

New Product Release

Surface Mount Ceramic Chip Capacitors Extended Values 0402 & 1206 - X5R

KEMET is pleased to further expand our offerings in high capacitance X5R ceramic chip capacitors, including new values in the 0402 and 1206 case sizes which complement our other X5R offerings.

The X5R dielectric is EIA rated for operation from -55°C to +85°C, and is often chosen for use in power supplies and other decoupling applications. These new ratings represent a major expansion of our previously available ratings in X5R dielectric.

Outline Drawings

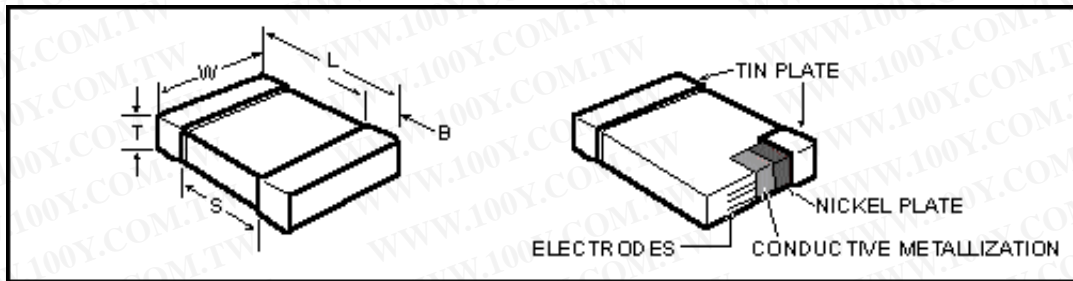


Table 1
Dimensions - Millimeters (Inches)

Metric Size Code	EIA Size Code	L - Length	W - Width	Max. T - Thickness	B - Bandwidth	Separation
1005	0402	1.0 (.04) ± .05 (.002)	0.5 (.02) ± .05 (.002)	0.55 (.022)	0.20 (.008)-0.40 (.016)	0.3 (.012)
3216	1206	3.2 (.126) ± 0.2 (.008)	1.6 (.063) ± 0.2 (.008)	1.90 (.075)	0.5 (.02) ± .25 (.010)	n/a
3225	1210	3.2 (.126) ± 0.2 (.008)	2.5 (.098) ± 0.2 (.008)	2.25 (.089)	0.5 (.02) ± .25 (.010)	n/a

Electrical Parameters

Generally as detailed in KEMET Surface Mount Catalog F3102, except as detailed below:

- EIA Capacitance Shift with Temperature: ±15% from 25°C over the range of -55° to +85°C
- Dissipation Factor (measured at 25°C at 1KHz and 1.0 Vrms for ordered capacitance of 10µF and smaller). Limits: 2.5% for 50 volt rating, 3.5% for 16 and 25 volt ratings, and 5% for 6.3 and 10 volt ratings.
- Insulation Resistance: 1000 MOhm-µF, or 100 GOhm, whichever is lower.

Soldering Process

The 0603, 0805 and 1206 case sizes are suitable for either wave or reflow soldering, while the 0402 and 1210 are limited to reflow only.

Table 2
X5R Dielectric – Capacitance Value Extensions

Capacitance (uF)	KEMET Part Number	Cap. Tol.	0402		1206				1210				
			6.3V	10V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	50V
.012	C0402C123(1)(2)PAC	K,M	<u>123</u>	<u>123</u>									
.015	C0402C153(1)(2)PAC	K,M	<u>153</u>	<u>153</u>									
.018	C0402C183(1)(2)PAC	K,M	<u>183</u>	<u>183</u>									
.022	C0402C223(2)(2)PAC	K,M	<u>223</u>	<u>223</u>									
.027	C0402C273(1)(2)PAC	K,M	<u>273</u>	<u>273</u>									
.033	C0402C333(1)(2)PAC	K,M	<u>333</u>	<u>333</u>									
.047	C0402C473(1)(2)PAC	K,M	<u>473</u>	<u>473</u>									
.068	C0402C683(1)(2)PAC	K,M	<u>683</u>	<u>683</u>									
.10	C0402C104(1)(2)PAC	K,M	<u>104</u>	<u>104</u>									
.10	C1206C104(1)(2)PAC	K,M											
.12	C1206C124(1)(2)PAC	K,M											
.15	C1206C154(1)(2)PAC	K,M											
.18	C1206C184(1)(2)PAC	K,M											
.27	C1206C274(1)(2)PAC	K,M											
.33	C1206C334(1)(2)PAC	K,M											
.47	C1206C474(1)(2)PAC	K,M											
.68	C1206C684(1)(2)PAC	K,M											
1.0	C1206C105(1)(2)PAC	K,M											
1.5	C1206C155(1)(2)PAC	K,M			155	155	155						
1.8	C1206C185(1)(2)PAC	K,M			185	185	185						
2.2	C1206C225(1)(2)PAC	K,M			225	225	225						
2.7	C1206C275(1)(2)PAC	K,M			275	275	275						
3.3	C1206C335(1)(2)PAC	K,M			335	335	335						
4.7	C1206C475(1)(2)PAC	K,M			475	475	475						
6.8	C1206C685(1)(2)PAC	K,M			<u>685</u>								
10.0	C1206C106(1)(2)PAC	K,M			<u>106</u>								
1.0	C1210C105(1)(2)PAC	K,M											
4.7	C1210C475(1)(2)PAC	K,M											
6.8	C1210C685(1)(2)PAC	K,M											
10.0	C1210C106(1)(2)PAC	K,M											

(1) To complete KEMET part number, insert the alpha code for the tolerance desired. K = ±10%; M = ±20%

(2) To complete KEMET part number, insert the numeric code for the voltage listed in Table 2. 9 = 6.3 volts; 8 = 10 volts; 4 = 16 volts; 3 = 25 volts; 5 = 50 volts

NOTE: NEW RATINGS SHADED AND UNDERLINED.

Packaging

X5R chips are normally packaged in 7" or 13" reels - please specify when ordering.

Marking

Laser marking is available as an extra cost option for KEMET ceramic chips.

In general, the information in the KEMET Surface Mount catalog F3102 applies to these capacitors. The information in this bulletin supplements, and may supersede, the information in the catalog.