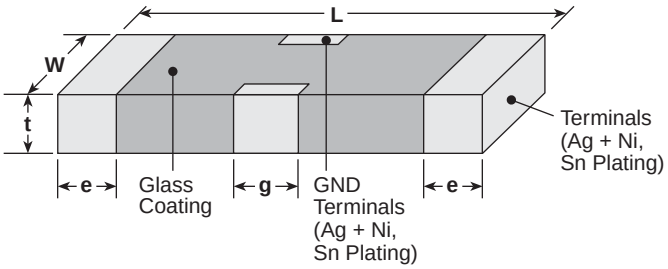
EU RoHS COMPLIANT

features

- Improved reduction of radiated noises
- Capacitor/resistor filter
- Noise reduction in a variety of circuits
- Marking: Black body color with no marking
- Products with lead-free terminations meet EU RoHS requirements

dimensions and construction



Size	L	W	t	g	e
1206	.126±.008 *(3.2±0.2)*	.063±.008 *(1.6±0.2)*	.031±.008 *(0.8±0.2)**	.039±.012 *(1.0±0.3)*	.016±.012 *(0.4±0.3)*

* KCR1206T221/500: t = .043 ± .008 *(1.1 ± 0.2)*
KCR1206T221/101: t = .043 ± .008 *(1.1 ± 0.2)*

ordering information

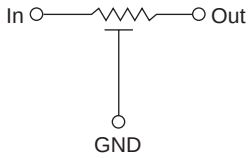
New Part #

KCR	1206	T	TE	220/500
Type	**Size**	**Termination Material**	**Packaging**	**Capacitance/ Resistance**
	1206	T: Sn	TE: 7" embossed plastic (1206 - 2,000 pieces/reel)	2 significant digits + number of zeros

For further information on packaging, please refer to Appendix A.

EMI/EMC filtering

circuit schematic



applications and ratings

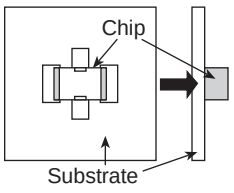
Item	Specification
Operating Temperature Range	-40°C to +85°C
Storage Temperature Range	-40°C to +85°C
Measuring Condition (Standard) Temperature Relative Humidity	 15°C to 35°C 20 - 90%
Measuring Condition (Precision) Temperature Relative Humidity	 20°C ± 1°C 60 - 67%

applications and ratings (continued)

Part Designation	Capacitance (pF)	Capacitance Tolerance	Resistance (Ω)	Resistance Tolerance (%)	Power Rating (W)	Operating Temperature Range
KCR1206TTE220/500	22	+50 ~ -20	50	±30	1/16	-40°C to +85°C
KCR1206TTE220/101	22		100			
KCR1206TTE470/500	47		50			
KCR1206TTE470/101	47		100			
KCR1206TTE101/500	100		50			
KCR1206TTE101/101	100		100			
KCR1206TTE221/500	220		50			
KCR1206TTE221/101	220		100			

environmental applications

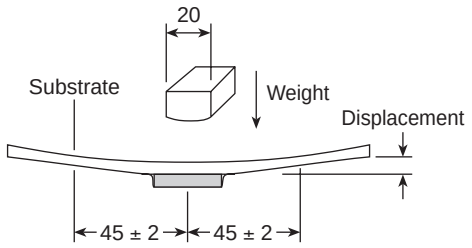
Performance Characteristics

Parameter	Requirement	Test Method
Insulation Resistance	1000 MΩ Minimum	Applied rated voltage for 60 seconds
Capacitance	Within the tolerance	Frequency: 1kHz Voltage: 1Vrms
DC Resistance	Within the tolerance	DC: 0.3V Maximum
Terminal Adhesion Strength	No physical damage	Solder a chip to a test substrate and then laterally apply a load (5N, 500gF) in the arrow direction 
Resistance to Solder Heat	Appearance: No physical damage Capacitance: Within tolerance Dielectric Loss: Within tolerance Insulation Resistance: Within tolerance	Flux: 25% rosin Preheating: 60 seconds Preheating Temperature: 150°C Solder: H60A Solder Temperature: 260°C ±5°C Dip Time: 5 seconds ± 0.5 second

5/15/05

environmental applications (continued)

Performance Characteristics

Parameter	Requirement	Test Method
Solderability	More than 95% of the terminal electrode shall be covered with new solder	Flux: 25% rosin Preheating: 60 seconds Preheating Temperature: 150°C Solder: H60A Solder Temperature: 230°C ±5°C Dip Time: 4 seconds ± 1 second
Temperature Cycle*	Appearance: No physical damage Capacitance: Within tolerance Dielectric Loss: Within tolerance Insulation Resistance: Within tolerance	Repeat the following heat cycle 10 times: Step: 1 — Temperature: -40°C ± 3°C — Time: 30 minutes ± 3 minutes 2 — Room Temp. — 15 minutes maximum 3 — 85°C ± 2°C — 30 minutes ± 3 minutes 4 — Room Temp. — 15 minutes maximum
High Temperature Resistance*	Appearance: No physical damage Capacitance: Within tolerance Dielectric Loss: Within tolerance Insulation Resistance: Within tolerance	Temperature: 70°C ± 2°C Bias: 150% of rated voltage Test Time: 1000 +48/-0 hours
Humidity Resistance (Unload)*	Appearance: No physical damage Capacitance: Within tolerance Dielectric Loss: Within tolerance Insulation Resistance: Within tolerance	Temperature: 85°C ± 2°C Humidity: 85% ± 5% Test Time: 500 +24/-0 hours
Substrate Bending Test	Appearance: No physical damage Capacitance: Within tolerance	After soldering a chip to a test substrate, bend the substrate by 1 mm and then measure. The substrate is GE4 or based on GE4. 
Humidity Resistance (Load)*	Appearance: No physical damage Capacitance: Within tolerance Dielectric Loss: Within tolerance Insulation Resistance: Within tolerance	Temperature: 40°C ± 2°C Humidity: 90 - 95% Bias: 100% of rated voltage Test Time: 500 +24/-0 hours
Low Temperature Resistance (Unload)*	Appearance: No physical damage Capacitance: Within tolerance Dielectric Loss: Within tolerance Insulation Resistance: Within tolerance	Temperature: -40°C ± 2°C Test Time: 1000 +48/-0 hours
Vibration	Appearance: No physical damage Capacitance: Within tolerance Dielectric Loss: Within tolerance Insulation Resistance: Within tolerance	The frequency of applied vibration should be swept from 10 Hz to 55 Hz and return to 10 Hz. This cycle time should be about 1 minute and this cycle should be repeated. Amplitude (Total Excursion): 1.5 mm This motion shall be applied for a period of 2 hours in each of 3 mutually perpendicular axes (total of 6 hours).

* After temperature cycle test, high temperature resistance test, humidity resistance test or low temperature resistance test, the tested sample should be measured after having been left in temperature from 15°C to 35°C and relative humidity from 45% to 75% for 24 hours.