New Product Release

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.

X5R/0603 - 2.7 µF (275) – 4.7 (475) @ 6.3 Volts

Outline Drawing

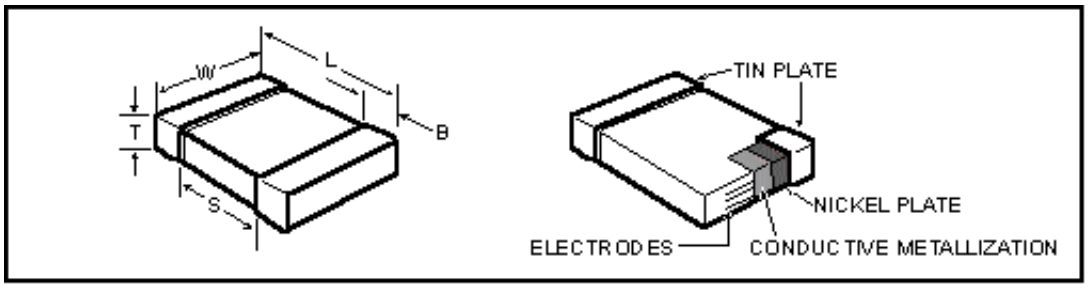


Table 1
Dimensions - Millimeters (Inches)

Metric Size Code	EIA Size Code	L - Length	W - Width	Max. T - Thickness	B - Bandwidth	Separation
1608	0603	1.6 (.04) ± 0.15 (.006)	0.8 (.032) ± 0.15 (.006)	See Table 2	0.35 (.014) ± 0.15 (.006)	0.7 (.028)

Table 2 - X5R - Capacitance Value Extensions

Capacitance Values (µF)	KEMET Part Number	Capacitance Tolerance	Thickness mm	Qty 7" Reel	Qty 13" Reel
2.7	C0603C275(1)9PAC	K,M	0.8 ± .15	4,000	10,000
3.3	C0603C335(1)9PAC	K,M	0.8 ± .15	4,000	10,000
4.7	C0603C475(1)9PAC	K,M	0.8 ± .15	4,000	10,000

(1) To complete KEMET part number, insert the alpha code for the tolerance desired. K = ±10%; M = ±20%
Note: 0402 and 0603 components are reeled on paper tape.

KEMET RoHS Compliant

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 or 100 gigohms, whichever is less.
- 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

The 0603 components are suitable for reflow or wave 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.