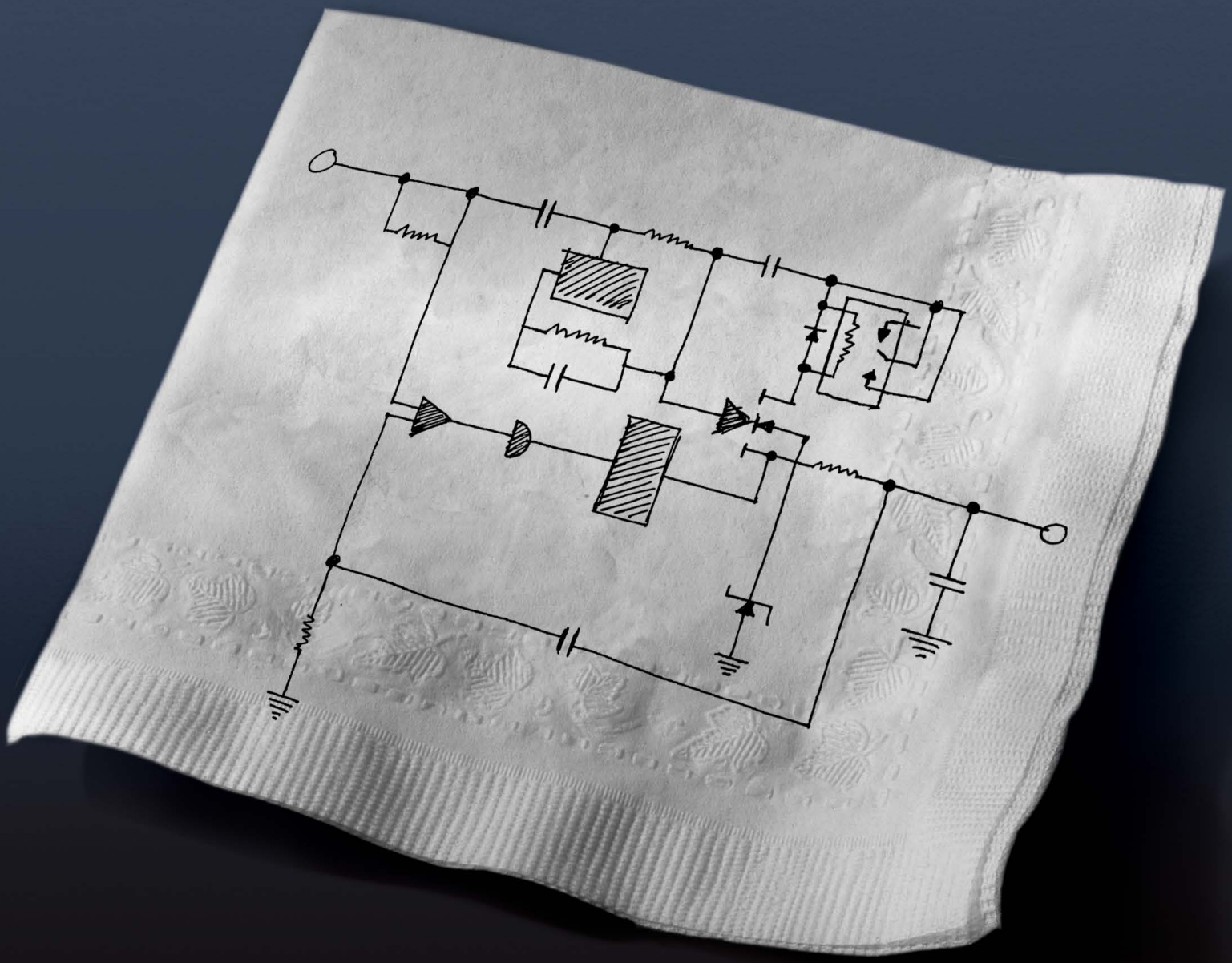

Capacitor Ordering Information Guide

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Why Choose KEMET

KEMET Electronics Corporation is a leading global supplier of electronic components. We offer our customers the broadest selection of capacitor technologies in the industry, along with an expanding range of electromechanical devices, electromagnetic compatibility solutions and supercapacitors. Our vision is to be the preferred supplier of electronic component solutions for customers demanding the highest standards of quality, deliver and service.

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Axial Leads

PEG124 Series Very Long Life 105°C & 125°C, 10 – 450 VDC

Capacitance Range: 1 to 4,700 µF • **Temperature Range:** −40°C to +105°C and −40°C to +125°C • **Lifetime:** 27,500 Hours

PEG124	E		F	410	0	Q	T1
Series	Voltage (VDC)		Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Packaging
Axial Aluminum Electrolytic	E= 10 G = 16 H = 25 K = 40 M = 63	P = 100 R = 200 U = 350 V = 400 Y = 450	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard A-Z = High Performance	Q = -10 +30% M = ±20% T = -10 +50%	See Ordering Options Table

PEG126 Series High Ripple Current 150ºC, 25 – 63 VDC

Capacitance Range: 250 to 4,000 µF • **Temperature Range:** −40°C to +150°C • **Lifetime:** D=16 6,300 Hours, D=20 8,400 Hours

PEG126	H	F	368	E	Q	E1
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Packaging
Axial Aluminum Electrolytic	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	E = Standard	Q = -10 +30% M = ±20%	E1 = Bulk

PEG127 Series High Ripple Current 150ºC, 25 – 63 VDC

Capacitance Range: 33 to 1,300 µF • **Temperature Range:** −40°C to +150°C • **Lifetime:** 1,600 Hours

PEG127	H	A	318	0	Q	T1
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Packaging
Axial Aluminum Electrolytic	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 +30%	See Ordering Options Table

PEG130 Series Very Long Life 105ºC, 25 – 63 VDC

Capacitance Range: 900 to 6,300 µF • **Temperature Range:** −40°C to +150°C • **Lifetime:** 160,000 Hours

PEG130	H	H	436	0	Q	L1
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Packaging
Axial Aluminum Electrolytic	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 +30%	See Ordering Options Table

PEG220 Series Very High Ripple Current 150ºC, 25 – 63 VDC

Capacitance Range: 250 to 4,700 µF • **Temperature Range:** −40°C to +150°C • **Lifetime:** 2,000 Hours

PEG220	H	F	415	0	Q	E1
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Packaging
Axial Aluminum Electrolytic	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 +30% M = ±20%	E1 = Bulk

Axial Leads (cont.)

PEG225 Series Extremely High Ripple Current 125°C & 150°C, 25 – 63 VDC

Capacitance Range: 470 to 6,300 µF • **Temperature Range:** −40°C to +125°C (at U_R) and −40°C to +150°C (at reduced voltage) • **Lifetime:** 2,000 Hours

PEG225	H	F	422	0	M
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance
Axial Aluminum Electrolytic	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 +30% M = ±20%

PEG226 Series Extremely High Ripple Current 150°C, 25 – 63 VDC

Capacitance Range: 250 to 4,700 µF • **Temperature Range:** −40°C to +150°C • **Lifetime:** 2,000 Hours

PEG226	H	F	415	0	M
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance
Axial Aluminum Electrolytic	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 +30% M = ±20%

Radial Crown

PEH126 High Ripple Current 150°C, 25 – 63 VDC

Capacitance Range: 250 to 4,000 µF • **Temperature Range:** −40°C to +150°C • **Lifetime:** 2,000 Hours

PEH126	H	F	368	E	Q
Series	Voltage (VDC)	Size Code	Capacitance Code (pF)	Version	Capacitance Tolerance
Radial Crown Aluminum Electrolytic with Soldering Star Termination	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	E = Standard	Q = -10 +30%

PEH220 High Ripple Current 150°C, 25 – 63 VDC

Capacitance Range: 250 to 4,700 µF • **Temperature Range:** −40°C to +150°C • **Lifetime:** 2,000 Hours

PEH220	H	F	415	0	M
Series	Voltage (VDC)	Size Code	Capacitance Code (pF)	Version	Capacitance Tolerance
Radial Crown Aluminum Electrolytic with Soldering Star Termination	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 +30% M = ±20%

PEH225 High Ripple Current 125ºC & 150ºC, 25 – 63 VDC

Capacitance Range: 470 to 6,300 µF • **Temperature Range:** −40°C to +125°C (at U_R) and −40°C to +150°C (at reduced voltage) • **Lifetime:** 2,000 Hours

PEH225	H	F	422	0	M
Series	Voltage (VDC)	Size Code	Capacitance Code (pF)	Version	Capacitance Tolerance
Radial Crown Aluminum Electrolytic with Soldering Star Termination	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 +30% M = ±20%

Radial Crown (cont.)

PEH226 High Ripple Current 150ºC, 25 – 63 VDC

Capacitance Range: 250 to 4,700 µF • **Temperature Range:** −40°C to +150°C • **Lifetime:** 2,000 Hours

PEH226	H	F	415	0	M
Series	Voltage (VDC)	Size Code	Capacitance Code (pF)	Version	Capacitance Tolerance
Radial Crown Aluminum Electrolytic with Soldering Star Termination	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 +30% M = ±20%

Screw Terminal

ALS30/31 Series High CV Value & Long Life 85°C, 25 – 500 VDC

Capacitance Range: 100 to 680,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 40,000 Hours

ALS3	0	A	153	DA	025	
Series	Stud Option	Termination	Capacitance Code (µF)	Size Code	Voltage (VDC)	
Screw Terminal Aluminum Electrolytic	0 = Plain Can 1 = Threaded mounting stud	See Termination Table	First 2 digits equals first 2 significant figures, 3rd digit is the number of additional zeros.	See Dimension Table	025 = 25 040 = 40 063 = 63 100 = 100 200 = 200 250 = 250	350 = 350 400 = 400 415 = 415 450 = 450 500 = 500

ALS32/33 Series High CV Value & Long Life 85°C, 350 – 500 VDC

Capacitance Range: 220 to 18,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 40,000 Hours

ALS3	2	A	391	D2C	350
Series	Stud Option	Termination	Capacitance Code (µF)	Size Code	Voltage (VDC)
Screw Terminal Aluminum Electrolytic	2 = Plain Can 3 = Threaded mounting stud	See Termination Table	First 2 digits equals first 2 significant figures, 3rd digit is the number of additional zeros.	See Dimension Table	350 = 350 400 = 400 450 = 450 500 = 500

ALS36/37 Series High Ripple Current 85°C, 25 – 500 VDC

Capacitance Range: 150 to 470,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 40,000 Hours

ALS3	6	A	153	D2C	025	
Series	Stud Option	Termination	Capacitance Code (µF)	Size Code	Voltage (VDC)	
Screw Terminal Aluminum Electrolytic	6 = Plain Can 7 = Threaded mounting stud	See Termination Table	First 2 digits equals first 2 significant figures, 3rd digit is the number of additional zeros.	See Dimension Table	025 = 25 040 = 40 050 = 50 063 = 63 075 = 75 100 = 100 160 = 160	200 = 200 250 = 250 350 = 350 400 = 400 450 = 450 500 = 500

Screw Terminal (cont.)

ALS40/41 Series High CV Value 105°C, 25 – 500 VDC

Capacitance Range: 150 to 680,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 15,000 Hours

ALS4	0	A	153	DA	025	
Series	Stud Option	Termination	Capacitance Code (µF)	Size Code	Voltage (VDC)	
Screw Terminal Aluminum Electrolytic	0 = Plain Can 1 = Threaded mounting stud	See Termination Table	First 2 digits equals first 2 significant figures, 3rd digit is the number of additional zeros.	See Dimension Table	025 = 25 040 = 40 063 = 63 100 = 100 160 = 160 200 = 200	250 = 250 350 = 350 400 = 400 415 = 415 450 = 450 500 = 500

ALS42/43 Series High CV Value 105°C, 350 – 450 VDC

Capacitance Range: 1,000 to 15,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 15,000 Hours

ALS4	2	A	102	K3C	350
Series	Stud Option	Termination	Capacitance Code (µF)	Size Code	Voltage (VDC)
Screw Terminal Aluminum Electrolytic	2 = Plain Can 3 = Threaded mounting stud	See Termination Table	First 2 digits equals first 2 significant figures, 3rd digit is the number of additional zeros.	See Dimension Table	350 = 350 400 = 400 415 = 415 450 = 450

ALS60/61 Series High CV Value 85°C, 550 VDC

Capacitance Range: 560 to 3,300 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 20,000 Hours

ALS6	0	A	561	KE	550
Series	Stud Option	Termination	Capacitance Code (µF)	Size Code	Voltage (VDC)
Screw Terminal Aluminum Electrolytic	0 = Plain Can 1 = Threaded mounting stud	See Termination Table	First 2 digits equals first 2 significant figures, 3rd digit is the number of additional zeros.	See Dimension Table	550 = 550

PEH169 Series Low ESR 85°C, 10 – 450 VDC

Capacitance Range: 68 to 470,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 78,000 Hours

PEH169	E		A	510	V	M	U2
Series	Voltage (VDC)		Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Stud Option
Screw Terminal Aluminum Electrolytic	E = 10 G = 16 H = 25 K = 40 M = 63 P = 100 Q = 160	R = 200 S = 250 U = 350 V = 400 O = 420 Y = 450	See Dimension Table	The second 2 digits indicate the 2 most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 + 30% M = ±20%	U2 = Plain Can B2 = Threaded mounting stud

PEH169 Series Low ESR & ESL 105°C, 10 – 350 VDC

Capacitance Range: 100 to 330,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 25,000 Hours

PEH169	E		A	468	0	Q	U2
Series	Voltage (VDC)		Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Stud Option
Screw Terminal Aluminum Electrolytic	E = 10 G = 16 H = 25 K = 40 M = 63	P = 100 Q = 160 R = 200 S = 250 U = 350	See Dimension Table	The second 2 digits indicate the 2 most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 + 30%	U2 = Plain Can B2 = Threaded mounting stud

Screw Terminal (cont.)

PEH200 Series High CV Value 85°C, 25 – 500 VDC

Capacitance Range: 100 to 330,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 60,000 Hours

PEH200	H		A	515	0	M	U2
Series	Voltage (VDC)		Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Stud Option
Screw Terminal Aluminum Electrolytic	H = 25 K = 40 M = 63 P = 100 S = 250 U = 350	X = 385 V = 400 O = 420 Y = 450 Z = 500	See Dimension table	The second 2 digits indicate the 2 most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 + 30% M = ±20%	U2 = Plain Can B2 = Threaded mounting stud

PEH205 Series High Ripple 125°C, 16 – 100 VDC

Capacitance Range: 1,500 to 390,000 µF • **Temperature Range:** −40°C to +125°C • **Lifetime:** 6,000 Hours

PEH205	G	A	518	0	Q	U3
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Stud Option
Screw Terminal Aluminum Electrolytic	G = 16 H = 25 K = 40 L = 55 M = 63 P = 100	See Dimension Table	The second 2 digits indicate the 2 most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	Q = -10 + 30%	U3 = Plain Can B3 = Threaded mounting stud

Snap-In

ALC10 Series Long Life 85°C, 35 – 550 VDC

Capacitance Range: 56 to 82,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 29,000 Hours

ALC10	A	392	BB	040	
Series	Termination	Capacitance Code (µF)	Size Code	Voltage (VDC)	
Snap-In type Aluminum Electrolytic	See Termination Table	First 2 digits equals first 2 significant figures, 3rd digit is the number of additional zeros.	See Dimension Table	035 = 35 040 = 40 063 = 63 100 = 100 200 = 200 250 = 250	350 = 350 400 = 400 450 = 450 500 = 500 550 = 550

ALC10S Series Slit Foil Audio 85°C, 50 – 100 VDC

Capacitance Range: 10,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 29,000 Hours

ALC10	S	110 2	DF
Series	Construction	Unique Sequential Number	Size Code
Snap-In type Aluminum Electrolytic	S = Slit foil		See Dimension Table

Snap-In (cont.)

ALC40 Series High Ripple Current 105°C, 25 – 500 VDC

Capacitance Range: 47 to 120,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 14,000 Hours

ALC40	A	822	BB	025	
Series	Termination	Capacitance Code (µF)	Size Code	Voltage (VDC)	
Snap-In type Aluminum Electrolytic	See Termination Table	First 2 digits equals first 2 significant figures, 3rd digit is the number of additional zeros.	See Dimension Table	025 = 25 040 = 40 063 = 63 100 = 100 200 = 200	250 = 250 350 = 350 400 = 400 450 = 450 500 = 500

PEH506 Series Low ESR & ESL 85°C, 35 – 450 VDC

Capacitance Range: 68 to 27,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 6,000 Hours

PEH506	J	AC	433	0	M	2
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Termination
Snap-In type Aluminum Electrolytic	J = 35 M = 63 P = 100 R = 200 S = 250 U = 350 V = 400 Y = 450	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	M = ±20%	See Termination Table

PEH526 Series Automotive 125°C, 25 – 63 VDC

Capacitance Range: 820 to 6,800 µF • **Temperature Range:** −40°C to +125°C • **Lifetime:** 20,000 Hours

PEH526	H	AB	427	0	M	3
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Termination
Snap-In type Aluminum Electrolytic	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	M = ±20%	See Termination Table

PEH532 Series Low ESR & ESL 105°C, 35 – 450 VDC

Capacitance Range: 68 to 27,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 2,000 Hours

PEH532	J	AC	433	0	M	2
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Termination
Snap-In type Aluminum Electrolytic	J = 35 M = 63 P = 100 R = 200 S = 250 U = 350 V = 400 Y = 450	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	M = ±20%	See Termination Table

Snap-In (cont.)

PEH534 Series Low ESR & ESL 105°C, 35 – 450 VDC

Capacitance Range: 150 to 22,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 4,000 Hours

PEH534	J	BC	456	0	M	2
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Termination
Snap-In type Aluminum Electrolytic	J = 35 M = 63 P = 100 R = 200 S = 250 U = 350 V = 400 Y = 450	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	M = ±20%	See Termination Table

PEH536 Series Low ESR & ESL 105°C, 35 – 450 VDC

Capacitance Range: 47 to 18,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 6,000 Hours

PEH536	J	AD	439	0	M	2
Series	Voltage (VDC)	Size Code	Capacitance Code (µF)	Version	Capacitance Tolerance	Termination
Snap-In type Aluminum Electrolytic	J = 35 M = 63 P = 100 R = 200 S = 250 U = 350 V = 400 Y = 450	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The first digit indicates the total number digits.	0 = Standard	M = ±20%	See Termination Table

ELH Series Low Impedance 85°C, 6.3 – 450 VDC

Capacitance Range: 47 to 120,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 2,000 Hours

ELH	159	M	6R3		A	Q1	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)		Electrical Parameters	Size Code	Packaging
Snap-In Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63 080 = 80	100 = 100 160 = 160 180 = 180 200 = 200 250 = 250 350 = 350 400 = 400 450 = 450	A = Standard	See Dimension Table	See Ordering Options Table

ELG Series General Purpose 105°C, 6.3 – 450 VDC

Capacitance Range: 47 to 82,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 2,000 Hours

ELG	129	M	6R3		A	Q1	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)		Electrical Parameters	Size Code	Packaging
Snap-In Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63 080 = 80	100 = 100 160 = 160 180 = 180 200 = 200 250 = 250 350 = 350 400 = 400 450 = 450	A = Standard	See Dimension Table	See Ordering Options Table

Aluminum Capacitors

Solder Pin/Tag

ALP20 and ALT20/21 Series Low ESR 85°C, 40 – 450 VDC

Capacitance Range: 22 to 150,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 26,000 Hours

ALP	20A	682	AB	010	
Series	Version	Capacitance Code (µF)	Size Code	Voltage (VDC)	
ALP = Solder pin ALT = Solder tag	20A = Standard 21A = Threaded Mounting Stud (ALT only)	First 2 digits equals first 2 significant figures, 3rd digit is number of zeros	See Dimension Table	040 = 40 063 = 63 100 = 100 200 = 200	250 = 250 385 = 385 400 = 400 450 = 450

ALP22 and ALT22/23 Series High Ripple 85°C, 40 – 450 VDC

Capacitance Range: 22 to 150,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 26,000 Hours

ALP	22A	682	AB	010	
Series	Version	Capacitance Code (µF)	Size Code	Voltage (VDC)	
ALP = Solder pin ALT = Solder tag	22A = Standard 23A = Threaded Mounting Stud (ALT only)	First 2 digits equals first 2 significant figures, 3rd digit is number of zeros	See Dimension Table	040 = 40 063 = 63 100 = 100 200 = 200	250 = 250 385 = 385 400 = 400 450 = 450

ALN20S Series T-Network 85°C, 50 & 100 VDC

Capacitance Range: 10,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 18,000 Hours

ALN20	S	1053	DD
Series	Construction	Unique Sequential Number	Size Code
Snap-In type Aluminum Electrolytic	S = Slit foil		See Dimension Table

Single-Ended

ESK Series General Purpose 85°C, 6.3 – 500 VDC

Capacitance Range: 0.1 to 22,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 2,000 Hours

ESK	226	M	6R3		A	C3	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)		Electrical Parameters	Size Code	Packaging
Single-Ended Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63	100 = 100 160 = 160 200 = 200 250 = 250 350 = 350 400 = 400 450 = 450 500 = 500	A = Standard	See Dimension Table	See Ordering Options Table

Single-Ended (cont.)

ESH Series High CV 105°C, 6.3 – 500 VDC

Capacitance Range: 0.47 to 15,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 2,000 Hours

ESH	107	M	6R3		A	C3	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)		Electrical Parameters	Size Code	Packaging
Single-Ended Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63	100 = 100 160 = 160 200 = 200 250 = 250 350 = 350 400 = 400 450 = 450 500 = 500	A = Standard	See Dimension Table	See Ordering Options Table

ESC Series Low ESR 105°C, 6.3 – 100 VDC

Capacitance Range: 4.7 to 15,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 3,000 Hours

ESC	157	M	6R3	A	C3	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)	Electrical Parameters	Size Code	Packaging
Single-Ended Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63 100 = 100	A = Standard	See Dimension Table	See Ordering Options Table

ESG Series High Ripple Current 105°C, 160 – 450 VDC

Capacitance Range: 4.7 to 330 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 5,000 Hours

ESG	336	M	160	A	H4	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)	Electrical Parameters	Size Code	Packaging
Single-Ended Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	160 = 160 200 = 200 250 = 250 350 = 350 400 = 400 450 = 450	A = Standard	See Dimension Table	See Ordering Options Table

ESY Series Low Impedance 105°C, 6.3 – 100 VDC

Capacitance Range: 5.6 to 6,800 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 5,000 Hours

ESY	396	M	6R3	A	B2	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)	Electrical Parameters	Size Code	Packaging
Single-Ended Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63 100 = 100	A = Standard	See Dimension Table	See Ordering Options Table

Single-Ended (cont.)

ESW Series Low Impedance 105°C, 6.3 – 100 VDC

Capacitance Range: 6.8 to 15,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 5,000 Hours

ESW	226	M	6R3	A	C3	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)	Electrical Parameters	Size Code	Packaging
Single-Ended Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63 100 = 100	A = Standard	See Dimension Table	See Ordering Options Table

EST Series Long Life 105°C, 6.3 – 63 VDC

Capacitance Range: 6.8 to 15,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 10,000 Hours

EST	157	M	6R3	A	C3	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)	Electrical Parameters	Size Code	Packaging
Single-Ended Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63	A = Standard	See Dimension Table	See Ordering Options Table

EAK Series Long Life 125°C, 10 – 63 VDC

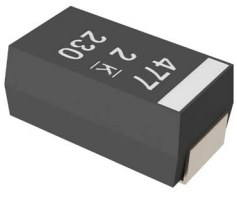
Capacitance Range: 47 to 4,700 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 5,000 Hours

EAK	227	M	010	A	G3	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)	Electrical Parameters	Size Code	Packaging
Single-Ended Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63	A = Standard	See Dimension Table	See Ordering Options Table

Surface Mount

A700 Series Polymer Aluminum 125°C, 2 – 16 VDC

Capacitance Range: 6.8 to 560 µF • **Temperature Range:** −55°C to +125°C • **Lifetime:** 2,000 Hours



A	700	V	476	M	006	A	T	E018	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR Code	Packaging (C-Spec)
A = Aluminum	700 = Aluminum Polymer	D, V, W, X	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	002 = 2 V 2R5 = 2.5 V 004 = 4 V 006 = 6.3 V 008 = 8 V 010 = 10 V 12R = 12.5 V 016 = 16 V	A = N/A	T = 100% Matte Tin (Sn) Plated	E = ESR Last three digits specify ESR in mΩ (018 = 18 mΩ)	Blank = 7" Reel 7280 = 13" Reel

Surface Mount (cont.)

EDH Series General Purpose 105°C, 6.3 – 100 VDC

Capacitance Range: 1.0 to 1,500 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 2,000 Hours

EDH	226	M	6R3		A	9B	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)		Electrical Parameters	Size Code	Packaging
Surface Mount Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35	050 = 50 063 = 63 100 = 100	A = Standard	See Dimension Table	AA = T&R

EDK Series General Purpose 85°C, 4 – 100 VDC

Capacitance Range: 0.1 to 1,000 µF • **Temperature Range:** −40°C to +85°C • **Lifetime:** 2,000 Hours

EDK	226	M	004		A	9B	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)		Electrical Parameters	Size Code	Packaging
Surface Mount Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	004 = 4 6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35	050 = 50 063 = 63 100 = 100	A = Standard	See Dimension Table	AA = Tape & Reel

EEV Series Ultra-Low Impedance 105°C, 6.3 – 50 VDC

Capacitance Range: 4.7 to 1,500 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 2,000 Hours

EEV	226	M	6R3	A	9B	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)	Electrical Parameters	Size Code	Packaging
Surface Mount Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50	A = Standard	See Dimension Table	AA = Tape & Reel

EXV Series Ultra-Low Impedance 105°C, 6.3 – 50 VDC

Capacitance Range: 1 to 1,000 µF • **Temperature Range:** −40°C to +105°C • **Lifetime:** 5,000 Hours

EXV	226	M	6R3	A	9B	AA
Series	Capacitance Code (pF)	Tolerance	Rated Voltage (VDC)	Electrical Parameters	Size Code	Packaging
Surface Mount Aluminum Electrolytic	Digits 4 – 5 represent the first two digits of the capacitance value. The final digit indicates the number of zeros to be added.	M = ±20%	6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50	A = Standard	See Dimension Table	AA = Tape & Reel

Motor Start

MS/MD Series 60ºC/70°C, 120 – 260 VAC

Capacitance Range: 25 to 750 µF • **Temperature Range:** MS: −20°C to +60°C, MD: −20°C to +70°C • **Lifetime:** 500 Hours

080	MS	12	AA	M	A	1	STD
Capacitance Code (µF)	Rating	Voltage (VAC)	Size Code	Manufacturing Style	Capacitance Tolerance	Terminal Code	Version
Example: 080 = 80 µF 120 = 120 µF	MS = Motor start single rating MD = Motor start dual rating	12 = 120 22 = 220 26 = 260	See Dimension Table	M = Molded case	A = -0% +25% K = ±10%	1 = Double amp tag	STD = Standard

Ceramic Capacitors

CERAMIC SURFACE MOUNT CAPACITORS

Commercial Grade	Flex Mitigation	Automotive Grade	High Reliability Commercial Off-the-Shelf (COTS)	SnPb End Metallization	Bulk Capacitance	High Temperature (> 125°C)	High Voltage (> 500 V)	Aerospace & Defense	RF & Microwave
C0G 10 – 250 VDC	Open Mode Design X7R 16 – 200 VDC	C0G 10 – 250 VDC	C0G 10 – 250 VDC	C0G 10 – 250 VDC	KPS X7R 10 – 250 VDC	150°C X8R 25 –100 VDC	ArcShield™ Technology X7R 500 – 1,000 VDC	MIL-PRF-123 BP & BX 6.3 – 200 VDC	CBR Series Ultra High Q C0G 6.3 – 500 VDC
X7R 6.3 – 250 VDC	Floating Electrode X7R 6.3 – 250 VDC	X7R 6.3 – 250 VDC	X7R 6.3 – 250 VDC	X7R 6.3 – 250 VDC	KPS High Voltage X7R 500 – 630 VDC	150°C X8L 10 –50 VDC	C0G 500 – 3,000 VDC	GR900 BP & BX 16 – 200 VDC	
X5R 4 – 50 VDC	Flexible Termination C0G 10 – 250 VDC	Capacitor Array C0G 10 – 200 VDC		COTS C0G 10 – 200 VDC	KPS High Temperature 150°C X8L 10 – 50 VDC	200°C C0G 10 – 200 VDC	X7R 500 – 3,000 VDC	MIL-PRF-55681 BP, BR & BX 6.3 – 200 VDC	
Z5U 50 VDC & 100 VDC	Flexible Termination X7R 6.3 – 250 VDC	Capacitor Array X7R 10 – 200 VDC		COTS X7R 6.3 – 250 VDC	KPS MIL Series 50 – 1,000 VDC	HV-HT Series 200°C C0G 500 – 2,000 VDC	Flexible Termination C0G 500 – 3,000 VDC	DLA 03028 BR & BX 6.3 – 200 VDC	
Y5V 6.3 – 50 VDC	High Voltage Flexible Termination C0G 500 – 3,000 VDC	Open Mode Design X7R 16 – 200 VDC		High Temperature X8R 25 – 100 VDC		Flexible Termination 150°C X8R 25 – 100 VDC	Flexible Termination X7R 500 – 3,000 VDC	DLA 03029 BR & BX 6.3 – 200 VDC	
Telecom "Tip & Ring" X7R 250 VDC	High Voltage Flexible Termination X7R 500 – 3,000 VDC	Flexible Termination X7R 6.3 – 250 VDC		High Temperature X8L 10 – 50 VDC		KPS 150°C X8L 10 VDC – 50 VDC	KPS X7R 500 – 630 VDC		
Capacitor Array C0G 10 – 200 VDC	Flexible Termination X8R 25 – 100 VDC	KPS X7R 10 – 250 VDC		Telecom "Tip & Ring" X7R 250 VDC		200°C High Voltage Pulse Discharge C0G 500 – 2,000 VDC	HV-HT Series 200°C C0G 500 – 2,000 VDC		
Capacitor Array X7R 10 – 200 VDC	Floating Electrode w/ Flexible Termination X7R 6.3 – 250 VDC	High Voltage Flexible Termination X7R 500 – 3,000 VDC		Open Mode Design X7R 16 – 200 VDC			200°C High Voltage Pulse Discharge C0G 500 – 2,000 VDC		
	KPS X7R 10 – 250 VDC	KPS High Voltage X7R 500 – 630 VDC		Floating Electrode X7R 6.3 – 250 VDC			KPS HV Large Case C0G 500 – 10K VDC		
	KPS High Voltage X7R 500 – 630 VDC	KPS High Temperature 150°C X8L 10 – 50 VDC		Flexible Termination X7R 6.3 – 250 VDC			KPS HV Large Case X7R 500 – 10K VDC		
	KPS High Temperature 150°C X8L 10 – 50 VDC	Flexible Termination C0G 10 – 250 VDC		Floating Electrode w/ Flexible Termination X7R 6.3 – 250 VDC					
		Flexible Termination X8R 25 – 100 VDC							
		High Temperature X8R 25 – 100 VDC							
		High Temperature 150°C X8L 10 – 50 VDC							
		High Voltage X7R 500 – 3,000 VDC							
		High Voltage Flexible Termination C0G 500 – 3,000 VDC							

CERAMIC DISC CAPACITORS

Safety	Commercial Grade
900 Radial Encapsulated AC Type X1 400 VAC/Y2 250 VAC	KHA X7R 1,000 – 2,000 VDC
900 Radial Encapsulated AC Type X1 440 VAC/Y2 300 VAC	KHB Y5P 1,000 – 2,000 VDC
900 Radial Encapsulated AS Type X1 760 VAC/Y1 500 VAC	KHC SL 1,000 – 2,000 VDC
900 Radial Encapsulated AH Type X1 400 VAC/Y1 250 VAC	KJN Y5P, Y5U & Y5V Y1 250/400 VAC/ X1 440 VAC
900 Radial Encasulated AH Type X1 400 VAC/Y1 400 VAC	KJY Y5P, Y5U & Y5V Y2 250 VAC/ X1 400 VAC
ERO610 Radial AC Type X1 440 VAC/Y2 250 VAC	
ERK610 Radial AC Type X1 440 VAC/Y2 300 VAC	
ERP610 Radial AC Type X1 760 VAC/Y2 500 VAC	

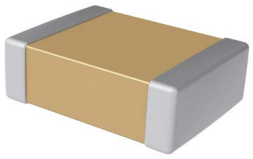
CERAMIC THROUGH-HOLE CAPACITORS

Commercial Grade	High Temperature (> 150°C)	High Voltage (> 500 V)	Aerospace & Defense
Aximax C0G, X7R & Z5U Axial Conformally Coated 25 – 250 VDC	HT/HP 200°C C0G & X7R Axial & Radial 50 – 200 VDC	High Voltage Goldmax C0G & X7R Radial Conformally Coated 500 – 3,000 VDC	MIL-PRF-123 BP & BX Molded Radial 50 – 200 VDC
Goldmax C0G, X7R & Z5U Radial Conformally Coated 25 – 250 VDC	HV 200°C C0G & X7R Radial Conformally Coated 500 – 4,000 VDC	HV C0G & X7R Radial Conformally Coated 500 –10,000 VDC	GR900 High Reliability CG, BP & BX Molded Radial 50 – 200 VDC
Molded Axial & Radial C0G & X7R 50 – 200 VDC	ACR/ACA 200°C Axial & Radial C0G 50 – 100 VDC		MIL-PRF-20 CG Molded Axial & Radial 50 – 200 VDC
	ARR/ARA 200°C Axial & Radial X7R 50 – 100 VDC		MIL-C-11015/ MIL-PRF-39014 BX & BR Molded Axial 50 – 100 VDC
	TCR/TCA 260°C Axial & Radial C0G 50 – 100 VDC		MIL-C-11015/ MIL-PRF-39014 BX (X7R) Molded Radial 50 – 200 VDC
	TRR/TRA 260°C Axial & Radial X7R 50 – 100 VDC		HV MIL-PRF-46467 Equivalent BP, BR & BZ 600 – 5,000 VDC
	VCR 200°C Axial & Radial C0G 500 – 5,000 VDC		HS High Voltage Space Quality C0G & X7R Radial Conformally Coated 500 – 10,000 VDC
	VRR 200°C Axial & Radial X7R 500 – 5,000 VDC		SCR/SCA Standard Axial & Radial C0G 50 – 200 VDC
	Aximax 150°C X8L & X8R Molded Axial 25 – 200 VDC		SRR/SRA Standard Axial & Radial X7R 50 – 200 VDC

Commercial Grade

C0G Dielectric, 10 – 250 VDC (Commercial Grade)

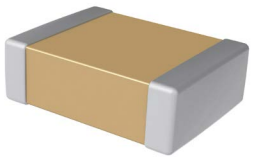
Capacitance Range: 0.50 pF to 0.47 µF • **Temperature Range:** −55°C to +125°C



C	1206	C	104	J	3	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance[2]	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[3]	Packaging/Grade (C-Spec)[4]
	0201 0402 0603 0805 1206 1210 1808 1812 1825 2220 2225	C = Standard	2 significant digits + number of zeros. Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF e.g., 2.2 pF = 229 e.g., 0.5 pF = 508	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	G = C0G	A = N/A	C = 100% Matte Sn	Blank = Bulk TU = 7" Reel Unmarked

X7R Dielectric, 6.3 – 250 VDC (Commercial Grade)

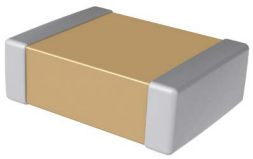
Capacitance Range: 10 pF to 47 µF • **Temperature Range:** −55°C to +125°C



C	1206	C	106	M	4	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0402 0603 0805 1206 1210 1808 1812 1825 2220 2225	C = Standard	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 6 = 35 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn	Blank = Bulk TU = 7" Reel Unmarked TM = 7" Reel Marked

X5R Dielectric, 4 – 50 VDC (Commercial Grade)

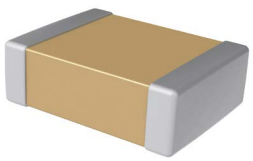
Capacitance Range: 0.01 µF to 100 µF • **Temperature Range:** −55°C to +85°C



C	1206	C	107	M	9	P	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C–Spec)[2]
	0201 0402 0603 0805 1206 1210	C = Standard	2 Significant Digits + Number of Zeros	K = ±10% M = ±20%	7 = 4 V 9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 6 = 35 V 5 = 50 V	P = X5R	A = N/A	C = 100% Matte Sn	Blank = Bulk TU = 7" Reel Unmarked TM = 7" Reel Marked

Z5U Dielectric, 50 & 100 VDC (Commercial Grade)

Capacitance Range: 6,800 pF to 2.2 µF • **Temperature Range:** −10°C to +85°C

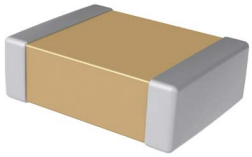


C	1825	C	225	M	5	U	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[2]
	0805 1206 1210 1812 1825 2225	C = Standard	2 significant digits + number of zeros	M = ±20% Z = +80%/ -20	5 = 50 V 1 = 100 V	U = Z5U	A = N/A	C = 100% Matte Sn	Blank = Bulk TU = 7" Reel Unmarked TM = 7" Reel Marked

Commercial Grade (cont.)

Y5V Dielectric, 6.3 – 50 VDC (Commercial Grade)

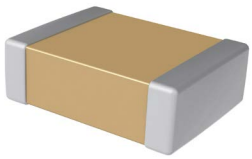
Capacitance Range: 0.022 µF to 22 µF • **Temperature Range:** −30°C to +85°C



C	1210	C	226	Z	4	V	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0402 0603 0805 1206 1210	C = Standard	2 significant digits + number of zeros	Z = +80%/ -20% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V	V = Y5V	A = N/A	C = 100% Matte Sn	Blank = Bulk TU = 7" Reel Unmarked

Telecom "Tip and Ring" X7R Dielectric, 250 VDC (Commercial Grade)

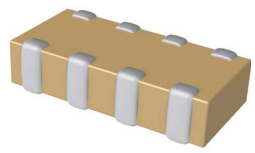
Capacitance Range: 1,000 pF to 6.8 µF • **Temperature Range:** −55°C to +125°C



C	1825	C	105	K	A	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0805 1206 1210 1812 1825 2220 2225	C = Standard X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk TU = 7" Reel Unmarked TM = 7" Reel Marked

Capacitor Array, C0G Dielectric, 10 – 200 VDC (Commercial Grade)

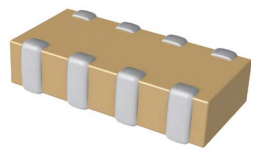
Capacitance Range: 10 pF to 2,200 pF • **Temperature Range:** −55°C to +125°C



CA	06	4	C	104	K	4	G	A	C	TU
Ceramic Array	Case Size (L" x W")[1]	Number of Capacitors	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	05 = 0508 06 = 0612	2 = 2 4 = 4	C = Standard X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk Bag (Commercial Grade) TU = 7" Tape & Reel (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel/Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel/ Embossed Plastic (Automotive Grade)

Capacitor Array, X7R Dielectric, 10 – 200 VDC (Commercial Grade)

Capacitance Range: 330 pF to 0.22 µF • **Temperature Range:** −55°C to +125°C

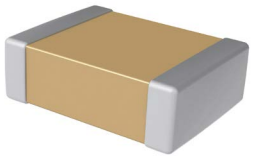


CA	06	4	C	104	K	4	R	A	C	TU
Ceramic Array	Case Size (L" x W")[1]	Number of Capacitors	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/ Grade (C-Spec)[3]
	05 = 0508 06 = 0612	2 = 2 4 = 4	C = Standard X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Flex Mitigation

Open Mode Design (FO-CAP), X7R Dielectric, 16 – 200 VDC (Commercial Grade)

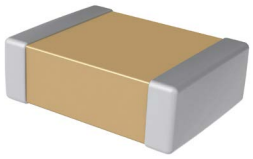
Capacitance Range: 1,000 pF to 6.8 µF • **Temperature Range:** −55°C to +125°C



C	1210	J	685	K	3	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/ Grade (C-Spec)[2]
	0805 1206 1210 1812	F = Open Mode J = Open Mode with Flexible Termination	2 significant digits + number of zeros	K = ±10% M = ±20%	4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Floating Electrode Design (FE-CAP), X7R Dielectric, 6.3 – 250 VDC (Commercial Grade)

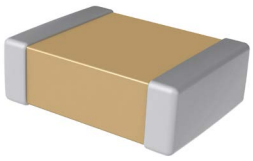
Capacitance Range: 150 pF to 0.22 µF • **Temperature Range:** −55°C to +125°C



C	0805	S	104	K	5	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/ Grade (C-Spec)[2]
	0402 0603 0805 1206 1210 1812	S = Floating Electrode	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Flexible Termination System (FT-CAP), C0G Dielectric, 10 – 250 VDC (Commercial Grade)

Capacitance Range: 0.5 pF to 0.47 µF • **Temperature Range:** −55°C to +125°C

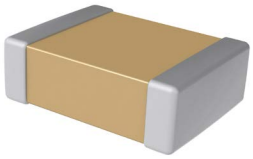


C	1206	X	563	J	3	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0603 0805 1206 1210 1812 1825 2220 2225	X = Flexible Termination	2 significant digits + number of zeros. Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF e.g., 2.2 pF = 229 e.g., 0.5 pF = 508	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk (Commercial Grade) TU = 7" Reel (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel/Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel/ Embossed Plastic (Automotive Grade)

Flex Mitigation (cont.)

Flexible Termination System (FT-CAP) X7R Dielectric, 6.3 – 250 VDC (Commercial Grade)

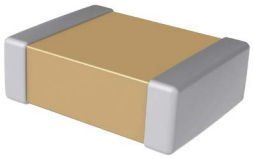
Capacitance Range: 180 pF to 22 µF • **Temperature Range:** −55°C to +125°C



C	1206	X	106	K	4	R	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0603 0805 1206 1210 1808 1812 1825 2220 2225	X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

High Voltage with Flexible Termination System (HV FT-CAP), C0G Dielectric, 500 – 3,000 VDC (Commercial Grade)

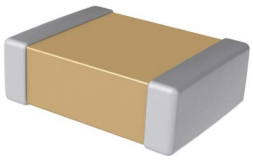
Capacitance Range: 1 pF to 0.039 µF • **Temperature Range:** −55°C to +125°C



C	2225	X	393	J	C	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0805 1206 1210 1808 1812 1825 2220 2225	X= Flexible Termination	2 significant digits + number of zeros.	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1000 V F = 1500 V G = 2000 V Z = 2500 V H = 3000 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk Bag (Commercial Grade) TU = 7" Reel (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel/ Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel/ Embossed Plastic (Automotive Grade)

High Voltage with Flexible Termination System (HV FT-CAP) X7R Dielectric, 500 – 3,000 VDC (Commercial Grade)

Capacitance Range: 130 pF to 0.33 µF • **Temperature Range:** −55°C to +125°C

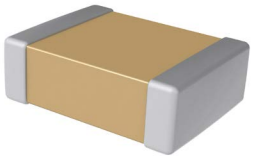


C	1210	X	154	K	C	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0805 1206 1210 1808 1812 1825 2220 2225	X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1,000 V F = 1,500 V G = 2,000 V Z = 2,500 V H = 3,000 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% min)	See "Packaging C-Spec Ordering Options Table" below

Flex Mitigation (cont.)

Flexible Termination System (FT-CAP), Ultra-Stable X8R Dielectric, 25 – 100 VDC (Commercial Grade)

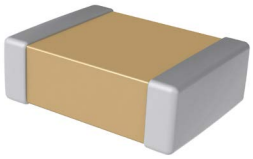
Capacitance Range: 430 pF to 0.22 µF • **Temperature Range:** −55°C to +150°C



C	1206	X	104	J	3	H	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0603 0805 1206 1210 1812	X = Flexible Termination	2 significant digits + number of zeros.	F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	3 = 25 V 5 = 50 V 1 = 100 V	H = Ultra-Stable X8R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Floating Electrode Design with Flexible Termination System (FF-CAP), X7R Dielectric, 6.3 – 250 VDC (Commercial Grade)

Capacitance Range: 180 pF to 0.22 µF • **Temperature Range:** −55°C to +125°C



C	0805	Y	104	K	5	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/ Grade (C-Spec)[2]
	0603 0805 1206 1210 1812	Y = Floating Electrode with Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

KPS Series, X7R Dielectric, 10 – 250 VDC (Commercial Grade)

Capacitance Range: 0.1 µF to 47 µF • **Temperature Range:** −55°C to +125°C

C	2220	C	106	M	5	R	2	C	7186
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Failure Rate/Design	Leadframe Finish[2]	Packaging/Grade (C-Spec)[3]
	1210 1812 2220	C = Standard	2 significant digits + number of zeros	K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V A = 250 V	R = X7R	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel Unmarked 7289 = 13" Reel Unmarked

KPS Series, High Voltage, X7R Dielectric, 500 – 630 VDC (Commercial Grade)

Capacitance Range: 0.047 µF to 1.0 µF • **Temperature Range:** −55°C to +125°C

C	2220	C	105	M	C	R	2	C	7186
Ceramic	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Leadframe Finish[2]	Packaging/Grade (C-Spec)[3]
	2220	C = Standard	2 significant digits + number of zeros.	K = ±10% M = ±20%	C = 500 V B = 630 V	R = X7R	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel/ Embossed Plastic 7289 = 13" Reel/ Embossed Plastic

Flex Mitigation (cont.)

KPS HT Series, High Temperature 150°C, X8L Dielectric, 10 – 50 VDC (Commercial Grade)

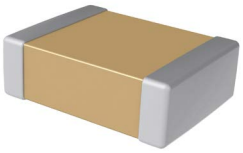
Capacitance Range: 0.47 µF to 47 µF • **Temperature Range:** −55°C to +150°C

C	2220	C	476	M	4	N	2	C	7186
Ceramic	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Leadframe Finish	Packaging/Grade (C-Spec)
	1210 2220	C = Standard	2 significant digits + number of zeros.	K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V	N = X8L	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel/Embossed Plastic (Commercial Grade) 7289 = 13" Reel/Embossed Plastic (Commercial Grade) AUTO = Auto Grade 7"Reel (Embossed Plastic) AUTO 7289= Auto Grade 13" Reel (Embossed Plastic)

Automotive Grade

C0G Dielectric, 10 – 250 VDC (Automotive Grade)

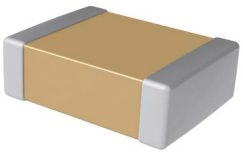
Capacitance Range: 0.5 pF to 0.47 µF • **Temperature Range:** −55°C to +125°C



C	1206	C	104	J	3	G	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0402 0603 0805 1206 1210 1812 2220	C = Standard	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	G = C0G	A = N/A	C = 100% Matte Sn	AUTO = 7" Reel AUTO 7411 = 13" Reel/Punched Paper AUTO 7210 = 13" Reel/Embossed Plastic

X7R Dielectric, 6.3 – 250 VDC (Automotive Grade)

Capacitance Range: 10 pF to 22 µF • **Temperature Range:** −55°C to +125°C

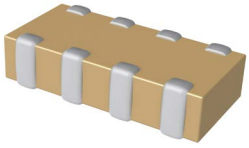


C	0805	C	225	M	4	R	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[3]
	0402 0603 0805 1206 1210 1812 2220	C = Standard	Two significant digits + number of zeros.	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn	AUTO = 7" Reel AUTO 7411 = 13" Reel/Punched Paper AUTO 7210 = 13" Reel/Embossed Plastic

Automotive Grade (cont.)

Capacitor Array, C0G Dielectric, 10 – 200 VDC (Automotive Grade)

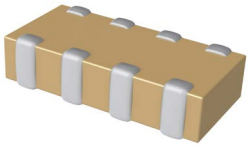
Capacitance Range: 10 pF to 2,200 pF • **Temperature Range:** −55°C to +125°C



CA	06	4	C	104	K	4	G	A	C	TU
Ceramic Array	Case Size (L" x W")[1]	Number of Capacitors	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	05 = 0508 06 = 0612	2 = 2 4 = 4	C = Standard X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk Bag (Commercial Grade) TU = 7" Tape & Reel (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel/Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel/ Embossed Plastic (Automotive Grade)

Capacitor Array, X7R Dielectric, 10 – 200 VDC (Automotive Grade)

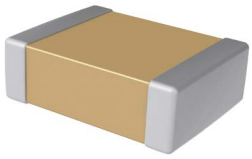
Capacitance Range: 330 pF to 0.22 µF • **Temperature Range:** −55°C to +125°C



CA	06	4	C	104	K	4	R	A	C	TU
Ceramic Array	Case Size (L" x W")[1]	Number of Capacitors	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/ Grade (C-Spec)[3]
	05 = 0508 06 = 0612	2 = 2 4 = 4	C = Standard X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Open Mode Design (FO-CAP), X7R Dielectric, 16 – 200 VDC (Automotive Grade)

Capacitance Range: 1,000 pF to 6.8 µF • **Temperature Range:** −55°C to +125°C

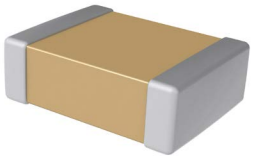


C	1210	J	685	K	3	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/ Grade (C-Spec)[2]
	0805 1206 1210 1812	F = Open Mode J = Open Mode with Flexible Termination	2 significant digits + number of zeros	K = ±10% M = ±20%	4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Automotive Grade (cont.)

Flexible Termination System (FT-CAP) X7R Dielectric, 6.3 – 250 VDC (Automotive Grade)

Capacitance Range: 180 pF to 22 µF • **Temperature Range:** −55°C to +125°C



C	1206	X	106	K	4	R	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0603 0805 1206 1210 1808 1812 1825 2220 2225	X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

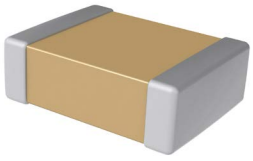
KPS Series, X7R Dielectric, 10 – 250 VDC (Automotive Grade)

Capacitance Range: 0.1 µF to 47 µF • **Temperature Range:** −55°C to +125°C

C	2220	C	106	M	5	R	2	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Failure Rate/Design	Leadframe Finish[2]	Packaging/Grade (C-Spec)[3]
	1210 1812 2220	C = Standard	2 significant digits + number of zeros	K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V A = 250 V	R = X7R	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	AUTO = 7" Reel/ Embossed Plastic AUTO 7289 = 13" Reel/Embossed Plastic

High Voltage with Flexible Termination System (HV FT-CAP) X7R Dielectric, 500 – 3,000 VDC (Automotive Grade)

Capacitance Range: 130 pF to 0.33 µF • **Temperature Range:** −55°C to +125°C



C	1210	X	154	K	C	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0805 1206 1210 1808 1812 1825 2220 2225	X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1,000 V F = 1,500 V G = 2,000 V Z = 2,500 V H = 3,000 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% min)	See "Packaging C-Spec Ordering Options Table" below

KPS Series, High Voltage, X7R Dielectric, 500 – 630 VDC (Automotive Grade)

Capacitance Range: 0.047 µF to 0.47 µF • **Temperature Range:** −55°C to +125°C

C	2220	C	105	M	C	R	2	C	7186
Ceramic	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Leadframe Finish[2]	Packaging/Grade (C-Spec)[3]
	2220	C = Standard	2 significant digits + number of zeros.	K = ±10% M = ±20%	C = 500 V B = 630 V	R = X7R	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel/ Embossed Plastic 7289 = 13" Reel/ Embossed Plastic

Automotive Grade (cont.)

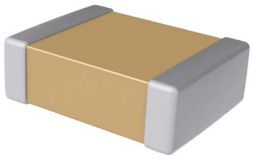
KPS HT Series, High Temperature 150°C, X8L Dielectric, 10 – 50 VDC (Automotive Grade)

Capacitance Range: 0.47 µF to 47 µF • **Temperature Range:** −55°C to +150°C

C	2220	C	476	M	4	N	2	C	7186
Ceramic	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Leadframe Finish	Packaging/Grade (C-Spec)
	1210 2220	C = Standard	2 significant digits + number of zeros.	K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V	N = X8L	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel/Embossed Plastic (Commercial Grade) 7289 = 13" Reel/Embossed Plastic (Commercial Grade) AUTO = Auto Grade 7"Reel (Embossed Plastic) AUTO 7289= Auto Grade 13" Reel (Embossed Plastic)

Flexible Termination System (FT-CAP), C0G Dielectric, 10 – 250 VDC (Automotive Grade)

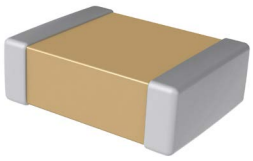
Capacitance Range: 0.5 pF to 0.47 µF • **Temperature Range:** −55°C to +125°C



C	1206	X	563	J	3	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0603 0805 1206 1210 1812 1825 2220 2225	X = Flexible Termination	2 significant digits + number of zeros. Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF e.g., 2.2 pF = 229 e.g., 0.5 pF = 508	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk (Commercial Grade) TU = 7" Reel (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel/Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel/ Embossed Plastic (Automotive Grade)

Flexible Termination System (FT-CAP), Ultra-Stable X8R Dielectric, 25 – 100 VDC (Automotive Grade)

Capacitance Range: 430 pF to 0.22 µF • **Temperature Range:** −55°C to +150°C

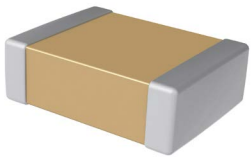


C	1206	X	104	J	3	H	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0603 0805 1206 1210 1812	X = Flexible Termination	2 significant digits + number of zeros.	F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	3 = 25 V 5 = 50 V 1 = 100 V	H = Ultra-Stable X8R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Automotive Grade (cont.)

High Temperature 150°C, Ultra-Stable X8R Dielectric, 25 – 100 VDC (Automotive Grade)

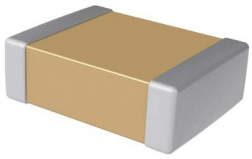
Capacitance Range: 10 pF to 0.22 µF • **Temperature Range:** −55°C to +150°C



C	1210	C	184	K	3	H	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[2]
	0402 0603 0805 1206 1210 1812	C = Standard	2 significant digits + number of zeros	F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	3 = 25 V 5 = 50 V 1 = 100 V	H = Ultra Stable X8R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk Bag (Commercial Grade) TU = 7" Tape & Reel/ Unmarked (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel/Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel/ Embossed Plastic (Automotive Grade)

High Temperature 150°C, X8L Dielectric, 10 – 50 VDC (Automotive Grade)

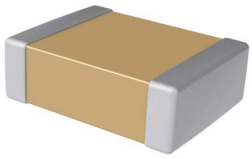
Capacitance Range: 0.012 µF to 10 µF • **Temperature Range:** −55°C to +150°C



C	1210	X	106	K	8	N	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0402 0603 0805 1206 1210	C = Standard X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	8 = 10 V 3 = 25 V 5 = 50 V	N = X8L	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

High Voltage X7R Dielectric, 500 – 3,000 VDC (Automotive Grade)

Capacitance Range: 10 pF to 0.33 µF • **Temperature Range:** −55°C to +125°C

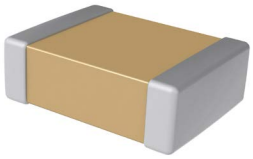


C	1210	C	154	K	C	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0805 1206 1210 1808 1812 1825 2220 2225	C = Standard	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1,000 V F = 1,500 V G = 2,000 V Z = 2,500 V H = 3,000 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Automotive Grade (cont.)

High Voltage with Flexible Termination System (HV FT-CAP), C0G Dielectric, 500 – 3,000 VDC (Automotive Grade)

Capacitance Range: 1 pF to 0.039 µF • **Temperature Range:** −55°C to +125°C

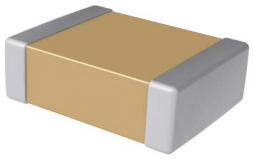


C	2225	X	393	J	C	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0805 1206 1210 1808 1812 1825 2220 2225	X= Flexible Termination	2 significant digits + number of zeros.	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1000 V F = 1500 V G = 2000 V Z = 2500 V H = 3000 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk Bag (Commercial Grade) TU = 7" Reel (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel/ Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel/ Embossed Plastic (Automotive Grade)

High Reliability Commercial Off-The-Shelf (COTS)

C0G Dielectric, 10 – 250 VDC for Higher Reliability Applications

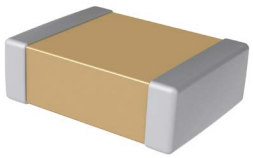
Capacitance Range: 0.5 pF to 0.47 µF • **Temperature Range:** −55°C to +125°C



C	1206	T	104	K	5	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Failure Rate/Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0402 0603 0805 1206 1210 1812 2220	T = COTS	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ± 1% G = ±2% J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 6 = 35 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	G = C0G	A = Testing per MIL–PRF–55681 PDA 8% B= Testing per MIL–PRF–55681 PDA 8%, DPA per EIA–469 C = Testing per MIL–PRF–55681 PDA 8%, DPA per EIA–469, Humidity per MIL–STD–202, Method 103, Condition A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk TU = 7" Reel

X7R Dielectric, 6.3 – 250 VDC for Higher Reliability Applications

Capacitance Range: 10 pF to 22 µF • **Temperature Range:** −55°C to +125°C

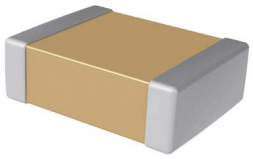


C	1210	T	104	K	5	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0402 0603 0805 1206 1210 1812 2220	T = COTS	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = Testing per MIL–PRF–55681 PDA 8% B= Testing per MIL–PRF–55681 PDA 8%, DPA per EIA–469 C = Testing per MIL–PRF–55681 PDA 8%, DPA per EIA–469, Humidity per MIL–STD–202, Method 103, Condition A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk TU = 7" Reel Unmarked TM = 7" Reel Marked

SnPb End Metallization

C0G Dielectric, 10 – 250 VDC (Commercial Grade)

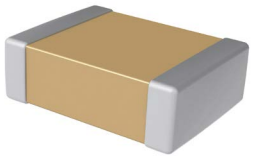
Capacitance Range: 0.5 pF to 0.47 µF • **Temperature Range:** −55°C to +125°C



C	1206	C	104	J	3	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance[2]	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[3]	Packaging/Grade (C-Spec)[4]
	0201 0402 0603 0805 1206 1210 1808 1812 1825 2220 2225	C = Standard	2 significant digits + number of zeros. Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF e.g., 2.2 pF = 229 e.g., 0.5 pF = 508	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	G = C0G	A = N/A	C = 100% Matte Sn	Blank = Bulk TU = 7" Reel Unmarked

X7R Dielectric, 6.3 – 250 VDC (Commercial Grade)

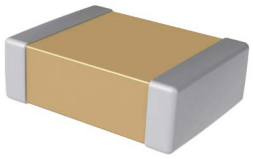
Capacitance Range: 10 pF to 22 µF • **Temperature Range:** −55°C to +125°C



C	1206	C	106	M	4	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0402 0603 0805 1206 1210 1808 1812 1825 2220 2225	C = Standard	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 6 = 35 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn	Blank = Bulk TU = 7" Reel Unmarked TM = 7" Reel Marked

C0G Dielectric, 10 – 250 VDC, Commercial Off-The-Shelf (COTS) for Higher Reliability Applications

Capacitance Range: 0.5 pF to 0.47 µF • **Temperature Range:** −55°C to +125°C

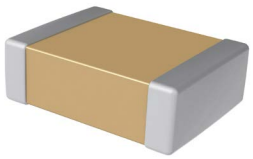


C	1206	T	104	K	5	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Failure Rate/Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0402 0603 0805 1206 1210 1812 2220	T = COTS	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ± 1% G = ±2% J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 6 = 35 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	G = C0G	A = Testing per MIL–PRF–55681 PDA 8% B= Testing per MIL–PRF–55681 PDA 8%, DPA per EIA–469 C = Testing per MIL–PRF–55681 PDA 8%, DPA per EIA–469, Humidity per MIL–STD–202, Method 103, Condition A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk TU = 7" Reel

SnPb End Metallization (cont.)

X7R Dielectric, 6.3 – 250 VDC, Commercial Off-The-Shelf (COTS) for Higher Reliability Applications

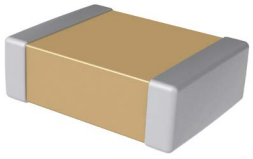
Capacitance Range: 10 pF to 22 µF • **Temperature Range:** −55°C to +125°C



C	1210	T	104	K	5	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0402 0603 0805 1206 1210 1812 2220	T = COTS	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = Testing per MIL–PRF–55681 PDA 8% B= Testing per MIL–PRF–55681 PDA 8%, DPA per EIA–469 C = Testing per MIL–PRF–55681 PDA 8%, DPA per EIA–469, Humidity per MIL–STD–202, Method 103, Condition A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk TU = 7" Reel Unmarked TM = 7" Reel Marked

High Temperature 150°C, Ultra-Stable X8R Dielectric, 25 – 100 VDC (Commercial & Automotive Grade)

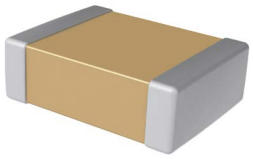
Capacitance Range: 10 pF to 0.22 µF • **Temperature Range:** −55°C to +150°C



C	1210	C	184	K	3	H	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[2]
	0402 0603 0805 1206 1210 1812	C = Standard	2 significant digits + number of zeros	F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	3 = 25 V 5 = 50 V 1 = 100 V	H = Ultra Stable X8R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk Bag (Commercial Grade) TU = 7" Tape & Reel/ Unmarked (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel/Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel/ Embossed Plastic (Automotive Grade)

High Temperature 150°C, X8L Dielectric, 10 – 50 VDC (Commercial & Automotive Grade)

Capacitance Range: 0.012 µF to 10 µF • **Temperature Range:** −55°C to +150°C

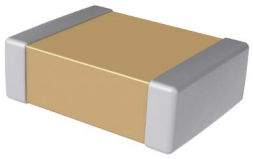


C	1210	X	106	K	8	N	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0402 0603 0805 1206 1210	C = Standard X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	8 = 10 V 3 = 25 V 5 = 50 V	N = X8L	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

SnPb End Metallization (cont.)

Telecom "Tip and Ring" X7R Dielectric, 250 VDC (Commercial Grade)

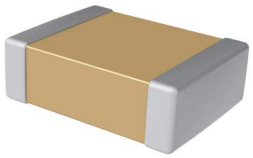
Capacitance Range: 1,000 pF to 6.8 µF • **Temperature Range:** −55°C to +125°C



C	1825	C	105	K	A	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0805 1206 1210 1812 1825 2220 2225	C = Standard X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk TU = 7" Reel Unmarked TM = 7" Reel Marked

Open Mode Design (FO-CAP), X7R Dielectric, 16 – 200 VDC (Commercial Grade)

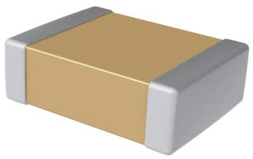
Capacitance Range: 1,000 pF to 6.8 µF • **Temperature Range:** −55°C to +125°C



C	1210	J	685	K	3	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/ Grade (C-Spec)[2]
	0805 1206 1210 1812	F = Open Mode J = Open Mode with Flexible Termination	2 significant digits + number of zeros	K = ±10% M = ±20%	4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Floating Electrode Design (FE-CAP), X7R Dielectric, 6.3 – 250 VDC (Commercial Grade)

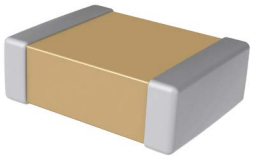
Capacitance Range: 150 pF to 0.22 µF • **Temperature Range:** −55°C to +125°C



C	0805	S	104	K	5	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/ Grade (C-Spec)[2]
	0402 0603 0805 1206 1210 1812	S = Floating Electrode	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Flexible Termination System (FT-CAP) X7R Dielectric, 6.3 – 250 VDC (Commercial Grade)

Capacitance Range: 180 pF to 22 µF • **Temperature Range:** −55°C to +125°C

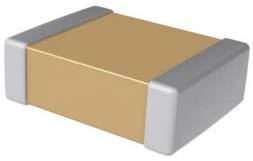


C	1206	X	106	K	4	R	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0603 0805 1206 1210 1808 1812 1825 2220 2225	X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

SnPb End Metallization (cont.)

Floating Electrode Design with Flexible Termination System (FF-CAP), X7R Dielectric, 6.3 – 250 VDC (Commercial Grade)

Capacitance Range: 180 pF to 0.22 µF • **Temperature Range:** −55°C to +125°C



C	0805	Y	104	K	5	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/ Grade (C-Spec)[2]
	0603 0805 1206 1210 1812	Y = Floating Electrode with Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	9 = 6.3 V 8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

Bulk Capacitance

KPS Series, X7R Dielectric, 10 – 250 VDC (Commercial Grade)

Capacitance Range: 0.1 µF to 47 µF • **Temperature Range:** −55°C to +125°C

C	2220	C	106	M	5	R	2	C	7186
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Failure Rate/Design	Leadframe Finish[2]	Packaging/Grade (C-Spec)[3]
	1210 1812 2220	C = Standard	2 significant digits + number of zeros	K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V A = 250 V	R = X7R	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel Unmarked 7289 = 13" Reel Unmarked

KPS Series, High Voltage, X7R Dielectric, 500 – 630 VDC (Commercial Grade)

Capacitance Range: 0.047 µF to 1.0 µF • **Temperature Range:** −55°C to +125°C

C	2220	C	105	M	C	R	2	C	7186
Ceramic	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Leadframe Finish[2]	Packaging/Grade (C-Spec)[3]
	2220	C = Standard	2 significant digits + number of zeros.	K = ±10% M = ±20%	C = 500 V B = 630 V	R = X7R	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel/ Embossed Plastic 7289 = 13" Reel/ Embossed Plastic

KPS HT Series, High Temperature 150°C, X8L Dielectric, 10 – 50 VDC (Commercial Grade)

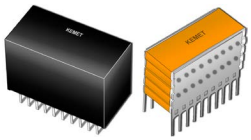
Capacitance Range: 0.47 µF to 47 µF • **Temperature Range:** −55°C to +150°C

C	2220	C	476	M	4	N	2	C	7186
Ceramic	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Leadframe Finish	Packaging/Grade (C-Spec)
	1210 2220	C = Standard	2 significant digits + number of zeros.	K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V	N = X8L	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel/Embossed Plastic (Commercial Grade) 7289 = 13" Reel/Embossed Plastic (Commercial Grade) AUTO = Auto Grade 7"Reel (Embossed Plastic) AUTO 7289= Auto Grade 13" Reel (Embossed Plastic)

Bulk Capacitance (cont.)

KPS MIL Series, SMPS Stacked Capacitors, 25 – 1,000 VDC (Commercial, Military, & Space Grades)

Capacitance Range: 0.047 µF to 75 µF • **Temperature Range:** −55°C to +125°C



L1	R	N	30	C	106	K	S	12	
Product Family[1]	Dielectric Classification/ Characteristic[2]	Lead Configuration[3]	Case Size / Case Code (CC)	Rated Voltage (VDC)	Capacitance Code (pF)	Capacitance Tolerance	Testing Option[4]	Maximum Height Dimension (in.)[5]	
L1 = Unencapsulated L2 = Encapsulated	Q = BQ R = BR X = BX W = X7R	N = Straight L = Formed "L" M= Formed "L" J= Formed "J" K= Formed "J"	30 = CC 3 40 = CC 4 50 = CC 5	3 = 25 5 = 50 1 = 100 2 = 200 C = 500 B = 630 D = 1,000	2 Significant Digits + Number of Zeros	J = ±5% K = ±10% M = ±20%	B = M49470 "B" Level T = M49470 "T" Level C = DSCC87106 S = Commercial X = Non-Standard (Customer Specific Requirements)	Unencapsulated 12 = 0.12" 24 = 0.24" 36 = 0.36" 48 = 0.48" 65 = 0.65"	Encapsulated 27 = 0.27" 39 = 0.39" 53 = 0.53" 66 = 0.66" 80 = 0.80"

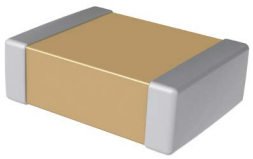
MIL–PRF–49470, DSCC 87106

M49470	R	01	474	K	C	N
Performance Specification Indicating MIL–PRF–49470[1]	Dielectric Classification/ Characteristic[2]	Performance Specification Sheet Number (Indicating MIL–PRF–49470/1)[3]	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Lead Configuration[4]
M49470 = B level T49470 = T level A "T" prefix is used in place of the "M" for T level product.	Q = BQ R = BR X = BX	01 = Unencapsulated 02 = Encapsulated	2 Significant Digits + Number of Zeros	J = ±5% K = ±10% M = ±20%	A = 50 B = 100 C = 200 E = 500	N = Straight Pin L = Formed "L" M= Formed "L" J= Formed "J" K= Formed "J"

High Temperature (> 125°C)

High Temperature 150°C, Ultra-Stable X8R Dielectric, 25 – 100 VDC (Commercial & Automotive Grade)

Capacitance Range: 10 pF to 0.22 µF • **Temperature Range:** −55°C to +150°C

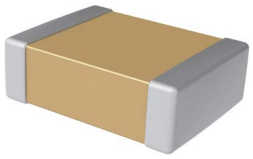


C	1210	C	184	K	3	H	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[2]
	0402 0603 0805 1206 1210 1812	C = Standard	2 significant digits + number of zeros	F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	3 = 25 V 5 = 50 V 1 = 100 V	H = Ultra Stable X8R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk Bag (Commercial Grade) TU = 7" Tape & Reel/ Unmarked (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel/Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel/ Embossed Plastic (Automotive Grade)

High Temperature (> 125°C) (cont.)

High Temperature 150°C, X8L Dielectric, 10 – 50 VDC (Commercial & Automotive Grade)

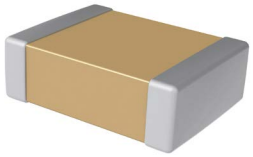
Capacitance Range: 0.012 µF to 10 µF • **Temperature Range:** −55°C to +150°C



C	1210	X	106	K	8	N	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0402 0603 0805 1206 1210	C = Standard X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	8 = 10 V 3 = 25 V 5 = 50 V	N = X8L	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

High Temperature 200°C, C0G Dielectric, 10 – 200 VDC (Industrial Grade)

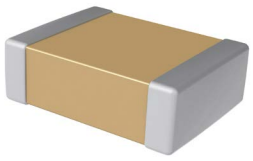
Capacitance Range: 0.5 pF to 0.47 µF • **Temperature Range:** −55°C to +200°C



C	1210	H	124	J	5	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0402 0603 0805 1206 1210 1812 2220	H= High Temperature (200°C)	2 significant digits + number of zeros. Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF e.g., 2.2 pF = 229 e.g., 0.5 pF = 508	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk TU = 7" Reel (full reel quantity) T050 = 50 pcs / 7" Reel T100 = 100pcs / 7" Reel T250 = 250pcs / 7" Reel T500 = 500pcs / 7" Reel T1K0 = 1,000 pcs / Reel

HV-HT Series, High Voltage, High Temperature 200°C, C0G Dielectric, 500 – 2,000 VDC (Industrial Grade)

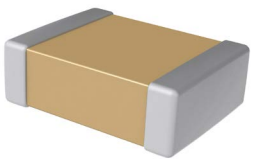
Capacitance Range: 1 pF to 0.039 µF • **Temperature Range:** −55°C to +200°C



C	2225	H	393	J	C	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0805 1206 1210 1808 1812 1825 2220 2225	H= High Temperature (200°C)	2 significant digits + number of zeros.	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1000 V F = 1500 V G = 2000 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk TU = 7" Reel (full reel quantity) T050 = 50 pieces/7" Reel T100 = 100 pieces/7" Reel T250 = 250 pieces/7" Reel T500 = 500 pieces/7" Reel T1K0 = 1,000 pieces/Reel

Flexible Termination System (FT-CAP), Ultra-Stable X8R Dielectric, 25 – 100 VDC (Commercial Grade)

Capacitance Range: 430 pF to 0.22 µF • **Temperature Range:** −55°C to +150°C



C	1206	X	104	J	3	H	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0603 0805 1206 1210 1812	X = Flexible Termination	2 significant digits + number of zeros.	F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	3 = 25 V 5 = 50 V 1 = 100 V	H = Ultra-Stable X8R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

High Temperature (> 125°C) (cont.)

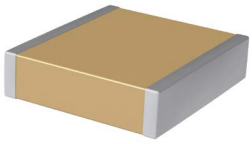
KPS HT Series, High Temperature 150°C, X8L Dielectric, 10 – 50 VDC (Commercial Grade)

Capacitance Range: 0.47 µF to 47 µF • **Temperature Range:** −55°C to +150°C

C	2220	C	476	M	4	N	2	C	7186
Ceramic	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Leadframe Finish	Packaging/Grade (C-Spec)
	1210 2220	C = Standard	2 significant digits + number of zeros.	K = ±10% M = ±20%	8 = 10 V 4 = 16 V 3 = 25 V 5 = 50 V	N = X8L	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel/Embossed Plastic (Commercial Grade) 7289 = 13" Reel/Embossed Plastic (Commercial Grade) AUTO = Auto Grade 7"Reel (Embossed Plastic) AUTO 7289= Auto Grade 13" Reel (Embossed Plastic)

Pulse Discharge, High Voltage, High Temperature 200°C, C0G Dielectric, 500 – 2,000 VDC (Industrial Grade)

Capacitance Range: 0.5 pF to 0.15 µF • **Temperature Range:** −55°C to +200°C

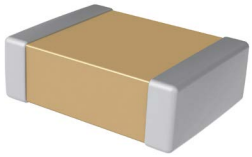


Contact KEMET for ordering information									
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)[1]	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	2824 3040 3640 4040 4540	H= High Temp (200°C)	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1,000 V F = 1,500 V G = 2,000 V	G = C0G	W = Pulse Discharge	C = 100% Matte Sn	Contact KEMET for packaging availability and details

High Voltage (> 500 V)

ArcShield™ Technology, High Voltage, X7R Dielectric, 500 – 1,000 VDC (Commercial & Automotive Grade)

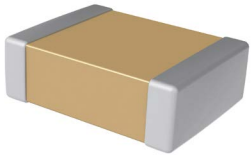
Capacitance Range: 2,200 pF to 0.33 µF • **Temperature Range:** −55°C to +125°C



C	1812	V	334	K	C	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/ Grade (C-Spec)[2]
	0805 1206 1210 1808 1812	V = ArcShield W = ArcShield with Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1,000 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

High Voltage C0G Dielectric, 500 – 3,000 VDC (Commercial & Automotive Grade)

Capacitance Range: 1 pF to 0.039 µF • **Temperature Range:** −55°C to +125°C

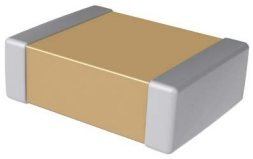


C	1210	C	332	J	C	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0805 1206 1210 1808 1812 1825 2220 2225	C = Standard	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1,000 V F = 1,500 V G = 2,000 V Z = 2,500 V H = 3,000 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk Bag (Commercial Grade) TU = 7" Reel (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel / Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel / Embossed Plastic (Automotive Grade)

High Voltage (> 500 V) (cont.)

High Voltage X7R Dielectric, 500 – 3,000 VDC (Commercial & Automotive Grade)

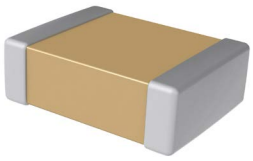
Capacitance Range: 10 pF to 0.33 µF • **Temperature Range:** −55°C to +125°C



C	1210	C	154	K	C	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0805 1206 1210 1808 1812 1825 2220 2225	C = Standard	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1,000 V F = 1,500 V G = 2,000 V Z = 2,500 V H = 3,000 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	See "Packaging C-Spec Ordering Options Table" below

High Voltage with Flexible Termination System (HV FT-CAP), C0G Dielectric, 500 – 3,000 VDC (Commercial Grade)

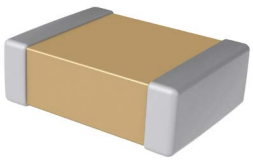
Capacitance Range: 1 pF to 0.039 µF • **Temperature Range:** −55°C to +125°C



C	2225	X	393	J	C	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0805 1206 1210 1808 1812 1825 2220 2225	X= Flexible Termination	2 significant digits + number of zeros.	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1000 V F = 1500 V G = 2000 V Z = 2500 V H = 3000 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk Bag (Commercial Grade) TU = 7" Reel (Commercial Grade) AUTO = 7" Reel (Automotive Grade) AUTO 7411 = 13" Reel/ Punched Paper (Automotive Grade) AUTO 7210 = 13" Reel/ Embossed Plastic (Automotive Grade)

High Voltage with Flexible Termination System (HV FT-CAP) X7R Dielectric, 500 – 3,000 VDC (Commercial Grade)

Capacitance Range: 130 pF to 0.33 µF • **Temperature Range:** −55°C to +125°C



C	1210	X	154	K	C	R	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)[2]
	0805 1206 1210 1808 1812 1825 2220 2225	X = Flexible Termination	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1,000 V F = 1,500 V G = 2,000 V Z = 2,500 V H = 3,000 V	R = X7R	A = N/A	C = 100% Matte Sn L = SnPb (5% min)	See "Packaging C-Spec Ordering Options Table" below

KPS Series, High Voltage, X7R Dielectric, 500 – 630 VDC (Commercial Grade)

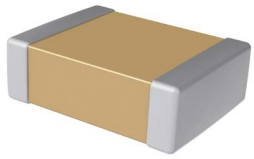
Capacitance Range: 0.047 µF to 1.0 µF • **Temperature Range:** −55°C to +125°C

C	2220	C	105	M	C	R	2	C	7186
Ceramic	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Leadframe Finish[2]	Packaging/Grade (C-Spec)[3]
	2220	C = Standard	2 significant digits + number of zeros.	K = ±10% M = ±20%	C = 500 V B = 630 V	R = X7R	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel/ Embossed Plastic 7289 = 13" Reel/ Embossed Plastic

High Voltage (> 500 V) (cont.)

HV-HT Series, High Voltage, High Temperature 200°C, C0G Dielectric, 500 – 2,000 VDC (Industrial Grade)

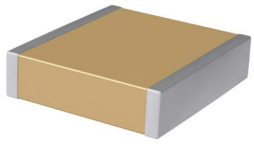
Capacitance Range: 1 pF to 0.039 µF • **Temperature Range:** −55°C to +200°C



C	2225	H	393	J	C	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	0805 1206 1210 1808 1812 1825 2220 2225	H= High Temperature (200°C)	2 significant digits + number of zeros.	B = ±0.10 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1000 V F = 1500 V G = 2000 V	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% minimum)	Blank = Bulk TU = 7" Reel (full reel quantity) T050 = 50 pieces/7" Reel T100 = 100 pieces/7" Reel T250 = 250 pieces/7" Reel T500 = 500 pieces/7" Reel T1K0 = 1,000 pieces/Reel

Pulse Discharge, High Voltage, High Temperature 200°C, C0G Dielectric, 500 – 2,000 VDC (Industrial Grade)

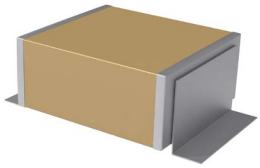
Capacitance Range: 0.5 pF to 0.15 µF • **Temperature Range:** −55°C to +200°C



Contact KEMET for ordering information									
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)[1]	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)[3]
	2824 3040 3640 4040 4540	H= High Temp (200°C)	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	C = 500 V B = 630 V D = 1,000 V F = 1,500 V G = 2,000 V	G = C0G	W = Pulse Discharge	C = 100% Matte Sn	Contact KEMET for packaging availability and details

KPS HV, Large Case, SM Series, C0G Dielectric, 500 – 10,000 VDC (Industrial Grade)

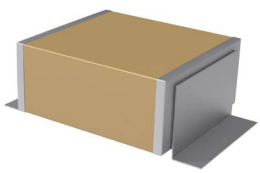
Capacitance Range: 10 pF to 0.39 µF • **Temperature Range:** −55°C to +125°C



SM20		N	472	J	501	B	M
Style/Size		Dielectric	Capacitance Code (pF)	*Capacitance Tolerance*	Voltage	Lead Configuration[1]	Testing/ Inspection Option[2]
SM20 SM21 SM22 SM23 SM24 SM25 SM26	SM30 SM31 SM33 SM34 SM35 SM36	N = C0G	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	501 = 500 V 102 = 1,000 V 202 = 2,000 V 302 = 3,000 V 402 = 4,000 V 502 = 5,000 V 752 = 7,500 V 103 = 10,000 V	A = Formed "L" B = Formed "J"	Blank = None M = Group A per MIL–PRF–49467

KPS HV, Large Case, SM Series, X7R Dielectric, 500 – 10,000 VDC (Industrial Grade)

Capacitance Range: 150 pF to 5.6 µF • **Temperature Range:** −55°C to +125°C

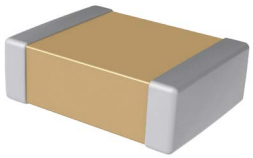


SM20		B	153	K	501	B	M
Style/Size		Dielectric	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Lead Configuration[1]	Testing/ Inspection Option[2]
SM20 SM21 SM22 SM23 SM24 SM25 SM26	SM30 SM31 SM33 SM34 SM35 SM36	B = X7R	2 significant digits + number of zeros	K = ±10% M = ±20%	501 = 500 V 102 = 1,000 V 202 = 2,000 V 302 = 3,000 V 402 = 4,000 V 502 = 5,000 V 752 = 7,500 V 103 = 10,000 V	A = Formed "L" B = Formed "J"	Blank = None M = Group A per MIL–PRF–49467

Aerospace & Defense

MIL–PRF–123, BP & BX Dielectric, 6.3 – 200 VDC

Capacitance Range: 1 pF to 1 µF • **Temperature Range:** −55°C to +125°C



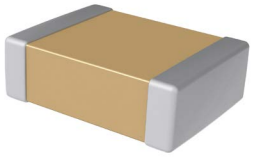
C	0805	Z	101	K	5	G	A	L	A
Ceramic	Style/ Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish	Failure Rate
	0805 1206 1210 1808 1812 1825 2225	Z = MIL-PRF-123	2 significant digits + number of zeros Use 9 for 1.0 - 9.9 pF ex. 0.5 pF = 508 ex. 2.2 pF = 229 Use 8 for 0.5 - 0.99 pF	C = ±0.25 pF D = ±0.5 pF F = ±1% J = ±5% K = ±10%	5 = 50 V 1 = 100 V	G = BP (Ultra-stable) X = BX (Stable)	A = N/A	H = Nickel guarded, (solder coated) L = 70/30 SnPb plated	A = N/A

MIL–PRF–123

M123	A	10	BX	B	472	K	Z	L	A
Series	Specification/ Series	Style/Size	Dielectric	Voltage	Capacitance Code (pF)	Capacitance Tolerance	Termination Finish	Termination Finish	Failure Rate
M123 = MIL-PRF	A = Indicates the latest characteristics of the part in the specification sheet.	10 = 0805 11 = 1210 12 = 1808 13 = 2225 21 = 1206 22 = 1812 23 = 1825	BP = G (Ultra-stable) BX = X (Stable)	B = 50 V C= 100 V	2 significant digits + number of zeros Use 9 for 1.0 - 9.9 pF ex. 0.5 pF = 508 ex. 2.2 pF = 229 Use 8 for 0.5 - 0.99 pF	C = ±0.25 pF D = ±0.5 pF F = ±1% J = ±5% K = ±10%	Z = 70/30 SnPb plated C = Solder coated copper	H = Nickel guarded, (solder coated) L = 70/30 SnPb plated	A = N/A

GR900 High Reliability Series, BP & BX Dielectric, 16 – 200 VDC

Capacitance Range: 1 pF to 1 µF • **Temperature Range:** −55°C to +125°C

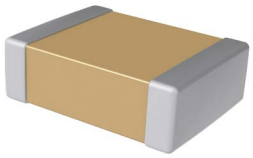


C	0805	A	103	K	5	X	A	C	A
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish	Failure Rate
	0504 0805 1005 1206 1210 1805 1808 1812 1825 2225	A = GR900 Q = Q-Spec	2 significant digits + number of zeros Use 9 for 1.0 - 9.9 pF ex. 0.5 pF = 508 ex. 2.2 pF = 229 Use 8 for 0.5 - 0.99 pF	C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	1 = 100 V 2 = 200 V 3 = 25 V 4 = 16 V 5 = 50 V	G = BP (Ultra-stable) X = BX (Stable)	A = N/A	C = 100% Tin plated H = 60/40 SnPb coated L = 70/30 SnPb plated G = Gold plated	A = N/A

Aerospace & Defense (cont.)

MIL-PRF-55681, BP, BR & BX Dielectric, 6.3 – 200 VDC

Capacitance Range: 1 pF to 0.47 µF • **Temperature Range:** −55°C to +125°C



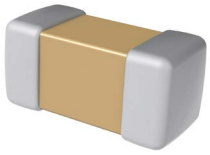
C	0805	P	101	K	1	G	M	L	A
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Failure Rate/ Design	Termination Finish	Failure Rate
	0805 1206 1210 1805 1808 1812 1825 2225	P = MIL-PRF-55681 (CDR01 – CDR06) N = MIL-PRF-55681 (CDR31 – CDR35)	2 significant digits + number of zeros Use 9 for 1.0 - 9.9 pF ex. 0.5 pF = 508 ex. 2.2 pF = 229 Use 8 for 0.5 - 0.99 pF	B = ±0.1 pF C = ±0.25 pF D = ±0.5 pF F = ±1% J = ±5% K = ±10% M = ±20%	5 = 50 V 1 = 100 V	G = BP (C0G, NP0) X = BX (X7R)	M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	C = 100% Tin plated H = 60/40 SnPb plated L = 70/30 SnPb plated	A = N/A

MIL-PRF-55681

CDR	01	B	P	101	B	K	Z	M	A
Series	Style/Size	Temperature (°C)	Dielectric	Capacitance Code (pF)	Voltage	Capacitance Tolerance	Termination Finish	Failure Rate/ Design	Failure Rate
C = Ceramic D = Dielectric, Fixed Chip R = Established Reliability	01 = 0805 02 = 1805 03 = 1808 04 = 1812 05 = 1825 06 = 2225 31 = 0805 32 = 1206 33 = 1210 34 = 1812 35 = 1825	B = -55 to +125	P = G (BP, C0G) X = BX (X7R)	2 significant digits + number of zeros Use 9 for 1.0 - 9.9 pF ex. 0.5 pF = 508 ex. 2.2 pF = 229 Use 8 for 0.5 - 0.99 pF	A = 50 V B = 100 V	B = ±0.1 pF C = ±0.25 pF D = ±0.5 pF F = ±1% J = ±5% K = ±10% M = ±20%	S = Solder coated U = Base metallization, (solder coated) W = Base metaliation, (Tin/Lead alloy) Y = Base metalization, (100% Tin) Z = Base metalization, metal-tinned (Tin/ Lead alloy)	M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	A = N/A

DLA Drawing 03028 BR & BX Dielectric, 6.3 – 200 VDC

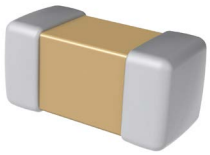
Capacitance Range: 100 pF to 0.1 µF • **Temperature Range:** −55°C to +125°C



03028	BX	104	Y	J	Z	C	7189
Series	Dielectric	Capacitance Code (pF)	Voltage	Capacitance Tolerance	Termination Finish	Screening Option	Packaging/Grade (C-Spec)
03028 = DSCC Drawing Number (0603 case size)	BR = CG (BP, C0G) BX = X (X7R)	2 significant digits + number of zeros Use 9 for 1.0 - 9.9 pF ex. 0.5 pF = 508 ex. 2.2 pF = 229 Use 8 for 0.5 - 0.99 pF	W = 6.3 V X = 10 V Y = 16 V Z = 25 V A = 50 V B = 100 V C = 200 V	J = ±5% K = ±10% M = ±20%	U = SnPb (4% min) Z = SnPb (4% min)	C = Group C test L = 2,000 hour life test M = 1,000 hour life test H = Low voltage humidity only	Blank = Bulk bag 7189 = 7" Reel marked 7246 = Anti-static bulk bag 7292 = Waffle pack

DLA Drawing 03029 BR & BX Dielectric, 6.3 – 200 VDC

Capacitance Range: 100 pF to 2,200 pF • **Temperature Range:** −55°C to +125°C

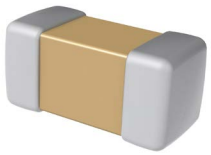


03029	BX	222	Z	J	Z	C	7189
Series	Dielectric	Capacitance Code (pF)	Voltage	Capacitance Tolerance	Termination Finish	Screening Option	Packaging/Grade (C-Spec)
03029 = DSCC Drawing Number (0402 case size)	BR = CG (BP, C0G) BX = X (X7R)	2 significant digits + number of zeros Use 9 for 1.0 - 9.9 pF ex. 0.5 pF = 508 ex. 2.2 pF = 229 Use 8 for 0.5 - 0.99 pF	W = 6.3 V X = 10 V Y = 16 V Z = 25 V A = 50 V B = 100 V C = 200 V	J = ±5% K = ±10% M = ±20%	U = SnPb (4% min) Z = SnPb (4% min)	C = Group C test L = 2,000 hour life test M = 1,000 hour life test H = Low voltage humidity only	Blank = Bulk bag 7189 = 7" Reel marked 7246 = Anti-static bulk bag 7292 = Waffle pack

RF & Microwave

CBR Series, C0G Dielectric, Ultra High Q, Low ESR, 6.3 – 500 VDC (RF & Microwave)

Capacitance Range: 0.1 pF to 100 pF • **Temperature Range:** −55°C to +125°C



CBR	02	C	330	F	9	G	A	C	
Series	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Termination Style	Termination Finish	Packaging/Grade (C-Spec)[1]
CBR	02 = 0201 04 = 0402 06 = 0603 08 = 0805	C = Standard	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.1 – .99 pF e.g., 2.2 pF = 229 e.g., 0.5 pF = 508	A = ±0.05 pF B = ±0.1 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5%	9 = 6.3 V 8 = 10 V 3 = 25 V 5 = 50 V 1 = 100 V A = 250 V C = 500 V	G = C0G	A = N/A	C = 100% Matte Sn	Blank = 7" Reel Unmarked

Commercial Grade

Aximax, 400 Series, Axial, Conformally Coated, C0G Dielectric, 50 – 200 VDC (Commercial Grade)

Capacitance Range: 1 pF to 4.7 µF • **Temperature Range:** −55°C to +125°C

C	410	C	472	J	5	G	5	T	A	7200
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/ Grade (C-Spec)
	410 412 420 430 440	C = Standard	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10%	5 = 50 V 1 = 100 V 2 = 200 V	G = C0G	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	A = N/A	Blank = Bulk 7200 = 12" Reel 7293 = Ammo Pack

Aximax, 400 Series, Axial, Conformally Coated, X7R Dielectric, 25 – 250 VDC (Commercial Grade)

Capacitance Range: 1 pF to 4.7 µF • **Temperature Range:** −55°C to +125°C

C	410	C	105	K	3	R	5	T	A	7200
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)
	410 412 420 430 440	C = Standard	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	A = N/A	Blank = Bulk 7200 = 12" Reel 7293 = Ammo Pack

Aximax, 400 Series, Axial, Conformally Coated, Z5U Dielectric, 50 – 200 VDC (Commercial Grade)

Capacitance Range: 1 pF to 4.7 µF • **Temperature Range:** +10°C to +85°C

C	410	C	105	K	3	U	5	T	A	7200
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)
	410 412 420 430 440	C = Standard	2 significant digits + number of zeros	M = ±20% Z =+80%, -20%	5 = 50 V 1 = 100 V 2 = 200 V	U = Z5U	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	A = N/A	Blank = Bulk 7200 = 12" Reel 7293 = Ammo Pack

Goldmax, 300 Series, Radial, Conformally Coated, C0G Dielectric, 50 – 200 VDC (Commercial Grade)

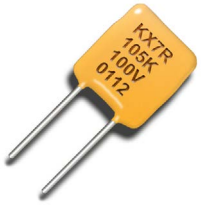
Capacitance Range: 1 pF to 10 µF • **Temperature Range:** −55°C to +125°C

C	320			C	153	J	5	G	5	T	A	7301
Ceramic	Style/Size			Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)[3]
	315 316 317 318 320 321 322 323	324 325 326 327 328 330 331 333	335 336 340 346 350 356	C = Standard	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10%	5 = 50 V 1 = 100 V 2 = 200 V	G = C0G	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	A = N/A	Blank = Bulk 7200 = 12" Reel 7293 = Ammo Pack

Commercial Grade (cont.)

Goldmax, 300 Series, Radial, Conformally Coated, X7R Dielectric, 25 – 250 VDC (Commercial Grade)

Capacitance Range: 1 pF to 10 µF • **Temperature Range:** −55°C to +125°C



C	320			C	106	K	3	R	5	T	A	7301
Ceramic	Style/Size			Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)[3]
	315 316 317 318 320 321 322 323	324 325 326 327 328 330 331 333	335 336 340 346 350 356	C = Standard	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20% Z = +80% -20%	3 = 25 V 5 = 50 V 1 = 100 V 2 = 200 V A = 250 V	R = X7R	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	A = N/A	Blank = Bulk 7301 = 12" Reel 7303 = 12" Reel 7293 = Ammo Pack

Goldmax, 300 Series, Radial, Conformally Coated, Z5U Dielectric, 50 – 200 VDC (Commercial Grade)

Capacitance Range: 1 pF to 10 µF • **Temperature Range:** +10°C to +85°C

C	335			C	225	M	5	U	5	T	A	7303
Ceramic	Style/Size			Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)[3]
	315 316 317 318 320 321 322 323	324 325 326 327 328 330 331 333	335 336 340 346 350 356	C = Standard	2 significant digits + number of zeros	M = ±20% P = +100%, -0% Z = +80%, -20%	5 = 50 V 1 = 100 V 2 = 200 V	U = Z5U	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	A = N/A	Blank = Bulk 7301 = 12" Reel 7303 = 12" Reel 7293 = Ammo Pack

Radial, Molded, C0G Dielectric, 100 – 200 VDC (Commercial Grade)

Capacitance Range: 1 pF to 3.3 µF • **Temperature Range:** −55°C to +125°C

C	052	C	272	F	2	G	5	T	A	7303
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)[3]
	052 062 512 522	C = Standard	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10%	1 = 100 V 2 = 200 V	G = C0G	5 = Multilayer	T = 100% Matte Sn C = SnPb (60/40)	A = N/A	Blank = Bulk 7301 = 12" Reel 7303 = 12" Reel 7293 = Ammo Pack

Radial, Molded, X7R Dielectric, 50 – 200 VDC (Commercial Grade)

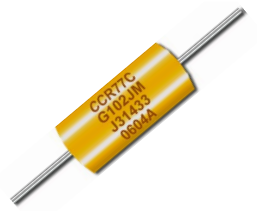
Capacitance Range: 1 pF to 3.3 µF • **Temperature Range:** −55°C to +125°C

C	062	C	105	K	1	R	5	T	A	7301
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)[3]
	052 062 512 522	C = Standard	2 significant digits + number of zeros	K = ±10% M = ±20%	5 = 50 V 1 = 100 V 2 = 200 V	R = X7R	5 = Multilayer	T = 100% Matte Sn C = SnPb (60/40)	A = N/A	Blank = Bulk 7301 = 12" Reel 7303 = 12" Reel 7293 = Ammo Pack

Commercial Grade (cont.)

Axial, Molded, C0G Dielectric, 100 – 200 VDC (Commercial Grade)

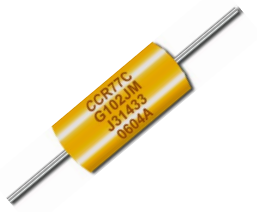
Capacitance Range: 1 pF to 3.3 µF • **Temperature Range:** −55°C to +125°C



C	114	C	681	F	1	G	5	C	A	7200
Ceramic	Style/ Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)
	114 124 192 202 222	C = Standard	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10%	1 = 100 V 2 = 200 V	G = C0G	5 = Multilayer	C = SnPb (60/40)	A = N/A	Blank = Bulk 7200 = 12" Reel 7293 = Ammo Pack

Axial, Molded, X7R Dielectric, 50 – 100 VDC (Commercial Grade)

Capacitance Range: 1 pF to 3.3 µF • **Temperature Range:** −55°C to +125°C



C	114	C	472	M	1	R	5	C	A	7200
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)
	114 124 192 202 222	C = Standard	2 significant digits + number of zeros	K = ±10% M = ±20%	5 = 50 V 1 = 100 V	R = X7R	5 = Multilayer	C = SnPb (60/40)	A = N/A	Blank = Bulk 7200 = 12" Reel 7293 = Ammo Pack

High Temperature (> 150°C)

High Temperature 200°C, Radial, Molded, C0G Dielectric, 50 – 200 VDC (Industrial Grade)

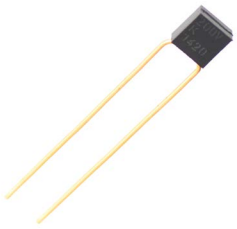
Capacitance Range: 1 pF up to 0.22 µF • **Temperature Range:** −55°C to +200°C

C	052	H	272	F	2	G	5	G	A	7301
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging C-Spec[3]
	052 062	H = High Temp 200°C	2 Sig. Digits + Number of Zeros Use 9 for 1.0 – 9.9 pF ex. 2.2 pF = 229	B = ±0.1 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10%	5 = 50 V 1 = 100 V 2 = 200 V	G = C0G	5 = Multilayer	G = Gold (Au)	A = N/A	Blank = Bulk Bag T250 = 250 pcs / 12" Reel T500 = 500 pcs / 12" Reel T1K0 = 1,000 pcs / 12" Reel 7301 = Full Reel Qty / 12" Reel 7303 = Full Reel Qty / 12" Reel 7061 = Bulk Tray

High Temperature (> 150°C) (cont.)

High Temperature 200°C, Radial, Molded, X7R Dielectric, 50 – 200 VDC (Industrial Grade)

Capacitance Range: 1,000 pF up to 1 µF • **Temperature Range:** −55°C to +200°C



C	062	H	105	K	5	R	5	G	A	7303
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging C-Spec[3]
	052 062	H = High Temp 200°C	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF ex. 2.2 pF = 229	J = ±5% K = ±10% M = ±20%	5 = 50 V 1 = 100 V 2 = 200 V	R = X7R	5 = Multilayer	G = Gold (Au)	A = N/A	Blank = Bulk Bag T250 = 250 pcs / 12" Reel T500 = 500 pcs / 12" Reel T1K0 = 1,000 pcs / 12" Reel 7301 = Full Reel Qty / 12" Reel 7303 = Full Reel Qty / 12" Reel 7061 = Bulk Tray

HT/HP Series, 200°C, C0G & X7R Dielectric, Axial & Radial, 25 – 200 VDC

Capacitance Range: 22 pF to 1 µF • **Temperature Range:** −55°C to +200°C

HT06	A	W	472	K	N
Style/Size	Voltage	Dielectric	Capacitance Code (pF)	Capacitance Tolerance	Lead Finish
HT05 – HT16 HP05 – HP16	A = 25 V B = 50 V C = 100 V D = 200 V	N = C0G (NP0) W = X7R	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	N = Nickel (Standard) C = Solder Coated Clad Steel

HV Series, 200°C, C0G & X7R Dielectric, Radial Conformally Coated, 500 – 4,000 VDC

Capacitance Range: 390 pF to 0.27 µF • **Temperature Range:** −55°C to +200°C

HV12	10	W	472	K	N	M
Style/Size	Voltage	Dielectric	Capacitance Code (pF)	Capacitance Tolerance	Lead Finish	Group A Screening
HV10 – HV16	05 = 500 V 10 = 1,000 V 20 = 2,000 V 30 = 3,000 V 40 = 4,000 V	N = C0G (NP0) W = X7R	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	N = Nickel (Standard) C = Solder Coated Clad Steel	MIL-PRF-49467 (Subgroup 1) except Corona

ACR/ACA/ARR/ARA Series, 200°C, C0G & X7R Dielectric, Axial & Radial, 50 – 100 VDC

Capacitance Range: ACR/ACA: 1 pF to 0.12 µF, ARR/ARA: 100 pF to 3.3 µF • **Temperature Range:** −55°C to +200°C

A	C	R	06	B	103	K	G	S
Series	Dielectric	Lead Configuration	Case Size	Voltage	Capacitance Code (pF)	Capacitance Tolerance	Lead Finish	Grade/ Test Level
A = High Temperature Axial and Radial Capacitors	C = C0G (NP0)/BP R = X7R (BX)	A = Axial R = Radial	05 – 09 (Radial) 16 – 69 (Axial)	B = 50 VDC D = 100 VDC S = Special	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	W = Solder Coated Copper Clad Steel G = Gold Plated Copper Clad Steel	S = Standard A = MIL-PRF-39014, Group A Test A = MIL-PRF-20 (C0G) X = Special

High Temperature (> 150°C) (cont.)

TCR/TRR/TCA/TRA Series, 260°C, C0G & X7R Dielectric, Axial & Radial, 50 – 100 VDC

Capacitance Range: TCR/TCA: 1 pF to 0.12 µF, TRR/TRA: 100 pF to 3.3 µF • **Temperature Range:** −55°C to +200°C

T	C	R	06	B	103	K	G	S
Series	Dielectric	Lead Configuration	Case Size	Voltage	Capacitance Code (pF)	Capacitance Tolerance	Lead Finish	Grade/ Test Level
T = High Temperature Axial and Radial Capacitors	C = C0G (NP0)/BP R = X7R (BX)	A = Axial R = Radial	05 – 09 (Radial) 16 – 69 (Axial)	B = 50 VDC D = 100 VDC	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	W = Solder Coated Copper Clad Steel G = Gold Plated Copper Clad Steel	S = Standard A = MIL-PRF-20, Group A Test (C0G) A = MIL-PRF-39014 (X7R) X = Special

VCR/VRR Series, 200°C, C0G & X7R Dielectric, Radial, 500 – 5,000 VDC

Capacitance Range: VCR:10 pF to 0.056 µF, VRR:330 pF to 1.2 µF • **Temperature Range:** −55°C to +200°C

V	C	R	40	M	102	K	W	A
Series	Dielectric	Lead Configuration	Case Size	Voltage	Capacitance Code (pF)	Capacitance Tolerance	Lead Finish	Grade/ Test Level
V = High Voltage Radial Capacitors	C = C0G (NP0)/BP R = X7R (BX)	R = Radial	07 40 50 60 70 80	L = 500 VDC M = 1,000 VDC T = 2,000 VDC V = 3,000 VDC W = 4,000 VDC X = 5,000 VDC	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	W = Solder Coated Copper Clad Steel G = Gold Plated Copper Clad Steel	S = Standard A = MIL-PRF-20, Group A Test X = Special

Aximax, 400 Series, Axial, Conformally Coated, X8L Dielectric, 25 – 50 VDC (Commercial & Automotive Grade)

Capacitance Range: 10 pF to 2.2 µF • **Temperature Range:** −55°C to +150°C

C	410	C	105	K	3	N	5	T	A	7200
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)
	410 430	C = Standard	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	3 = 25 V 5 = 50 V	N = X8L	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	A = N/A	Blank = Bulk 7200 = 12" Reel 7293 = Ammo pack AUTO = Automotive grade

Aximax, 400 Series, Axial, Conformally Coated, X8R Dielectric, 50 – 200 VDC (Commercial & Automotive Grade)

Capacitance Range: 10 pF to 2.2 µF • **Temperature Range:** −55°C to +150°C

C	410	C	472	J	5	H	5	T	A	7200
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)
	410 430	C = Standard	2 significant digits + number of zeros	F = ±1% G = ±2% J = ±5% K = ±10%	5 = 50 V 1 = 100 V 2 = 200 V	H = Ultra-Stable X8R	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	A = N/A	Blank = Bulk 7200 = 12" Reel 7293 = Ammo pack AUTO = Automotive grade

High Voltage (> 500 V)

High Voltage Goldmax, 300 Series, Radial, Conformally Coated, C0G Dielectric, 500 – 3,000 VDC (Commercial Grade)

Capacitance Range: 1 pF to 0.82 µF • **Temperature Range:** −55°C to +125°C

C	320			C	332	J	C	G	5	T	A	7301
Ceramic	Style/Size			Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)[3]
	315 316 317 318 320 321 322 323	324 325 326 327 328 330 331 333	335 336 340 346 350 356	C = Standard	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10%	C = 500 V D = 1,000 V F = 1,500 V G = 2,000 V Z = 2,500 V H = 3,000 V	G = C0G	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	A = N/A	Blank = Bulk 7301 = 12" Reel 7303 = 12" Reel 7293 = Ammo Pack

High Voltage Goldmax, 300 Series, Radial, Conformally Coated, X7R Dielectric, 500 – 3,000 VDC (Commercial Grade)

Capacitance Range: 1 pF to 0.82 µF • **Temperature Range:** −55°C to +125°C

C	320			C	473	K	C	R	5	T	A	7301
Ceramic	Style/Size			Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)[3]
	315 316 317 318 320 321 322 323	324 325 326 327 328 330 331 333	335 336 340 346 350 356	C = Standard	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20% Z = +80%, -20%	C = 500 V D = 1,000 V F = 1,500 V G = 2,000 V Z = 2,500 V H = 3,000 V	R = X7R	5 = Multilayer	T = 100% Matte Sn H = SnPb (60/40)	A = N/A	Blank = Bulk 7301 = 12" Reel 7303 = 12" Reel 7293 = Ammo Pack

HV Series, C0G and X7R, Radial Conformally Coated, 500 – 10,000 VDC

Capacitance Range: 10 pF to 5.6 µF • **Temperature Range:** −55°C to +125°C

HV23	10	N	102	K	N	M
Style/Size	Voltage	Dielectric	Capacitance Code (pF)	Capacitance Tolerance	Lead Finish	Group A Screening
HV20 – HV36	05 = 500 V 10 = 1,000 V 20 = 2,000 V 30 = 3,000 V 40 = 4,000 V 50 = 5,000 V 75 = 7,500 V 100 = 10,000 V	N = C0G (NP0) B = X7R	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20% P = 0/+100% Z = -20%/+80%	N = Nickel C = Solder Coated Clad Steel (Standard)	MIL-PRF-49467 (Subgroup 1) except Corona

Aerospace & Defense

MIL–PRF–123, BP & BX Dielectric, Molded Radial, 50 – 200 VDC

Capacitance Range: 4.7 pF to 1 µF • **Temperature Range:** −55°C to +125°C

C	052	Z	102	K	5	G	5	C	A
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Design	Lead Finish	Failure Rate
	052 062 512	Z = MIL-PRF-123	2 significant digits + number of zeros Use 9 for 1.0 - 9.9 pF ex. 0.5 pF = 508 ex. 2.2 pF = 229 Use 8 for 0.5 - 0.99 pF	C = ±0.25 pF D = ±0.5 pF F = ±1% J = ±5% K = ±10%	5 = 50 V 1= 100 V	G = BP (Ultra-stable) X = BX (Stable)	5 = Standard	C = Solder coated copper (standard)	A = N/A

MIL–PRF–123

M123	A	01	BX	B	103	K	C
Series	Specification/ Series	Style/Size	Dielectric	Voltage	Capacitance Code (pF)	Capacitance Tolerance	Lead Finish
M123 = MIL-PRF	A = Indicates the latest characteristics of the part in the specification sheet.	01 = 052 02 = 062 03 = 512	BP = G (Ultra-stable) BX = X (Stable)	B = 50 V C= 100 V	2 significant digits + number of zeros Use 9 for 1.0 - 9.9 pF ex. 0.5 pF = 508 ex. 2.2 pF = 229 Use 8 for 0.5 - 0.99 pF	C = ±0.25 pF D = ±0.5 pF F = ±1% J = ±5% K = ±10%	C = Solder coated copper

GR900 High Reliability, CG, BP & BX Dielectric, Molded Radial, 50 – 200 VDC

Capacitance Range: 1 pF to 3.3 µF • **Temperature Range:** −55°C to +125°C

C	052	B	223	K	1	X	5	C	A
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Design	Lead Finish	Failure Rate
	052 062 512	B = Leaded devices	2 significant digits + number of zeros Use 9 for 1.0 - 9.9 pF ex. 0.5 pF = 508 ex. 2.2 pF = 229 Use 8 for 0.5 - 0.99 pF	C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	1 = 100 V 2 = 200 V 5 = 50 V	G = C0G (CG, BP) X = X7R (BX)	5 = Standard	C = Solder coated copper (standard)	A = N/A

MIL-PRF-20, CG, Molded Axial & Radial, 50 – 200 VDC

Capacitance Range: 1 pF to 0.1 µF • **Temperature Range:** −55°C to +125°C

C	052	G	102	J	1	G	5	C	A
Ceramic	Style/Size	Specification	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Design	Lead Finish	Failure Rate
	C052 – C522 (Radial) C114 – C222 (Axial)	G – MIL-PRF-20	2 significant digits + number of zeros	C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10%	1 = 100 V 2 = 200 V 5 = 50 V	G = C0G, CG	5 = Standard	C = 60/40 Tin/Lead (SnPb)	A = N/A M = 1.0% P = 0.1% R = 0.01% S = 0.001%

Aerospace & Defense (cont.)

MIL–C–11015/MIL–PRF–39014, BX & BR, Molded Axial & Radial, 50 – 200 VDC

Capacitance Range: Axial: 10 pF to 3.3 µF, Radial: 10 pF to 0.1 µF • **Temperature Range:** −55°C to +125°C

C	052	K	102	K	2	X	5	C	A
Ceramic	Style/Size	Specification	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Dielectric	Design	Lead Finish	Failure Rate
	C052 – C066 (Radial) C114 – C222 (Axial)	Military T – MIL-PRF-39014 K – MIL-C-11015	2 significant digits + number of zeros	K = ±10% M = ±20%	1 = 100 V 2 = 200 V 5 = 50 V	X = BX (X7R) R = BR	5 = Multilayer	C = 60/40 Tin/Lead (SnPb)	A = N/A M = 1.0% P = 0.1% R = 0.01% S = 0.001%

HV Series, MIL–PRF–46467 Equivalent, BP BR & BZ, 600 – 5,000 VDC

Capacitance Range: 12 pF to 0.47 µF • **Temperature Range:** −55°C to +125°C

HV60	10	R	102	K	C
Style/Size	Voltage	Dielectric	Capacitance Code (pF)	Capacitance Tolerance	Grade/ Test Level
HV60 – HV69	06 = 600 V 10 = 1,000 V 20 = 2,000 V 30 = 3,000 V 40 = 4,000 V 50 = 5,000 V	P = BP C0G (NP0) R = BR (X7R) Z = BZ (X7R)	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	C = CSAM

HS Series High Voltage Space Quality, C0G & X7R, Radial, 500 – 10,000 VDC

Capacitance Range: 560 pF to 2.2 µF • **Temperature Range:** −55°C to +125°C

HS24	10	B	103	K	C	F
Style/Size	Voltage	Dielectric	Capacitance Code (pF)	Capacitance Tolerance	Grade/ Test Level	Lead Finish
HS20 – HS36	05 = 500 V 10 = 1,000 V 20 = 2,000 V 30 = 3,000 V 40 = 4,000 V 50 = 5,000 V 75 = 7,500 V 100 = 10,000 V	B = X7R N = BP C0G (NP0)	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20% P = 0/+100% Z = -20%/+80%	C = CSAM	INERT LIQUID (BURN-IN) Standard for > 2kV; Add "F" if required for 500 V or 1 kV parts

SCA Series, Axial, C[3] Technology, C0G Dielectric, 50 – 200 VDC (Commercial Grade)

Capacitance Range: 1.0 pF to .12 µF • **Temperature Range:** −55°C to +125°C

S	C	A	69	B	104	J	W	S	
Specification/ Series	Dielectric	Lead Configuration	Style/Size	Voltage	Capacitance Code (pF)	Capacitance Tolerance[1]	Lead Finish[2]	Screening Option	Packaging/Grade (C-Spec)
S=Standard	C = C0G	A = Axial	16 25 39 50 69	B = 50 V D = 100 V F = 200 V	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	J = ±5% K = ±10% M = ±20%	W = SnPb (60/40) G = Au	S = Standard A = Group A (MIL–PRF–20)	Blank = Tray

Aerospace & Defense (cont.)

SCR Series, Radial, C³ Technology, C0G Dielectric, 50 – 200 VDC (Commercial Grade)

Capacitance Range: 1.0 pF to .12 µF • **Temperature Range:** −55°C to +125°C

S	C	R	09	D	184	J	W	S	
Specification/ Series	Dielectric	Lead Configuration	Style/Size	Voltage	Capacitance Code (pF)	Capacitance Tolerance[1]	Lead Finish[2]	Screening Option	Packaging/Grade (C-Spec)
S=Standard	C = C0G	R =Radial	05 06 07 08 09	B = 50 V D = 100 V F = 200 V	2 significant digits + number of zeros Use 9 for 1.0 – 9.9 pF Use 8 for 0.5 – .99 pF ex. 2.2 pF = 229 ex. 0.5 pF = 508	J = ±5% K = ±10% M = ±20%	W = SnPb (60/40) G = Au	S = Standard A = Group A (MIL–PRF–20)	Blank = Tray

SRA Series, Axial, C³ Technology, X7R Dielectric, 50 – 200 VDC (Commercial Grade)

Capacitance Range: 100 pF to 6.8 µF • **Temperature Range:** −55°C to +125°C

S	R	A	69	B	475	J	W	S	
Specification/ Series	Dielectric	Lead Configuration	Style/Size	Voltage	Capacitance Code (pF)	Capacitance Tolerance[1]	Lead Finish[2]	Screening Option	Packaging/Grade (C-Spec)
S=Standard	R = X7R	A = Axial	16 25 39 50 69	B = 50 V D = 100 V F = 200 V	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	W = SnPb (60/40) G = Au	S = Standard A = Group A (MIL–PRF–39014)	Blank = Tray

SRR Series, Radial, C³ Technology, X7R Dielectric, 50 – 200 VDC (Commercial Grade)

Capacitance Range: 100 pF to 6.8 µF • **Temperature Range:** −55°C to +125°C

S	R	R	09	D	475	J	W	S	
Specification/ Series	Dielectric	Lead Configuration	Style/Size	Voltage	Capacitance Code (pF)	Capacitance Tolerance[1]	Lead Finish[2]	Screening Option	Packaging/ Grade (C-Spec)
S=Standard	R = X7R	R =Radial	05 06 07 08 09	B = 50 V D = 100 V F = 200 V	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	W = SnPb (60/40) G = Au	S = Standard A = Group A (MIL–PRF–39014)	Blank = Tray

Safety

Safety Standard Recognized, 900 Series, Radial Disc, Encapsulated, AC Type, X1 400 VAC/Y2 250 VAC (Industrial Grade)

Capacitance Range: 2 pF to 10,000 pF • **Temperature Range:** −40°C to +125°C

C9	8	1	U	103	M	Y	V	D	A	A	7317
Ceramic Series	Body Diameter	Lead Spacing[1,2,4]	Spec.	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage	Dielectric/ Temp. Char.	Design	Lead Config.[1,3,4]	Failure Rate	Packaging (C-Spec)[2,3,4]
C9 = Ceramic 900 Series	0 = 7.0 mm 1 = 8.0 mm 2 = 9.0 mm 3 = 10.0 mm 4 = 11.0 mm 6 = 13.0 mm 8 = 15.0 mm	5 = 5.0 mm 7 = 7.5 mm 1 = 10.0 mm	U = Safety	2 significant digits + number of zeroes Use 9 for 1.0 - 9.9 pF e.g., 2.2 pF = 229	C = ±0.25 pF D = ±0.5 pF J = ±5% K = ±10% M = ±20%	Y = X1 400 VAC /Y2 250 VAC	N = CH (NP0) S = SL Y = Y5P W = Y5U V = Y5V	D = Disc	A = Straight B = Vertical Kink C = Outside Kink D = Inside Kink	A = N/A	7317 = Ammo Pack WL30 = Bulk/3.0 mm Lead length WL35 = Bulk/3.5 mm Lead length WL40 = Bulk/4.0 mm Lead length WL45 = Bulk/4.5 mm Lead length WL50 = Bulk/5.0 mm Lead length WL20 = Bulk/20 mm Lead length

Safety Standard Recognized, 900 Series, Radial Disc, Encapsulated, AC Type, X1 440 VAC/Y2 300 VAC (Industrial Grade)

Capacitance Range: 2 pF to 10,000 pF • **Temperature Range:** −40°C to +125°C

C9	7	1	U	472	M	Z	W	D	A	A	7317
Ceramic Series	Body Diameter	Lead Spacing[1,3]	Spec.	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage	Dielectric/ Temp. Char.	Design	Lead Config.[2,3]	Failure Rate	Packaging (C-Spec)[2,3]
C9 = Ceramic 900 Series	0 = 7.0 mm 1 = 8.0 mm 2 = 9.0 mm 3 = 10.0 mm 4 = 11.0 mm 6 = 13.0 mm 8 = 15.0 mm	7 = 7.5 mm 1 = 10.0 mm	U = Safety	2 significant digits + number of zeroes Use 9 for 1.0 - 9.9 pF e.g., 2.2 pF = 229	C = ±0.25 pF D = ±0.5 pF J = ±5% K = ±10% M = ±20%	Z = X1 440 VAC /Y2 300 VAC	N = CH (NP0) S = SL Y = Y5P W = Y5U V = Y5V	D = Disc	A = Straight B = Vertical Kink C = Outside Kink D = Inside Kink	A = N/A	7317 = Ammo Pack WL30 = Bulk/3.0 mm Lead length WL35 = Bulk/3.5 mm Lead length WL40 = Bulk/4.0 mm Lead length WL45 = Bulk/4.5 mm Lead length WL50 = Bulk/5.0 mm Lead length WL20 = Bulk/20 mm Lead length

Safety Standard Recognized, 900 Series, Radial Disc, Encapsulated, AS Type, X1 760 VAC/Y1 500 VAC (Industrial Grade)

Capacitance Range: 2,200 pF • **Temperature Range:** −25°C to +125°C

C9	6	1	U	222	M	W	W	D	A	A	7317
Ceramic Series	Body Diameter	Lead Spacing[1]	Spec.	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage	Dielectric/ Temp. Char.	Design	Lead Config.[1]	Failure Rate	Packaging (C-Spec)[1]
C9 = Ceramic 900 Series	6 = 13.0 mm	1 = 10.0 mm	U = Safety	2 significant digits + number of zeroes	M = ±20%	W = X1 760 VAC /Y1 500 VAC	W = Y5U	D = Disc	A = Straight B = Vertical Kink C = Outside Kink	A = N/A	7317 = Ammo Pack WL35 = Bulk/3.5 mm Lead length WL40 = Bulk/4.0 mm Lead length WL45 = Bulk/4.5 mm Lead length WL20 = Bulk/20 mm Lead length

Safety (cont.)

Safety Standard Recognized, 900 Series, Radial Disc, Encapsulated, AH Type, X1 400 VAC/Y1 250 VAC (Industrial Grade)

Capacitance Range: 2.0 pF to 4,700 pF • **Temperature Range:** −25°C to +125°C

C9	1	1	U	620	J	U	S	D	A	A	7317
Ceramic Series	Body Diameter	Lead Spacing[1]	Spec.	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage	Dielectric/ Temp. Char.	Design	Lead Config.[2]	Failure Rate	Packaging (C-Spec)[1,2]
C9 = Ceramic 900 Series	0 = 7.0 mm 1 = 8.0 mm 2 = 9.0 mm 3 = 10.0 mm 4 = 11.0 mm 5 = 12.0 mm 7 = 14.0 mm	1 = 10.0 mm	U = Safety	2 significant digits + number of zeroes Use 9 for 1.0 - 9.9pF e.g., 2.2pF = 229	C = ±0.25pF D = ±0.5pF J = ±5% K = ±10% M = ±10%	U = X1 400 VAC /Y1 250 VAC	N = CH (NP0) S = SL Y = Y5P W = Y5U V = Y5V	D = Disc	A = Straight B = Vertical Kink C = Outside Kink	A = N/A	7317 = Ammo Pack WL30 = Bulk/3.0 mm Lead length WL35 = Bulk/3.5 mm Lead length WL40 = Bulk/4.0 mm Lead length WL45 = Bulk/4.5 mm Lead length WL50 = Bulk/5.0 mm Lead length WL20 = Bulk/20 mm Lead length

Safety Standard Recognized, 900 Series, Radial Disc, Encapsulated, AH Type, X1 400 VAC/Y1 400 VAC (Industrial Grade)

Capacitance Range: 2.0 pF to 4,700 pF • **Temperature Range:** −25°C to +125°C

C9	3	1	U	101	J	V	S	D	A	A	7317
Ceramic Series	Body Diameter	Lead Spacing[1]	Spec.	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage	Dielectric/ Temp. Char.	Design	Lead Config.[2]	Failure Rate	Packaging (C-Spec)[1,2]
C9 = Ceramic 900 Series	0 = 7.0 mm 1 = 8.0 mm 2 = 9.0 mm 3 = 10.0 mm 4 = 11.0 mm 5 = 12.0 mm 6 = 13.0 mm 7 = 14.0 mm	1 = 10.0 mm	U = Safety	2 significant digits + number of zeroes Use 9 for 1.0 - 9.9 pF e.g., 2.2 pF = 229	C = ±0.25 pF D = ±0.5 pF J = ±5% K = ±10% M = ±20%	V = X1 400 VAC /Y1 400 VAC	N = CH (NP0) S = SL Y = Y5P W = Y5U V = Y5V	D = Disc	A = Straight B = Vertical Kink C = Outside Kink	A = N/A	7317 = Ammo Pack WL30 = Bulk/3.0 mm Lead length WL35 = Bulk/3.5 mm Lead length WL40 = Bulk/4.0 mm Lead length WL45 = Bulk/4.5 mm Lead length WL50 = Bulk/5.0 mm Lead length WL20 = Bulk/20 mm Lead length

ERO610 Series, Radial AC Type, X1 440 VAC/Y2 250 VAC

Capacitance Range: 1,000 pF to 12,000 pF • **Temperature Range:** −40°C to +125°C

ERO610	R	J	4250	K	BF0
Series	Safety Class/Sub-Class	Lead Spacing	Capacitance Code (pF)	Capacitance Tolerance	Lead Configuration & Packaging
ERO610	R = X1/Y2	J = 5.0 mm K = 7.5 mm	Digits 2 – 4 indicate the first three significant figures of capacitance in pF. The first digit indicates the total number of significant figures of capacitance. Example: 12,000 pF = 5120 1,800 pF = 4180 150 pF = 3150	K = ±10% M = ±20%	Please refer to datasheet

Safety (cont.)

ERK610 Series, Radial AC Type, X1 440 VAC/Y2 300 VAC

Capacitance Range: 33 pF to 4,700 pF • **Temperature Range:** −40°C to +125°C

ERK610	R	K	4470	K	CF0
Series	Safety Class/Sub-Class	Lead Spacing	Capacitance Code (pF)	Capacitance Tolerance	Lead Configuration & Packaging
ERK610	R = X1/Y2	K = 7.5 mm	Digits 2 – 4 indicate the first three significant figures of capacitance in pF. The first digit indicates the total number of significant figures of capacitance. Example: 12,000 pF = 5120 1,800 pF = 4180 150 pF = 3150	K = ±10% M = ±20%	Please refer to datasheet

ERP610 Series, Radial AC Type, X1 760 VAC/Y2 500 VAC

Capacitance Range: 33 pF to 4,700 pF • **Temperature Range:** −40°C to +125°C

ERP610	V	H	4470	K	EF0
Series	Safety Class/Sub-Class	Lead Spacing	Capacitance Code (pF)	Capacitance Tolerance	Lead Configuration & Packaging
ERP610	V = X1 / Y1	H = 12.5 mm	Digits 2 – 4 indicate the first three significant figures of capacitance in pF. The first digit indicates the total number of significant figures of capacitance. Example: 12,000 pF = 5120 1,800 pF = 4180 150 pF = 3150	K = ±10% M = ±20%	Please refer to datasheet

Commercial Grade

KHA Series, X7R Dielectric, 1,000 – 2,000 VDC

Capacitance Range: 100 pF to 4,700 pF • **Temperature Range:** −55°C to +125°C

KHA	152	K	N	35		C	H
Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Size (mm)		Lead Spacing (mm)	Temperature Code
	2 significant digits + number of zeros	K = ±10% M = ±20%	N = 1,000 VDC P = 2,000 VDC	28 = 7 31 = 8 35 = 9 39 = 10 43 = 11 47 = 12 51 = 13	55 = 14 59 = 15 63 = 16 67 = 17 71 = 18 79 = 20 87 = 22	C = 5 D = 7.5	H = X7R

Commercial Grade (cont.)

KHB Series, Y5P Dielectric, 1,000 – 2,000 VDC

Capacitance Range: 100 pF to 10,000 pF • **Temperature Range:** −25°C to +85°C

KHB	122	K	N	31		D	G
Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Size (mm)		Lead Spacing (mm)	Temperature Code
	2 significant digits + number of zeros	K = ±10% M = ±20%	N = 1,000 VDC P = 2,000 VDC	28 = 7 31 = 8 35 = 9 39 = 10 43 = 11 47 = 12 51 = 13	55 = 14 59 = 15 63 = 16 67 = 17 71 = 18 79 = 20 87 = 22	C = 5 D = 7.5	G = Y5P

KHC Series, SL Dielectric, 1,000 – 2,000 VDC

Capacitance Range: 15 pF to 560 pF • **Temperature Range:** −55°C to +125°C

KHC	820	K	N	28		D	C
Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Size (mm)		Lead Spacing (mm)	Temperature Code
	2 significant digits + number of zeros	K = ±10% M = ±20%	N = 1,000 VDC P = 2,000 VDC	28 = 7 31 = 8 35 = 9 39 = 10 43 = 11 47 = 12 51 = 13	55 = 14 59 = 15 63 = 16 67 = 17 71 = 18 79 = 20 87 = 22	C = 5 D = 7.5	C = SL

KJN Series, Y5P, Y5U & Y5V Dielectric, Y1 250/400 VAC/X1 440 VAC

Capacitance Range: 100 pF to 4,700 pF • **Temperature Range:** −25°C to +125°C

KJN	331	K	Q	35		F	G
Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Size (mm)		Lead Spacing (mm)	Temperature Code
	2 significant digits + number of zeros	K = ±10% M = ±20%	Q = 440 VDC/X1, 250 VAC/Y1	28 = 7 31 = 8 35 = 9 39 = 10 43 = 11 47 = 12 51 = 13	55 = 14 59 = 15 63 = 16 67 = 17 71 = 18 79 = 20 87 = 22	F = 10 G = 12.5	A = Y5U or better B = Y5V G = Y5P

KJY Series, Y5P, Y5U & Y5V Dielectric, Y2 250 VAC/X1 400 VAC

Capacitance Range: 100 pF to 10,000 pF • **Temperature Range:** −25°C to +125°C

KJY	102	M	R	31		F	A
Series	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Size (mm)		Lead Spacing (mm)	Temperature Code
	2 significant digits + number of zeros	K = ±10% M = ±20%	R = 400 VAC/X1, 250 VAC/Y2	28 = 7 31 = 8 35 = 9 39 = 10 43 = 11 47 = 12 51 = 13	55 = 14 59 = 15 63 = 16 67 = 17 71 = 18 79 = 20 87 = 22	F = 10 G = 12.5	A = Y5U or better B = Y5V G = Y5P

Film Capacitors

THROUGH-HOLE FILM CAPACITORS

General Purpose

Metallized Polyester	Metallized Paper & Polyphenylene Sulfide
F622 – 125°C Halogen Free 5 mm (Stacked) 50 – 630 VDC	PME261 (P561) Impregnated Paper 400 – 1,000 VDC
R60 10 – 37.5 mm 50 – 1,000 VDC	SMR (F211) Polyphenylene Sulfide 150°C 50 – 400 VDC
R66 7.5 mm Lead Spacing 50 – 630 VDC	
R82 5 mm Lead Spacing 50 – 400 VDC	
RSB – 125°C 5 mm (Stacked) 50 – 630 VDC	
A50 Axial 50 – 1,000 VDC	
MDK (F683/4/5/7/8) Dual In-Line High Current 50 – 630 VDC	

Pulse & AC

Single Metallized Polypropylene	Double Metallized Polypropylene	Film/Foil Polypropylene
F461 – 464 Halogen Free 160 – 2,500 VDC	PHE450 (F450) DC Applications 250 – 3,000 VAC	R73 Radial 100 – 2,000 VDC
R79 5 mm Lead Spacing 160 – 630 VDC	R76 DC & Pulse Applications 250 – 2,000 VDC	PFR (F411) Radial 63 – 1,000 VDC
R75 160 – 2,000 VDC		A72 Axial 100 – 2,000 VDC
R74 AC Applications 250 – 900 VDC		
R74 – 125°C AC Applications 500 – 700 VDC		
R71 SMPS PFC Applications 420 – 1,000 VDC		
A70 Axial 160 – 630 VDC		

Safety/EMI

X1 Class	X2 Class	Y1 Class	Y2 Class	Multiple X & Y
F871 – F873 Halogen Free Metallized Polypropylene 330/480/760 VAC	F862 Metallized Polypropylene 310 VAC	P295 Metallized Impregnated Paper 500 VAC	F881 Halogen Free Metallized Polypropylene 300 VAC	PHZ9004 (9004) Metallized Polypropylene 300 VAC (3x X2)
R49 Metallized Polypropylene 310 VAC/330 VAC	R47 Metallized Polypropylene 440 VAC/520 VAC	PME295 (P295) Metallized Impregnated Paper 440 VAC/480 VAC	R41 Metallized Polypropylene 300 VAC	PMZ2074 (P374) Metallized Impregnated Paper 275 VAC (2x X2)
R47 Metallized Polypropylene 440 VAC	R46 Metallized Polypropylene 310 VAC		PME271Y A – E (P272) Impregnated Paper 300 VAC	PZB300 (P300) Metallized Impregnated Paper 275 VAC (X2 + 2x Y2)
P278 Metallized Impregnated Paper 480 VAC	R46 (Miniature) Metallized Polypropylene 275 VAC		PME271Y (P271) Impregnated Paper 250 VAC	
P410 Metallized Impregnated Paper 300 VAC	R46 – 125°C Metallized Polypropylene 275 VAC			
PME271E (P277) Metallized Impregnated Paper 300 VAC	PME264 (P264) Metallized Impregnated Paper 660 VAC			
PHE844 (F844) Metallized Polypropylene 440/480 VAC	P409 Metallized Impregnated Paper 275 VAC			
PHE845 (F845) Metallized Polypropylene 760 VAC	PME271M (P276) Metallized Impregnated Paper 275 VAC			

POWER & APPLICATION OPTIMIZED FILM CAPACITORS

Power Film

Axial	Radial	Screw/Faston Terminal
C4C Axial Round 850 – 3,000 VDC/ 450 – 750 VAC	C4AE 2 or 4 Leads DC Link 450 – 1,100 VDC	C4DE Low Inductance DC Link 400 – 1,000 VDC
C4DC GTO Snubbing 400 – 1,400 VDC/ 160 – 700 VAC	C4AS 2 or 4 Leads 850 – 3,000 VDC/ 500 – 750 VAC	C44A General Purpose & Snubbing 400 – 1,500 VDC/ 250 – 630 VAC
C4DR GTO Clamping 400 – 3,000 VDC/ 160 – 1,500 VAC	C4AT 2 or 4 Leads 250 – 850 VDC/ 160 – 450 VAC	C44B General Purpose & Snubbing 1,200 – 2,400 VDC/ 500 – 1,000 VAC
C4G Axial Round 250 – 850 VDC/ 160 – 450 VAC	C4BS IGBT Direct Mount 850 – 3,000 VDC/ 550 – 750 VAC	C44H PFC & AC Filter 330 – 440 VAC/ 700 – 1,000 VDC
	C4BT IGBT Direct Mount 250 – 850 VDC/ 160 – 450 VAC	C44P/C20A PFC & AC Filter 330 – 1,000 VAC/ 700 – 2,300 VDC
		C44U DC Link 700 – 1,300 VDC
		C93 Filter Applications 400 – 600 VDC
		C9T PFC & AC Filter 415 – 690 VAC

Motor Run Applications

Screw/Faston Terminal
C27 Plastic Case 425 – 500 VAC
C87 Aluminum Case 160 – 500 VAC

AC Lighting Applications

Cylindrical Case
C3B Metalized Polyproplyene 250 VAC
C95 Metalized Polyproplyene 250 VAC/450 VAC

High Voltage Transient Suppression

Radial
F43 Integrated Resistor Metallized Polypropylene 250 – 630 VDC
PMR205 (P405) Integrated Resistor Metallized Impregnated Paper 125 VAC/250 VDC
P409 Integrated Resistor Metallized Impregnated Paper 275 VAC
P410 Integrated 100 Ω Resistor Metallized Impregnated Paper 300 VAC
PMZ2035 (P435) Integrated 100 Ω Resistor Metallized Impregnated Paper 300 VDC

Low Voltage Transient Suppression

Radial
F5A Integrated Varistor 18 – 63 VDC
F5B Integrated Suppression Diode 18– 63 VDC
F5D Integrated Ceramic Capacitor 63 – 100 VDC

Capacitive AC Power Supply

Radial
F862 Metallized Polypropylene 310 VAC
R47 X1 – X2 Metallized Polypropylene 440 VAC
R75 2/L Metallized Polypropylene 230 VAC / 250 VAC
PME271E (P277) Metallized Impregnated Paper 300 VAC
PME271M X2 (P276) Metallized Impregnated Paper 275 VAC

SURFACE MOUNT FILM CAPACITORS

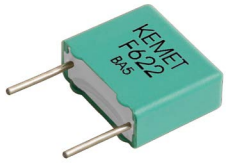
Polyester (PET)	Polyethylene Naphthalate (PEN)	Metallized Polyphenylene Sulfide (PPS)	Y2 Class
F161 Encapsulated Stacked 50 – 400 VDC	LDE Unencapsulated Stacked 50 – 1,000 VDC	LDB Unencapsulated Stacked 16 VDC & 50 VDC	SMP253 (P101) Metallized Impregnated Paper 250 VAC
MDC (F153/4/5/7/8) Dual In-Line High Current 50 – 630 VDC	GMC (F115) Encapsulated Stacked Size 2220 – 6560 50 – 630 VDC	SMC (F125) Encapsulated Stacked 50 – 400 VDC	
MDS (F173/4/5) Dual In-Line High Current 50 – 630 VDC	GPC (F117) Encapsulated Double Metallized 63 – 1,000 VDC	SPC (F127) Encapsulated Double Metallized 100 – 630 VDC	

Film Capacitors
Through-Hole – General Purpose

Metallized Polyester

F622 Series, 125ºC, Halogen Free, 5 mm (Stacked), 50 – 630 VDC

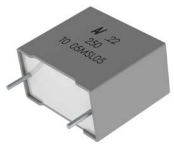
Capacitance Range: 0.001 to 2.2 µF • **Temperature Range:** −55°C to +125°C



F	622	J	F	104	M	050	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Voltage (VDC)	Lead and Packaging Code
F = Film	Metallized Polyester	J = 5	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	J = ± 5% K = ± 10% M = ± 20%	050 = 50 063 = 63 100 = 100 250 = 250 400 = 400 500 = 500 630 = 630	See Ordering Options Table

R60 Series, Radial, 10 – 37.5 mm Lead Spacing, 50 – 1,000 VDC (Automotive Grade)

Capacitance Range: 0.001 to 220 µF • **Temperature Range:** −55°C to +105°C



R60	M	F	2470	AA	60	K
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polyester	C = 50 D = 63 E = 100 G = 160 I = 250 M = 400 P = 630 Q = 1000	F = 10 I = 15 N = 22.5 R = 27.5 W = 37.5	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	00 01 30 40 50 6A L0 L1	J = ±5% K = ±10% M = ±20%

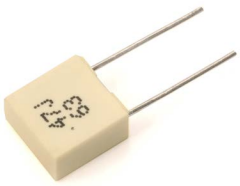
R66 Series, Radial, 7.5 mm Lead Spacing, 50 – 630 VDC (Automotive Grade)

Capacitance Range: 0.001 to 4.7 µF • **Temperature Range:** −55°C to +105°C

R66	E	D	3100	AA	7A	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polyester	C = 50 D = 63 E = 100 I = 250 M = 400 P = 630	D = 7.5	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	10 6A 7A	J = ±5% K = ±10% M = ±20%

R82 Series, 5 mm Lead Spacing, 50 – 400 VDC (Automotive Grade)

Capacitance Range: 0.001 to 4.7 µF • **Temperature Range:** −55°C to +105°C

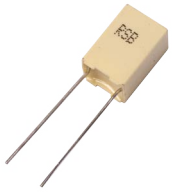


R82	D	C	3470	AA	60	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polyester	C = 50 D = 63 E = 100 I = 250 M = 400	C = 5.0	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	30 50 60 70	J = ±5% K = ±10% M = ±20%

Metallized Polyester (cont.)

RSB Series, 125ºC, 5 mm (Stacked), 50 – 630 VDC (Automotive Grade)

Capacitance Range: 0.001 to 2.2 µF • **Temperature Range:** −55°C to +125°C



RSB	D	C	3100	AA	00	K
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polyester	C = 50 D = 63 E = 100 I = 250 M = 400 W = 500 P = 630	C = 5.0	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	30 50 60 70	J = ±5% K = ±10% M = ±20%

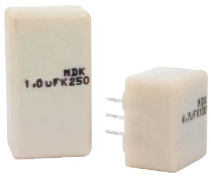
A50 Series Axial Pulse DC Transient, 50 – 1,000 VDC (Automotive Grade)

Capacitance Range: 0.001 to 10 µF • **Temperature Range:** −55°C to +105°C

A50	C	F	3470	AA	00	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polyester	C = 50 D = 63 E = 100 I = 250 M = 400 P = 630 Q = 1000	F = 11 H= 14 K = 20.5 Q = 28 T = 33	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	00, 60 (Standard)	J = ±5% K = ±10% M = ±20%

MDK Series, Dual In-Line, High Current, 50 – 630 VDC

Capacitance Range: 0.033 to 15 µF • **Temperature Range:** −55°C to +125°C



Legacy Part Number System

MDK	10	333	K	50	A52	P3	TUBE
Series	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Number of Leads per Side	Packaging Code
Dual In-Line, Metallized Polyester	10 15	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5 K = ±10% Other tolerances on request	50 100 250 400 630	See Dimension Table	P3 = 3 leads P4 = 4 leads P5 = 5 leads P7 = 7 leads P8 = 8 leads	See Ordering Options Table

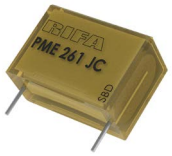
New KEMET Part Number System

F	68	3	A	A	333	K	050	T
Capacitor Class	Series	Number of Leads per Side	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging Code
F = Film	Dual In-Line, Metallized Polyester	3 = 3 leads 4 = 4 leads 5 = 5 leads 7 = 7 leads 8 = 8 leads	A = 10 B = 15	A = Standard box size	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5 K = ±10% Other tolerances on request	050 = 50 100 = 100 250 = 250 400 = 400 630 = 630	See Ordering Options Table

Metallized Paper & Polyphenylene Sulfide

PME261 Series Impregnated Paper, 10.2 – 25.4 mm Lead Spacing, 400 – 1,000 VDC

Capacitance Range: 0.001 to 1 µF • **Temperature Range:** −40°C to +70°C AC app & −40°C to +100°C DC app



Legacy Part Number System

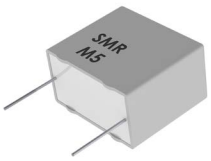
PME261	K	A	5100	K	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
Metallized Paper	K = 220 E = 300 J = 500	A = 10.2 B = 15.2 C = 20.3 E = 25.4	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value	J = ±5% K = ±10% M = ±20%	See Ordering Options Table

New KEMET Part Number System

P	561	H	E	103	K	220	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	Metallized Paper General Purpose	H = 10.2 Q = 15.2 C = 20.3 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5% K = ±10% M = ±20%	220 = 220 300 = 300 500 = 500	See Ordering Options Table

SMR Series Polyphenylene Sulfide Film, +150°C, 5.0 – 27.5 mm Lead Spacing, 50 – 400 VDC

Capacitance Range: 0.001 to 22 µF • **Temperature Range:** −55°C to +150°C



Legacy Part Number System

SMR	5	104	K	50	J01	L4	BULK
Series	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Lead Length	Lead and Packaging Code
Metallized PPS	5 = 5.0 7.5 = 7.5 10 = 10.0 15 = 15.0 22.5 = 22.5 27.5 = 27.5	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	H = ±2.5% J = ±5% K = ±10% M = ±20%	50 = 50 63 = 63 100 = 100 250 = 250 400 = 400	See Dimension Table	Letter "L" followed by lead length in mm	See Ordering Options Table

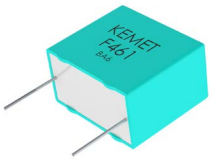
New KEMET Part Number System

F	211	J	F	104	K	050	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Lead and Packaging Code
F = Film	Metallized PPS	J = 5.0 K = 7.5 A = 10.0 B = 15.0 D = 22.5 F = 27.5	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	R = ±2.5% J = ±5% K = ±10% M = ±20%	050 = 50 063 = 63 100 = 100 250 = 250 400 = 400	See Ordering Options Table

Single Metallized Polypropylene

F461 – 464 Series Halogen Free, 160 – 2,500 VDC

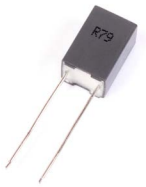
Capacitance Range: 0.001 to 56 µF • **Temperature Range:** −55°C to +105°C



F	46x	K	E	223	J	160	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Lead and Packaging Code
F = Film	Metallized Polypropylene x = sections in construction	J = 5 K = 7.5 A = 10 B = 15 D = 22.5 F = 27.5 R = 37.5	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5% K = ±10% On Request: F = ±1% G = ±2% M = ±20%	160 = 160 250 = 250 400 = 400 630 = 630 1K0 = 1000 1L2 = 1250 1K6 = 1600 2K0 = 2000 2K5 = 2500	See Ordering Options Table

R79 Series Radial, 5 mm Lead Spacing, 160 – 630 VDC

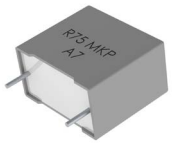
Capacitance Range: 0.001 to 0.22 µF • **Temperature Range:** −55°C to +105°C



R79	G	C	2390	AA	40	K
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polypropylene	G = 160 I = 250 M = 400 P = 630	C = 5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	40 45	H = 2.5% J = ±5% K = ±10%

R75 Series Radial, DC & Pulse Applications 160 – 2,000 VDC (Automotive Grade)

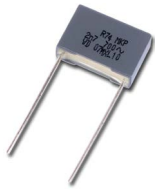
Capacitance Range: 220 pF to 33 µF • **Temperature Range:** −55°C to +105°C



R75	P	N	2820	AA	30	K
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polypropylene	G = 160 I = 250 M = 400 P = 630 Q = 1,000 R = 1,250 T = 1,600 U = 2,000	D = 7.5 F = 10 I = 15 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	00 10 30 40 50 60 70 80	J = ±5% K = ±10% M = ±20%

R74 Series Radial, AC Applications 250 – 900 VDC (Automotive Grade)

Capacitance Range: 470 pF to 3.3 µF • **Temperature Range:** −55°C to +105°C

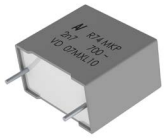


R74	5	N	2180	AA	00	J
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polypropylene	L = 250 N = 400 5 = 500 6 = 600 7 = 700 9 = 900	F = 10 I = 15 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	00 30 60	J = ±5% K = ±10%

Single Metallized Polypropylene (cont.)

R74 Series 125°C Radial, AC Applications 500 & 700 VDC (Automotive Grade)

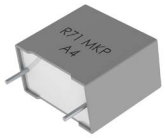
Capacitance Range: 470 pF to 0.018 µF • **Temperature Range:** −55°C to +125°C



R74	5	F	1100	AA	H	0	J
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Dimensions and Electrical Characteristics	Internal Use	Capacitance Tolerance
Metallized Polypropylene	5 = 500 7 = 700	F = 10.0 I = 15.0 N = 22.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	H = 125ºC	0 (Standard)	J = ±5% K = ±10%

R71 Series Radial, SMPS PFC Applications 420 – 1,000 VDC

Capacitance Range: 0.01 to 22 µF • **Temperature Range:** −55°C to +105°C



R71	M	F	2100	AA	00	J
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polypropylene	M = 420 V = 520 P = 630 Q = 1,000	F = 10.0 I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	00, 10, 20, 30, 40 (Standard)	J = ±5% K = ±10% M = ±20%

A70 Series Axial 160 – 630 VDC

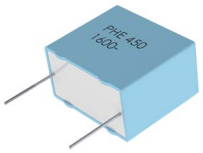
Capacitance Range: 0.001 to 4.7 µF • **Temperature Range:** −55°C to +105°C

A70	G	F	2220	AA	00	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polypropylene	G = 160 I = 250 M = 400 P = 630	F = 11 H= 14 K = 20.5 Q = 28 T = 33	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	00 (Standard)	J = ±5% K = ±10% M = ±20%

Double Metallized Polypropylene

PHE450 Series Radial, 250 – 3,000 VAC

Capacitance Range: 0.00033 to 10 µF • **Temperature Range:** −55°C to +105°C



Legacy Part Number System

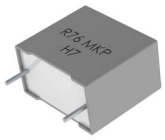
PHE450	P	B	5180	J	B04	R06
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Optional Box Code	Lead and Packaging Code
Metallized Polypropylene	H = 250 K = 400 M = 630 P = 1000 R = 1600 S = 2000 T = 2500 X = 3000	K = 7.5 A = 10.0 B = 15.0 D = 22.5 F = 27.5 R = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	J = ±5% On request: F = ±1% G = ±2% H = ±2.5% K = ±10% M = ±20%	See Dimension Table	See Ordering Options Table

New KEMET Part Number System

F	450	B	D	183	J	1K0	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Lead and Packaging Code
F = Film	Metallized Polypropylene	K = 7.5 A = 10.0 B = 15.0 D = 22.5 F = 27.5 R = 37.5	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5% On request: F = ±1% G = ±2% H = ±2.5% K = ±10% M = ±20%	250 = 250 400 = 400 630 = 630 1K0 = 1000 1K6 = 1600 2K0 = 2000 2K5 = 2500 3K0 = 3000	See Ordering Options Table

R76 Series Radial, DC & Pulse Applications 250 – 2,000 VDC (Automotive Grade)

Capacitance Range: 100 pF to 15 µF • **Temperature Range:** −55°C to +105°C

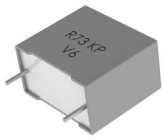


R76	I	D	1680	AA	00	H
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polypropylene	I = 250 M = 400 P = 630 Q = 1000 T = 1600 U = 2000	D = 7.5 F = 10.0 I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	00, 30, 40, 70 (Standard)	H = ±2.5% (for C ≥ 0.001 µF only) J = ±5% K = ±10%

Film/Foil Polypropylene

R73 Series Radial 100 – 2,000 VDC (Automotive Grade)

Capacitance Range: 100 pF to 2.2 µF • **Temperature Range:** −55°C to +105°C

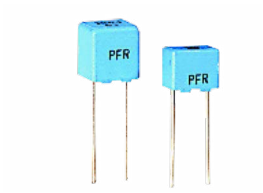


R73	E	I	2470	AA	00	H
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Polypropylene Film/Foil	E = 100 G = 160 I = 250 M = 400 P = 630 Q = 1000 R = 1250 T = 1600 U = 2000	I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	00, 10, 30, 40 (Standard)	H = ±2.5% (for 2-section construction only) J = ±5% K = ±10%

Polypropylene Film/Foil (cont.)

PFR Series Radial 63 – 1,000 VDC

Capacitance Range: 100 pF to 0.022 µF • **Temperature Range:** −55°C to +100°C



Legacy Part Number System

PFR	5	101	J	63	J11	L4	BULK
Series	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Lead Length	Lead and Packaging Code
Polypropylene Film/Foil	5 (Standard)	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	F = ±1% G = ±2% H = ±2.5% J = ±5% K = ±10%	63 = 63 100 = 100 250 = 250 400 = 400 630 = 630 1000 = 1000	See Dimension Table	Letter "L" followed by lead length in mm	See Ordering Options Table

New KEMET Part Number System

F	411	J	H	101	J	063	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Lead and Packaging Code
F = Film	Polypropylene Film/Foil	J = 5.0	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	F = ±1% G = ±2% H = ±2.5% J = ±5% K = ±10%	063 = 63 100 = 100 250 = 250 400 = 400 630 = 630 1K0 = 1000	See Ordering Options Table

A72 Series Axial 100 – 2,000 VDC

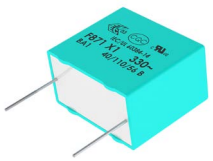
Capacitance Range: 47 pF to 0.33 µF • **Temperature Range:** −55°C to +105°C

A72	E	F	1470	AA	00	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Polypropylene Film/Foil	E = 100 I = 250 M = 400 P = 630 Q = 1000 S = 1500 U = 2000	F = 11 H= 14 K = 20.5 Q = 28 T = 33	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	00, 02 (Standard)	J = ±5% K = ±10% M = ±20%

X1 Class

F871 – F873 Series, Halogen Free, Metallized Polypropylene, 330/480/760 VAC

Capacitance Range: 0.001 to 8.2 µF • **Temperature Range:** −40°C to +110°C



F	871	B	K	104	M	330	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Voltage (VAC)	Lead and Packaging Code
F = Film	X1, Metallized Polypropylene	A = 10 B = 15 D = 22.5 F = 27.5 R = 37.5	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	330	See Ordering Options Table

X1 Class (cont.)

R49 Series, Metallized Polypropylene, 310 VAC

Capacitance Range: 0.01 to 2.2 µF • **Temperature Range:** −40°C to +110°C

R49	A	I	3100	00	01	M
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
X1, Metallized Polypropylene	A = 310	F = 10.0 I = 15.0 N = 22.5 R = 27.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	01 M1	K = ±10% M = ±20%

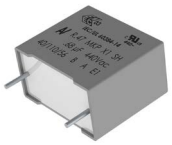
R49 Series, Metallized Polypropylene, 330 VAC

Capacitance Range: 0.047 to 6.8 µF • **Temperature Range:** −40°C to +110°C

R49	A	N	3150	00	B1	M
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
X1, Metallized Polypropylene	A = 330	I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	A1 A2 A3 B1 B2	K = ±10% M = ±20%

R47 Series, Metallized Polypropylene, 440 VAC (Automotive Grade)

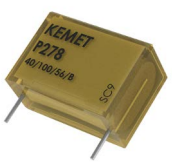
Capacitance Range: 0.0047 to 2.2 µF • **Temperature Range:** −40°C to +110°C



R47	4	I	2100	00	A1	M
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
X1, Metallized Polypropylene	4 = 440	F = 10.0 I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	A1 A2 A3	K = ±10% M = ±20%

P278 Series, Metallized Impregnated Paper, 480 VAC

Capacitance Range: 0.001 to 0.15 µF • **Temperature Range:** −40°C to +110°C

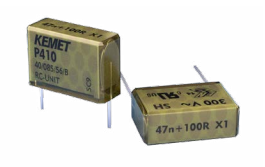


P	278	H	E	102	M	480	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	X1, Metallized Paper	H = 10.2 Q = 15.2 C = 20.3 S = 22.5 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20%	480 = 480	See Ordering Options Table

X1 Class (cont.)

P410 Series, Metallized Impregnated Paper 300 VAC

Capacitance Range: 0.022 to 0.1 µF • **Temperature Range:** −40°C to +85°C



P	410	Q	M	223	M	300	A	H101
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	Resistance (Ω)
P= Metallized Paper	RC Snubber	Q = 15.2 C = 20.3 E = 25.4	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	300 = 300	See Ordering Options Table	H + first two digits representing significant figures. Third digit specifies number of zeros.

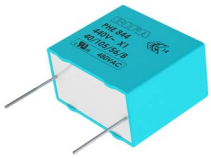
PME271E Series, Metallized Impregnated Paper, 300 VAC

Capacitance Range: 0.01 to 0.22 µF • **Temperature Range:** −40°C to +110°C

P	277	Q	E	103	M	300	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	X1, Metallized Paper	Q = 15.2 C = 20.3 S = 22.5 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	300 = 300	See Ordering Options Table

PHE844 Series, Metallized Polypropylene, 440/480 VAC

Capacitance Range: 0.1 to 2.2 µF • **Temperature Range:** −40°C to +105°C



Legacy Part Number System

PHE844	R	D	6100	M	R06L2
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
X1, Metallized Polypropylene	R = 440	D = 22.5 F = 27.5 R = 37.5	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value	K = ±10% M = ±20%	See Ordering Options Table

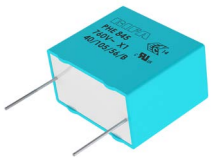
New KEMET Part Number System

F	844	D	H	104	M	440	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
F = Film	X1, Metallized Polypropylene	D = 22.5 F = 27.5 R = 37.5	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeroes.	K = ±10% M = ±20%	400 = 400	See Ordering Options Table

X1 Class (cont.)

PHE845 Series, Metallized Polypropylene, 760 VAC

Capacitance Range: 0.01 to 1.0 µF • **Temperature Range:** −40°C to +105°C



Legacy Part Number System

PHE845	V	D	5100	M	R06L2
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
X1, Metallized Polypropylene	V = 760	D = 22.5 F = 27.5 R = 37.5	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value	K = ±10% M = ±20%	See Ordering Options Table

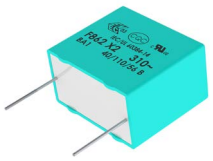
New KEMET Part Number System

F	845	D	D	103	M	760	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
F = Film	X1, Metallized Polypropylene	D = 22.5 F = 27.5 R = 37.5	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeroes.	K = ±10% M = ±20%	760 = 760	See Ordering Options Table

X2 Class

F862 Series, Metallized Polypropylene for Harsh Environmental Conditions, 310 VAC (Automotive Grade)

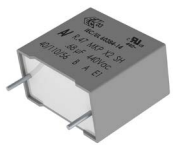
Capacitance Range: 0.047 to 4.7 µF • **Temperature Range:** −40°C to +110°C



F	862	B	C	104	M	310	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Voltage (VAC)	Lead and Packaging Code
F = Film	X2, Metallized Polypropylene	B = 15 D = 22.5 F = 27.5	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	310	See Ordering Options Table

R47 Series, Metallized Polypropylene, 440 VAC (Automotive Grade)

Capacitance Range: 0.0047 to 2.2 µF • **Temperature Range:** −40°C to +110°C

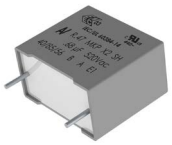


R47	4	F	1470	00	01	M
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
X2, Metallized Polypropylene	4 = 440	F = 10.0 I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	01 02 03	K = ±10% M = ±20%

X2 Class (cont.)

R47 Series, Metallized Polypropylene, 520 VAC, 85ºC (Automotive Grade)

Capacitance Range: 0.0047 to 2.2 µF • **Temperature Range:** −40°C to +85°C



R47	5	I	2100	00	01	M
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
X2, Metallized Polypropylene	5 = 520	F = 10.0 I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	01 02 03	K = ±10% M = ±20%

R46 Series, Metallized Polypropylene, 310 VAC

Capacitance Range: 0.01 to 10 µF • **Temperature Range:** −40°C to +110°C

R46	3	N	3150	00	01	M
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
X2, Metallized Polypropylene	3 = 310	F = 10.0 I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	01 02 L2 M1 M2 N0 N1 N2	K = ±10% M = ±20%

R46 (Miniature) Series, Metallized Polypropylene, 275 VAC

Capacitance Range: 0.033 to 10 µF • **Temperature Range:** −40°C to +110°C

R46	K	I	3470	00	P0	M
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
X2, Metallized Polypropylene	K = 275	F = 10.0 I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	P0 P1 P2 P3	K = ±10% M = ±20%

R46 Series, Metallized Polypropylene, 275 VAC, 125ºC

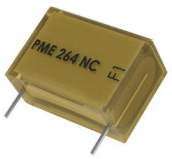
Capacitance Range: 0.01 to 1 µF • **Temperature Range:** −40°C to +125°C

R46	K	N	3220	00	H1	M
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
X2, Metallized Polypropylene	K = 275	F = 10.0 I = 15.0 N = 22.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	H = High Temperature H1 H2 H3 H4	K = ±10% M = ±20%

X2 Class (cont.)

PME264 Series Metallized Impregnated Paper, 660 VAC

Capacitance Range: 0.001 to 0.1 µF • **Temperature Range:** −40°C to +85°C



Legacy Part Number System

PME264	N	B	5100	M	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
X2, Metallized Paper	N = 660	B = 15.2 C = 20.3 E = 25.4	Digits 2 – 4(3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	M = ±20%	See Ordering Options Table

New KEMET Part Number System

P	264	Q	E	103	M	660	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	X2, Metallized Paper	Q = 15.2 C = 20.3 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20%	660 = 660	See Ordering Options Table

P409 Series Metallized Polypropylene, 275 VAC

Capacitance Range: 0.047 to 0.47 µF • **Temperature Range:** −40°C to +85°C

P	409	Q	M	473	M	275	A	H470
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	Resistance (Ω)
P= Metallized Paper	RC Snubber	Q = 15.2 C = 20.3 E = 25.4	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	275 = 275	See Ordering Options Table	H + first two digits representing significant figures. Third digit specifies number of zeros.

X2 Class (cont.)

PME271M Series Metallized Impregnated Paper, 275 VAC

Capacitance Range: 0.001 to 0.6 µF • **Temperature Range:** −40°C to +110°C

Legacy Part Number System

PME271	M	(B)	610(0)	M	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
X2, Metallized Paper	M = 275	Blank = Standard A = 10.2 B = 15.2 D = 22.5	Digits 2 – 4(3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	See Ordering Options Table

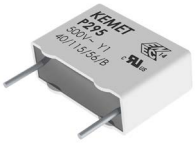
New KEMET Part Number System

P	276	Q	E	104	M	275	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	X2, Metallized Paper	H = 10.2 Q = 15.2 C = 20.3 S = 22.5 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	275 = 275	See Ordering Options Table

Y1 Class

P295 Series Metallized Impregnated Paper, 500 VAC

Capacitance Range: 470 to 4,700 pF • **Temperature Range:** −40°C to +115°C



P	295	B	E	471	M	500	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	Y1, Metallized Paper	B = 15.0	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20%	500 = 500	See Ordering Options Table

Y1 Class (cont.)

PME295 Series Metallized Impregnated Paper, 440 VAC/480 VAC

Capacitance Range: 470 to 4,700 pF • **Temperature Range:** −40°C to +115°C

Legacy Part Number System

PME295	R	B	3470	M	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
Y1, Metallized Paper	R = 440	B = 15.0	Digits 2 – 4 (3) indicate the first three digits of the capacitance value. Digit 1 indicates the total number of digits in the capacitance value.	M = ±20%	See Ordering Options Table

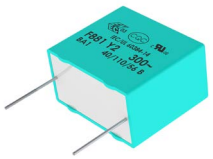
New KEMET Part Number System

P	295	B	E	471	M	440	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	Y1, Metallized Paper	B = 15.0	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20%	440 = 440	See Ordering Options Table

Y2 Class

F881 Series, Halogen Free, Metallized Polypropylene, 300 VAC

Capacitance Range: 0.01 to 1.0 µF • **Temperature Range:** −40°C to +110°C



F	881	B	C	103	M	300	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Voltage (VAC)	Lead and Packaging Code
F = Film	Y2, Metallized Polypropylene	K = 7.5 A = 10 B = 15 D = 22.5 F = 27.5 R = 37.5	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	300	See Ordering Options Table

R41 Series, Metallized Polypropylene, 300 VAC (Automotive Grade)

Capacitance Range: 0.001 to 1 µF • **Temperature Range:** −40°C to +110°C

R41	3	I	2330	00	M1	M
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Y2, Metallized Polypropylene	3 = 300	D = 7.5 F = 10.0 I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	00 M1	K = ±10% M = ±20%

Y2 Class (cont.)

PME271Y A–E Series Metallized Impregnated Paper, 300 VAC

Capacitance Range: 0.001 to 0.15 µF • **Temperature Range:** −40°C to +115°C

Legacy Part Number System

PME271	Y	A	4100	M	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
Y2, Metallized Paper	Y = 300	A = 10.2 B = 15.2 C = 20.3 D = 22.5 E = 25.4	Digits 2 – 4(3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	See Ordering Options Table

New KEMET Part Number System

P	272	H	E	102	M	300	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	Y2, Metallized Paper	H = 10.2 Q = 15.2 C = 20.3 D = 22.5 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	300 = 300	See Ordering Options Table

PME271Y Series Metallized Impregnated Paper, 250 VAC

Capacitance Range: 0.001 to 0.1 µF • **Temperature Range:** −40°C to +100°C

Legacy Part Number System

PME271	Y	410	M	R30
Series	Rated Voltage (VAC)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
Y2, Metallized Paper	Y = 250	Digits 2 – 4(3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	M = ±20%	See Ordering Options Table

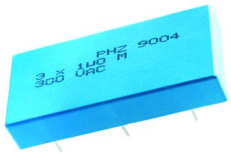
New KEMET Part Number System

P	271	H	E	102	M	250	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	Y2, Metallized Paper	H = 10.2 Q = 15.2 C = 20.3 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20%	250 = 250	See Ordering Options Table

Multiple X & Y

PHZ9004 Series Metallized Polypropylene Film, 300 VAC 3x X2 with Separate Terminals for Three-Phase Filtering

Capacitance Range: 3 x 1.0 µF • **Temperature Range:** −55°C to +105°C



Legacy Part Number System

PHZ9004	E	F	7100	M	R06L2
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
Triple Capacitor X2, Metallized Polypropylene	E = 300	F = 27.5	Digits 2 – 4(3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	M = ±20%	See Ordering Options Table

New KEMET Part Number System

9004	AA	105	M	300	C	DECT	V680
Capacitor Class	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	C-Spec	V-Spec
Triple Capacitor X2, Metallized Polypropylene	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20%	300 = 300	See Ordering Options Table	Optional additional characters at KEMET's option	Part Number specific version code

PMZ2074 Series Metallized Impregnated Paper, 275 VAC 2x X2 with One Common Terminal

Capacitance Range: 0.15 µF + 0.033 µF, 0.15 µF + 0.047 µF, 0.15 µF + 0.068 µF, 0.22 µF + 0.082 µF, 0.22 µF + 0.1 µF
Temperature Range: −40°C to +110°C

Legacy Part Number System

PMZ2074	M	C	615	M	533	M	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Capacitance Code (pF)	Internal Use	Lead and Packaging Code
Double Capacitor X2, Metallized Paper	M = 275	C = 20.3	Digits 2 – 3 indicate the first three digits of the C1 capacitance value. First digit indicates the total number of digits in the capacitance value.	K = ±10% M = ±20%	Digits 2 – 3 indicate the first three digits of the C2 capacitance value. First digit indicates the total number of digits in the capacitance value.	M (Standard)	See Ordering Options Table

New KEMET Part Number System

P	374	C	L	154	M	275	A	C333
Capacitor Class	Series	Lead Spacing (mm)	Size Code	X Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	Y Capacitance Code
P = Paper	Double Capacitor X2, Metallized Paper	C = 20.3	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20%	275 = 275	See Ordering Options Table	C + first two digits represent significant figures. Third digit specifies number of zeros.

Multiple X & Y (cont.)

PZB300 Series Metallized Impregnated Paper, 275 VAC Delta Configuration X2 + 2x Y2

Capacitance Range: X Value 0.1 µF and 0.15 µF, Y Value 0.0022 µF, 0.0033 µF and 0.0047 µF • **Temperature Range:** −40°C to +100°C

Legacy Part Number System

PZB300	M	C	11	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code
Delta EMI, X2 + 2x Y2, Metallized Paper	M = 275	C = 20.0	The first digit indicates the value of the X capacitor: 1 = 0.10 µF 2 = 0.15 µF The second digit indicates the value of the Y capacitor: 1 = 0.0022 µF 2 = 0.0033 µF 3 = 0.0047 µF	See Ordering Options Table

New KEMET Part Number System

P	300	P	L	104	M	275	A	C222
Capacitor Class	Series	Lead Spacing (mm)	Size Code	X Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	Y Capacitance Code
P = Paper	Delta EMI, X2 + 2x Y2, Metallized Paper	P = 20	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20%	275 = 275	See Ordering Options Table	C + first two digits represent significant figures. Third digit specifies number of zeros.

Polyester (PET)

F161 Series Encapsulated Stacked, Size 2220 – 6560, 50 – 400 VDC

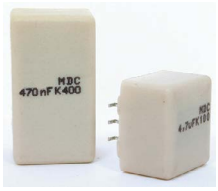
Capacitance Range: 0.01 to 12 µF • **Temperature Range:** −55°C to +125°C

F	161	P	L	102	K	050	V
Capacitor Class	Series	Chip Size	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging Code
F = Film	Metallized Polyester Stacked Technology	P = 2220 S = 2824 W = 4036 Y = 5045 Z = 6560	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5 K = ±10% Other tolerances on request	050 = 50 063 = 63 100 = 100 250 = 250 400 = 400	See Ordering Options Table

MDC Series Dual In-Line, High Current, 50 – 630 VDC

Capacitance Range: 0.033 to 15 µF • **Temperature Range:** −55°C to +125°C

Legacy Part Number System



MDC	10	333	K	50	A52	P3	TUBE
Series	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Number of Leads per Side	Packaging Code
Dual In-Line, Metallized Polyester	10 15	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5 K = ±10% Other tolerances on request	50 100 250 400 630	See Dimension Table	P3 = 3 leads P4 = 4 leads P5 = 5 leads P7 = 7 leads P8 = 8 leads	See Ordering Options Table

New KEMET Part Number System

F	15	3	A	A	333	K	050	T
Capacitor Class	Series	Number of Leads per Side	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging Code
F = Film	Dual In-Line, Metallized Polyester	3 = 3 leads 4 = 4 leads 5 = 5 leads 7 = 7 leads 8 = 8 leads	A = 10 B = 15	A = Standard box size	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5 K = ±10% Other tolerances on request	050 = 50 100 = 100 250 = 250 400 = 400 630 = 630	See Ordering Options Table

Polyester (PET) (cont.)

MDS Series Dual In-Line Low Profile, High Current, 50 – 630 VDC

Capacitance Range: 0.033 to 6.8 µF • **Temperature Range:** −55°C to +125°C

Legacy Part Number System

MDS	10	333	K	50	A52	P3	TUBE
Series	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Number of Leads per Side	Packaging Code
Dual In-Line, Metallized Polyester	10 15	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5 K = ±10% Other tolerances on request	050 = 50 100 = 100 250 = 250 400 = 400 630 = 630	See Dimension Table	P3 = 3 leads P4 = 4 leads P5 = 5 leads	See Ordering Options Table

New KEMET Part Number System

F	17	3	A	A	333	K	050	T
Capacitor Class	Series	Number of Leads per Side	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging Code
F = Film	Dual In-Line, Metallized Polyester	3 = 3 leads 4 = 4 leads 5 = 5 leads	A = 10 B = 15	A = Standard box size	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5 K = ±10% Other tolerances on request	050 = 50 100 = 100 250 = 250 400 = 400 630 = 630	See Ordering Options Table

Polyethylene Naphthalate (PEN)

LDE Series Unencapsulated Stacked Chip, Size 1206 – 6054, 50 – 1,000 VDC (Automotive Grade)

Capacitance Range: 0.001 to 4.7 µF • **Temperature Range:** −55°C to +125°C

LDE	C	C	2560	M	A	5	N	00
Series	Rated Voltage (VDC)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Dielectric	Version	Packaging Code	Internal Use
Metallized PEN	C = 50 D = 63 E = 100 I = 250 M = 400 P = 630 Q = 1000	See Dimension Table	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	K = ±10% M = ±20% J = ±5% on request	A = PEN	5 = Standard 0 = Miniature	See Ordering Options Table	00 (Standard)

Polyethylene Naphthalate (PEN) (cont.)

GMC Series Encapsulated Stacked, Size 2220 – 6560, 50 – 630 VDC

Capacitance Range: 0.001 to 5.6 µF • **Temperature Range:** −55°C to +125°C

Legacy Part Number System

GMC	5.7	102	K	50	J31	TR12
Series	Chip Length (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Packaging Code
Metallized PEN	5.7 7.3 10.2 12.7 16.5	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5% K = ±10% Other tolerances on request	50 63 100 250 400 630	See Dimension Table	See Ordering Options Table

New KEMET Part Number System

F	115	P	L	102	K	050	V
Capacitor Class	Series	Chip Size	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging Code
F = Film	Metallized PEN	P = 2220 S = 2824 W = 4036 Y = 5045 Z = 6560	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5% K = ±10% Other tolerances on request	050 = 50 063 = 63 100 = 100 250 = 250 400 = 400 630 = 630	See Ordering Options Table

GPC Series Encapsulated Double Metallized, Size 2824 – 6560, 63 – 1,000 VDC

Capacitance Range: 470 pF to 1.0 µF • **Temperature Range:** −55°C to +125°C

Legacy Part Number System

GPC	7.3	471	K	63	K31	TR12
Series	Chip Length (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Packaging Code
Double Metallized PEN	7.3 10.2 12.7 16.5	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	K = ±10% M = ±20% Other tolerances on request	63 100 160 250 400 630 1,000	See Dimension Table	See Ordering Options Table

New KEMET Part Number System

F	117	S	G	471	K	063	V
Capacitor Class	Series	Chip Size	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging Code
F = Film	Double Metallized PEN	S = 2824 W = 4036 Y = 5045 Z = 6560	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	K = ±10% M = ±20% Other tolerances on request	063 = 63 100 = 100 160 = 160 250 = 250 400 = 400 630 = 630 1K0 = 1,000	See Ordering Options Table

Metallized Polyphenylene Sulfide (PPS)

LDB Series Unencapsulated Stacked Chip, Size 1206 – 1812, 16 & 50 VDC

Capacitance Range: 0.0033 to 0.1 µF • **Temperature Range:** −55°C to +125°C

LDB	A	A	2120	G	C	5	N	0
Series	Rated Voltage (VDC)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Dielectric	Version	Packaging Code	Internal Use
Metallized PPS	A = 16 C = 50	See Dimension Table	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	G = ±2% J = ±5%	C = PPS	5 = Standard	See Ordering Options Table	0 (Standard)

SMC Series Encapsulated Stacked, Size 2220 – 6560, 50 – 400 VDC

Capacitance Range: 0.001 to 3.3 µF • **Temperature Range:** −55°C to +125°C

Legacy Part Number System

SMC	5.7	102	J	50	J31	TR12
Series	Chip Length (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Packaging Code
Metallized PPS	5.7 7.3 10.2 12.7 16.5	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	G = ±2% H = ±2.5% J = ±5%	50 100 250 400	See Dimension Table	See Ordering Options Table

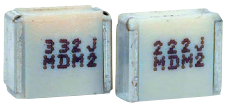
New KEMET Part Number System

F	125	P	L	102	J	050	V
Capacitor Class	Series	Chip Size	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging Code
F = Film	Metallized PPS	P = 2220 S = 2820 W = 4036 Y = 5045 Z = 6560	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	G = ±2% R = ±2.5% J = ±5%	050 = 50 100 = 100 250 = 250 400 = 400	See Ordering Options Table

Metallized Polyphenylene Sulfide (PPS) (cont.)

SPC Series Encapsulated Double Metallized, Size 2824 – 6560, 100 – 630 VDC

Capacitance Range: 470 pF to 0.68 µF • **Temperature Range:** −55°C to +125°C



Legacy Part Number System

SPC	7.3	471	K	100	K31	TR12
Series	Chip Length (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Packaging Code
Double Metallized PPS	7.3 10.2 12.7 16.5	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	G = ±2% H = ±2.5% J = ±5% K = ±10%	100 250 400 630	See Dimension Table	See Ordering Options Table

New KEMET Part Number System

F	127	S	G	471	K	100	V
Capacitor Class	Series	Chip Size	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging Code
F = Film	Double Metallized PPS	S = 2824 W = 4036 Y = 5045 Z = 6560	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	G = ±2% R = ±2.5% J = ±5% K = ±10%	100 250 400 630	See Ordering Options Table

Y2 Class

SMP253 Series Metallized Impregnated Paper, 250 VAC

Capacitance Range: 1,000 to 4,700 pF • **Temperature Range:** −40°C to +100°C

Legacy Part Number System

SMP253	M	A	4100	M	TR24
Series	Rated Voltage (VAC)	Chip Length (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
Y2, Metallized Paper	M = 250	A = 12.7	Digits 2 – 4(3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	M = ±20%	See Ordering Options Table

New KEMET Part Number System

P	101	AA	102	M	250	V
Capacitor Class	Series	Chip Size	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	Y2, Metallized Paper	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20%	250 = 250	See Ordering Options Table

Film Capacitors
Power & Application Optimized – Power Film

Axial

C4C Series, Axial Round, 850 – 3,000 VDC/450 – 750 VAC
Capacitance Range: 0.0068 to 2.5 µF • **Temperature Range:** −40°C to +85°C

C4	C	A	M	U	B	3100	AA	0	J
Series	Type	Fire Protection	Rated Voltage (VDC)	Insulation	Lead Diameter (mm)	Capacitance Code (pF)	Lead and Packaging Code	Capacitor Length (mm)	Tolerance
C4 = MKP capacitors	C = Round body, snubber application	A = No fire retardant S = Fire retardant (on request)	M = 850 P = 1,200 W = 2,000 Y = 3,000	U = Polyester tape & resin protection 0 = Uninsulated (on request)	B = 0.8 C = 1.0 D = 1.2	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	AA (Standard)	0 = 33 1 = 44 3 = 58	J = 5% K = 10%

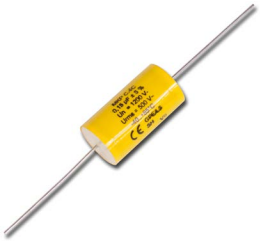
C4DC Series, GTO Snubbing, 400 – 1,400 VDC/160 – 700 VAC
Capacitance Range: 0.5 to 6 µF • **Temperature Range:** −40°C to +85°C

C4DC	M	A	Q	4150	AA0	J
Series	Rated Voltage (VDC)	Case	Terminal Style	Capacitance Code (pF)	Internal Code	Tolerance
C4DC = MKP, GTO Application	M = 850 N = 1000 R = 1400	A = Axial plastic case	Q = M8 Threaded Inserts	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	AA0 = Standard	J = 5% K = 10%

C4DR Series, GTO Clamping, 400 – 3,000 VDC/160 – 1,000 VAC
Capacitance Range: 1 to 220 µF • **Temperature Range:** −40°C to +85°C

C4DR	F	A	Q	5250	AA0	J
Series	Rated Voltage (VDC)	Case	Terminal Style	Capacitance Code (pF)	Internal Code	Tolerance
C4DR = MKP, Clamping Application	F = 400 H = 600 J = 700 M = 850 P = 1,200 S = 1,500 Y = 3,000	A = Axial plastic case	Q = M8 threaded inserts	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	AA0 = Standard	J = 5% K = 10%

C4G Series, Axial Round, 250 – 850 VDC/160 – 450 VAC
Capacitance Range: 0.15 to 40 µF • **Temperature Range:** −40°C to +85°C



C4	G	A	D	U	B	4100	AA	4	J
Series	Type	Fire Protection	Rated Voltage (VDC)	Insulation	Lead Diameter (mm)	Capacitance Code (pF)	Lead and Packaging Code	Capacitor Length (mm)	Tolerance
C4 = MKP capacitors	G = Round body, switching application	A = No fire retardant S = Fire retardant (on request)	D = 250 F = 400 H = 600 J = 700 M = 850	U = Polyester tape & resin protection 0 = Uninsulated (on request)	B = 0.8 C = 1.0 D = 1.2	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	AA (Standard)	4 = 20.5 5 = 28 0 = 33 1 = 44 3 = 58	J = 5% K = 10%

Radial

C4AE Series, Radial, 2 or 4 Leads, 450 – 1,100 VDC, for DC Link

Capacitance Range: 1 to 100 µF • **Temperature Range:** −40°C to +105°C

C4	A	E	G	B	W	4 4 5 0	A	1	W	J
Series			DC Voltage	Case Code	Terminals Code	Capacitance Code (pF)	Variants	Terminals Diameter (mm)	Case Letter[2]	Tolerance
C4 = MKP Capacitors	A = Box - Wire Terminals	E = DC Link	E = 300 V G = 450 V H = 600 V I = 800 V J = 700 V K = 750 V L = 500 V M = 850 V N = 1000 V O = 900 V Q = 1100 V U = 1300 V	B = Box plastic case	U = Single copper wire W = Double copper wire Z = Special wire	Digits 9, 10, & 11 indicate the first 3 digits of capacitance value. Digit 8 indicates the number of zeroes that must be added to obtain rated capacitance in pF.	A = Standard B = Special H[1] = 100°C	1 = 0.8 2 = 1 3 = 1.2	0, A, B, C, D, E, F, G, H, J, L, M, N, W, X, Y, 1, 2	J = 5% K = 10%

C4AS Series, 2 or 4 Leads, 850 – 3,000 VDC/500 – 750 VAC

Capacitance Range: 0.022 to 5 µF • **Temperature Range:** −40°C to +85°C

C4	AS	M	B	U	3150	A3	A	J
Series	Type	Rated Voltage (VDC)	Case	Number of Leads	Capacitance Code (pF)	Lead Diameter (mm)	Size Code	Tolerance
C4 = MKP Capacitors	AS = Radial box, snubber application	M = 850 N = 1,000 P = 1,200 W = 2,000 Y = 3,000	B = Plastic box with epoxy resin sealing	U = 2 lead W = 4 lead	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	A1 = 0.8 A3 = 1.2	See Dimension Table	J = 5% K = 10%

C4AT Series, 2 or 4 Leads, 250 – 850 VDC/160 – 450 VAC

Capacitance Range: 0.22 to 60 µF • **Temperature Range:** −40°C to +85°C

C4	AT	D	B	U	4100	A3	0	J
Series	Type	Rated Voltage (VDC)	Case	Number of Leads	Capacitance Code (pF)	Lead Diameter (mm)	Size Code	Tolerance
C4 = MKP Capacitors	AT = Radial box, switching application	D = 250 F = 400 G = 450 H = 600 J = 700 M = 850	B = Plastic box with epoxy resin sealing	U = 2 lead W = 4 lead	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	A1 = 0.8 A3 = 1.2	See Dimension Table	J = 5% K = 10%

C4BS Series, IGBT Box, 850 – 3,000 VDC/550 – 750 VAC

Capacitance Range: 0.047 to 5 µF • **Temperature Range:** −40°C to +85°C

C4	BS	M	B	X	3470	Z	E	E	J
Series	Type	Rated Voltage (VDC)	Case	Number of Leads	Capacitance Code (pF)	Internal Code	Termination Style	Size Code	Tolerance
C4 = MKP Capacitors for Power Applications	BS = Radial box with tab terminals, IGBT application	M = 850 N = 1,000 P = 1,200 W = 2,000 Y = 3,000	B = Plastic box with epoxy resin sealing	X = Standard	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	Z = Standard	A = Style A B = Style B E = Style E F = Style F G = Style G	See Dimension Table	J = 5% K = 10%

Radial (cont.)

C4BT Series, IGBT Box, 250 – 850 VDC/160 – 450 VAC

Capacitance Range: 1 to 60 µF • **Temperature Range:** −40°C to +85°C

C4	BT	F	B	X	4330	Z	E	E	J
Series	Type	Rated Voltage (VDC)	Case	Number of Leads	Capacitance Code (pF)	Internal Code	Termination Style	Size Code	Tolerance
C4 = MKP Capacitors for Power Applications	BT = Radial box with tab terminals, switching application	F = 400 M = 850	B = Plastic box with epoxy resin sealing	X = Standard	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	Z = Standard	A = Style A E = Style E	See Dimension Table	J = 5% K = 10%

Screw/Faston Terminal

C4DE Series, Low Inductance DC Link, 400 – 1,000 VDC

Capacitance Range: 47 to 380 µF • **Temperature Range:** −40°C to +85°C

C4DE	F	P	Q	6175	A8T	K
Series	Rated Voltage (VDC)	Case & Fixing Bolt Code	Terminal Style	Capacitance Code (pF)	Internal Code	Tolerance
C4DE = MKP, DC Link Application	F = 400 H = 600 I = 800 N = 1,000	P = Cylindrical plastic case with fixing feet	Q = M8 threaded inserts	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	A8T = Standard	K = 10%

C44A Series, Aluminum Case, 400 – 1,500 VDC

Capacitance Range: 1 to 330 µF • **Temperature Range:** −40°C to +85°C

C44A	F	F	P	5150	ZA0	J
Series	Rated Voltage (VDC)	Case & Fixing Bolt Code	Terminal Style	Capacitance Code (pF)	Internal Code	Tolerance
C44A = MKP, General Purpose	F = 400 H = 600 J = 700 M = 850 P = 1,200 S = 1,500	F = Cylindrical aluminum case with M8 bolt G = Cylindrical aluminum case with M12 bolt	P = M6 Threaded posts R = M10 Threaded posts Q = M8 Threaded posts (on request) 2 = Simple faston 6.3 x 0.8 mm (on request) 3 = Double faston 6.3 x 0.8 mm (on request)	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	ZA0, ZB0, ZC0, ZD0, ZE0, ZF0, ZG0, ZH0 = Standard	J = 5% K = 10%

C44B Series, Aluminum Case, Snubber Applications, 1,200 – 2,400 VDC

Capacitance Range: 0.047 to 4 µF • **Temperature Range:** −40°C to +85°C

C44B	P	F	001	3100	ZB0	J
Series	Rated Voltage (VDC)	Case & Fixing Bolt Code	Terminal Style	Capacitance Code (pF)	Internal Code	Tolerance
C44B = MKP, Snubber Application	P = 1,200 W = 2,000 X = 2,400	F = Cylindrical aluminum case with M8 bolt G = Cylindrical aluminum case with M12 bolt	P = M6 Threaded posts 1 = Single fasten 2.8 x 0.8 mm	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	ZA0, ZB0, ZC0 = Standard	J = 5% K = 10%

C44H Series, 330 – 440 VAC, 700 – 1,000 VDC, for PFC and AC Filter
Capacitance Range: 100 to 600 µF • **Temperature Range:** −40°C to +75°C

C44H	L	G	P	6100	A	A	S	J
Series	Rated Voltage	Case & Fixing Bolt Code	Terminal Style	Capacitance Code (pF)	Internal Code	Internal Code		Tolerance
C44H = MKP Capacitors for AC filtering	L = 330 V_{rms} K = 440 V_{rms}	G = Cylindrical aluminum case with M12 bolt	P = M6 Threaded Posts R = M10 Threaded Posts	Digits 9-11 indicate the first three digits of the capacitance value. Digit 8 indicates the number of zeros to be added.	A = Standard Z = Special			J = 5% K = 10%

C44P/C20A Series, for PFC & AC Filter, 330 – 1,000 VAC, 700 – 2,300 VDC
Capacitance Range: 10 to 600 µF • **Temperature Range:** −40°C to +80°C

C	44	P	F		G	R	6	1	0	0	A	A	S	J
Series		Application	Rated Voltage (VAC)		Case Type	Terminal Style	Capacitance Code (pF)				Internal Code	Internal Codes		Tolerance
MKP Capacitors for Power Applications	44 = 250/440 V_{ac} 20 = 550/1,000 V_{ac}	AC Filter P = C44 A = C20	**For C44P:** F = 250 L = 330 K = 440	**For C20A:** K = 550 L = 640 Q = 780 Z = 1000	G = M12 bolt	R = Male M10	Digits 9, 10, & 11 indicate the first 3 digits of capacitance value. Digit 8 indicates the number of zeros that must be added to obtain rated capacitance in pF.				A = Standard Z = Special			J = 5% K = 10%

C44U Series, for DC Link, 700 – 1,300 VDC
Capacitance Range: 50 to 600 µF • **Temperature Range:** −40°C to +85°C

C4	4	U	Q	G	T	6	5	0	0	F	8	S	K
Series			DC Voltage	Case & Fixing	Terminals Code	Capacitance Code (pF)				Variants	Case Diameter	Film Type	Tolerance
MKP Capacitors for Power Applications	Cylindrical types	DC-Link	J = 700 V O = 900 V Q = 1100 V U = 1300 V	G = Cylindrical case with threaded bolt M12 E = Cylindrical case without threaded bolt	T = M6 female terminals Q = M8 male terminals Y = M8 female terminals	Digits 9, 10, & 11 indicate the first 3 digits of capacitance value. Digit 8 indicates the number of zeroes that must be added in order to obtain rated capacitance in pF.				A = 85°C Hot Spot temperature series F = 70°C Hot Spot temperature series	7 = 76 mm 8 = 85 mm	T = Standard film S = Segmented film	J = 5% K = 10%

C93 Series, Aluminum Case, Filter Applications, 400 – 600 VDC
Capacitance Range: 10 to 100 µF • **Temperature Range:** −25°C to +55°C

C93	0	Z	G	3	5500	ZA0	X
Series	Rated Voltage (VAC)	Internal Code	Case & Mounting	Terminal Style	Capacitance Code (pF)	Internal Code	Tolerance
C93 = Single Phase Power Factor Correction Capacitors	0 = 320 1 = 415 3 = 460	Z = Standard	G = Cylindrical aluminum case with M12 bolt	3 = Double fasten	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	ZA0, RA0 & RS0 = Standard	X = -5/+15%

Screw/Faston Terminal (cont.)

C9T Series, Aluminum Case, PFC & AC Filter, 415 – 690 VAC

Capacitance Range: 19.2 to 184.8 µF • **Temperature Range:** −25°C to +55°C

C9T	S	5	A	D	5308	AA0	X
Series	Type	Rated Voltage (VAC)	Terminal Style	Internal Connection	Capacitance Code (pF)	Internal Code	Tolerance
C9T = Cylindrical Three-Phase Capacitors	S = Slim	A = 525 D = 690 5 = 415 6 = 450	A = Single quick connect B = Double quick connect M = Screw Terminal	D = Delta Y = Star	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	AA0 = Standard	X = -5% / +15%

C27 Series, Plastic Case, 470 VAC

Capacitance Range: 1 to 100 µF • **Temperature Range:** −25°C to +100°C

C27	4	A	C	2	4100	AA	4	J
Series		Marking	Case & Fixing Bolt Code	Terminal Style	Capacitance Code (pF)	Packaging	Internal Use	Tolerance
C27 = Motor Run Capacitors	4 = 30,000 hours/420 VAC (Class A) or 10,000 hours/470 VAC (Class B) 6 = 10,000 hours/420 VAC (Class B) or 3,000 hours/470 VAC (Class C) 7 = 10,000 hours/275 VAC (Class C) or 1,000 hours/425 VAC (Class D)	A = C274 C = C276 L = C277	C = Cylindrical plastic case with M8 bolt	2 = Single fasten 6.3 x 0.8 3 = Double fasten 6.3 x 0.8 A = Polar cable (tinned end) B = Polar cable (untinned end) F = Bipolar cable (40 mm unsheathed, 8 mm exposed end)	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	AA, AF, AL, LG = Standard	0, 1, 2, 5 = Standard	J = 5%

C87 Series, Aluminum Case, 500 VAC

Capacitance Range: 1 to 80 µF • **Temperature Range:** −25°C to +85°C

C87	0	C	F	2	4300	AA	4	J
Series		Marking	Case & Fixing Bolt Code	Terminal Style	Capacitance Code (pF)	Packaging	Internal Use	Tolerance
C87 = Motor Run Capacitors	0 = 10,000 hours/420 VAC (Class B) or 3,000 hours/470 VAC (Class C) 8 = 30,000 hours/420 VAC (Class A) or 10,000 hours/470 VAC (Class B) 1 = Legacy (not for new design) 5 = Legacy (not for new design)	A, C, W = Standard	F = Cylindrical aluminum can with M8 bolt G = Cylindrical aluminum can with M12 bolt	2 = Single fasten 6.3 x 0.8 3 = Double fasten 6.3 x 0.8	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	AA= Standard	0, 1, 2, 4, 5 = Standard	J = 5% K = 10%

Cylindrical Case

C3B Series, Metalized Polypropylene, 250 VAC

Capacitance Range: 2 to 50 µF • **Temperature Range:** −25°C to +85°C

C3B	2A	C	5	5500	A	1	0	K
Series	Marking	Case	Terminal Style	Capacitance Code (pF)	Mounting	Internal Code	Discharge Resistor	Tolerance
C3B = Cylindrical Plastic Case	1 = Faston 2 = Push-in 3 = Stiff wires A = Standard Z = Special	A = No fixing bolt C = Metal fixing bolt D = Plastic fixing bolt E = Fixing feet	1 = Faston 4 = Integral deck 5 = Push-in A = PVC insulated/ L – 180 mm B = PVC insulated/ L– 250 mm C = PVC insulated/ L – 40 mm E = PVC insulated/ L – 80 mm F = PVC insulated/ L – 150 mm	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	A = Standard B = Mounted nut and washer C = Without nut and washer	0 – 9 = Standard	0 = With resistor 1 = No resistor	J = 5% K = 10%

C95 Series, Metalized Polypropylene, 250 VAC/450 VAC

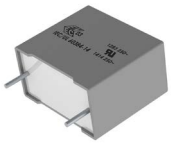
Capacitance Range: 2 to 60 µF • **Temperature Range:** −25°C to +100°C

C95	0	P	F	1	5500	AA	4	K
Series		Marking	Case	Terminal Style	Capacitance Code (pF)	Mounting	Size Code (mm)	Tolerance
C95 = Cylindrical Aluminum Case	0 = Parallel component 4 = Series component	P = Standard Z = Special	F = Metal case	1 = Fasten, 2.8 mm plus hole 4 = Push-in	Digits 2-4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	AA = Nut and washer supplied separately ZA = Nut and washer mounted ZB = Flanged nut supplied separately ZC = Flanged nut mounted ZD = Nut and washer not included ZE = Fasten, 2.8 mm w/ soldering hole ZF = Nut and washer supplied separately w/ fasten, 2.8 mm ZL = Nut and washer not included w/ fasten, 2.8 mm	0 = D – 25 1 = D – 30 2 = D – 35 3 = D – 40 4 = D – 45	X = 4% J = 5% K = 10%

Film Capacitors
Power & Application Optimized – High Voltage Transient Suppression

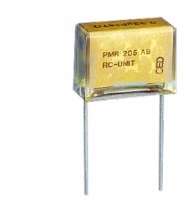
Radial

F43 Series, Integrated Resistor Metallized Polypropylene, 250 – 630 VDC
Capacitance Range: 0.01 to 1.0 µF • **Temperature Range:** −55°C to +100°C



F	43	K	N	3100	XX	01	M
Capacitor Class	Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Legacy PN: F New KEMET PN: Omit this character	RC Snubber, Metallized Polypropylene	I = 160 M = 200 P = 220 K = 275 (X2)	I = 15.0 N = 22.5 R = 27.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	Contact KEMET for packaging availability and details	00, 01, 04 (Standard)	K = ±10% M = ±20%

PMR205 Series Integrated Resistor Metallized Impregnated Paper, 125 VAC/250 VDC
Capacitance Range: 0.1 to 1.0 µF • **Temperature Range:** −40°C to +85°C



Legacy Part Number System

PMR205	A	B	6100	M	033	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Resistance (Ω)	Lead and Packaging Code
RC Snubber, Metallized Paper	A = 125	B = 15.2 C = 20.3 E = 25.4	Digits 2 – 4 (3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	M = ±20%	Resistance Value in Ω	See Ordering Options Table

New KEMET Part Number System

P	405	Q	E	104	M	125	A	H330
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	Resistance (Ω)
P = Metallized Paper	RC Snubber	Q = 15.2 C = 20.3 E = 25.4	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	125 = 125	See Ordering Options Table	H + first two digits representing significant figures. Third digit specifies number of zeros.

P409 Series Integrated Resistor Metallized Impregnated Paper, Class X2, 275 VAC
Capacitance Range: 0.047 to 0.47 µF • **Temperature Range:** −40°C to +85°C

P	409	Q	M	473	M	275	A	H470
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	Resistance (Ω)
P= Metallized Paper	RC Snubber	Q = 15.2 C = 20.3 E = 25.4	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	275 = 275	See Ordering Options Table	H + first two digits representing significant figures. Third digit specifies number of zeros.

Radial (cont.)

P410 Series, Integrated 100 Ω Resistor Metallized Impregnated Paper, 300 VAC

Capacitance Range: 0.022 to 0.1 µF • **Temperature Range:** −40°C to +85°C

P	410	Q	M	223	M	300	A	H101
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	Resistance (Ω)
P= Metallized Paper	RC Snubber	Q = 15.2 C = 20.3 E = 25.4	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	300 = 300	See Ordering Options Table	H + first two digits representing significant figures. Third digit specifies number of zeros.

PMZ2035 Series, Integrated 100 Ω Resistor Metallized Impregnated Paper, 440 VAC/1,000 VDC

Capacitance Range: 0.1 µF • **Temperature Range:** −40°C to +85°C

Legacy Part Number System

PMZ2035	R	E	6100	K	150	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Resistance (Ω)	Lead and Packaging Code
RC Snubber, Metallized Paper	R = 440	E = 25.4	Digits 2 – 4 (3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	K = ±10% M = ±20%	Resistance Value in Ω	See Ordering Options Table

New KEMET Part Number System

P	435	E	J	104	K	440	A	H151
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	Resistance (Ω)
P = Metallized Paper	RC Snubber	E = 25.4	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	440 = 440	See Ordering Options Table	H + first two digits representing significant figures. Third digit specifies number of zeros.

Film Capacitors
Power & Application Optimized – Low Voltage Transient Suppression

Radial

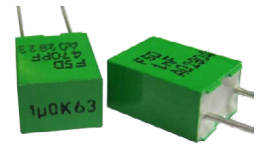
F5A Series Metallized Polyester Film with Integrated Varistor, 18 – 63 VDC
Capacitance Range: 0.1 to 2.2 µF • **Temperature Range:** −55°C to +125°C

F5A	H	C	4100	DQ	A	6	K
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Varistor Voltage V_v @ 1 mA	Size Code	Capacitance Tolerance
Film Capacitor/ Ceramic Varistor Unit	B = 18 H = 25 J = 30 N = 45 C = 50 D = 63	C = 5 F = 10	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	See Varistor Voltage Table	See Dimension Table	K = ±10% M = ±20%

F5B Series Metallized Polyester Film with Integrated Suppression Diode, 18 – 63 VDC
Capacitance Range: 0.1 to 2.2 µF • **Temperature Range:** −55°C to +125°C

F5B	H	C	4100	DQ	A	7	K
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Diode Breakdown Voltage V_{BR} @ 1 mA	Size Code	Capacitance Tolerance
Film Capacitor/ Diode Unit	B = 18 H = 25 J = 30 N = 45 C = 50 D = 63	C = 5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	See Diode Breakdown Voltage Table	See Dimension Table	K = ±10% M = ±20%

F5D Series Metallized Polyester Film with Integrated Ceramic Capacitor, 63 – 100 VDC
Capacitance Range: 0.1 to 2.2 µF • **Temperature Range:** −55°C to +125°C

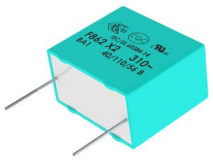


F5D	D	C	3100	DQ	W	5	M
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Ceramic Capacitor Value	Size Code	Capacitance Tolerance
Film Capacitor/ Ceramic Capacitor Unit	D = 63 E = 100	C = 5 mm F= 10 mm	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	See Ceramic Capacitor Table	See Dimension Table	K = ±10% M = ±20%

Film Capacitors
Power & Application Optimized – Capacitive AC Power Supply

Radial

F862 Series, Metallized Polypropylene, 310 VAC (Automotive Grade)
Capacitance Range: 0.1 to 4.7 µF • **Temperature Range:** −40°C to +110°C

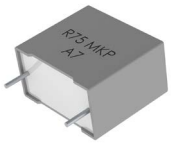


F	862	B	C	104	M	310	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Voltage (VAC)	Lead and Packaging Code
F = Film	X2, Metallized Polypropylene	B = 15 D = 22.5 F = 27.5	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	310	See Ordering Options Table

R47 Series, Metallized Polypropylene, 440 VAC (Automotive Grade)
Capacitance Range: 0.0047 to 2.2 µF • **Temperature Range:** −40°C to +110°C

R47	4	F	1470	00	01	M
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
X2, Metallized Polypropylene	4 = 440	F = 10.0 I = 15.0 N = 22.5 R = 27.5 W = 37.5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	01 02 03	K = ±10% M = ±20%

R75 2/L Series Metallized Polypropylene, 230 VAC/250 VAC
Capacitance Range: 0.01 to 10 µF • **Temperature Range:** −55°C to +105°C



R75	2 / L	R	3680	DQ	3	–	K
Series	Voltage (AC)	Lead Spacing (mm)	Capacitance Code (pF)	Ordering Code	Electrical Characteristics	Internal use	Capacitance Tolerance
	2 = 230 V L = 250 V	I = 15 N = 22.5 R = 27.5 W = 37.5	2 significant digits + number of zeros	DQ GY CK AA 40 50	Dimensions and electrical characteristics (0 – 9)		J = ±5% K = ±10% M = ±20%

Radial (cont.)

PME271E Series Metallized Impregnated Paper, Class X1, 300 VAC

Capacitance Range: 0.01 to 0.22 µF • **Temperature Range:** −40°C to +110°C

Legacy Part Number System

PME271	E	(D)	510(0)	M	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
X1, Metallized Paper	E = 300	Blank = Standard D = 22.5	Digits 2 – 4(3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	See Ordering Options Table

New KEMET Part Number System

P	277	Q	E	103	M	300	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	X1, Metallized Paper	Q = 15.2 C = 20.3 S = 22.5 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	300 = 300	See Ordering Options Table

PME271M Series Metallized Impregnated Paper, Class X2, 275 VAC

Capacitance Range: 0.001 to 0.6 µF • **Temperature Range:** −40°C to +110°C

Legacy Part Number System

PME271	M	(B)	610(0)	M	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
X2, Metallized Paper	M = 275	Blank = Standard A = 10.2 B = 15.2 D = 22.5	Digits 2 – 4(3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	See Ordering Options Table

New KEMET Part Number System

P	276	Q	E	104	M	275	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	X2, Metallized Paper	H = 10.2 Q = 15.2 C = 20.3 S = 22.5 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	275 = 275	See Ordering Options Table

Supercapacitors

SUPERCAPACITORS				
Small Cell		Large Cell		
Radial	Surface Mount	Snap-In	Screw Terminal	Bank Module
FA 5.5 V & 11 V 70°C	FC 3.5 V – 5.5 V 70°C	S501 2.7 V 65°C	S301 2.7 V 65°C	S02 16 V – 48 V 65°C
FE 5.5 V 70°C			S301 Development Balancing Kit	
FG 3.5 V & 5.5 V 70°C & 85°C				
FM 3.5 V, 5.5 V & 6.5 V 70°C & 85°C				
FR 5.5 V 85°C				
FS 5.5 V, 11 V & 12 V 70°C				
FT 5.5 V 85°C				
FY 5.5 V 70°C				
HV 2.5 V & 2.7 V 60°C & 70°C				

Radial

FA Series, 5.5 V – 11 V, 70ºC

Capacitance Range: 0.022 to 1 F • **Temperature Range:** −25°C to +70°C

FA	0H	104	Z	F
Series	Maximum Operating Voltage	Capacitance Code (F)	Capacitance Tolerance	Environmental
FA	0H = 5.5 VDC 1A = 11.0 VDC	First two digits represent significant figures. Third digit specifies number of zeros.	Z = -20/+80%	F = Lead-free

FE Series, 5.5 V, 70ºC

Capacitance Range: 0.047 to 1.5 F • **Temperature Range:** −40°C to +70°C

FE	0H	104	Z	F
Series	Maximum Operating Voltage	Capacitance Code (F)	Capacitance Tolerance	Environmental
FE	0H = 5.5 VDC	First two digits represent significant figures. Third digit specifies number of zeros.	Z = -20/+80%	F = Lead-free

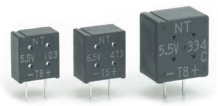
FG Series, 3.5 V – 5.5 V, 70ºC & 85ºC

Capacitance Range: 0.01 to 4.7 F • **Temperature Range:** −25°C to +70°C (FG, FGH) and −40°C to +85°C (FGR)

FG	0H	104	Z	F
Series	Maximum Operating Voltage	Capacitance Code (F)	Capacitance Tolerance	Environmental
FG FGH FGR	0V = 3.5 VDC 0H = 5.5 VDC	First two digits represent significant figures. Third digit specifies number of zeros.	Z = -20/+80%	F = Lead-free

FM Series, 3.5 V – 6.5 V, 70ºC & 85ºC

Capacitance Range: 0.01 to 0.22 F • **Temperature Range:** −25°C to +70°C (all types except FMR) and −40°C to +85°C (FMR)



FM	0H	223	Z	F	TP	16
Series	Maximum Operating Voltage	Capacitance Code (F)	Capacitance Tolerance	Environmental	Tape Type	Height (excluding lead)
FM FME FML FMR FMC	0V = 3.5 VDC 0H = 5.5 VDC 0J = 6.5 VDC	First two digits represent significant figures. Third digit specifies number of zeros.	Z = -20/+80%	F = Lead-free	TP = AMMO -L1 = Transverse mounting Blank = Bulk	16 = 16 mm 18 = 18 mm Blank = Bulk

FR Series, 5.5 V, 85ºC

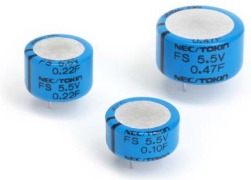
Capacitance Range: 0.022 to 1 F • **Temperature Range:** −40°C to +85°C

FR	0H	104	Z	F
Series	Maximum Operating Voltage	Capacitance Code (F)	Capacitance Tolerance	Environmental
FR	0H = 5.5 VDC	First two digits represent significant figures. Third digit specifies number of zeros.	Z = -20/+80%	F = Lead-free

Radial (cont.)

FS Series, 5.5 V – 12 V, 70ºC

Capacitance Range: 0.022 to 5 F • **Temperature Range:** −25°C to +70°C



FS	0H	104	Z	F
Series	Maximum Operating Voltage	Capacitance Code (F)	Capacitance Tolerance	Environmental
FS	0H = 5.5 VDC 1A = 11.0 VDC 1B = 12.0 VDC	First two digits represent significant figures. Third digit specifies number of zeros.	Z = -20/+80%	F = Lead-free

FT Series, 5.5 V, 85ºC

Capacitance Range: 0.1 to 5.6 F • **Temperature Range:** −40°C to +85°C

FT	0H	104	Z	F
Series	Maximum Operating Voltage	Capacitance Code (F)	Capacitance Tolerance	Environmental
FT FTW	0H = 5.5 VDC	First two digits represent significant figures. Third digit specifies number of zeros.	Z = -20/+80%	F = Lead-free

FY Series, 5.5 V, 70ºC

Capacitance Range: 0.01 to 2.2 F • **Temperature Range:** −25°C to +70°C

FY	0H	104	Z	F
Series	Maximum Operating Voltage	Capacitance Code (F)	Capacitance Tolerance	Environmental
FYD FYH FYL	0H = 5.5 VDC	First two digits represent significant figures. Third digit specifies number of zeros.	Z = -20/+80%	F = Lead-free

HV Series, 2.5 V – 2.7 V, 60ºC & 70ºC

Capacitance Range: 1 to 200 F • **Temperature Range:** −25°C to +60°C and −25°C to +70°C

HVZ	0E	105	N	F	-LT
Series	Maximum Operating Voltage	Capacitance Code (F)	Capacitance Tolerance	Environmental	Terminal
HVZ	0E = 2.7 VDC (50 F type has 2.5 VDC)	First two digits represent significant figures. Third digit specifies number of zeros.	N = ±30%	F = Lead-free	-LT = Snap-in Blank = Standard

Surface Mount

FC Series, 3.5 V – 5.5 V, 70ºC

Capacitance Range: 0.1 to 1 F • **Temperature Range:** −25°C to +70°C

FC	0H	104	Z	F	TB	R	24	-SS
Series Surface Mount	Maximum Operating Voltage	Capacitance Code (F)	Capacitance Tolerance	Environmental	Tape Type	Orientation	Tape Width	C-Spec
FCS FC	0V = 3.5 VDC 0H = 5.5 VDC	First two digits represent significant figures. Third digit specifies number of zeros.	Z = -20/+80%	F = Lead-free	TB = Embossed	R = Positive electrode forward	24 = 24 mm 32 = 32 mm 44 = 44 mm	-SS = 3 digit serial number marked on top Blank = No serial number marking

Supercapacitors
Large Cell

Snap-In

S501 Series, 2.7 V, 65ºC
Capacitance Range: 100 to 350 F • **Temperature Range:** −40°C to +65°C

S501	DC	107	V	2R7	A
Series	Size Code (D x L)	Capacitance Code (µF)	Capacitance Tolerance	Rated Voltage (VDC)	Termination Code
Supercapacitor, Snap-In Termination	DC = 22 x 45 LF = 35 x 60 LI = 35 x 69 LR = 35 x 89	First two digits represent significant figures. Third digit specifies number of zeros.	V = -5/+10% W = -0/+20%	2R7 = 2.7	A = 2 pin, 10 mm lead spacing, 5.9 mm terminal length U = 4 pin standard snap-in style

Screw Terminal

S301 Series, 2.7 V, 65ºC
Capacitance Range: 1,200 to 3,000 F • **Temperature Range:** −40°C to +65°C

S301	RV	308	T	2R7	W
Series	Size Code (D x L)	Capacitance Code (µF)	Capacitance Tolerance	Rated Voltage (VDC)	Termination Code
Supercapacitor, Screw Termination	RP = 60.5 x 80.5 RS = 60.5 x 108.5 RV = 60.5 x 144	First two digits represent significant figures. Third digit specifies number of zeros.	R = -0%	2R7 = 2.7	2 threaded inserts per end, 20 mm lead spacing, M6

S301 Development Balancing Kit
Capacitance Range: 1,200 to 3,000 F • **Temperature Range:** −40°C to +105°C

S301	RV	308	T	2R7	W
Series	Size Code (D x L)	Capacitance Code (µF)	Capacitance Tolerance	Rated Voltage (VDC)	Termination Code
Supercapacitor, Screw Termination	RP = 60.5 x 80.5 RS = 60.5 x 108.5 RV = 60.5 x 144	First two digits represent significant figures. Third digit specifies number of zeros.	R = -0%	2R7 = 2.7	2 threaded inserts per end, 20 mm lead spacing, M6

Bank Module

S02 Series, Modules with Cells in Extruded Metal Holder, 16 V – 48 V, 65ºC
Capacitance Range: 165 to 500 F • **Temperature Range:** −40°C to +65°C

S02	A	T	5006	R	016	A	U808
Series	Configuration Code Balancing	Configuration Code Capacitor Type	Capacitance Code (µF)	Capacitance Tolerance	Rated Voltage (VDC)	Termination Code	C-Spec
Supercapacitor, Bank Modules with cells in extruded metal holder	A = Analog with clamping	T =Array, 2 dimensions D = Array, 3 dimensions	First three digits represent significant figures. Fourth digit specifies number of zeros.	R = -0%	016 = 16 V 048 = 48 V	A = The first mechanical configuration of a particular part number B = Refers only to part number S02AT1656R048BU808	Blank = No monitor U808 = Digital Overvoltage and analog over temperature monitor

Tantalum Capacitors

TANTALUM SURFACE MOUNT CAPACITORS

Standard Tantalum	Polymer Tantalum KEMET Organic Capacitor (KO-CAP)	Polymer Aluminum Organic Capacitor (AO-CAP)	High Temperature	High Reliability Commercial Off-The-Shelf (COTS)	MIL-PRF CWR Series	Fused	Automotive Grade	Space Grade
T489 Low DC Leakage MnO_2	T520 105°C Rated	A700 125°C Rated	T498 150°C Rated MnO_2	T428 High Volumetric Efficiency Facedown MnO_2	T409 (CWR09) MIL-PRF-55365/4	T496 MnO_2	T489 Low DC Leakage MnO_2	T493 COTS MnO_2 (CWR11)
T490 High CV MnO_2	T521 High Voltage		T499 175°C Rated MnO_2	T493 MnO_2 (CWR11)	T419 (CWR19) MIL-PRF-55365/11		T491 MnO_2	T496 COTS Fail-Safe Fused MnO_2
T491 Industrial Grade MnO_2	T522 Reduced Leakage		T500 200°C Rated MnO_2	T495 Surge Robust MnO_2 DLA 95158	T429 (CWR29) MIL-PRF-55365/11		T494 Low ESR MnO_2	T497 COTS MnO_2 (CWR09/19/29)
T494 Industrial Grade Low ESR MnO_2	T525 125°C Rated			T497 MnO_2 (CWR09/19/29)	T492 (CWR11) MIL-PRF-55365/8		T495 Surge Robust MnO_2	T510 Multiple Anode MnO_2
T495 Surge Robust MnO_2	T527 Facedown Terminal			T496 Fused MnO_2			T498 150°C Rated MnO_2	
T510 Multiple Anode MnO_2	T528 Low ESL/Facedown Terminal			T513 Multiple Anode MnO_2			T499 175°C Rated MnO_2	
TSM Tantalum Stack MnO_2	T529 Small Case Size Substrate Terminal			T540 Single Anode Polymer			T510 Multiple Anode MnO_2	
	T530 High Capacitance 125°C Rated			T541 Multiple Anode Polymer			T591 High Performance Polymer	
	T545 High Energy			T543 Polymer				
	TSP Tantalum Stack Polymer							

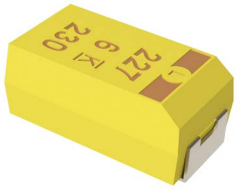
TANTALUM THROUGH-HOLE CAPACITORS

Hermetically Sealed Axial		Radial Dipped	Molded Axial	Molded Radial
T110 MIL-PRF-39003 Polar & T212 (CSR13)	T225 High Temperature Solder (CSR09)	T35X Polar	T322/T323 (CX01/CX05) MIL-PRF-49137/1 & 5	T330 Precision Molded Polar
T111 MIL-PRF-39003 Non-Polar & T213 (CSR91)	T245 High Temperature Solder (CSR23)	T363 (CX02) & T369 (CX12) MIL-PRF-49137/2		T340 Precision Molded Polar
T140 MIL-PRF-39003 Polar & T242 (CSR23)	T252 MIL-PRF-39003 (CSR33)	T368 High Capacitance		T370 & T378 (CX06) MIL-PRF-49137/6
T210/T240/GR500 High Reliability	T255 High Temperature Solder (CSR33)	T396 & T398 3 Leaded		
T215 High Temperature Solder (CSR13)	T262 MIL-PRF-30093 (CSR21)			
T216 MIL-PRF-39003 (CSS13) & T256 (CSS33)	T550 Polymer 105°C Rated			
T222 MIL-PRF-39003 Polar Miniature (CSR09)	T551 Polymer 125°C Rated			

Standard Tantalum

T489 Series Low DC Leakage MnO_2

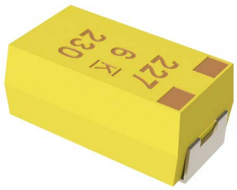
Capacitance Range: 0.1 to 470 µF • **Temperature Range:** −55°C to +125°C



T	489	B	156	M	16	A	T	E800
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR
T = Tantalum	Low DC Leakage Series	A, B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) G = Gold Plated	Last three digits specify ESR in mΩ. (800 = 800 mΩ)

T490 Series Commercial Grade High CV MnO_2

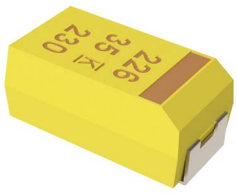
Capacitance Range: 47 to 470 µF • **Temperature Range:** −55°C to +40°C



T	490	B	227	M	006	A	T	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Packaging (C-Spec)
T = Tantalum	Industrial	A, B, T	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) G = Gold Plated (A, B only)	Blank = 7" Reel 7280 = 13" Reel

T491 Series Industrial Grade MnO_2

Capacitance Range: 0.1 to 1,000 µF • **Temperature Range:** −55°C to +125°C

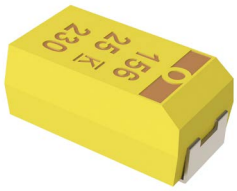


T	491	X	157	K	020	A	T	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Packaging (C-Spec)
T = Tantalum	Industrial	A, B, C, D, E, S, T, U, V, W, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	2R5 = 2.5 V 003 = 3 V 004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated* H = Standard Solder Coated (SnPb 5% Pb minimum) G = Gold Plated (A, B, C, D, X only) N = Non-Magnetic 100% Tin (Sn) M = Non-Magnetic (SnPb)	Blank = 7" Reel 7280 = 13" Reel

Standard Tantalum (cont.)

T494 Series Industrial Grade Low ESR MnO_2

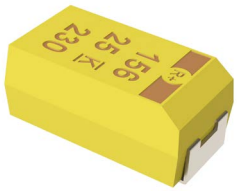
Capacitance Range: 0.1 to 1,000 µF • **Temperature Range:** −55°C to +125°C



T	494	T	336	M	004	A	T	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Packaging (C-Spec)
T = Tantalum	Industrial - Low ESR	A, B, C, D, E, S, T, U, V, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	2R5 = 2.5 V 003 = 3 V 004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) G = Gold Plated (A, B, C, D, X only)	Blank = 7" Reel 7280 = 13" Reel

T495 Series Surge Robust MnO_2

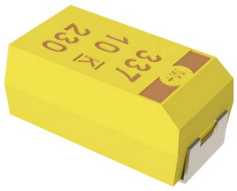
Capacitance Range: 0.47 to 1,000 µF • **Temperature Range:** −55°C to +125°C



T	495	X	107	M	010	A	T	E045	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	Surge Robust Low ESR	A, B, C, D, E, M, T, U, V, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	2R5 = 2.5 V 004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) G = Gold Plated (A, B, C, D, X only)	Last three digits specify ESR in mΩ. (45 = 45 mΩ)	Blank = 7" Reel 7280 = 13" Reel

T510 Series Multiple Anode MnO_2

Capacitance Range: 10 to 1,000 µF • **Temperature Range:** −55°C to +125°C

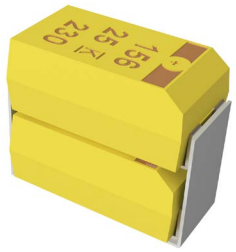


T	510	X	477	M	006	A	T	E800	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	Multiple Anode Low ESR	E, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A Z = N/A	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) G = Gold Plated (A, B, C, D, X only)	Last three digits specify ESR in mΩ. (800 = 800 mΩ)	Blank = 7" Reel 7280 = 13" Reel

Standard Tantalum (cont.)

Tantalum Stack MnO_2 (TSM) Series

Capacitance Range: 9.4 to 2,000 µF • **Temperature Range:** −55°C to +125°C



T	SM	2D	447	K	10	A	H	61	20	D493
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	ESR	C-Spec 2
T = Tantalum	Stacks MnO_2 Cathode	2C, 3C, 4C, 6C, 2D, 3D, 4D, 6D, 2X, 3X, 4X, 6X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A B = 0.1%/1,000 hours C = 0.01%/1,000 hours	H = Standard Solder Coated (SnPb 5% Pb minimum) C = Hot Solder Dipped B = Gold Plated T = 100% Tin	61 = None 62 = 10 Cycles 25°C After Weibull 63 = 10 cycles, -55°C and 85°C After Weibull 64 = 10 cycles, -55°C and 85°C Before Weibull	10 = ESR-Standard 20 = ESR-Low 30 = ESR-Ultra-low	Designates discrete component series. D493 = T493

Polymer Tantalum KEMET Organic Capacitor (KO-CAP)

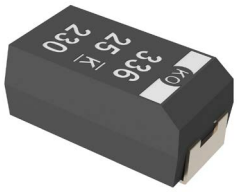
T520 Series Polymer Tantalum

Capacitance Range: 10 to 1,500 µF • **Temperature Range:** −55°C to +105°C

T	520	V	157	M	006	A	T	E045	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR Code	Packaging (C-Spec)
T = Tantalum	520 = Polymer	A, B, C, D, H, L, M, Q, T, U, V, W, X, Y	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	2R5 = 2.5 V 003 = 3 V 004 = 4 V 006 = 6.3 V 008 = 8 V 010 = 10 V 011 = 11 V 12R = 12.5 V 016 = 16 V 020 = 20 V 025 = 25 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Tin/Lead (SnPb) Solder Coated (5% Pb minimum) P = Ni-Pd-Au Plated N = Non-Magnetic 100% Tin (Sn) M = Non-Magnetic (SnPb)	E = ESR Last three digits specify ESR in mΩ. (045 = 45 mΩ)	Blank = 7" Reel 7280 = 13" Reel

T521 Series High Voltage Polymer Tantalum

Capacitance Range: 15 to 330 µF • **Temperature Range:** −55°C to +105°C and −55°C to +125°C

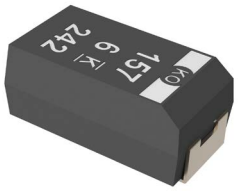


T	521	V	226	M	025	A	T	E060	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR Code	Packaging (C-Spec)
T = Tantalum	521 = High Voltage Polymer	B, T, D, Q, V, W, X	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V 063 = 63 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Tin/Lead (SnPb) Solder Coated (5% Pb minimum)	E = ESR Last three digits specify ESR in mΩ. (060 = 60 mΩ)	Blank = 7" Reel 7280 = 13" Reel

Polymer Tantalum KEMET Organic Capacitor (KO-CAP) (cont.)

T522 Series Reduced Leakage Polymer Tantalum

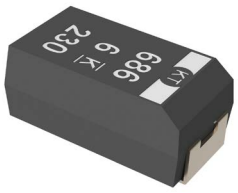
Capacitance Range: 150 to 470 µF • **Temperature Range:** −55°C to +105°C



T	522	V	157	M	006	A	T	E025	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR Code	Packaging (C-Spec)
T = Tantalum	522 = Reduced Leakage Polymer	V, Y	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	006 = 6.3 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Tin/Lead (SnPb) Solder Coated (5% Pb minimum)	E = ESR Last three digits specify ESR in mΩ. (025 = 25 mΩ)	Blank = 7" Reel 7280 = 13" Reel

T525 Series Polymer Tantalum 125ºC

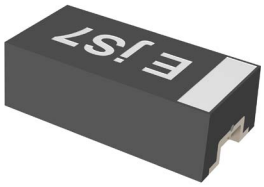
Capacitance Range: 10 to 680 µF • **Temperature Range:** −55°C to +125°C



T	525	D	337	M	006	A	T	E025	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	525 = 125°C Rated Polymer	A, B, D, T, Y	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	2R5 = 2.5 V 003 = 3 V 004 = 4 V 006 = 6.3 V 008 = 8 V 010 = 10 V 016 = 16 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Tin/Lead (SnPb) Solder Coated (5% Pb minimum)	Last three digits specify ESR in mΩ. (025 = 25 mΩ)	Blank = 7" Reel 7280 = 13" Reel

T527 Series Facedown Terminal Polymer Tantalum

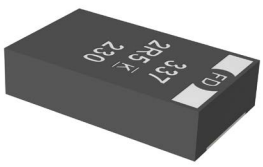
Capacitance Range: 22 to 100 µF • **Temperature Range:** −55°C to +105°C



T	527	I	476	M	006	A	T	E200
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR Code
T = Tantalum	527 = Facedown Terminal Polymer	I = 3216	First two digits represent significant figures. Third digit specifies number of zeros. e.g., 476 = 47 µF	M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V	A = N/A	T = 100% Tin (Sn)	E = ESR Last three digits specify ESR in mΩ (200 = 200 mΩ)

T528 Series Low ESL Facedown Terminal Polymer Tantalum

Capacitance Range: 33 to 470 µF • **Temperature Range:** −55°C to +105°C

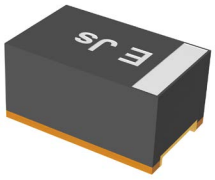


T	528	Z	337	M	2R5	A	T	E009	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR Code	Packaging (C-Spec)
T = Tantalum	528 = Low ESL Facedown Terminal Polymer	B = 3528-21 W = 7343-15 Z = 7343-17	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	002 = 2 V 2R5 = 2.5 V 004 = 4 V 006 = 6.3 V	A = N/A	T = 100% Matte Tin (Sn) Plated P = Ni-Pd-Au Plated	E = ESR Last three digits specify ESR in mΩ (009 = 9 mΩ)	Blank = 7" Reel 7280 = 13" Reel

Polymer Tantalum KEMET Organic Capacitor (KO-CAP) (cont.)

T529 Series Small Case Size Substrate Terminal Polymer Tantalum

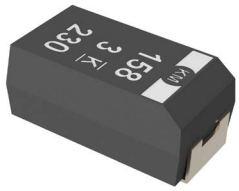
Capacitance Range: 22 to 150 µF • **Temperature Range:** −55°C to +105°C



T	529	P	476	M	006	A	A	E200
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR Code
T = Tantalum	529 = Substrate Terminal Polymer	P = 2012-10 I = 3216-10	First two digits represent significant figures. Third digit specifies number of zeros. e.g., 476 = 47 µF	M = ±20%	006 = 6.3 V 010 = 10 V	A = N/A	A = Ni - Au	E = ESR Last three digits specify ESR in mΩ (200 = 200 mΩ)

T530 Series High Capacitance Polymer Tantalum 125ºC

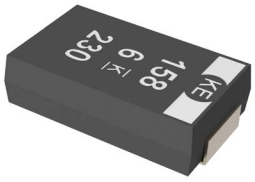
Capacitance Range: 150 to 1,500 µF • **Temperature Range:** −55°C to +125°C



T	530	X	337	M	010	A	T	E005	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR Code	Packaging (C-Spec)
T = Tantalum	530 = High Capacitance 125°C Rated Polymer	D, X, Y	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	2R5 = 2.5 V 003 = 3 V 004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V	A = N/A	T = 100% Matte Tin (Sn) plated* H = Standard solder Coated (SnPb 5% Pb minimum)	E = ESR Last three digits specify ESR in mΩ (005 = 5 mΩ)	Blank = 7" Reel 7280 = 13" Reel

T545 Series High Energy Polymer Tantalum

Capacitance Range: 33 to 1,500 µF • **Temperature Range:** −55°C to +125°C



T	545	H	108	M	006	A	T	E055	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	High Energy Polymer Tantalum	H, V, W, X, Y	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20% K = ±10 %	006 = 6.3 V 008 = 8 V 010 = 10 V 016 = 16 V 020 = 20 V	A = N/A	T = 100% Tin (Sn)	ESR in mΩ	Blank = 7" Reel 7280 = 13" Reel

Tantalum Stack Polymer (TSP) Series

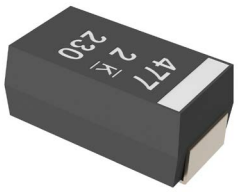
Capacitance Range: 66 to 4,080 µF • **Temperature Range:** −55°C to +125°C

T	SP	2D	207	M	010	A	H	65	20	D540
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	ESR	C-Spec 2
T = Tantalum	Stacks Polymer Cathode	2B, 3B, 4B, 6B, 2D, 3D, 4D, 6D	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	003 = 3 V 004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V	A = N/A	H = Standard Solder Coated (SnPb 5% Pb minimum)	65 = No Surge 66 = 10 cycles @ 25°C 67 = 10 cycles -55°C and 85°C	10 = ESR - Standard 20 = ESR-Low	Designates discrete component series. D540 = T540

Polymer Aluminum Organic Capacitor (AO-CAP)

A700 Series Polymer Aluminum

Capacitance Range: 6.8 to 560 µF • **Temperature Range:** −55°C to +125°C

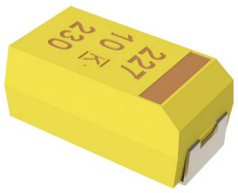


A	700	V	476	M	006	A	T	E018	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR Code	Packaging (C-Spec)
A = Aluminum	700 = Aluminum Polymer	D, V, W, X	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	002 = 2 V 2R5 = 2.5 V 004 = 4 V 006 = 6.3 V 008 = 8 V 010 = 10 V 12R = 12.5 V 016 = 16 V	A = N/A	T = 100% Matte Tin (Sn) Plated	E = ESR Last three digits specify ESR in mΩ (018 = 18 mΩ)	Blank = 7" Reel 7280 = 13" Reel

High Temperature

T498 Series Automotive Grade MnO_2 150ºC

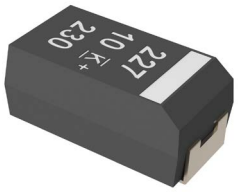
Capacitance Range: 0.33 to 220 µF • **Temperature Range:** −55°C to +150°C



T	498	X	227	M	010	A	T	E500	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	High Temperature 150°C	A, B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated G = Gold Plated	E = ESR Last three digits specify ESR in mΩ (500 = 500 mΩ)	Blank = 7" Reel 7280 = 13" Reel

T499 Series Automotive Grade MnO_2 175ºC

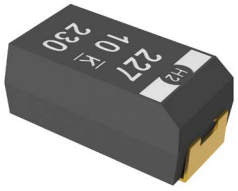
Capacitance Range: 0.15 to 220 µF • **Temperature Range:** −55°C to +175°C



T	499	X	227	M	010	A	T	E500	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	High Temperature 175°C	A, B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated G = Gold Plated	E = ESR Last three digits specify ESR in mΩ (500 = 500 mΩ)	Blank = 7" Reel 7280 = 13" Reel

T500 Series MnO_2 200ºC

Capacitance Range: 33 to 220 µF • **Temperature Range:** −55°C to +200°C

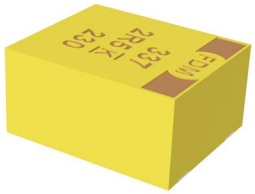


T	500	X	227	M	010	A	G	61	10
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Performance	ESR
T = Tantalum	High Temperature 200°C	X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	010 = 10 V 016 = 16 V 035 = 35 V	A = N/A B= 0.1%/1,000 hours	G = Gold Plated	61 = Surge None 62 = Surge @ 25°C after Weibull 63 = Surge -55°C and +85°C after Weibull	10 = Standard ESR

High Reliability Commercial Off-The-Shelf (COTS)

T428 Series High Volumetric Efficiency Facedown COTS MnO_2

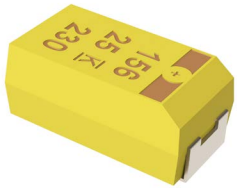
Capacitance Range: 15 to 470 µF • **Temperature Range:** −55°C to +125°C



T	428	P	227	K	006	A	H	61	10
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	ESR
T = Tantalum	High Volumetric Efficiency Facedown Hi-Rel MnO_2 COTS	P	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A B = 0.1%/1,000 hours	H = Standard solder coated (SnPb 5% Pb) T = 100% tin (Sn)	61 = None 62 = 10 cycles, 25°C 63 = 10 cycles, -55°C and 85°C	10 = Standard 20 = Low 30 = Ultra-low

T493 Series COTS MnO_2 (CWR11 Style)

Capacitance Range: 0.1 µF to 470 µF • **Temperature Range:** −55°C to +125°C



T	493	D	227	K	006	C	H	61	20
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	ESR
T = Tantalum	Military COTS	A, B, C, D, E, X	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V 063 = 63 V	A = N/A B = 0.1%/1,000 hours C = 0.01%/1,000 hours	C = Hot Solder Dipped H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated K = Solder Fused T = 100% Tin N = Non-Magnetic 100% Tin (Sn) M = Non-Magnetic (SnPb)	61 = None 62 = 10 Cycles after Weibull, 25°C 63 = 10 cycles after Weibull, -55°C and 85°C after Weibull 64 = 10 cycles before Weibull,-55° and +85°C	10 = ESR - Standard 20 = ESR - Low 30 = ESR - Ultra low

DLA Drawing 07016

07016-	001	K	B	H	A
Drawing Number	Dash Number	Capacitance Tolerance	Reliability Grade	Lead Material	Surge
	See Part Number Reference	J = ±5% K = ±10% M = ±20%	B = 0.1%/1,000 hours C = 0.01%/1,000 hours	C = Hot Solder Dipped H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated	A = + 25°C after Weibull B = -55°C and +85°C after Weibull C = -55°C and + 85°C before Weibull Z or no option= No test required

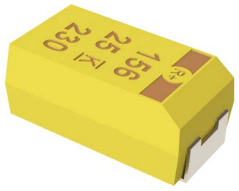
F-Tech & Simulated Breakdown Screening (SBDS)

T	493	D	226	K	020	C	H	61	20
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	Screening + ESR
T = Tantalum	Military COTS	A, B, C, D, E, X	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V 063 = 63 V	A = N/A B = 0.1%/1,000 hours C = 0.01%/1,000 hours	C = Hot Solder Dipped H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated K = Solder Fused K = Solder Fused T = 100% Tin N = Non-Magnetic 100% Tin (Sn) M = Non-Magnetic (SnPb)	61 = None 62 = 10 Cycles after Weibull, 25°C 63 = 10 cycles after Weibull, -55°C and 85°C after Weibull 64 = 10 cycles before Weibull,-55° and +85°C	11 = F-Tech + SBDS * 12 = SBDS 13 = F-Tech * 21 = Low ESR + 11 22= Low ESR + 12 23 = Low ESR + 13 31= Ultra Low ESR + 11 32 = Ultra Low ESR + 12 33 = Ultra Low ESR + 13

High Reliability Commercial Off-The-Shelf (COTS) (cont.)

T495 Series Surge Robust COTS MnO_2

Capacitance Range: 4.7 to 220 µF • **Temperature Range:** −55°C to +125°C



T	495	X	107	M	010	A	H	4095	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Customer Specification	Packaging (C-Spec)
T = Tantalum	Surge Robust Low ESR	C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated	Tested to meet the Established Reliability	Blank = 7" Reel 7280 = 13" Reel

DLA Drawing 95158

95158-	07	M	H
Drawing Number	Dash Number	Capacitance Tolerance	Termination Finish
Capacitor, Fixed, Tantalum Chip, Low ESR	See Part Number List	K = ±10% M = ±20%	H = Solder Plated B= Gold Plated

T496 Series Fused COTS MnO_2

Capacitance Range: 0.15 to 470 µF • **Temperature Range:** −55°C to +125°C

T	496	X	227	M	010	B	T	61	10	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Performance	ESR	Packaging (C-Spec)
T = Tantalum	Fail Safe	B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	B = 0.1%/1,000 hours C = 0.01%/1,000 hours D = 0.001%/ 1,000 hours A = Non-Weibull Graded	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) C = Hot Solder Dipped K = Solder Fused	61 = Surge None 62 = Surge @ 25°C after Weibull 63 = Surge -55°C and +85°C after Weibull 64 = Surge -55°C and +85°C before Weibull	10 = Standard 20 = Low	Blank = 7" Reel 7280 = 13" Reel

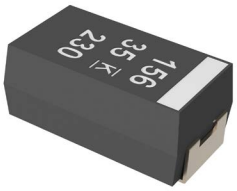
DLA Drawing 04053

04053-	001	B
Drawing Number	Dash Number	Reliability Grade
	See Part Number List	B = 0.1%/1,000 hours C = 0.01%/1,000 hours D = 0.001%/1,000 hours A = Non-Weibull Graded

High Reliability Commercial Off-The-Shelf (COTS) (cont.)

T497 Series COTS MnO_2 (CWR09/19/29 Style)

Capacitance Range: 0.1 to 150 µF • **Temperature Range:** −55°C to +125°C



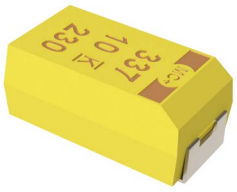
T	497	G	226	K	020	A	H	61	10
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	X-ray
T = Tantalum	High Grade COTS	A, B, C, D, E, F, G, H, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A B = 0.1%/1,000 hours C = 0.01%/1,000 hours	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated	61 = Standard (in-process) 62 = 10 Cycles After Weibull, 25°C 63 = 10 Cycles After Weibull, -55° and 85°C 64 = 10 Cycles Before Weibull, -55° and 85°C	10 = None 15 = 100%

F-Tech & Simulated Breakdown Screening (SBDS)

T	497	H	226	K	020	A	H	61	10
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	Design/Screening
T = Tantalum	High Grade COTS	H	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	020 = 20V 025 = 25V 035 = 35V 050 = 50V	A = N/A B=0.1%/1,000 hours C=.01%/1,000 hours	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated	61 = Standard (in-process) 62 = 10 Cycles After Weibull, 25°C 63 = 10 Cycles After Weibull, -55° and 85°C 64 = 10 Cycles Before Weibull, -55° and 85°C	10 = Standard 11 = F-Tech & SBDS * 12 = SBDS 13 = F-Tech * 15 = 100% X-ray 16 = F-Tech & SBDS & 100% X-ray * 17 = SBDS & 100% X-ray 18 = F-Tech & 100% X-ray *

T513 Series COTS Multiple Anode MnO_2

Capacitance Range: 15 to 1,000 µF • **Temperature Range:** −55°C to +125°C

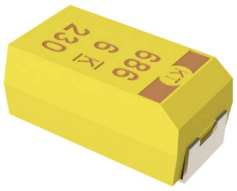


T	513	X	108	K	004	B	H	61	10
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	ESR
T = Tantalum	Multiple Anode COTS	D, E, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V	A = N/A B = 0.1%/1,000 hours	C = Hot Solder Dipped H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated K = Solder Fused T = 100% Tin	61 = None 62 = 10 cycles, 25°C after Weibull 63 = 10 cycles, -55°C & 85°C after Weibull 64 = 10 cycles, -55°C & 85°C before Weibull	10 = Standard ESR 20 = Low ESR 30 = Ultra Low ESR

High Reliability Commercial Off-The-Shelf (COTS) (cont.)

T540 Series COTS Single Anode Polymer Tantalum

Capacitance Range: 4.7 to 680 µF • **Temperature Range:** −55°C to +125°C



T	540	D	107	M	10	A	H	65	10	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge Option	ESR	Packaging (C-Spec)
T = Tantalum	540 = Polymer COTS	B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	2R5 = 2.5 V 003 = 3 V 004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V 063 = 63 V	A = N/A	H = Standard Solder Coated (SnPb 5% Pb minimum)	65 = 4 cycles at 25°C * 66 = 10 cycles at 25°C * 67 = 10 cycles -55°C and 85°C *	10 = ESR - Standard 20 = ESR - Low	Blank = 7" Reel 7280 = 13" Reel

DLA Drawing 04051

04051-	001	A
Drawing Number	Dash Number	Surge Current Option
04051	See Part Number List	Blank = 4 cycles +25°C ±5°C Before Voltage Aging A = 10 cycles +25°C ±5°C After Voltage Aging B = 10 cycles -55°C ±5°C, +0°C ±5°C, and +85°C ±5°C After Voltage Aging

T541 Series COTS Multiple Anode Polymer Tantalum

Capacitance Range: 10 to 1,500 µF • **Temperature Range:** −55°C to +125°C

T	541	D	157	M	10	A	H	65	10	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge Option	ESR	Packaging (C-Spec)
T = Tantalum	541 = Polymer COTS Multiple Anode	D, X, Y	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	2R5 = 2.5 V 003 = 3 V 004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020= 20 V 025 = 25 V 035 = 35 V 050 = 50 V 063 = 63 V	A = N/A	H = Standard Solder Coated (SnPb 5% Pb minimum)	65 = 4 cycles @ 25°C * 66 = 10 cycles @ 25°C * 67 = 10 cycles -55°C and 85°C	10 = ESR - Standard 20 = ESR - Low 30 = ESR - Ultra Low ESR	Blank = 7" Reel 7280 = 13" Reel

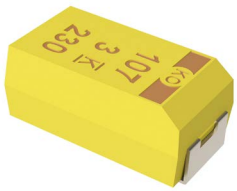
DLA Drawing 04052

04052-	001	A
Drawing Number	Dash Number	Surge Current Option
04052	See Part number List	Blank = 4 cycles +25°C ±5°C Before Voltage Aging A = 10 cycles +25°C ±5°C After Voltage Aging B = 10 cycles -55°C ±5°C, +0°C ±5°C, and +85°C ±5°C After Voltage Aging

High Reliability Commercial Off-The-Shelf (COTS) (cont.)

T543 Series COTS Polymer Tantalum

Capacitance Range: 4.7 to 1,500 µF • **Temperature Range:** −55°C to +105°C

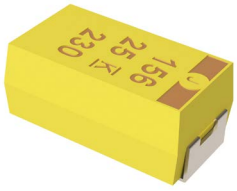


T	543	D	156	K	035	A	H	E	100	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	ESR	Packaging (C-Spec)
T = Tantalum	Polymer Tantalum COTS	A, B, C, D, H, L, M, T, U, V, W, X, Y	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	2R5 = 2.5 V 003 = 3 V 004 = 4 V 006 = 6.3 V 010 = 10 V 12R = 12.5 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V 063 =63 V	A = N/A	H = Standard Solder Coated (SnPb 5% Pb minimum) T = 100% Tin (Sn)	E = None S = 10 cycles 25°C W = 10 cycles -55°C and 85°C	ESR in mΩ	Blank = 7" Reel 7280 = 13" Reel

MIL–PRF CWR Style

T409 Series MIL–PRF–55365/4 (CWR09 Style)

Capacitance Range: 0.1 to 100 µF • **Temperature Range:** −55°C to +125°C



T	409	A	225	K	004	A	H	4252	7280
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/Design	Lead Material	Surge	Packaging (C-Spec)
T = Tantalum	CWR 09 Established Reliability	A, B, C, D, E, F, G, H	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	Weibull A = non-ER B = (0.1%/1,000 hours) C = (0.01%/1,000 hours) D = (0.001%/1,000 hours) T = (0.01%/1,000 hours) Exponential M = (1.0%/1,000 hours) P = (0.1%/1,000 hours) R = (0.01%/1,000 hours) S =(0.001%/1,000 hours)	C = Hot Solder Dipped H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated K = Solder Fused	4250= 25°C after Weibull 4251 = -55°C and 85°C after Weibull 4252 = -55°C and 85°C before Weibull TLVL = Weibull Grade Level "T"	Blank = 7" Reel 7280 = 13" Reel 7610 = Bag 7005 = Moisture bags

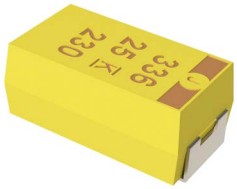
MIL–PRF–55365/4

CWR09	J	H	105	K	C	A
Capacitor Style	Voltage	Termination Finish	Capacitance Code (pF)	Capacitance Tolerance	Reliability Level	Surge Current Option
Per MIL–PRF–55365/4	C = 4 V D = 6 V F = 10 V H = 15 V J = 20 V K = 25 V M = 35 V N = 50 V	B = Gold Plated C = Hot solder dipped H = Solder Plated K = Solder fused	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	Weibull A = non-ER B = (0.1%/1,000 hours) C = (0.01%/1,000 hours) D =(0.001%/1,000 hours) T= T Level* (0.01%/1,000 hours) Exponential M = (1.0%/1,000 hours) P = (0.1%/1,000 hours) R = (0.01%/1,000 hours) S =(0.001%/1,000 hours)	A = +25°C after Weibull B = -55°C +85°C after Weibull C = -55°C +85°C before Weibull Blank = No Surge

MIL–PRF CWR Style (cont.)

T419 Series MIL–PRF–55365/11 (CWR19 Style)

Capacitance Range: 0.33 to 330 µF • **Temperature Range:** −55°C to +125°C



T	419	A	225	K	004	A	H	4251	7280
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/Design	Lead Material	Surge	Packaging (C-Spec)
T = Tantalum	CWR19 Established Reliability	A, B, C, D, E, F, G, H, X	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V	Weibull A = non-ER B = (0.1%/1,000 hours) C = (0.01%/1,000 hours) D = (0.001%/1,000 hours) T = (0.01%/1,000 hours) Exponential M = (1.0%/1,000 hours) P = (0.1%/1,000 hours) R = (0.01%/1,000 hours) S =(0.001%/1,000 hours)	C = Hot Solder Dipped H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated K = Solder Fused	Blank = No Surge 4250= 25°C after Weibull 4251 = -55°C and 85°C after Weibull 4252 = -55°C and 85°C before Weibull TLVL = Weibull Grade Level "T"	Blank = 7" Reel 7280 = 13" Reel 7610 = Bag 7005 = Moisture bags

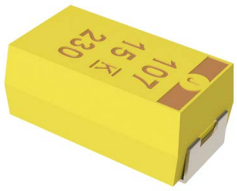
MIL–PRF–55365/11

CWR19	K	H	225	K	C	D	A
Capacitor Style	Voltage	Termination Finish	Capacitance Code (pF)	Capacitance Tolerance	Reliability Level	Case Code	Surge Current Option
Per MIL–PRF–55365/11	C = 4 V D = 6 V F = 10 V H = 15 V J = 20 V K = 25 V M = 35 V	B = Gold Plated C = Hot solder dipped H = Solder Plated K = Solder fused	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	Weibull A = non-ER B = (0.1%/1,000 hours) C = (0.01%/1,000 hours) D =(0.001%/1,000 hours) T= T Level* (0.01%/1,000 hours) Exponential M = (1.0%/1,000 hours) P = (0.1%/1,000 hours) R = (0.01%/1,000 hours) S =(0.001%/1,000 hours)	A, B, C, D, E, F, G, H, X	A = +25°C after Weibull B = -55°C +85°C after Weibull C = -55°C +85°C before Weibull Z = None

MIL–PRF CWR Style (cont.)

T429 Series MIL–PRF–55365/11 (CWR29 Style)

Capacitance Range: 0.1 to 330 µF • **Temperature Range:** −55°C to +125°C



T	429	A	225	K	004	A	H	4251	7280
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/Design	Lead Material	Surge	Packaging (C-Spec)
T = Tantalum	CWR29 Established Reliability	A, B, C, D, E, F, G, H, X	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	Weibull A = non-ER B = (0.1%/1,000 hours) C = (0.01%/1,000 hours) D =(0.001%/1,000 hours) T = (0.01%/1,000 hours) Exponential M = (1.0%/1,000 hours) P = (0.1%/1,000 hours) R = (0.01%/1,000 hours) S =(0.001%/1,000 hours)	C = Hot Solder Dipped H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated K = Solder Fused	Blank = No surge 4250= 25°C after Weibull 4251 = -55°C and 85°C after Weibull 4252 = -55°C and 85°C before Weibull TLVL= Weibull Grade Level "T"	Blank = 7" Reel 7280 = 13" Reel 7610 = Bag 7005 = Moisture bags

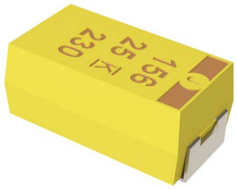
MIL–PRF–55365/11

CWR29	K	H	225	K	C	D	A
Capacitor Style	Voltage	Termination Finish	Capacitance Code (pF)	Capacitance Tolerance	Reliability Level	Case Code	Surge Current Option
Per MIL–PRF–55365/11	C = 4 V D = 6 V F = 10 V H = 15 V J = 20 V K = 25 V M = 35 V N = 50 V	B = Gold Plated C = Hot solder dipped H = Solder Plated K = Solder fused	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	Weibull A = non-ER B = (0.1%/1,000 hours) C = (0.01%/1,000 hours) D =(0.001%/1,000 hours) T = T Level* (0.01%/1,000 hours) Exponential M = (1.0%/1,000 hours) P = (0.1%/1,000 hours) R = (0.01%/1,000 hours) S =(0.001%/1,000 hours)	A, B, C, D, E, F, G, H, X	A = +25°C after Weibull B = -55°C +85°C after Weibull C = -55°C +85°C before Weibull Z = None

MIL–PRF CWR Style (cont.)

T492 Series MIL–PRF–55365/8 (CWR11 Style)

Capacitance Range: 0.1 to 100 µF • **Temperature Range:** −55°C to +125°C



T	492	D	156	K	020	A	C	4251
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/Design	Lead Material	Surge (C-Spec)
T = Tantalum	CWR11 Established Reliability	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	Weibull A = non-ER B = (0.1%/1,000 hours) C = (0.01%/1,000 hours) D = (0.001%/1,000 hours) T = (0.01%/1,000 hours) Exponential M = (1.0%/1,000 hours) P = (0.1%/1,000 hours) R = (0.01%/1,000 hours) S =(0.001%/1,000 hours	C = Hot Solder Dipped H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated K = Solder Fused	4250= 25ºC after Weibull 4251 = -55ºC and 85ºC after Weibull 4252 = -55ºC and 85ºC before Weibull TLVL= Weibull Grade Level "T"

MIL–PRF–55365/8

CWR11	M	H	105	K	B	A
Capacitor Style	Voltage	Termination Finish	Capacitance Code (pF)	Capacitance Tolerance	Reliability Level	Surge Current Option
Per MIL–PRF–55365/8	C = 4 V D = 6 V F = 10 V H = 15 V J = 20 V K = 25 V M = 35 V N = 50 V	B = Gold Plated C = Hot solder dipped H = Solder Plated K = Solder fused	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	Weibull A = non-ER B = (0.1%/1,000 hours) C = (0.01%/1,000 hours) D =(0.001%/1,000 hours) T= T Level* (0.01%/1,000 hours) Exponential M = (1.0%/1,000 hours) P = (0.1%/1,000 hours) R = (0.01%/1,000 hours) S =(0.001%/1,000 hours	A = +25°C after Weibull B = -55°C +85°C after Weibull C = -55°C +85°C before Weibull Blank = None

Fused

T496 Series Fused MnO_2

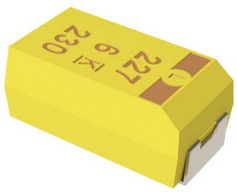
Capacitance Range: 0.15 to 477 µF • **Temperature Range:** −55°C to +125°C

T	496	X	227	M	010	A	T	E500	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	Fail Safe	B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum)	E = ESR Last three digits specify ESR in mΩ (500 = 500 mΩ)	Blank = 7" Reel 7280 = 13" Reel

Automotive Grade

T489 Series Automotive Grade Low DC Leakage MnO_2

Capacitance Range: 0.10 to 470 µF • **Temperature Range:** −55°C to +125°C

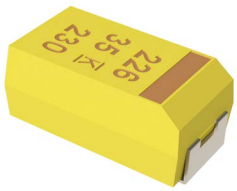


T	489	B	156	M	16	A	T	A800	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	C-Spec	Packaging (C-Spec)
T = Tantalum	Low DC Leakage Series	A, B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% matte tin (Sn) plated H = Standard solder coated (SnPb 5% Pb minimum) G = Gold plated	A = Automotive grade 800 = ESR value (800 = 800 mΩ)	Blank = 7" Reel 7280 = 13" Reel

Automotive Grade (cont.)

T491 Series Automotive/Industrial Grade MnO_2

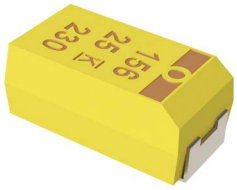
Capacitance Range: 0.1 to 470 µF • **Temperature Range:** −55°C to +125°C



T	491	X	157	K	020	A	T	AUTO	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	C-Spec 1	Packaging (C-Spec)
T = Tantalum	Industrial	A, B, C, D, E, S, T, U, V, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	2R5 = 2.5 V 003 = 3 V 004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated* H = Standard Solder Coated (SnPb 5% Pb minimum) G = Gold Plated (A, B, C, D, X only) N = Non-Magnetic 100% Tin (Sn) M = Non-Magnetic (SnPb)	AUTO = Automotive Grade (AUTO = AEC–Q200 Certification)	Blank = 7" Reel 7280 = 13" Reel

T494 Series Automotive/Industrial Grade MnO_2

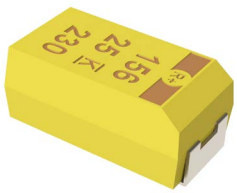
Capacitance Range: 0.1 to 1,000 µF • **Temperature Range:** −55°C to +125°C



T	494	T	336	M	004	A	T	AUTO	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	C-Spec 1	Packaging (C-Spec)
T = Tantalum	Industrial - Low ESR	A, B, C, D, E, S, T, U, V, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	2R5 = 2.5 V 003 = 3 V 004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) G = Gold Plated (A, B, C, D, X only)	AUTO = Automotive Grade (AUTO = AEC–Q200 Certification)	Blank = 7" Reel 7280 = 13" Reel

T495 Series Automotive Grade Surge Robust MnO_2

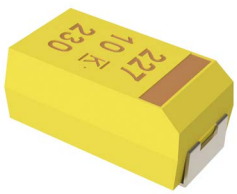
Capacitance Range: 0.1 to 1,000 µF • **Temperature Range:** −55°C to +125°C



T	495	X	107	M	010	A	T	A080	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	Surge Robust Low ESR	A, B, C, D, E, T, V, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	2R5 = 2.5 V 004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) G = Gold Plated (A, B, C, D, X only) N = Non-Magnetic 100% Tin (Sn) M = Non-Magnetic (SnPb)	A = AUTO grade product 080 = Maximum ESR in mΩ at room temperature (80 mΩ)	Blank = 7" Reel 7280 = 13" Reel

T498 Series Automotive Grade MnO_2 150ºC

Capacitance Range: 0.33 to 220 µF • **Temperature Range:** −55°C to +150°C

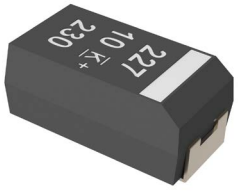


T	498	X	227	M	010	A	T	E500	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	High Temperature 150ºC	A, B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated G = Gold Plated	E = ESR Last three digits specify ESR in mΩ (500 = 500 mΩ)	Blank = 7" Reel 7280 = 13" Reel

Automotive Grade (cont.)

T499 Series Automotive Grade MnO_2 175ºC

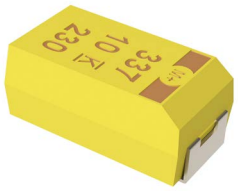
Capacitance Range: 0.15 to 220 µF • **Temperature Range:** −55°C to +175°C



T	499	X	227	M	010	A	T	E500	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	High Temperature 175°C	A, B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated G = Gold Plated	E = ESR Last three digits specify ESR in mΩ (500 = 500 mΩ)	Blank = 7" Reel 7280 = 13" Reel

T510 Series Automotive Grade Multiple Anode MnO_2

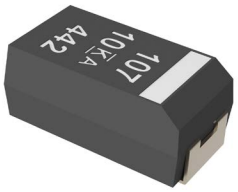
Capacitance Range: 10 to 1,000 µF • **Temperature Range:** −55°C to +125°C



T	510	X	477	M	006	A	T	A030	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR	Packaging (C-Spec)
T = Tantalum	Multiple Anode Low ESR	E, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	T = 100% Matte Tin (Sn) Plated* H = Standard Solder Coated (SnPb 5% Pb minimum) G = Gold Plated (A, B, C, D, X only)	A = AUTO grade product 030 = Maximum ESR in mΩ at room temperature (30mΩ)	Blank = 7" Reel 7280 = 13" Reel

T591 Series High Performance Automotive Grade Polymer Tantalum 105°C & 125°C

Capacitance Range: 33 to 220 µF • **Temperature Range:** −55°C to +105°C & −55°C to +125°C

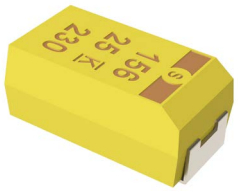


T	591	D	107	M	010	A	T	E025
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	ESR
T = Tantalum	591 = Automotive Grade Polymer	B, D, V	First two digits represent significant figures. Third digit specifies number of zeros.	M = ±20%	2R5 = 2.5 V 006 = 6.3 V 010 = 10 V	A = N/A	T = 100% Tin (Sn)	Maximum ESR in mΩ, 025 = 25 mΩ

Space Grade

T493 Series Space Grade (COTS) MnO_2 (CWR11 Style)

Capacitance Range: 0.1 to 330 µF • **Temperature Range:** −55°C to +125°C

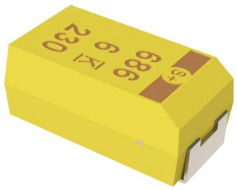


T	493	D	227	K	006	C	H	61	2	A
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	ESR	Testing
T = Tantalum	CRW11 Style Space Grade	A, B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	C = .01%/1,000 hours	C = Hot Solder Dipped H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated K = Solder Fused T = 100% Tin	61 = None 62 = 10 Cycles after Weibull,25°C 63 = 10 Cycles, after Weibull,-55°C and 85°C 64 = 10 Cycles before Weibull, -55°C and 85°C 65 = 10 Cycles Before and After Weibull, -55°C and 85°C	1 = ESR - Standard 2 = ESR - Low	A = Option A B = Option B C = Option C

Space Grade (cont.)

T496 Series Space Grade Fail-Safe Fused MnO_2

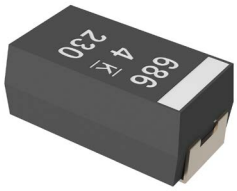
Capacitance Range: 0.15 to 470 µF • **Temperature Range:** −55°C to +125°C



T	496	X	227	M	010	C	T	61	2	A
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	ESR	Testing
T = Tantalum	Fail Safe - Space Grade	B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	C = 0.01%/1,000 hours	C = Hot Solder Dipped T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum)	61 = None 62 = 10 Cycles after Weibull,25°C 63 = 10 Cycles, after Weibull,-55°C and 85°C 64 = 10 Cycles before Weibull, -55°C and 85°C 65 = 10 Cycles Before and After Weibull, -55°C and 85°C	1 = ESR - Standard 2 = ESR - Low	A = Option A B = Option B C = Option C

T497 Series Space Grade (COTS) MnO_2 (CWR09/19/29 Style)

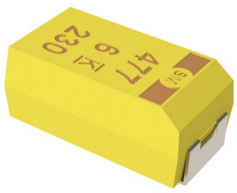
Capacitance Range: 0.1 to 150 µF • **Temperature Range:** −55°C to +125°C



T	497	G	226	K	020	C	H	61	2	A
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	ESR	Testing
T = Tantalum	High Grade - Space Grade	A, B, C, D, E, F, G, H, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	C = 0.01%/1,000 hours	C = Hot Solder Dipped T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum) B = Gold Plated	61 = None 62 = 10 Cycles after Weibull,25°C 63 = 10 Cycles, after Weibull,-55°C and 85°C 64 = 10 Cycles before Weibull, -55°C and 85°C 65 = 10 Cycles Before and After Weibull, -55°C and 85°C	1 = ESR - Standard 2 = ESR - Low	A = Option A B = Option B C = Option C

T510 Series Space Grade Multiple Anode MnO_2

Capacitance Range: 10 to 1,000 µF • **Temperature Range:** −55°C to +125°C



T	510	X	477	M	006	C	T	61	1	A
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge	ESR	Testing
T = Tantalum	Ultra Low ESR - Space Grade	E, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	004 = 4 V 006 = 6.3 V 010 = 10 V	C = 0.01%/1,000 hours	C = Hot Solder Dipped T = 100% Matte Tin (Sn) Plated H = Standard Solder Coated (SnPb 5% Pb minimum)	61 = None 62 = 10 Cycles after Weibull,25°C 63 = 10 Cycles, after Weibull,-55°C and 85°C 64 = 10 Cycles before Weibull, -55°C and 85°C 65 = 10 Cycles Before and After Weibull, -55°C and 85°C	1 = ESR - Standard	A = Option A B = Option B C = Option C

Hermetically Sealed Axial

T110 Series MIL–PRF–39003 Polar Type & T212 (CSR13 Style)

Capacitance Range: 0.0047 to 330 µF • **Temperature Range:** −55°C to +125°C

T	110	A	105	K	050	A	T	7200
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material	Specification
T = Tantalum	Hermetically Sealed Axial capacitor	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 035 = 35 V 050 = 50 V 060 = 60 V 075 = 75 V 100 = 100 V 125 = 125 V	A = N/A	T = 100% Tin S= Standard (Sn/Pb)	All capacitors are sleeved unless specified 0100 = Without sleeve 7200 = Tape & Reel 7293 & 7443 = Ammo

T212 (CSR13 Style)

T	212	A	105	K	050	B	S	7200
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material	Specification
T = Tantalum	Hermetically Sealed Axial Military grade capacitor	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	006 = 6V 010 = 10V 015 = 15V 020 = 20V 035 = 35V 050 = 50V 075 = 75V 100 = 100V	Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours G= 1.0 %/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	S = Standard (Sn/Pb)	All capacitors are sleeved unless specified 0100 = Without sleeve 7200 = Tape & Reel 7293 & 7443 = Ammo 4250="A" surge current 4251="B" surge current 4252="C" surge current

MIL–PRF–39003

M39003	/01	6003	A
Capacitor Class	Slash	Dash Number	Surge Option
Military Specification Number	Specification Sheet Number	Failure Rate Level	A = C-4250 B = C-4251 C = C-4252 Blank - No surge

Hermetically Sealed Axial (cont.)

T111 Series MIL–PRF–39003 Non-Polar & T213 (CSR91 Style)

Capacitance Range: 0.0023 to 160 µF • **Temperature Range:** −55°C to +125°C

T	111	A	105	K	050	A	S	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material	Specification
T = Tantalum	Hermetically Sealed Axial capacitor	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 035 = 35 V 050 = 50 V 075 = 75 V 100 = 100 V	A = N/A	S= Standard (Sn/Pb)	All capacitors are sleeved unless specified

T213 (CSR91 Style)

T	213	A	115	K	020	B	S	7200
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material	Specification
T = Tantalum	Hermetically Sealed Axial Military grade capacitor	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6V 010 = 10V 015 = 15V 020 = 20V 035 = 35V 050 = 50V 075 = 75V 100 = 100V	Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours G= 1.0 %/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	S = Standard (Sn/Pb)	All capacitors are sleeved unless specified 0100 = Without sleeve 7200 = Tape & Reel 7293 & 7443 = Ammo 4250="A" surge current 4251="B" surge current 4252="C" surge current

MIL–PRF–39003

M39003	/04	3007	A
Capacitor Class	Slash	Dash Number	Surge Option
Military Specification Number	Specification Sheet Number	Failure Rate Level	A = C-4250 B = C-4251 C = C-4252 Blank - No surge

Hermetically Sealed Axial (cont.)

T140 Series MIL–PRF–39003 Polar Type & T242 (CSR23 Style)

Capacitance Range: 0.82 to 1,200 µF • **Temperature Range:** −55°C to +125°C

T	140	A	105	K	050	A	S	7200
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material	Specification
T = Tantalum	Hermetically Sealed Axial Capacitor	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 030 = 30 V 035 = 35 V 060 = 60 V 050 = 50 V 060 = 60 V	A = N/A	S = Standard (Sn/Pb) T = 100% Tin	All capacitors are sleeved unless specified. 0100 = Without sleeve 7200 = Tape & Reel 7293 = Ammo 4250 = 10 cycles, 25°C after Weibull 4251 = 10 cycles, -55 & 85°C after Weibull 4252 = 10 cycles, -55 & 85°C before Weibull

T242 (CSR23 Style)

T	242	A	105	K	050	A	S	C
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material	Specification
T = Tantalum	T242 = CSR23	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 030 = 30 V 035 = 35 V 060 = 60 V 050 = 50 V 060 = 60 V	Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours G = 1.0%/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	S = Standard	All capacitors are sleeved unless specified 0100 = Without sleeve 7200 = Tape & Reel 7293 = Ammo 4250 = 10 cycles, 25°C after Weibull 4251 = 10 cycles, -55 & 85°C after Weibull 4252 = 10 cycles, -55 & 85°C before Weibull

MIL–PRF–39003

M39003	/03	3075	A
Capacitor Class	Slash	Dash Number	Surge Option
Military Specification Number	Specification Sheet Number	Failure Rate Level	A = C-4250 B = C-4251 C = C-4252 Blank - No surge

T210/T240/GR500 Series High Reliability

Capacitance Range: 0.0047 to 330 µF • **Temperature Range:** −55°C to +125°C

T	210	A	105	K	050	R	S
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material
T = Tantalum	210 = GR500/J (KEMET) High Reliability, Solid Electrolyte, Graded, Hermetic Seal, Axial Lead, Polar	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros to follow.	J = ±5% K = ±10% M = ±20%	006 = 6.3V 010 = 10V 015 = 15V 020 = 20V 025 = 25V 035 = 35V 050 = 50V 075 = 75V 100 = 100V	M = 1%/k hours P = 0.1/k hours R = 0.01%/k hours S = 0.001%/k hours	S = Standard (Solder-coated nickel)

Hermetically Sealed Axial (cont.)

T215 Series High Temperature Solder (CSR13 Style)

Capacitance Range: 0.0047 to 330 µF • **Temperature Range:** −55°C to +125°C

T	215	A	105	K	050	B	S	7200
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material	Specification
T = Tantalum	Hermetically Sealed Axial High Temperature Solder	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 035 = 35 V 050 = 50 V 075 = 75 V 100 = 100 V	Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours G= 1.0 %/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	S = Standard (Sn/Pb)	All capacitors are sleeved unless specified. 0100 = Without sleeve 7200 = Tape & Reel 7293 = Ammo 4250 = 10 cycles, 25°C after Weibull 4251 = 10 cycles, -55 & 85°C after Weibull 4252 = 10 cycles, -55 & 85°C before Weibull

CSR13 Style

M39003	/01	6003	E
Capacitor Class	Slash	Dash Number	Surge Option
Military Specification Number	Specification Sheet Number	Failure Rate Level	D = C-4250 E = C-4251 F = C-4252 H = No C-Spec

T216 Series MIL–PRF–39003 (CSS13 Style) & T256 (CSS33 Style)

Capacitance Range: CSS13: 0.12 to 330 µF, CSS33: 1.2 to 1,000 µF • **Temperature Range:** −55°C to +125°C

T	216	A	106	K	050	C	S	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material	C-Spec
T = Tantalum	216 (MIL–C–39003/10, CSS13) 256 (MIL–C–39003/10, CSS33)	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 035 = 35 V 050 = 50 V 075 = 75 V	Graded: B = 0.1%/k hours C = 0.01%/k hours	S = Standard (Solder-coated nickel)	Blank = Sleeved 0100 = Unsleeved 7200 = Tape & Reel

CSS13 Style

M39003	/10	2049	S
Capacitor Class	Slash	Dash Number	Sleeve
Military Specification Number	Specification Sheet Number	Failure Rate Level	S = Sleeved U = Unsleeved use C - 0100

CSS33 Style

M39003	/10	2549	S
Capacitor Class	Slash	Dash Number	Sleeve
Military Specification Number	Specification Sheet Number	Failure Rate Level	S = Sleeved U = Unsleeved use C - 0100

Hermetically Sealed Axial (cont.)

T222 Series MIL–PRF–39003 Polar Miniature (CSR09 Style)

Capacitance Range: 0.047 to 18 µF • **Temperature Range:** −55°C to +125°C

T	222	A	225	K	010	B	S	C
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material	Specification
T = Tantalum	T222 (CSR09)	A, B	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 035 = 35 V 050 = 50 V 075 = 75 V	Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours G = 1.0%/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	S = Standard Positive: Alloy 52 (solder-coated) Negative: Solder-coated nickel	All capacitors are sleeved unless specified

CSR09 Style

M39003	/02	2061	D
Capacitor Class	Slash	Dash Number	Surge Option
Military Specification Number	Specification Sheet Number	Failure Rate Level	D = C-4250 E = C-4251 F = C-4252 H = No C-Spec

T225 Series High Temperature Solder (CSR09 Style)

Capacitance Range: 0.047 to 18 µF • **Temperature Range:** −55°C to +125°C

T	225	A	225	K	010	B	S	7200
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material	Specification
T = Tantalum	Hermetically Sealed Axial High Temperature Solder	A, B	First two digits represent significant figures. Third digit specifies number of zeros to follow.	J = ±5% K = ±10%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 035 = 35 V 050 = 50 V 075 = 75 V	Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours G = 1.0%/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	S = Standard	All capacitors are sleeved unless specified. 0100 = Without sleeve 7200 = Tape & Reel 7293 = Ammo 4250 = 10 cycles, 25°C after Weibull 4251 = 10 cycles, -55 & 85°C after Weibull 4252 = 10 cycles, -55 & 85°C before Weibull

CSR09 Style

M39003	/02	3036	A
Capacitor Class	Slash	Dash Number	Surge Option
Military Specification Number	Specification Sheet Number	Failure Rate Level	A = C-4250 B = C-4251 C = C-4252 Blank - No surge

Hermetically Sealed Axial (cont.)

T245 Series High Temperature Solder (CSR23 Style)

Capacitance Range: 1.2 to 1,000 µF • **Temperature Range:** −55°C to +125°C

T	245	A	105	K	050	A	S	7200
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material	Specification
T = Tantalum	Hermetically Sealed Axial High Temperature Solder	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 035 = 35 V 050 = 50 V	Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours G = 1.0%/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	S = Standard	All capacitors are sleeved unless specified. 0100 = Without sleeve 7200 = Tape & Reel 7293 = Ammo 4250 = 10 cycles, 25°C after Weibull 4251 = 10 cycles, -55 & 85°C after Weibull 4252 = 10 cycles, -55 & 85°C before Weibull

CSR23 Style

M39003	/03	3075	E
Capacitor Class	Slash	Dash Number	Surge Option
Military Specification Number	Specification Sheet Number	Failure Rate Level	D = C-4250 E = C-4251 F = C-4252 H = No C-Spec

T252 Series MIL–PRF–39003 (CSR33 Style)

Capacitance Range: 1.2 to 1,000 µF • **Temperature Range:** −55°C to +125°C

T	252	A	125	K	050	M	S	C
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material	Specification
T = Tantalum	252 (CSR33)	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 035 = 35 V 050 = 50 V	Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	S = Standard	All capacitors are sleeved unless specified 0100 = Without sleeve 7200 = Tape & Reel 7293 = Ammo 4250 = 10 cycles, 25°C after Weibull 4251 = 10 cycles, -55 & 85°C after Weibull 4252 = 10 cycles, -55 & 85°C before Weibull

CSR33 Style

M39003	/06	4073	B
Capacitor Class	Slash	Dash Number	Surge Option
Military Specification Number	Specification Sheet Number	Failure Rate Level	B = C-4251 C = C-4252

Hermetically Sealed Axial (cont.)

T255 Series High Temperature Solder (CSR33 Style)

Capacitance Range: 1.2 to 1,000 µF • **Temperature Range:** −55°C to +125°C

T	255	A	125	K	050	M	S	C
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material	Specification
T = Tantalum	Hermetically Sealed Axial High Temperature Solder	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros to follow.	K = ±10% M = ±20%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 035 = 35 V 050 = 50 V	Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours G = 1.0%/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	S = Standard	4251 = 10 cycles, -55 & 85°C after Weibull 4252 = 10 cycles, -55 & 85°C before Weibull

CSR33 Style

M39003	/06	4073	H
Capacitor Class	Slash	Dash Number	Surge Option
Military Specification Number	Specification Sheet Number	Failure Rate Level	E = C-4251 F = C-4252 H = Hi Temp Solder Only

T262 Series MIL–PRF–39003 (CSR21 Style)

Capacitance Range: 5.6 to 330 µF • **Temperature Range:** −55°C to +125°C

T	262	C	106	K	050	C	C
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material
T = Tantalum	Hermetically Sealed Axial Capacitor	C, D	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 035 = 35 V 050 = 50 V	Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours	All capacitors are sleeved unless specified. 0100 = Without sleeve 7200 = Tape & Reel 7293 = Ammo 4251 = 10 cycles, -55 & 85°C after Weibull 4252 = 10 cycles, -55 & 85°C before Weibull

CSR21 Style

M39003	/09	3074	B
Capacitor Class	Slash	Dash Number	Surge Option
Military Specification Number	Specification Sheet Number	Failure Rate Level	B = C-4251 C = C-4252

Hermetically Sealed Axial (cont.)

T550 Series Polymer Hermetic Seal (PHS) 105ºC & DLA Series

Capacitance Range: 20 to 820 µF • **Temperature Range:** −55°C to +105°C

T	550	B	107	M	025	A	T	4251	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge Option	Sleeve Option
T = Tantalum	550 = Polymer Hermetic Seal	B	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 V 008 = 8 V 015 = 15 V 025 = 25 V 040 = 40 V 050 = 50 V 060 = 60 V 075= 75 V	A = N/A B* = Standard reliability T* = High reliability	T = 100% tin (Sn) plated H = Tin/lead (SnPb) solder coated (5% Pb minimum)	4251** = Surge current, 10 cycles, -55°C and +85°C	Blank = Sleeved 0100 = Unsleeved

DLA Series

13030	-01	K	A	S	L	B
Drawing Number	Dash Number	Capacitance Tolerance	Surge Current Testing	Insulation	Lead Length	Level
	See Part Numbers list	K = ±10 percent M = ±20 percent	A = +25°C ± 5°C, 10 cycles, after constant voltage conditioning	S = Sleeved U = Unsleeved	L = 1.50 inches (standard)	B = Standard reliability T = High reliability

T551 Series Polymer Hermetic Seal (PHS) 125ºC

Capacitance Range: 20 to 820 µF • **Temperature Range:** −55°C to +125°C

T	551	B	107	M	025	A	T	4251	
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Design	Lead Material	Surge Option	Sleeve Option
T = Tantalum	551 = Polymer Hermetic Seal	B	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6.3 V 008 = 8 V 015 = 15 V 025 = 25 V 040 = 40 V 050 = 50 V 060 = 60 V	A = N/A	T = 100% tin (Sn) plated H = Tin/lead (SnPb) solder coated (5% Pb minimum)	4251 = Surge current, 10 cycles, -55°C and +85°C	Blank = Sleeved 0100 = Unsleeved

Radial Dipped

T350, T351, T352, T353, T354, T355 and T356 Series UltraDip II Polar

Capacitance Range: 0.1 to 680 µF • **Temperature Range:** −55°C to +125°C

T	351	A	105	M	035	A	S
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material
T = Tantalum	350 = Straight Lead, 0.100 & 0.200 351 = Stand-Off Lead, 0.100 352 = Stand-Off Lead, 0.200 353 = Snap-In Lead, 0.200 354 = Stand-Off Lead, 0.250 355 = Stand-Off Lead, 0.125 356 = Stand-Off Lead, 0.200	A, B, C, D, E, F, G, H, J, K, L, M	First two digits represent significant figures. Third digit specifies number of zeros to follow.	J = ±5% K = ±10% M = ±20%	003 = 3 V 006 = 6 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	S = SnPb (Tin/Lead) T = 100% Sn (Tin)

Radial Dipped (cont.)

T363 and T369 Series MIL-PRF-49137/2 (CX02 and CX12 Style)

Capacitance Range: 0.1 to 330 µF • **Temperature Range:** −55°C to +85°C

T	369	A	157	M	006	A	S
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material
T = Tantalum	363 = CX02 369 = CX12	A, B, C, D, E, F, G, H, J, K, L, M	First two digits represent significant figures. Third digit specifies number of zeros to follow.	K = ±10% M = ±20%	003 = 3 V 006 = 6 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	S = SnPb (Tin/Lead) T = 100% Sn (Tin)

MIL–PRF–49137/2 (CX02 & CX12 Style)

CX	02	D	225	K
Capacitor Class	Series	Voltage	Capacitance Code (pF)	Capacitance Tolerance
CX = MIL-PRF	02 = T363 12 = T369	D = 6 V F = 10 V H = 15 V J = 20 V K = 25 V M = 35 V N = 50 V	First two digits represent significant figures. Third digit specifies number of zeros to follow.	K = ±10% M = ±20%

T368 Series UltraDip II

Capacitance Range: 5.6 to 330 µF • **Temperature Range:** −55°C to +85°C

T	368	C	106	M	035	A	S
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material
T = Tantalum	368 = High Capacitance	C, D	First two digits represent significant figures. Third digit specifies number of zeros to follow.	M = ±20% K = ±10%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	S = SnPb (Tin/Lead) T = 100% Sn (Tin)

T396 and T398 Series UltraDip III (3 Leaded)

Capacitance Range: 0.1 to 680 µF • **Temperature Range:** −55°C to +125°C

T	39X	A	105	M	035	A	S
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material
T = Tantalum	T396 Straight Leads T398 Straight Leads	A, B, C, D, E, F, G, H, J, K, L, M	First two digits represent significant figures. Third digit specifies number of zeros to follow.	M = ±20%	003 = 3 V 006 = 6 V 010 = 10 V 016 = 16 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	S = SnPb (Tin/Lead) T = 100% Sn (Tin)

Tantalum Capacitors
Through-Hole

Molded Axial

T322 & T323 Series MIL–PRF–49137/1 and 5 (CX01 & CX05 Style)

Capacitance Range: 0.1 to 330 µF • **Temperature Range:** −55°C to +85°C

T	32X	A	474	M	035	A	S
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate/ Military Product Only	Lead Material
T = Tantalum	322 = CX01 323 = CX05	A, B, C, D, E, F	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	002 = 2 V 004 = 4 V 006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	S = Standard T = 100% Sn (Tin)

MIL-PRF-49137/1/5 (CX01 & CX05 Style)

CX	05	D	225	K
Capacitor Class	Series	Voltage	Capacitance Code (pF)	Capacitance Tolerance
CX = MIL-PRF	01 = T322 05 = T323	D = 6 V F = 10 V H = 15 V J = 20 V K = 25 V M = 35 V N = 50 V	First two digits represent significant figures. Third digit specifies number of zeros to follow.	K = ±10% M = ±20%

Molded Radial

T330 Series Precision Molded Polar

Capacitance Range: 0.1 to 220 µF • **Temperature Range:** −55°C to +125°C

T	330	B	104	M	035	A	S
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material
T = Tantalum	330 = Precision Molded Polar	A, B, C, D	First two digits represent significant figures. Third digit specifies number of zeros to follow.	J = ±5% K = ±10% M = ±20%	006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 050 = 50 V	A = N/A	S = Standard (solder-coated nickel) T = 100% tin (Sn) plated

T340 Series Precision Molded Radial Lead

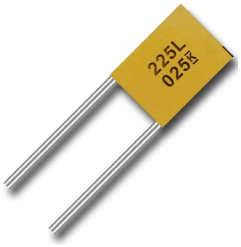
Capacitance Range: 0.1 to 330 µF • **Temperature Range:** −55°C to +125°C

T	340	A	105	M	035	A	S
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material
T = Tantalum	340 = Precision Molded Polar	A, B, C, D, E, F	First two digits represent significant figures. Third digit specifies number of zeros to follow.	M = ±20% K = ±10% J = ±5% (available on request)	003 = 3 V 006 = 6 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V 040 = 40 V 050 = 50 V	A = N/A	S = Standard (solder-coated copper weld)

Molded Radial (cont.)

T370 and T378 Series Micron MIL-PRF-4913716 (CX06 Style)

Capacitance Range: T370: 0.68 to 220 µF, T378: 2.2 to 220 µF • **Temperature Range:** −55°C to +125°C



T	370	D	475	M	035	A	S
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Voltage	Failure Rate	Lead Material
T = Tantalum	370 = Industrial 378 = Military	C, D, E, F	First two digits represent significant figures. Third digit specifies number of zeros to follow.	M = ±20% K = ±10% J = ±5% L = 40%, -20%	003 = 3 V 004 = 4 V 006 = 6.3 V 010 = 10 V 015 = 15 V 020 = 20 V 025 = 25 V 035 = 35 V	A = N/A	S = Standard (solder-coated nickel)

MIL-PRF-49137/6 (CX06 Style)

CX	06	D	225	K
Capacitor Class	Series	Voltage	Capacitance Code (pF)	Capacitance Tolerance
CX = MIL-PRF	06 = T378	A = 2 V B = 3 V C = 4 V D = 6 V F = 10 V H = 15 V J = 20 V K = 25 V M = 35 V	First two digits represent significant figures. Third digit specifies number of zeros to follow.	K = ±10% M = ±20%

Corporate Headquarters

KEMET Corporation
2835 KEMET Way
Simpsonville, SC 29681
USA
864.963.6300
www.kemet.com

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