

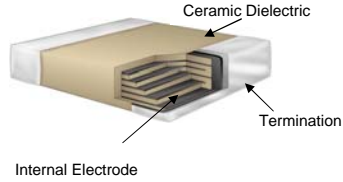
# KEMET Surface Mount Ceramic

Revision Nil, 01 November 2005

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## Characteristics and Typical Construction

- Standard EIA Chip Sizes
- C0G, X5R, X7R, Y5V, Z5U Dielectrics
- Termination code 'C' products support manufacture of RoHS-compliant EEE
- 6.3 - 3000 Volts
- Tape & Reel Packaging
- Bulk Cassette packaging available
- Matte Tin finish terminations standard
- SnPb terminations available beginning August, 2005



## RoHS Restricted Substance Content

☑ = Meets criteria    ✓ = Meets criteria, in some cases by reliance on 2002/95/EC Annex 1 exemptions 5, 7<sup>2</sup>    ☒ = Does not meet criteria

KEMET Product	Series	Substance and MCV <sup>1</sup> Termination Code	Restricted Substance						Compliant Version		
			Cd < 0.01%	Cr <sup>6+</sup> < 0.1%	Pb < 0.1%	Hg < 0.1%	PBB < 0.1%	PBDE < 0.1%	Size and Dielectric	Available since	Standard since
Ceramic Chip / Standard Ceramic Chip / High Voltage Tip & Ring	Cxxx C	C	☑	☑	✓ C0G and X7R < 1.0nF <sup>2</sup> ☑ X7R ≥ 1.0nF X5R, Y5V, Z5U	☑	☑	☑	0402 C0G 0402 X7R	Jun-04	Jun-04
Ceramic Open Mode Capacitors	Cxxx F								> 0402 C0G	Jul-03	Jul-03
KEMET Commercial-Off-The-Shelf (KCOTS)	Cxxx T								All others	Aug-93	Aug-93
Ceramic Chip / Standard Ceramic Chip / High Voltage Tip & Ring	Cxxx C	L	☑	☑	☒	☑	☑	☑			
Ceramic Open Mode Capacitors	Cxxx F										
KEMET Commercial-Off-The-Shelf (KCOTS)	Cxxx T										

<sup>1</sup> MCV = Maximum Concentration Values per 2005/618/EC amending RoHS Directive 2002/95/EC.

<sup>2</sup> All KEMET X7R and C0G surface mount offerings already meet RoHS requirements. A limited group of these components contain a small portion of lead (Pb) that is exempt per Annex 1 to 2002/95/EC. These components are in transition to a completely lead-free material set. This transition will be complete by 2QCY2006.

## Soldering Capability Characteristics

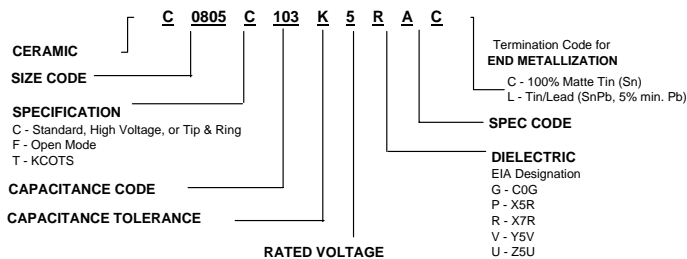
	Matte Tin Termination	SnPb Termination
Termination Material	Silver or Copper	Silver or Copper
Termination Plating (Barrier)	100% Matte Tin (Nickel)	90Sn10 Pb (Nickel)
Peak Temperature Capability	260°C	260°C
Soldering Process Compatibility	Backward & Forward Compatible	Backward & Forward Compatible
MSL Rating per J-STD-020C	Not Classified <sup>3</sup>	Not Classified <sup>3</sup>
Tin Whisker Test Results	Pass	Pass

<sup>4</sup> based on NEMI September 2003 recommendations

<sup>3</sup> MSL not classified for ceramic capacitors. J-STD-020 is applicable to non-hermetic surface mount devices, and is intended for plastic package components. Kemet ceramic chips are not encapsulated in a plastic package, so they are not susceptible to these effects. If an MSL were required, the rating this product would be considered MSL 1 or better.

<sup>4</sup> Updated whisker evaluation results per JESD22-A121 available January, 2006. Tin whiskering is not considered a reliability risk within the capacitor industry for 100% tin finishes used in non-Military / Hi-Rel applications. For more information, refer to EIA / ECA component bulletin CB19.

## Ordering



## Identification

Reel level KEMET EZ ID label indicates product content relative to substance restrictions of the RoHS Directive, 2002/95/EC, 2005/618/EC.  
RoHS-YES = Meets criteria  
RoHS-NO = Does not meet criteria

