



New Product Bulletin

Surface Mount Ceramic Chip Capacitors X5R Dielectric

KEMET is pleased to continue the expansion of high capacitance ratings in our X5R ceramic chip capacitors to include the following values in our base metal electrode devices.

0603/X5R - 1.2 μ F (125) – 2.2 μ F (225) @ 10 Volts
0805/X5R - 5.6 μ F (565) – 10.0 μ F (106) @ 10 Volts
1206/X5R - 12.0 μ F (126) – 22.0 (226) @ 10 Volts

Outline Drawing

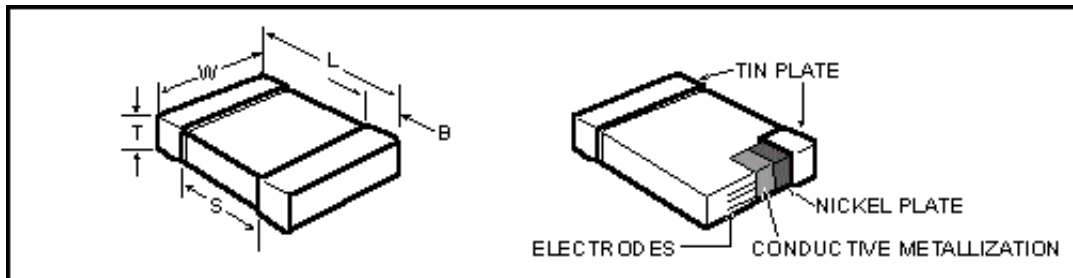


Table 1
Dimensions - Millimeters (Inches)

EIA Size Code	Metric Size Code	L Length	W Width	B Bandwidth	S - Min. Separation	Mounting Technique
0603	1608	1.6 (.063) $\pm$ 0.15 (.006)	0.8 (.032) $\pm$ 0.15 (.006)	0.35 (.014) $\pm$ 0.15 (.006)	0.7 (.028)	Solder Wave or Reflow
0805	2012	2.0 (.079) $\pm$ 0.2 (.008)	1.25 (.049) $\pm$ 0.2 (.008)	0.5 (.02) $\pm$.25 (.010)	0.75 (.030)	Solder Wave or Reflow
1206	3216	3.2 (.126) $\pm$ 0.2 (.008)	1.6 (.063) $\pm$ 0.2 (.008)	0.5 (.02) $\pm$.25 (.010)	N/A	Solder Wave or Reflow

See Table 2 for thickness dimension.



Table 2 - X5R - Capacitance Value Extensions

Capacitance Values (μF)	KEMET Part Number	Voltage	Capacitance Tolerance	Thickness mm	Qty 7" Reel	Qty 13" Reel
1.2	C0603C125(1)8PAC	10	K,M	0.8 ± 0.1	4,000	10,000
1.5	C0603C155(1)8PAC	10	K,M	0.8 ± 0.1	4,000	10,000
1.8	C0603C185(1)8PAC	10	K,M	0.8 ± 0.1	4,000	10,000
2.2	C0603C225(1)8PAC	10	K,M	0.8 ± 0.1	4,000	10,000
5.6	C0805C565(1)8PAC	10	K,M	1.25 ± 0.15	2,500	10,000
6.8	C0805C685(1)8PAC	10	K,M	1.25 ± 0.15	2,500	10,000
8.2	C0805C825(1)8PAC	10	K,M	1.25 ± 0.15	2,500	10,000
10.0	C0805C106(1)8PAC	10	K,M	1.25 ± 0.15	3,000	10,000
12.0	C1206C126(1)8PAC	10	K,M	1.60 ± 0.15	2,000	8,000
15.0	C1206C156(1)8PAC	10	K,M	1.60 ± 0.15	2,000	8,000
18.0	C1206C186(1)8PAC	10	K,M	1.60 ± 0.15	2,000	8,000
22.0	C1206C226(1)8PAC	10	K,M	1.60 ± 0.15	2,000	8,000

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

Electrical Parameters

As detailed in the KEMET Surface Mount Catalog F3102 for X5R, with following specific requirements based on room temperature (25°C) parameters:

- Operating Range: -55°C to +85°C, with no-bias capacitance shift limited to ± 15% over that range
- Insulation Resistance (IR) measured after 2 minutes at rated voltage @ 25°C: Limit is 500 megohm microfarads.
- Capacitance and Dissipation Factor (DF) measured at the following conditions. DF Limit is 10%.
1 kHz and 1 Vrms if capacitance ≤ 10 μF
120 Hz and 0.5 Vrms if capacitance > 10 μF

Soldering Process

These components are suitable for wave or reflow soldering. All parts incorporate the standard KEMET barrier layer of pure nickel, with an overplate of pure tin to provide excellent solderability as well as resistance to leaching.

Marking

These chips are normally supplied unmarked. If required, they can be laser marked as an extra cost option. More detail on the marking format is included in our Surface Mount Catalog F3102.

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