

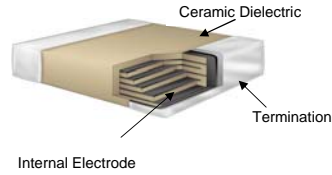
# KEMET Surface Mount Ceramic

Revision F, 17 Jul 2007

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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

Key for Determining Adherence to China RoHS and EU 2002/95/EC and 2005/618/EC Content Criteria<sup>1</sup>  
O = ≤ MCV, X = > MCV, X = > MCV, but EU RoHS Compliant with Exemption(s)

		Substance and MCV <sup>1</sup>	Restricted Substance						Compliant Version				
			Cd	Cr <sup>6+</sup>	Pb	Hg	PBB	PBDE	Size and Dielectric	Available since	Standard since	China RoHS Symbol <sup>3</sup>	
KEMET Product	Series	Termination Code	< 0.01%	< 0.1%	< 0.1%	< 0.1%	< 0.1%	< 0.1%					
Ceramic Chip / Standard Ceramic Chip / High Voltage Tip & Ring	CxxxxC	C			X 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	CxxxxF								> 0402 C0G	Jul-03	Jul-03		
KEMET Commercial-Off-The-Shelf (KCOTS)	CxxxxT								All others	Aug-93	Aug-93		
Low Profile Ceramic Chip / Standard	CxxxxL												
Floating Electrode	CxxxxS												
Flexible Termination	CxxxxX												
Ceramic Chip / Standard Ceramic Chip / High Voltage Tip & Ring	CxxxxC	L (not available for 0201 products)			X				Not Available				
Ceramic Open Mode Capacitors	CxxxxF												
KEMET Commercial-Off-The-Shelf (KCOTS)	CxxxxT												
Low Profile Ceramic Chip / Standard	CxxxxL												
Floating Electrode	CxxxxS												
Flexible Termination	CxxxxX												

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

<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.

<sup>3</sup> China RoHS Symbol based on current manufacturing. Refer to notes in Pb column for transition dates.

## Soldering Capability Characteristics

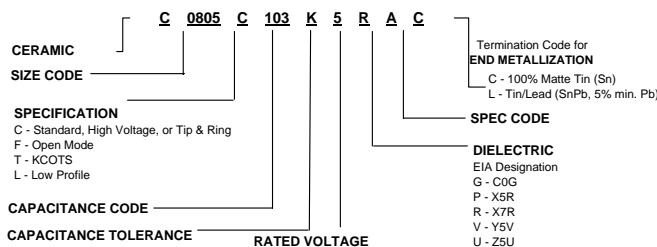
	Matte Tin Termination	SnPb Termination
Termination Material	Silver or Copper	Silver or Copper
Termination Plating (Barrier)	100% Matte Tin (Nickel)	90Sn10 Pb (Nickel)
Peak Temperature Capability	260°C	260°C
Soldering Process Compatibility	Backward & Forward Compatible	Backward & Forward Compatible
MSL Rating per J-STD-020C	Not Classified <sup>4</sup>	Not Classified <sup>4</sup>
Tin Whisker Test Results	Class 2	Class 2

based on JESD22-A121 and JESD201<sup>5</sup>

<sup>4</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>5</sup> Per EIA/ECA component bulletin CB19, tin whiskering is not considered a reliability risk within the capacitor industry for non-Military / Hi-Rel applications.

## Ordering



## Identification

Reel level KEMET EZ ID label indicates product content relative to substance restrictions of the EU RoHS Directive, 2002/95/EC, 2005/618/EC and China RoHS.

RoHS-PRC = Meets criteria without exemption  
RoHS-EU = Meets criteria with exemption  
RoHS-NO = Does not meet criteria

