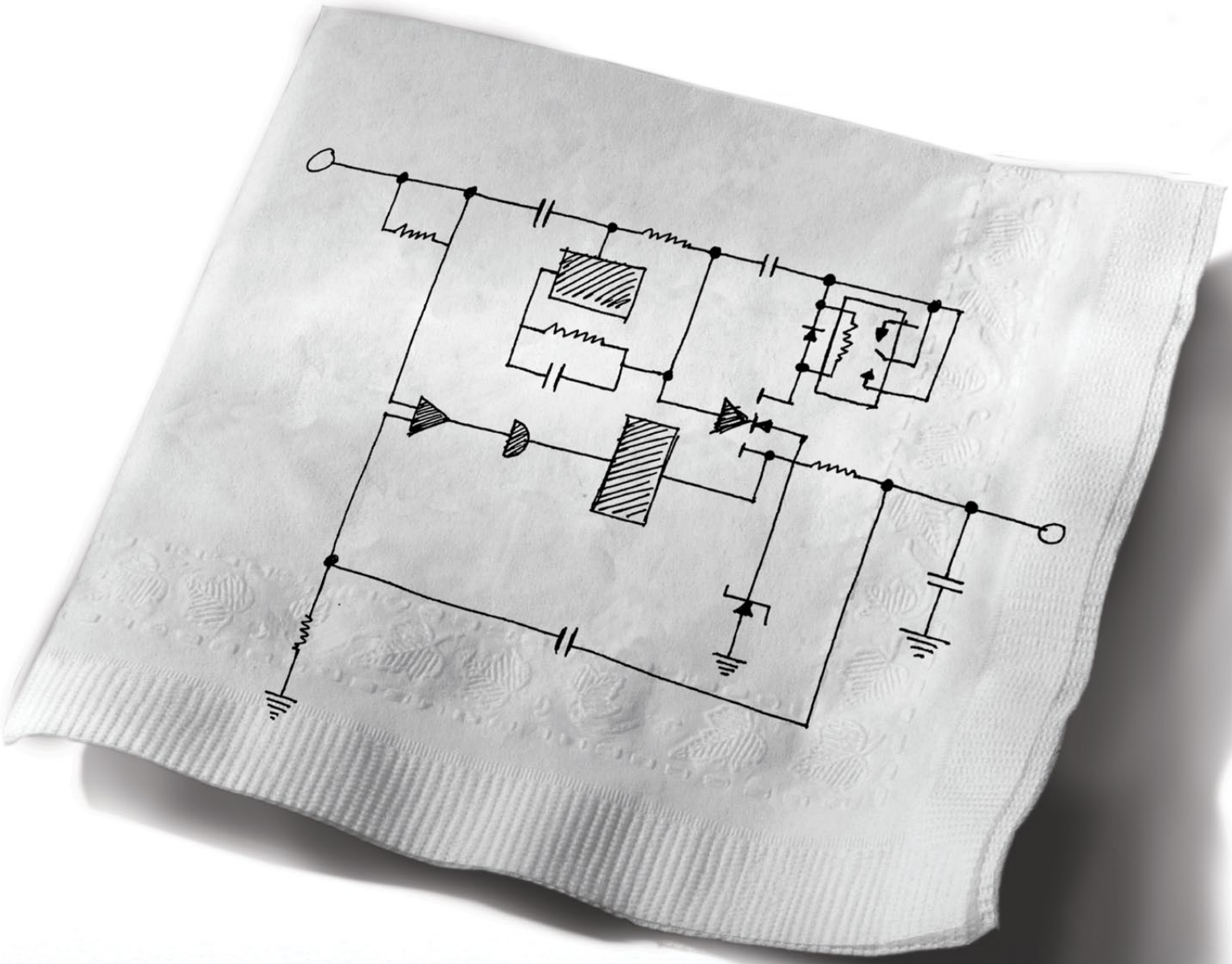
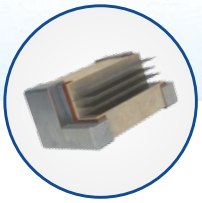
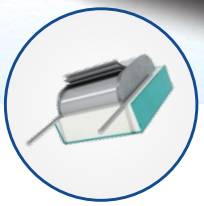
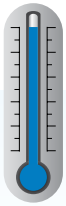






Capacitor Selection Guide
High Temperature



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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, delivery and service.

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150°C

Aluminum Electrolytic – 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%

Case Size	Voltage		
	25	40	63
16 x 29		470 µF	250 µF
16 x 37	1 mF – 1.5 mF	600 µF	370 µF
20 x 29	2 2 mF	1 mF – 1.5 mF	470 µF
20 x 37	3 3 mF	2 2 mF	680 µF
20 x 46	4 mF	2.7 mF	900 µF

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%

Case Size	Voltage		
	25	40	63
16 x 27	1 5 mF	800 µF	250 µF
16 x 35	2 2 mF	1.2 mF	370 µF
20 x 27	2 2 mF	1 5 mF	470 µF
20 x 35	3 3 mF	2 2 mF	680 µF
20 x 43	4.7 mF	2.7 mF	900 µF

Aluminum Electrolytic – Radial Crown (cont.)

PEH225 High Ripple Current 150ºC, 25 – 63 VDC

Capacitance Range: 470 to 6,300 µF • **Temperature Range:** −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%

Case Size	Voltage		
	25	40	63
16 x 27	2 2 mF	1.2 mF	470 µF
16 x 35	3 mF	1.8 mF	680 µF
20 x 27	3.6 mF	2 mF	900 µF
20 x 35	4.8 mF	3 mF	1.4 mF
20 x 43	6 3 mF	3 9 mF	1 8 mF

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

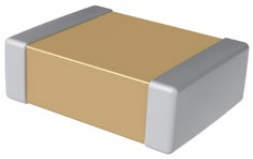
PEH226	H	F	415	0	M
Series	Voltage (VDC)	Size Code	Capacitance Code (pF)	Version	Capacitance Tolerance
Radial Crown Aluminum Electrolytic with Soldering Star Termination	H = 25 K = 40 M = 63	See Dimension Table	The second two digits indicate the two most significant digits of the capacitance value. The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

Case Size	Voltage		
	25	40	63
16 x 27	1 5 mF	800 µF	250 µF
16 x 35	2 2 mF	1.2 mF	370 µF
20 x 27	2 2 mF	1 5 mF	470 µF
20 x 35	3 3 mF	2 2 mF	680 µF
20 x 43	4.7 mF	2.7 mF	900 µF

Ceramic – Surface Mount

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

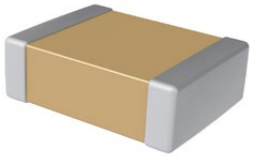


C	1210	X	106	K	8	N	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)
	0402 0603 0805 1206 1210	C = Standard X = Flexible Termination	2 significant digits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

Case Size	Voltage		
	10	16	25
0402	0.012 µF – 0.047 µF		0.012 µF – 0.022 µF
0603	0.047 µF – 0.22 µF		0.047 µF – 0.15 µF
0805	0.15 µF – 1 µF	0.82 µF – 1 µF	0.15 µF – 0.68 µF
1206	0.47 µF – 4.7 µF	2.7 µF – 4.7 µF	0.47 µF – 2.2 µF
1210	0.39 µF – 10 µF	5.6 µF – 10 µF	0.39 µF – 4.7 µF

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

Capacitance Range: 100 pF to 0.22 µF **Temperature Range:** −55°C to +150°C



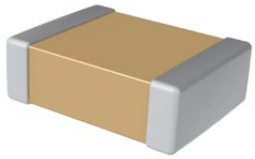
C	1210	C	184	K	3	H	A	C	AUTO
Ceramic	Case Size (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)
	0402 0603 0805 1206 1210 1812	C = Standard	2 significant digits + number of zeros	F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	3 = 25 5 = 50 1 = 100	H = Ultra Stable X8R	A = N/A	C = 100% Matte Sn L = SnPb (5% Pb minimum)	See "Packaging C-Spec Ordering Options Table" below

Case Size	Voltage		
	25	50	100
0402	100 pF – 1.5 nF	100 pF – 1.5 nF	100 pF – 1 nF
0603	430 pF – 0.01 µF	430 pF – 6.8 nF	430 pF – 4.7 nF
0805	2 nF – 0.033 µF	2 nF – 0.022 µF	2 nF – 0.015 µF
1206	6.8 nF – 0.1 µF	6.8 nF – 0.082 µF	6.8 nF – 0.056 µF
1210	0.012 µF – 0.18 µF	0.012 µF – 0.15 µF	0.012 µF – 0.1 µF
1812		0.015 µF – 0.22 µF	0.015 µF – 0.15 µF

Ceramic – Surface Mount (cont.)

Flexible Termination System (FT-CAP), Ultra Stable X8R Dielectric, 25 – 100 VDC (Commercial & 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	Reated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[1]	Packaging/Grade (C-Spec)
	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 5 = 50 1 = 100	H = Ultra-Stable X8R	A = N/A	C = 100% Matte Sn L = SnPb (5% Pb minimum)	See "Packaging C-Spec Ordering Options Table" below

Case Size	Voltage		
	25	50	100
0603	430 pF – 0.01 µF	430 pF – 6.8 nF	430 pF – 4.7 nF
0805	2 nF – 0.033 µF	2 nF – 0.022 µF	2 nF – 0.015 µF
1206	6 8 nF – 0.1 µF	6.8 nF – 0.082 µF	6.8 nF – 0.056 µF
210	0.012 µF – 0.18 µF	0.012 µF – 0.15 µF	0.012 µF – 0.1 µF
1812		0.015 µF – 0.22 µF	0.015 µF – 0.15 µF

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

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

C	2220	C	476	M	8	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 4 = 16 3 = 25 5 = 50	N = X8L	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	See "Packaging C-Spec Ordering Options Table" below

Case Size	Voltage			
	10	16	25	50
1210-1	0.47 µF – 4.7 µF	0.47 µF – 4.7 µF	0.47 µF – 4.7 µF	0.47 µF – 1 µF
1210-2	1 µF – 10 µF	1 µF – 10 µF	1 µF – 10 µF	1 µF – 2.2 µF
2220-1	2.2 µF – 22 µF	2 2 µF – 10 µF	2 2 µF – 10 µF	
2220-2	4.7 µF – 47 µF	4.7 µF – 22 µF	4.7 µF – 22 µF	

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Ceramic – Leaded

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

Capacitance Range: 0.1 µF 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]	Rated Voltage (VDC)	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

Case Size	Voltage	
	25	50
C410 (2.413 x 4.318)	0.1 µF – 0.68 µF	0.1 µF – 0.22 µF
C430 (3.81 x 6.096)	0.82 µF – 2 2 µF	0.33 µF – 0.47 µF

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

Capacitance Range: 100 pF to 0.082 µF **Temperature Range:** −55°C to +150°C

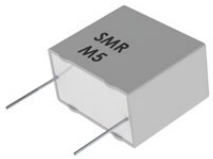
C	410	C	472	J	5	H	5	T	A	7200
Ceramic	Style/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Design	Lead Finish[2]	Failure Rate	Packaging/Grade (C-Spec)
	410 430	C = Standard	2 significant digits + number of zeros	F = ±1% G = ±2% J = ±5% K = ±10%	5 = 50 1 = 100 2 = 200	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

Case Size	Voltage		
	50	100	200
C410 (2.413 x 4.318)	100 pF – 0.022 µF	100 pF – 0.015 µF	100 pF – 1 nF
C430 (3.81 x 6.096)	0.027 µF – 0.082 µF	0.018 µF – 0.047 µF	1.1 nF – 2.7 nF

Film – Through-Hole

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	Packaging
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

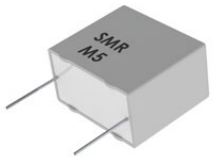
F	211	J	F	104	K	050	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Metallized PPS	J = 5.0 K = 7.5 A = 10.0 B = 15.0 D = 22 5 F = 27.5	See Dimension Table	First two digits indicate the two most significant digits 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

Case Size	Voltage				
	50/30	63/40	100/63	250/160	400/200
5 – 7.2 x 10 x 5	470 nF – 560 nF	270 nF – 330 nF	120 nF	56 nF	22 nF – 27 nF
5 – 7.2 x 11 x 6	680 nF – 820 nF	390 nF – 470 nF	150 nF – 180 nF	68 nF – 82 nF	33 nF – 39 nF
5 – 7.2 x 13 x 7.2	1 µF – 1.2 µF	560 nF – 680 nF	220 nF – 330 nF	100 nF – 120 nF	47 nF – 56 nF
5 – 7.2 x 6.5 x 2.5	1 nF – 120 nF	1 nF – 68 nF	1 nF – 39 nF	1 nF – 12 nF	1 nF – 3.9 nF
5 – 7.2 x 8 x 3.5	150 nF – 270 nF	82 nF – 150 nF	47 nF	15 nF – 27 nF	4.7 nF – 12 nF
5 – 7.2 x 9 x 4.5	330 nF – 390 nF	180 nF – 220 nF	56 nF – 100 nF	33 nF – 47 nF	15 nF – 18 nF
7.5 – 10 x 11 x 5	470 nF – 820 nF	330 nF – 560 nF	150 nF – 270 nF	56 nF – 100 nF	27 nF – 47 nF
7.5 – 10 x 8 x 4	1 nF – 390 nF	1 nF – 270 nF	1 nF – 120 nF	1 nF – 47 nF	1 nF – 22 nF
7.5 – 10.5 x 12 x 6	1 µF – 1.2 µF	680 nF – 820 nF	330 nF – 470 nF	120 nF – 150 nF	56 nF – 68 nF
10 – 13 x 10.5 x 4.5	820 nF – 1 µF	470 nF – 560 nF	270 nF	82 nF – 100 nF	39 nF
10 – 13 x 11 x 5	1 2 µF	680 nF	330 nF – 390 nF	120 nF	47 nF – 56 nF
10 – 13 x 12 x 6	1.5 µF – 1.8 µF	820 nF – 1 µF	470 nF – 560 nF	150 nF – 180 nF	68 nF – 82 nF
10 – 13 x 9 x 4	2.7 nF – 680 nF	2.7 nF – 390 nF	2.7 nF – 220 nF	2.7 nF – 68 nF	2.7 nF – 33 nF
15 – 18 x 10.5 x 5.5		680 nF – 820 nF	270 nF – 470 nF	100 nF – 150 nF	47 nF – 68 nF
15 – 18 x 12.5 x 5.5		1 µF	560 nF	180 nF	82 nF

Film – Through-Hole (cont.)

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

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	Packaging
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

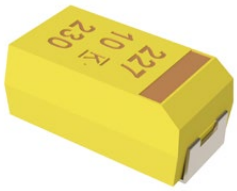
F	211	J	F	104	K	050	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Metallized PPS	J = 5.0 K = 7.5 A = 10.0 B = 15.0 D = 22 5 F = 27.5	See Dimension Table	First two digits indicate the two most significant digits 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

Case Size	Voltage				
	50/30	63/40	100/63	250/160	400/200
15 – 18 x 12.5 x 6.5	2.2 µF	1.2 µF – 1.5 µF	680 nF	220 nF	100 nF
15 – 18 x 14.5 x 7.5	2.7 µF – 3 3 µF	1.8 µF	820 nF – 1 µF	270 nF – 330 nF	120 nF – 150 nF
15 – 18 x 15 x 8	3.9 µF	2.2 µF	1 2 µF	390 nF	180 nF
15 – 18 x 16 x 8.5	4.7 µF	2.7 µF	1 5 µF	470 nF	220 nF
15 – 18 x 17.5 x 9.5	5.6 µF	3.3 µF	1.8 µF	560 nF	270 nF
22.5 – 26 x 14.5 x 6.5		2.7 µF	1 5 µF	470 nF	150 nF – 220 nF
22.5 – 26 x 16 x 8		3.9 µF	2.2 µF		330 nF
22.5 – 26 x 16.5 x 7		3.3 µF	1.8 µF	560 nF – 680 nF	270 nF
22.5 – 26 x 18.5 x 9	6.8 µF – 8.2 µF	4.7 µF – 5.6 µF	2.7 µF	820 nF – 1 µF	390 nF – 470 nF
22.5 – 26 x 19 x 10.5	10 µF	6.8 µF	3.3 µF – 3.9 µF	1.2 µF	560 nF
22.5 – 26 x 21.5 x 11	12 µF	8.2 µF	4.7 µF	1.5 µF	680 nF
27.5 – 31.5 x 22.5 x 11.5	18 µF	10 µF	5.6 µF	2.2 µF	820 nF – 1 µF
27.5 – 31.5 x 24.5 x 14.5	22 µF	12 µF – 15 µF	6.8 µF – 8.2 µF	2.7 µF	1 2 µF
27.5 – 31.5 x 28 x 17.5		18 µF – 22 µF	10 µF – 12 µF	3.3 µF – 3.9 µF	1.5 µF – 1.8 µF
27.5 – 31.5 x 20.5 x 10.5	15 µF			1.5 µF – 1.8 µF	470 nF – 680 nF

Tantalum – Surface Mount

T498 Series Automotive Grade MnO_2 150ºC

Capacitance Range: 0.1 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	Rated Voltage (VDC)	Failure Rate/ Design	Termination Finish	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%	004 = 4 006 = 6.3 010 = 10 015 = 15 020 = 20 025 = 25 035 = 35 050 = 50	A = N/A	T = 100% Matte Tin (Sn) plated* G = Gold 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

Case Size	Voltage							
	4	6.3	10	16	20	25	35	50
3216 – 1.6		2 2 µF – 10 µF	1.5 µF – 6.8 µF	1 µF – 6.8 µF	680 nF – 1.5 µF	470 nF – 1 µF	100 nF – 1 µF	100 nF
3528 – 1.9		6.8 µF – 33 µF	4.7 µF – 22 µF	3 3 µF – 10 µF	2.2 µF – 4.7 µF	1.5 µF – 2 2 µF	470 nF – 1 µF	150 nF – 330 nF
6032 – 2.5		15 µF – 68 µF	10 µF – 47 µF	6.8 µF – 47 µF	4.7 µF – 15 µF	3 3 µF – 10 µF	1.5 µF – 4.7 µF	470 nF – 1 µF
7343 – 2.8	150 µF	47 µF – 150 µF	33 µF – 100 µF	22 µF – 68 µF	15 µF – 33 µF	6.8 µF – 33 µF	4.7 µF – 22 µF	1.5 µF – 10 µF
7343 – 4			150 µF – 220 µF				15 µF – 47 µF	6.8 µF – 10 µF

175°C

Electronic Components
KEMET
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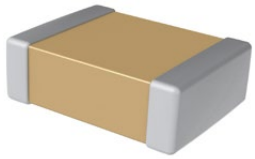
Ceramic – Surface Mount

High Temperature 175ºC, X7R Dielectric, 16 – 200 VDC (Industrial Grade)

Capacitance Range: 2.7 nF to 3.3 µF • **Temperature Range:** −55°C to +175°C



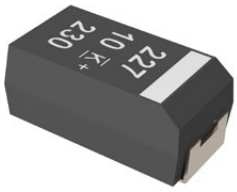
C	1210	R	225	K	3	R	A	C	T050
Ceramic	Case Size[1] (L" x W")	Specification/ Series[1]	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish	Packaging/Grade (C-Spec)[2]
	0402 0603 0805 1206 1210 1812	G = 175 C with standard termination R = 175 C w/ Flexible Termination	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	4 = 16 3 = 25 5 = 50 1 = 100 2 = 200	R = X7R	A = N/A	C = 100% Matte Sn	Blank = Bulk 7292 = Waffle Pack/Tray TU = 7" Reel - Unmarked (full reel quantity) T050 = 50 pieces/7" Reel - Unmarked T100 = 100 pieces/7" Reel - Unmarked T250 = 250 pieces/7" Reel - Unmarked T500 = 500 pieces/7" Reel - Unmarked T1K0 = 1,000 pieces/Reel - Unmarked

Case Size	Voltage			
	16	25	50	200
0402	2.7 nF – 0.047 µF	2.7 nF – 0.022 µF	2.7 nF – 0.01 µF	
0603		0.018 µF – 0.15 µF	0.018 µF – 0.1 µF	
0805		0.047 µF – 0.68 µF	0.047 µF – 0 27 µF	
1206		0.1 µF – 1 µF	0.1 µF – 0.47 µF	
1210		0.18 µF – 2.2 µF	0.18 µF – 1 µF	
1812		0 22 µF – 3.3 µF	0 22 µF – 1 5 µF	0.056 µF – 0.1 µF

Tantalum – Surface Mount

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	Rated Voltage (VDC)	Failure Rate/ Design	Termination Finish	ESR	Packaging (C-Spec)
T = Tantalum	High Temperature 175ºC	A, B, C, D, X	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	006 = 6 3 010 = 10 015 = 15 020 = 20 025 = 25 035 = 35 050 = 50	A = N/A	T = 100% Matte Tin (Sn) plated G = Gold 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

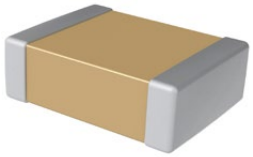
Case Size	Voltage						
	6.3	10	16	20	25	35	50
3216 – 1.6		1.5 µF – 6.8 µF	1 µF – 6.8 µF	680 nF – 1.5 µF	470 nF – 1 5 µF	150 nF – 1 µF	
3528 – 1.9	10 µF – 33 µF	4.7 µF – 22 µF	3.3 µF – 10 µF	2.2 µF – 4.7 µF	2 2 µF	470 nF – 1 µF	
6032 – 2.5	22 µF – 47 µF	10 µF – 33 µF	6.8 µF – 22 µF	4.7 µF – 15 µF	3.3 µF – 10 µF	1.5 µF – 4.7 µF	
7343 – 2.8	100 µF	33 µF – 100 µF	22 µF – 47 µF	15 µF – 22 µF	6.8 µF – 33 µF	6.8 µF – 10 µF	3 3 µF – 10 µF
7343 – 4		220 µF	100 µF			22 µF – 33 µF	

200°C

Ceramic – Surface Mount

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

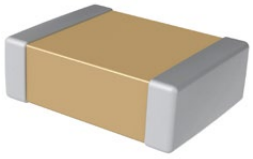


C	1210	H	124	J	5	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Voltage	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)
	0402 0603 0805 1206 1210 1812 2220	H = High Temperature (200 C)	2 significant digits + number 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% Pb minimum) E = Gold (Au) 1.97 – 11.8 µin F = Gold (Au) 30 – 50 µin G Gold (Au) 100 µin minimum	See "Packaging C-Spec Ordering Options Table" below

Case Size	Voltage					
	10	16	25	50	100	200
0402	0.5 pF – 1.5 nF	0 5 pF – 1.5 nF	0.5 pF – 1.5 nF	0.5 pF – 1.5 nF	100 pF – 1 nF	
0603	0.5 pF – 0.01 µF	0.5 pF – 0.01 µF	0.5 pF – 0.01 µF	0.5 pF – 6.8 nF	0.5 pF – 4.7 nF	0.5 pF – 180 pF
0805	0.5 pF – 0.047 µF	0.5 pF – 0.047 µF	0.5 pF – 0.047 µF	0.5 pF – 0.022 µF	0.5 pF – 0.015 µF	0.5 pF – 1 nF
1206	1 pF – 0.1 µF	1 pF – 0.1 µF	1 pF – 0.1 µF	1 pF – 0.082 µF	1 pF – 0.047 µF	1 pF – 2.7 nF
1210	1 pF – 0.15 µF	1 pF – 0.15 µF	1 pF – 0.15 µF	1 pF – 0.15 µF	1 pF – 0.1 µF	1 pF – 5.6 nF
1812	0.015 µF – 0.22 µF	0.015 µF – 0.22 µF	0.015 µF – 0.22 µF	0.015 µF – 0.22 µF	0.015 µF – 0.15 µF	
2220	0.47 µF	0.47 µF	0.47 µF	0.47 µF		

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 • **Tempe ature Range:** −55°C to +200°C



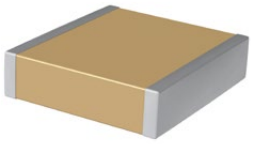
C	2225	H	393	J	C	G	A	C	TU
Ceramic	Case Size (L" x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Termination Finish[2]	Packaging/Grade (C-Spec)
	0805 1206 1210 1808 1812 1825 2220 2225	H= High Temperature (200 C)	2 significant 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 B = 630 D = 1,000 F = 1,500 G = 2,000	G = C0G	A = N/A	C = 100% Matte Sn L = SnPb (5% Pb minimum) E = Gold (Au) 1.97 – 11.8 µin F = Gold (Au) 30 – 50 µin G = Gold (Au) 100 µin minimum	See "Packaging C-Spec Ordering Options Table" below

Case Size	Voltage				
	500	630	1,000	1,500	2,000
0805	1 pF – 820 pF	1 pF – 560 pF	1 pF – 270 pF		
1206	10 pF – 2.7 nF	10 pF – 1.8 nF	10 pF – 1 nF	10 pF – 560 pF	10 pF – 270 pF
1210	10 pF – 8.2 nF	10 pF – 5.6 nF	10 pF – 2.7 nF	10 pF – 1.2 nF	10 pF – 680 pF
1808	1 pF – 6.8 nF	1 pF – 4.7 nF	1 pF – 2.7 nF	1 pF – 1.5 nF	1 pF – 680 pF
1812	10 pF – 0.015 µF	10 pF – 0.01 µF	10 pF – 5.6 nF	10 pF – 2.7 nF	10 pF – 1.5 nF
1825	10 pF – 0.033 µF	10 pF – 0.018 µF	10 pF – 0.01 µF	10 pF – 5.6 nF	10 pF – 3 nF
2220	10 pF – 0.033 µF	10 pF – 0.027 µF	10 pF – 0.012 µF	10 pF – 6.8 nF	10 pF – 3.9 nF
2225	10 pF – 0.039 µF	10 pF – 0.027 µF	10 pF – 0.015 µF	10 pF – 6.8 nF	10 pF – 3.9 nF

Ceramic – Surface Mount (cont.)

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 4540	H= High Temp (200 C)	2 significant digits + number of zeros	J = ±5% K = ±10% M = ±20%	C = 500 B = 630 D = 1,000 F = 1,500 G = 2,000	G = C0G	W = Pulse Discharge	C = 100% Matte Sn	Contact KEMET for packaging availability and details

Ceramic – Leaded

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

Capacitance Range: 10 pF to 5.6 µF **Temperature Range:** −55°C to +200°C

A	C	R	06	B	103	K	G	S
Series	Dielectric	Lead Configuration	Case Size	Rated Voltage (VDC)	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 D = 100 S = Special	Two significant digits plus the number of zeros	J = ±5% K = ±10% M = ±20%	W = Solder Coated Copper Clad Steel G = Gold Plated Copper Clad Steel	S = Standard A = M L-PRF-39014, Group A Test A = M L-PRF-20 (C0G) X = Special

ACR

Case Size	Voltage	
	50	100
05 (5.08 x 5.08 x 2.54)	10 pF – 0.01 µF	10 pF – 0.01 µF
06 (7.62 x 7.62 x 2.54)	270 pF – 0.027 µF	270 pF – 0.027 µF
07 (7.62 x 7.62 x 3.81)	270 pF – 0.033 µF	270 pF – 0.033 µF
08 (12.7 x 12.7 x 2.54)	270 pF – 0.082 µF	270 pF – 0.068 µF
09 (12.7 x 12.7 x 3.81)	270 pF – 0.12 µF	270 pF – 0.1 µF

ARR

Case Size	Voltage	
	50	100
05 (5.08 x 5.08 x 2.54)	100 pF – 0.33 µF	100 pF – 0.33 µF
06 (7.62 x 7.62 x 2.54)	330 pF – 1 µF	330 pF – 1 µF
07 (7.62 x 7.62 x 3.81)	330 pF – 1 µF	330 pF – 1 µF
08 (12.7 x 12.7 x 2.54)	680 pF – 1.8 µF	680 pF – 1.8 µF
09 (12.7 x 12.7 x 3.81)	680 pF – 3.3 µF	680 pF – 3.3 µF

ACA

Case Size	Voltage	
	50	100
16 (4.32 x 2.03 x 2.03)	1 pF – 680 pF	1 pF – 560 pF
25 (6.86 x 2.54 x 2.54)	56 pF – 4.7 nF	56 pF – 4.7 nF
39 (10.16 x 3.81 x 3.81)	150 pF – 0.015 µF	150 pF – 0.015 µF
50 (13.21 x 6.73 x 4.06)	390 pF – 0.039 µF	390 pF – 0.022 µF
69 (18.29 x 9.4 x 4.06)	820 pF – 0.1 µF	820 pF – 0.1 µF

ARA

Case Size	Voltage	
	50	100
16 (4.32 x 2.03 x 2.03)	100 pF – 0.015 µF	100 pF – 4.7 nF
25 (6.86 x 2.54 x 2.54)	100 pF – 0.12 µF	100 pF – 0.047 µF
39 (10.16 x 3.81 x 3.81)	180 pF – 0.33 µF	180 pF – 0.12 µF
50 (13.21 x 6.73 x 4.06)	390 pF – 1 µF	390 pF – 1 µF
69 (18.29 x 9.4 x 4.06)	820 pF – 1.8 µF	820 pF – 1.8 µF

Ceramic – Leaded (cont.)

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

Capacitance Range: 5.6 pF to 2.7 µF • **Temperature Range:** −55°C to +200°C

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

HT-C0G Axial

Case Size	Voltage		
	50	100	200
HT11 (2.54 x 4.32)	1 pF – 1 nF	1 pF – 1 nF	1 pF – 820 pF
HT13 (3.43 x 6.6)	15 pF – 5.6 nF	15 pF – 5.6 nF	15 pF – 3.9 nF
HT14 (3.94 x 10.16)	150 pF – 0.018 µF	150 pF – 0.018 µF	150 pF – 0.012 µF
HT16 (9.52 x 19.05)	820 pF – 0.1 µF	820 pF – 0.1 µF	820 pF – 0.082 µF

HP-C0G Axial

Case Size	Voltage		
	50	100	200
HP11 (2.54 x 4.32)	1 pF – 1 nF	1 pF – 1 nF	1 pF – 820 pF
HP13 (3.43 x 6.6)	15 pF – 5.6 nF	15 pF – 5.6 nF	15 pF – 3.9 nF
HP14 (3.94 x 10.16)	150 pF – 0.018 µF	150 pF – 0.018 µF	150 pF – 0.012 µF
HP15 (5.08 x 12.7)	390 pF – 0.047 µF	390 pF – 0.047 µF	390 pF – 0.039 µF
HP16 (9.52 x 19.05)	820 pF – 0.1 µF	820 pF – 0.1 µF	820 pF – 0.082 µF

HT-C0G Radial

Case Size	Voltage		
	50	100	200
HT05 (5.08 x 5.08 x 2.54)	22 pF – 2.7 nF	22 pF – 2.7 nF	22 pF – 1.5 nF
HT06 (7.62 x 7.62 x 3.81)	270 pF – 0.039 µF	270 pF – 0.039 µF	270 pF – 0.015 µF
HT08 (12.7 x 12.7 x 6.35)	680 pF – 0.12 µF	680 pF – 0.12 µF	680 pF – 0.12 µF
HT09 (17.78 x 10.16 x 5.08)	0.01 µF – 0.1 µF	0.01 µF – 0.1 µF	0.01 µF – 0.068 µF
HT55 (5.08 x 5.08 x 2.54)	10 pF – 2.7 nF	10 pF – 2.7 nF	10 pF – 1.5 nF

HP-C0G Radial

Case Size	Voltage		
	50	100	200
HP05 (5.08 x 5.08 x 2.54)	22 pF – 2.7 nF	22 pF – 2.7 nF	22 pF – 1.5 nF
HP06 (7.62 x 7.62 x 3.81)	270 pF – 0.039 µF	270 pF – 0.039 µF	270 pF – 0.015 µF
HP08 (12.7 x 12.7 x 6.35)	680 pF – 0.12 µF	680 pF – 0.12 µF	680 pF – 0.12 µF
HP09 (17.78 x 10.16 x 5.08)	0.01 µF – 0.1 µF	0.01 µF – 0.1 µF	0.01 µF – 0.068 µF
HP55 (5.08 x 5.08 x 2.54)	10 pF – 2.7 nF	10 pF – 2.7 nF	10 pF – 1.5 nF

HT-X7R Axial

Case Size	Voltage		
	50	100	200
HT11 (2.54 x 4.32)	100 pF – 0.056 µF	100 pF – 0.056 µF	100 pF – 0.018 µF
HT13 (3.43 x 6.6)	100 pF – 0.22 µF	100 pF – 0.22 µF	100 pF – 0.027 µF
HT14 (3.94 x 10.16)	330 pF – 0.47 µF	330 pF – 0.47 µF	330 pF – 0.18 µF
HT16 (9.52 x 19.05)	820 pF – 4.7 µF	820 pF – 4.7 µF	820 pF – 1.5 µF

HP-X7R Axial

Case Size	Voltage		
	50	100	200
HP11 (2.54 x 4.32)	100 pF – 0.056 µF	100 pF – 0.056 µF	100 pF – 0.018 µF
HP13 (3.43 x 6.6)	100 pF – 0.22 µF	100 pF – 0.22 µF	100 pF – 0.027 µF
HP14 (3.94 x 10.16)	330 pF – 0.47 µF	330 pF – 0.47 µF	330 pF – 0.18 µF
HP15 (5.08 x 12.7)	390 pF – 2 2 µF	390 pF – 2.2 µF	390 pF – 0.47 µF
HP16 (9.52 x 19.05)	820 pF – 4.7 µF	820 pF – 4.7 µF	820 pF – 1.5 µF

HT-X7R Radial

Case Size	Voltage		
	50	100	200
HT05 (5.08 x 5.08 x 2.54)	1 nF – 0.082 µF	1 nF – 0.082 µF	1 nF – 0.027 µF
HT06 (7.62 x 7.62 x 3.81)	1.8 nF – 1 µF	1.8 nF – 1 µF	1.8 nF – 0.47 µF
HT08 (12.7 x 12.7 x 6.35)	1.2 nF – 5.6 µF	1.2 nF – 5.6 µF	1.2 nF – 2.7 µF
HT09 (17.78 x 10.16 x 5.08)	0.1 µF – 3 9 µF	0.1 µF – 3 9 µF	0.1 µF – 1 µF
HT55 (5.08 x 5.08 x 2.54)	1 nF – 0.082 µF	1 nF – 0.082 µF	1 nF – 0.027 µF

HP-X7R Radial

Case Size	Voltage		
	50	100	200
HP05 (5.08 x 5.08 x 2.54)	1 nF – 0.082 µF	1 nF – 0.082 µF	1 nF – 0.027 µF
HP06 (7.62 x 7.62 x 3.81)	1.8 nF – 1 µF	1.8 nF – 1 µF	1.8 nF – 0.47 µF
HP08 (12.7 x 12.7 x 6.35)	1.2 nF – 5.6 µF	1.2 nF – 5.6 µF	1.2 nF – 2.7 µF
HP09 (17.78 x 10.16 x 5.08)	0.1 µF – 3 9 µF	0.1 µF – 3 9 µF	0.1 µF – 1 µF
HP55 (5.08 x 5.08 x 2.54)	1 nF – 0.082 µF	1 nF – 0.082 µF	1 nF – 0.027 µF

Ceramic – Leaded (cont.)

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

Capacitance Range: 10 pF to 1.0 µF **Temperature Range:** −55°C to +200°C

10	HV12	W	472	K	N	M
Rated Voltage (VDC)	Style/Size	Dielectric	Capacitance Code (pF)	Capacitance Tolerance	Lead Finish	Group A Screening
05 = 500 10 = 1,000 20 = 2,000 30 = 3,000 40 = 4,000	HV10 – HV16	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

C0G

Case Size	Voltage				
	500	1,000	2,000	3,000	4,000
HV10 (6.35 x 5.59 x 3.81)	27 pF – 1 5 nF	27 pF – 1.5 nF	10 pF – 390 pF		
HV11 (8.13 x 7.62 x 6.35)	39 pF – 2.2 nF	39 pF – 1.8 nF	22 pF – 1 nF	22 pF – 470 pF	
HV12 (10.67 x 10.16 x 6.35)	47 pF – 3 3 nF	47 pF – 2.7 nF	27 pF – 1.5 nF	27 pF – 1 nF	
HV13 (13.21 x 12.7 x 7.62)	120 pF – 5.6 nF	120 pF – 4.7 nF	120 pF – 3 3 nF	120 pF – 2.7 nF	
HV14 (15.75 x 12.7 x 7.62)	180 pF – 8.2 nF	180 pF – 6.8 nF	100 pF – 3.9 nF	100 pF – 3.3 nF	18 pF – 2.7 nF
HV15 (18.29 x 17.78 x 7.62)	390 pF – 0.01 µF	390 pF – 0.01 µF	150 pF – 4.7 nF	150 pF – 3.9 nF	27 pF – 3.3 nF
HV16 (20.83 x 17.78 x 8.89)	470 pF – 0.015 µF	470 pF – 0.015 µF	270 pF – 0.012 µF	270 pF – 8.2 nF	47 pF – 5.6 nF

X7R

Case Size	Voltage				
	500	1,000	2,000	3,000	4,000
HV10 (6.35 x 5.59 x 3.81)	680 pF – 0.047 µF	680 pF – 0.012 µF	270 pF – 4.7 nF		
HV11 (8.13 x 7.62 x 6.35)	1.2 nF – 0.15 µF	1.2 nF – 0.047 µF	560 pF – 2.7 nF		
HV12 (10.67 x 10.16 x 6.35)	1.2 nF – 0.22 µF	1.2 nF – 0.018 µF	680 pF – 0.01 µF		
HV13 (13.21 x 12.7 x 7.62)	3.3 nF – 0.082 µF	3.3 nF – 0.047 µF	1.2 nF – 0.018 µF	1.2 nF – 0.01 µF	
HV14 (15.75 x 12.7 x 7.62)	6.8 nF – 0.12 µF	6.8 nF – 0.056 µF	2.7 nF – 0.027 µF	2.7 nF – 0.012 µF	470 pF – 0.012 µF
HV15 (18.29 x 17.78 x 7.62)	0.01 µF – 0.22 µF	0.01 µF – 0.056 µF	3.9 nF – 0.027 µF	3 9 nF – 0.015 µF	680 pF – 0.01 µF
HV16 (20.83 x 17.78 x 8.89)	0.015 µF – 0.47 µF	0.015 µF – 0.47 µF	6.8 nF – 0.047 µF	6.8 nF – 0.022 µF	1.2 nF – 0.012 µF

Ceramic – Leaded (cont.)

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

Capacitance Range: 10 pF to 1.5 µF • **Temperature Range:** −55°C to +200°C

V	C	R	40	M	102	K	W	A
Series	Dielectric	Lead Configuration	Case Size	Rated Voltage (VDC)	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 M = 1,000 T = 2,000 V = 3,000 W = 4,000 X = 5,000	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

VCR

Case Size	Voltage					
	500	1,000	2,000	3,000	4,000	5,000
07 (7.62 x 7.62 x 3.81)	10 pF – 3 3 nF	10 pF – 6.8 nF	10 pF – 470 pF			
40 (8.89 x 10.16 x 6.98)	10 pF – 8 2 nF	10 pF – 3.3 nF	10 pF – 330 pF	10 pF – 270 pF	10 pF – 270 pF	
50 (13.2 x 12.7 x 7.62)	18 pF – 0.018 µF	18 pF – 6.8 nF	18 pF – 1.5 nF	18 pF – 1 nF	18 pF – 1 nF	18 pF – 680 pF
60 (13.97 x 15.24 x 9.52)	22 pF – 0.027 µF	22 pF – 0.015 µF	22 pF – 3 3 nF	22 pF – 2.2 nF	22 pF – 2 2 nF	22 pF – 1.2 nF
70 (16.51 x 17.78 x 9.52)	27 pF – 0.033 µF	27 pF – 0.027 µF	27 pF – 4.7 nF	27 pF – 2.7 nF	27 pF – 2.7 nF	27 pF – 2.2 nF
80 (19.05 x 20.32 x 9.52)	33 pF – 0.056 µF	33 pF – 0.033 µF	33 pF – 6.8 nF	33 pF – 3.9 nF	33 pF – 3 9 nF	33 pF – 2.7 nF

VRR

Case Size	Voltage					
	500	1,000	2,000	3,000	4,000	5,000
07 (7.62 x 7.62 x 3.81)	390 pF – 0.056 µF	390 pF – 0.015 µF	390 pF – 3.9 nF			
40 (8.89 x 10.16 x 6.98)	330 pF – 0.33 µF	330 pF – 0.1 µF	330 pF – 0.027 µF	330 pF – 0.015 µF	330 pF – 6.8 nF	
50 (13.2 x 12.7 x 7.62)	470 pF – 0.33 µF	470 pF – 0.1 µF	470 pF – 0.027 µF	470 pF – 0.015 µF	470 pF – 8.2 nF	470 pF – 2.7 nF
60 (13.97 x 15.24 x 9.52)	560 pF – 0.68 µF	560 pF – 0.18 µF	560 pF – 0.056 µF	560 pF – 0.033 µF	560 pF – 0.018 µF	560 pF – 6.8 nF
70 (16.51 x 17.78 x 9.52)	820 pF – 1 µF	820 pF – 0.27 µF	820 pF – 0.082 µF	820 pF – 0.047 µF	820 pF – 0.027 µF	820 pF – 0.01 µF
80 (19.05 x 20.32 x 9.52)	1 nF – 1.2 µF	1 nF – 0.39 µF	1 nF – 0.12 µF	1 nF – 0.056 µF	1 nF – 0.033 µF	1 nF – 0.015 µF

Ceramic – Leaded (cont.)

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	Sty e/Size	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance[1]	Rated Voltage (VDC)	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	B = ±0.1 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10%	5 = 50 1 = 100 2 = 200	G = C0G	5 = Multilayer	G = Gold (Au)	A = N/A	Blank = Bulk Bag T250 = 250 pcs / 12" Ree 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

Case Size	Voltage		
	50	100	200
C052 (4.83 x 5.97 x 2 29)	1 pF – 0.1 µF	1 pF – 0.047 µF	1 pF – 3.3 nF
C062 (7 37 x 7.37 x 2 29)	0 12 µF – 0 22 µF	0.056 µF – 0.12 µF	4.7 nF – 6.8 nF

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]	Rated Voltage (VDC)	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 1 = 100 2 = 200	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

Case Size	Voltage		
	50	100	200
C052 (4.83 x 5.97 x 2.29)	1 nF – 0.1 µF	1 nF – 0.047 µF	1 nF – 3.3 nF
C062 (7.37 x 7.37 x 2.29)	0.12 µF – 1 µF	0.056 µF – 0.12 µF	4.7 nF – 6.8 nF

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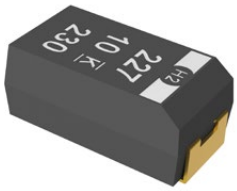
Tantalum – Surface Mount

T500 Series MnO_2 200ºC

Capacitance Range: 10 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	Rated Voltage (VDC)	Failure Rate/ Design	Termination Finish	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 = 10 016 = 16 035 = 35	A = N/A B= 0.1%/1,000 hours	G = Gold plated	61 = Surge None 62 = Surge at 25 C after Weibull 63 = Surge -55 C and +85 C after Weibull	10 = Standard ESR

Case Size	Voltage		
	10	16	35
7343 – 4	220 µF	100 µF	10 µF – 33 µF

> 200°C

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Ceramic – Leaded

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

Capacitance Range: 10 pF to 5.6 µF • **Temperature Range:** −55°C to +200°C

T	C	R	06	B	103	K	G	S
Series	Dielectric	Lead Configuration	Case Size	Rated Voltage (VDC)	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 D = 100	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 = M L-PRF-20, Group A Test (C0G) A = M L-PRF-39014 (X7R) X = Special

TCR

Case Size	Voltage	
	50	100
05 (5.08 x 5.08 x 2.54)	10 pF – 0.01 µF	10 pF – 0.01 µF
06 (7.62 x 7.62 x 2.54)	330 pF – 0.027 µF	330 pF – 0.022 µF
07 (7.62 x 7.62 x 3.81)	270 pF – 0.033 µF	270 pF – 0.033 µF
08 (12.7 x 12.7 x 2.54)	270 pF – 0.082 µF	270 pF – 0.068 µF
09 (12.7 x 12.7 x 3.81)	270 pF – 0.12 µF	270 pF – 0.1 µF

TCA

Case Size	Voltage	
	50	100
16 (4.32 x 2.03 x 2.03)	1 pF – 680 pF	1 pF – 560 pF
25 (6.86 x 2.54 x 2.54)	56 pF – 4.7 nF	56 pF – 4.7 nF
39 (10.16 x 3.81 x 3.81)	150 pF – 0.015 µF	150 pF – 0.015 µF
50 (13.21 x 6.73 x 4.06)	390 pF – 0.039 µF	390 pF – 0.022 µF
69 (18.29 x 9.4 x 4.06)	820 pF – 0.1 µF	820 pF – 0.1 µF

TRR

Case Size	Voltage	
	50	100
05 (5.08 x 5.08 x 2.54)	100 pF – 0.33 µF	100 pF – 0.33 µF
06 (7.62 x 7.62 x 2.54)	330 pF – 1 µF	330 pF – 1 µF
07 (7.62 x 7.62 x 3.81)	330 pF – 0.82 µF	330 pF – 0.56 µF
08 (12.7 x 12.7 x 2.54)	680 pF – 2.2 µF	680 pF – 2 µF
09 (12.7 x 12.7 x 3.81)	680 pF – 3.3 µF	680 pF – 3.3 µF

TRA

Case Size	Voltage	
	50	100
16 (4.32 x 2.03 x 2.03)	100 pF – 0.015 µF	100 pF – 4.7 nF
25 (6.86 x 2.54 x 2.54)	100 pF – 0.12 µF	100 pF – 0.047 µF
39 (10.16 x 3.81 x 3.81)	180 pF – 0.33 µF	180 pF – 0.12 µF
50 (13.21 x 6.73 x 4.06)	390 pF – 1 µF	390 pF – 1 µF
69 (18.29 x 9.4 x 4.06)	820 pF – 2 µF	820 pF – 2 µF

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