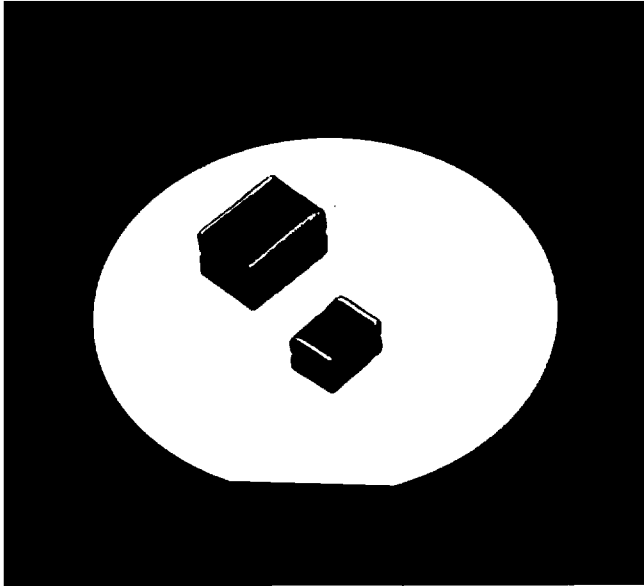




High Voltage Chips



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.

Larger physical sizes than normally encountered chips are used to make high voltage chips to maintain high insulation resistance. These larger sizes require that special precautions be taken in applying these chips in surface mount assemblies. This is due to differences in the coefficient of thermal expansion (CTE) between the substrate materials and chip capacitors.

These high voltage chip designs also exhibit ESRs well below 10 milliohms from 100 KHz through 20 MHz. The same dictates governing the high voltage design carries the added benefits of extremely low ESR in relatively low (.05 μ F to .005 μ F) capacitance and small packages.

AVX Styles: 1808, 1812, 1825, 2225 & 3640

How to Order:								
1808	A	A	271	K	A	1	M	A
AVX Style	Voltage	Temperature Coefficient	Capacitance Code (2 significant digits + no. of zeros)	Capacitance Tolerance	Failure Rate	Termination	Marking Packaging	Special Code
	500V = 7 600V = C 1000V = A 1500V = S 2000V = G 2500V = W 3000V = H 4000V = J 5000V = K	COG = A X7R = C	Examples: 10pF = 100 100pF = 101 1,000pF = 102 22,000pF = 223 220,000pF = 224 1 μ F = 105	COG: J= \pm 5% K= \pm 10% M= \pm 20% X7R: K= \pm 10% M= \pm 20% Z= +80 -20%	A=Not applicable	1= Pd/Ag T= NiGuard Nickel Barrier Solder Plate	M = Reel Marking B = Bulk 1 = Reel Unmarked 9 = Bulk Unmarked	A = Standard



High Voltage Chips

NPO Dielectric

General Specifications

Capacitance Range

100 pF to .018 μ F

Capacitance Tolerances

\pm 5%, \pm 10%, \pm 20%

Operating Temperature Range

-55°C to +125°C

Temperature Characteristic

0 \pm 30 ppm/°C

Voltage Ratings

500 VDC, 1000 VDC, 2000 VDC, 3000 VDC, 4000 VDC,
and 5000 VDC (+125°C)

Dissipation Factor

0.1% max. (+25°C and +125°C)

1.0 Vrms, 1kHz

Insulation Resistance (+25°C, at rated voltage)

100,000 megohms min. or 1000 ohm-Farads min.,
whichever is less

Insulation Resistance (+125°C, at rated voltage)

10,000 megohms min. or 100 ohm-Farads min.,
whichever is less

Dielectric Strength

120% rated voltage

X7R Dielectric

General Specifications

Capacitance Range

100 pF to 0.56 μ F (1.0 Vrms, 1kHz)

Capacitance Tolerances

\pm 5%, \pm 10%, \pm 20%

Operating Temperature Range

-55°C to +125°C

Temperature Characteristic

\pm 15% (0 VDC)

Voltage Ratings

500 VDC, 600 VDC, 1000 VDC, 1500 VDC, 2000 VDC,
and 2500 VDC (+125°C)

Dissipation Factor

2.5% max. (+25°C, 1.0 Vrms, 1kHz)

Insulation Resistance (+25°C, at rated voltage)

100,000 megohms min. or 1000 ohm-Farads min.,
whichever is less

Insulation Resistance (+125°C, at rated voltage)

10,000 megohms min. or 100 ohm-Farads min.,
whichever is less

Dielectric Strength

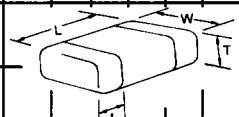
120% rated voltage



High Voltage Chips

Capacitance Ranges/NPO Dielectric

SIZE		1206	1210	1808**		1812**			1825**				2225**				3640**							
(L) Length	MM (in.)	3.20 ± 0.2 (.126 ± .008)	3.20 ± 0.2 (.126 ± .008)	4.57 ± .25 (.180 ± .010)		4.50 ± 0.3 (.177 ± .012)			4.50 ± 0.25 (.177 ± .012)				5.72 ± .25 (.225 ± .010)				9.14 ± .25 (.360 ± .010)							
(W) Width	MM (in.)	1.60 ± 0.2 (.063 ± .008)	2.49 ± 0.2 (.098 ± .008)	2.03 ± .25 (.080 ± .010)		3.20 ± 0.2 (.126 ± .008)			6.40 ± 0.3 (.252 ± .012)				6.35 ± .25 (.250 ± .010)				10.2 ± .25 (.400 ± .010)							
(T) Thickness	MM (in.)	1.50 (.059)	2.03 (.079)	2.03 (.080)		2.54 (.100)			2.54 (.100)				2.54 (.100)				2.54 (.100)							
(H) Terminal	MIN. MAX.	.25 (.010) .71 (.028)	.25 (.010) .71 (.028)	.25 (.010) 1.02 (.040)		.25 (.010) 1.02 (.040)			.25 (.010) 1.02 (.040)				.25 (.010) 1.02 (.040)				.25 (.010) 1.02 (.040)							
WVDC		500	500	1000	2000	1000	2000	3000	1000	2000	3000	4000	1000	2000	3000	4000	1000	2000	3000	4000	5000			
Cap. (pF)	10	[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]						
	12																							
15																								
18																								
22																								
Cap. (pF)	27	[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]				
	33																							
	39																							
	47																							
	56																							
Cap. (pF)	68	[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]				
	82																							
	100																							
	120																							
	150																							
Cap. (pF)	180	[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]				
	220																							
	270																							
	330																							
	390																							
Cap. (pF)	470	[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]				
	560																							
	680																							
	820																							
	1000																							
Cap. (pF)	1200	[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]				
	1500																							
	1800																							
	2200																							
	2700																							
Cap. (pF)	3300	[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]				
	3900																							
	4700																							
	5600																							
	6800																							
Cap. (pF)	8200	[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]				
	.010																							
	.012																							
Cap. (pF)	.015	[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]				
	.018																							



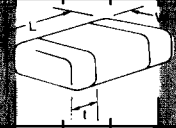
NOTES:
 • Dimensions are in millimeters, dimensions in parenthesis are in inches.
 • Other capacitance values and voltages are available—contact AVX.
 **IR and Vapor phase soldering only recommended.



High Voltage Chips

Capacitance Ranges/X7R Dielectric

SIZE		1206	1210	1808**	1812**	1825**	2225**	3640**
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(T) Thickness	MM (in.)	1.50 (.059)	2.03 (.079)	2.03 (.080)	2.54 (.100)	2.54 (.100)	2.54 (.100)	2.54 (.100)
(H) Terminal	MIN. MAX.	.25 (.010) .71 (.028)	.25 (.010) .71 (.028)	.25 (.010) 1.02 (.040)	.25 (.010) 1.02 (.040)	.25 (.010) 1.02 (.040)	.25 (.010) 1.02 (.040)	.25 (.010) 1.02 (.040)
WVDC		500	500	600 1000 1500	600 1000 1500 2000	600 1000 1500 2000	600 1000 1500 2000 2500	1000 1500 2000 2500
Cap. (pF)	100	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	120	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	150	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	180	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	220	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	270	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	330	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	390	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	470	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	560	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
Cap. (µF)	.010	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.012	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.015	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.018	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.022	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.027	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.033	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.039	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.047	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.056	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
Cap. (µF)	.068	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.082	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.10	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.12	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.15	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.18	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.22	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.27	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.33	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded
	.56	Shaded		Shaded	Shaded	Shaded	Shaded	Shaded



NOTES: • Dimensions are in millimeters, dimensions in parenthesis are in inches.
• Other capacitance values and voltages are available—contact AVX.

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