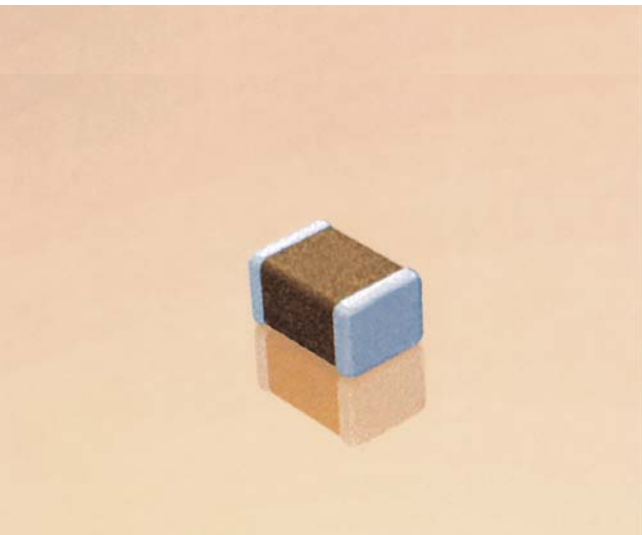


Tip & Ring

Multilayer Ceramic Chip Capacitors

AVX “Tip & Ring” or “ring detector” Multilayer Ceramic Chip Capacitors are designed as a standard telecom filter to block -48 Volts DC telephone line voltage and pass subscriber’s AC signal pulse (16 to 25Hz, 70 to 90Vrms). The typical ringing signal is seen on figure on page 88. The ringer capacitors replace large leaded film capacitors and are ideal for telecom/modem applications. Using AVX “Tip & Ring” capacitors not only saves valuable real estate on the board and reduces the weight of overall product, but also features standard surface mounting capabilities, so critical to new and compact designs.

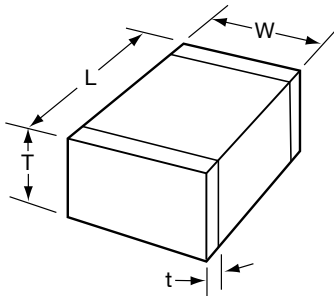
The AVX “Tip & Ring” capacitors are offered in standard EIA sizes and standard values. They offer excellent high frequency performance, low ESR and improved temperature performance over film capacitors.



HOW TO ORDER

1812	P	C	104	K	A	T	1	A
AVX Style 0805 1206 1210 1808 1812 1825 2220 2225	Voltage 250 VDC Telco Rating	Temp Coefficient X7R	Capacitance Code (2 significant digits + no. of zeros) Examples: 1,000 pF = 102 22,000 pF = 223 220,000 pF = 224 1 μ F = 105	Capacitance Tolerance K = $\pm 10\%$ M = $\pm 20\%$	Test Level A = Standard	Termination T = Plated Ni and Sn (RoHS Compliant) Z = FLEXITERM® 100% Tin (RoHS Compliant)	Packaging 1 = 7" Reel 3 = 13" Reel 9 = Bulk	Special Code A = Standard

Contact factory for availability of Termination and Tolerance options for Specific Part Numbers.



DIMENSIONS

millimeters (inches)

Style	0805	1206	1210*	1808*	1812*	1825*	2220*	2225*
(L) Length	2.01 $\pm$ 0.20 (0.079 $\pm$ 0.008)	3.20 $\pm$ 0.20 (0.126 $\pm$ 0.008)	3.2 $\pm$ 0.20 (0.126 $\pm$ 0.008)	4.57 $\pm$ 0.25 (0.180 $\pm$ 0.010)	4.50 $\pm$ 0.30 (0.177 $\pm$ 0.012)	4.50 $\pm$ 0.30 (0.177 $\pm$ 0.012)	5.60 $\pm$ 0.30 (0.220 $\pm$ 0.012)	5.60 $\pm$ 0.25 (0.220 $\pm$ 0.010)
(W) Width	1.25 $\pm$ 0.20 (0.049 $\pm$ 0.008)	1.60 $\pm$ 0.20 (0.063 $\pm$ 0.008)	2.50 $\pm$ 0.20 (0.098 $\pm$ 0.008)	2.03 $\pm$ 0.25 (0.080 $\pm$ 0.010)	3.2 $\pm$ 0.20 (0.126 $\pm$ 0.008)	6.34 $\pm$ 0.30 (0.252 $\pm$ 0.012)	5.10 $\pm$ 0.40 (0.200 $\pm$ 0.016)	6.35 $\pm$ 0.25 (0.250 $\pm$ 0.010)
(T) Thickness	1.30 max. (0.051 max.)	1.50 max. (0.059 max.)	1.78 max. (0.070 max.)	1.78 max. (0.070 max.)	2.00 max. (0.080 max.)	2.00 max. (0.080 max.)	2.00 max. (0.080 max.)	2.00 max. (0.080 max.)
(t) terminal	0.50 $\pm$ 0.25 (0.020 $\pm$ 0.010)	0.50 $\pm$ 0.25 (0.020 $\pm$ 0.010)	0.50 $\pm$ 0.25 (0.020 $\pm$ 0.010)	0.63 $\pm$ 0.38 (0.025 $\pm$ 0.015)	0.63 $\pm$ 0.38 (0.025 $\pm$ 0.015)	0.63 $\pm$ 0.38 (0.025 $\pm$ 0.015)	0.63 $\pm$ 0.38 (0.025 $\pm$ 0.015)	0.63 $\pm$ 0.38 (0.025 $\pm$ 0.015)

*Reflow Soldering Only

Tip & Ring

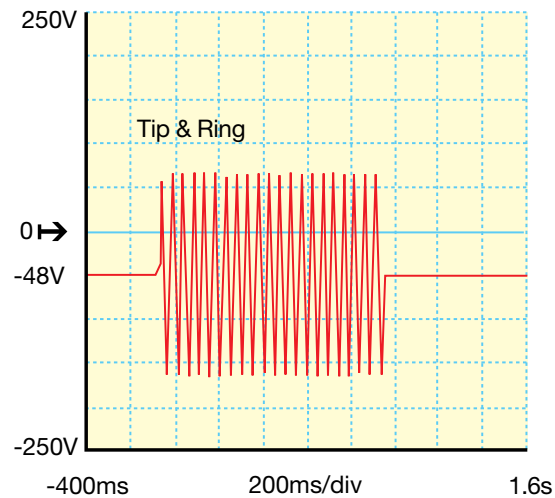
Multilayer Ceramic Chip Capacitors



CAPACITANCE RANGE (μF)

Size	0805	1206	1210	1808	1812	1825	2220	2225
min.	0.0010	0.0010	0.0010	0.010	0.10	0.33	0.47	0.47
max.	0.027	0.082	0.22	0.27	0.47	1.0	1.0	1.2

“TIP & RING” GRAPH



PERFORMANCE CHARACTERISTICS

Capacitance Range	1000 pF to 1.2 μF	(25°C, 1.0 ±0.2 Vrms at 1kHz)
Capacitance Tolerances	±10%, ±20%	
Dissipation Factor	2.5% max.	(25°C, 1.0 ±0.2 Vrms at 1kHz)
Operating Temperature Range	-55°C to +125°C	
Temperature Characteristic	X7R ±15%	(0 VDC)
Voltage Rating	250 VDC	Telco rating
Insulation Resistance	1000 megohm-microfarad min.	(25°C, at 250 VDC)
Dielectric Strength	Minimum 250% rated voltage for 5 seconds at 50 mA max. current	