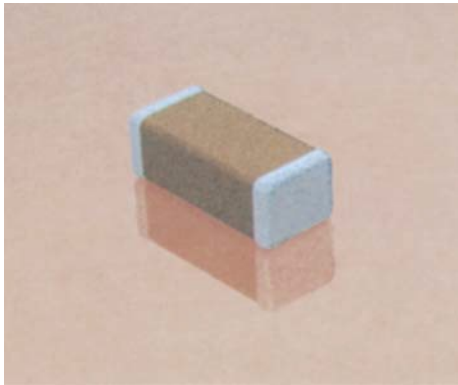


High Voltage MLC Chips FLEXITERM®

For 600V to 5000V Applications



High value, low leakage and small size are difficult parameters to obtain in capacitors for high voltage systems. AVX special high voltage MLC chips capacitors meet these performance characteristics and are designed for applications such as snubbers in high frequency power converters, resonators in SMPS, and high voltage coupling/DC blocking. These high voltage chip designs exhibit low ESRs at high frequencies.

To make high voltage chips, larger physical sizes than are normally encountered are necessary. These larger sizes require that special precautions be taken in applying these chips in surface mount assemblies. In response to this, and to follow from the success of the FLEXITERM® range of low voltage parts, AVX is delighted to offer a FLEXITERM® high voltage range of capacitors, FLEXITERM®.

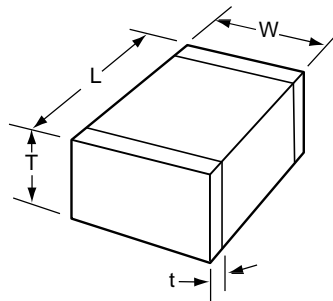
The FLEXITERM® layer is designed to enhance the mechanical flexure and temperature cycling performance of a standard ceramic capacitor, giving customers a solution where board flexure or temperature cycle damage are concerns.

HOW TO ORDER

1808	A	C	272	K	A	Z	1	A
AVX Style	Voltage	Temperature Coefficient	Capacitance Code (2 significant digits + no. of zeros) Examples: 10 pF = 100 100 pF = 101 1,000 pF = 102 22,000 pF = 223 220,000 pF = 224 1 μF = 105	Capacitance Tolerance COG: J=±5% K=±10% M=±20% X7R: K=±10% M=±20% Z=+80%, -20%	Test Level	Termination* Z = FLEXITERM® 100% Tin (RoHS Compliant)	Packaging 2 = 7" Reel 4 = 13" Reel	Special Code A = Standard
0805	600V/630V = C	COG = A						
1206	1000V = A	X7R = C						
1210	1500V = S							
1808	2000V = G							
1812	2500V = W							
1825	3000V = H							
2220	4000V = J							
2225	5000V = K							

Notes: Capacitors with X7R dielectrics are not intended for applications across AC supply mains or AC line filtering with polarity reversal. Contact plant for recommendations. Contact factory for availability of Termination and Tolerance options for Specific Part Numbers.

*** AVX offers nonstandard chip sizes. Contact factory for details.



DIMENSIONS

	millimeters (inches)							
SIZE	0805	1206	1210*	1808*	1812*	1825*	2220*	2225*
(L) Length	2.10±0.20 (0.083±0.008)	3.30±0.30 (0.130±0.012)	3.30±0.40 (0.130±0.016)	4.60±0.50 (0.181±0.020)	4.60±0.50 (0.181±0.020)	4.60±0.50 (0.181±0.020)	5.70±0.50 (0.224±0.020)	5.70±0.50 (0.224±0.020)
(W) Width	1.25±0.20 (0.049±0.008)	1.60 ^{+0.30} _{0.10} (0.063 ^{+0.012} _{-0.004})	2.50±0.30 (0.098±0.012)	2.00±0.20 (0.079±0.008)	3.20±0.30 (0.126±0.012)	6.30±0.40 (0.248±0.016)	5.00±0.40 (0.197±0.016)	6.30±0.40 (0.248±0.016)
(T) Thickness	1.35 (0.053)	1.80 (0.071)	2.80 (0.110)	2.20 (0.087)	2.80 (0.110)	3.40 (0.134)	3.40 (0.134)	3.40 (0.134)
(t) terminal	min. 0.50±0.20 max. (0.020±0.008)	0.60±0.20 (0.024±0.008)	0.75±0.35 (0.030±0.014)	0.75±0.35 (0.030±0.014)	0.75±0.35 (0.030±0.014)	0.75±0.35 (0.030±0.014)	0.85±0.35 (0.033±0.014)	0.85±0.35 (0.033±0.014)

*Reflow Soldering Only



Performance of SMPS capacitors can be simulated by downloading SpiCalc software program - <http://www.avx.com/SpiApps/default.asp?spicalci>
Custom values, ratings and configurations are also available.



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X7R Dielectric

Performance Characteristics

Capacitance Range	10 pF to 0.82 µF (25°C, 1.0 ±0.2 Vrms at 1kHz)
Capacitance Tolerances	±10%; ±20%; +80%, -20%
Dissipation Factor	2.5% max. (+25°C, 1.0 ±0.2 Vrms, 1kHz)
Operating Temperature Range	-55°C to +125°C
Temperature Characteristic	±15% (0VDC)
Voltage Ratings	600, 630, 1000, 1500, 2000, 2500, 3000, 4000 & 5000 VDC (+125°C)
Insulation Resistance (+25°C, at 500 VDC)	100K MΩ min. or 1000 MΩ - µF min., whichever is less
Insulation Resistance (+125°C, at 500 VDC)	10K MΩ min. or 100 MΩ - µF min., whichever is less
Dielectric Strength	Minimum 120% rated voltage for 5 seconds at 50 mA max. current

X7R CAPACITANCE RANGE PREFERRED SIZES ARE SHADED

Case Size	0805			1206				1210					1808							1812									
	Soldering			Soldering				Soldering					Soldering							Soldering									
(L) Length (mm (in.))	Reflow/Wave			Reflow/Wave				ReflowOnly					ReflowOnly							ReflowOnly									
(W) Width (mm (in.))	2.10 ±0.20 (0.083 ±0.008)			3.30 ±0.30 (0.130 ±0.012)				3.30 ±0.40 (0.130 ±0.016)					4.80 ±0.50 (0.181 ±0.020)							4.80 ±0.50 (0.181 ±0.020)									
(T) Thickness (mm (in.))	1.25 ±0.20 (0.049 ±0.008)			1.60 ±0.30/-0.10 (0.063 ±0.012/-0.004)				2.50 ±0.30 (0.098 ±0.012)					2.00 ±0.20 (0.079 ±0.008)							3.20 ±0.30 (0.126 ±0.012)									
(t) Terminal min max	1.35 (0.053)			1.80 (0.071)				2.80 (0.110)					2.20 (0.087)							2.80 (0.110)									
Voltage(V)	0.50 ±0.20 (0.020 ±0.008)			0.60 ±0.20 (0.024 ±0.008)				0.75 ±0.35 (0.030 ±0.014)					0.75 ±0.35 (0.030 ±0.014)							0.75 ±0.35 (0.030 ±0.014)									
Cap (pF)	600	630	1000	600	630	1000	1500	2000	600	630	1000	1500	2000	600	630	1000	1500	2000	2500	3000	4000	600	630	1000	1500	2000	2500	3000	4000
100 101	X	X	C	C	C	E	E	E	E	E	E	E	E																
120 121	X	X	C	C	C	E	E	E	E	E	E	E	E																
150 151	X	X	C	C	C	E	E	E	E	E	E	E	E																
180 181	X	X	C	C	C	E	E	E	E	E	E	E	E																
220 221	X	X	C	C	C	E	E	E	E	E	E	E	E																
270 271	X	X	C	C	C	E	E	E	E	E	E	E	E																
330 331	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F									
390 391	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F								
470 471	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
560 561	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
680 681	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
750 751	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
820 821	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
1000 102	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
1200 122	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
1500 152	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
1800 182	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
2200 222	X	X																										E	E
2700 272	X	X																										E	E
3300 332	X	X																										E	E
3900 392	X	X																										E	E
4700 472	X	X																										E	E
5600 562	X	X																										E	E
6800 682	X	X																										E	E
8200 822	X	X																										E	E
Cap (µF)	0.010	0.015	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
0.018	0.022	0.027	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F	F	F	F						E	E	
0.033	0.039	0.047																									E	E	
0.056	0.068	0.082																									E	E	
0.100	0.150	0.220																									E	E	
0.270	0.330	0.390																									E	E	
0.470	0.560	0.680																									E	E	
0.820	1.000	105																									E	E	
Voltage(V)	600	630	1000	600	630	1000	1500	2000	600	630	1000	1500	2000	600	630	1000	1500	2000	2500	3000	4000	600	630	1000	1500	2000	2500	3000	4000
Case Size	0805			1206				1210					1808							1812									



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X7R CAPACITANCE RANGE PREFERRED SIZES ARE SHADED

Case Size	1825								2220								2225								3640											
Soldering	Reflow Only								Reflow Only								Reflow Only								Reflow Only											
(L) Length	4.80 ±0.50 (0.181 ±0.020)								5.70 ±0.50 (0.224 ±0.020)								5.72 ±0.25 (0.225 ±0.010)								9.14 ±0.25 (0.360 ±0.010)											
(W) Width	6.30 ±0.40 (0.248 ±0.016)								5.00 ±0.40 (0.197 ±0.016)								6.35 ±0.25 (0.250 ±0.010)								5.72 ±0.25 (0.225 ±0.010)											
(T) Thickness	3.40 (0.134)								3.40 (0.134)								2.54 (0.100)								2.54 (0.100)											
(t) Terminal	0.75 ±0.35 (0.030 ±0.014)								0.85 ±0.35 (0.033 ±0.014)								0.85 ±0.35 (0.033 ±0.014)								0.76 (0.030) 1.52 (0.062)											
min																																				
max																																				
Voltage (V)	600	630	1000	1500	2000	2500	3000	4000	600	630	1000	1500	2000	2500	3000	4000	5000	600	630	1000	1500	2000	2500	3000	4000	5000	600	630	1000	1500	2000	2500	3000	4000	5000	
Cap (pF)	[Grid of F and G values]																																			
Cap (µF)	[Grid of F and G values]																																			
Voltage (V)	600	630	1000	1500	2000	2500	3000	4000	600	630	1000	1500	2000	2500	3000	4000	5000	600	630	1000	1500	2000	2500	3000	4000	5000	600	630	1000	1500	2000	2500	3000	4000	5000	
Case Size	1825								2220								2225								3640											

Letter	A	C	E	F	G	P	X
Max. Thickness	0.813 (0.032)	1.448 (0.057)	1.8034 (0.071)	2.2098 (0.087)	2.794 (0.110)	3.048 (0.120)	0.940 (0.037)

NOTE: Contact factory for non-specified capacitance values

