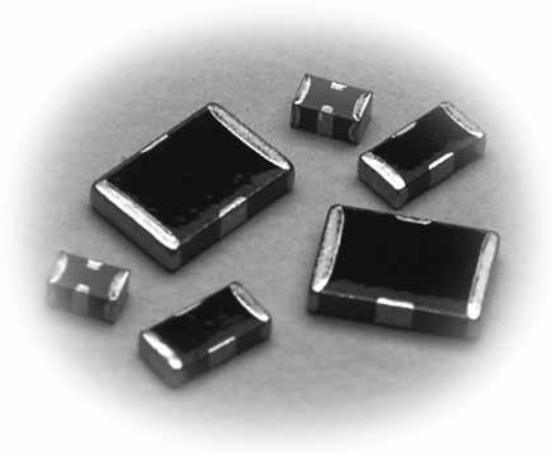
KOA SPEER ELECTRONICS, INC.

KGM

three-terminal capacitor

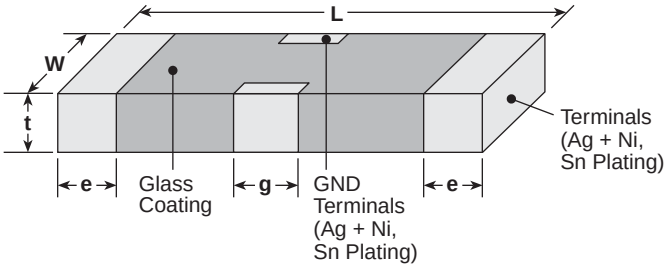
EU RoHS COMPLIANT



features

- Surface mount type noise filter
- Plated terminals provide excellent solder resistance
- Small size and high rated DC current
- 0603-2A, 0805-2A, 1206-2A series is available in signal lines in addition to power line
- 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
0603	.063±.008 *(1.6±0.2)*	.031±.008 *(0.8±0.2)*	.024±.008 *(0.6±0.2)*	.020±.008 *(0.5±0.2)*	.008±.006 *(0.2±0.15)*
0805	.079±.008 *(2.0±0.2)*	.049±.008 *(1.25±0.2)*	.031±.008 *(0.8±0.2)**	.016±.012 *(0.4±0.3)*	.012±.008 *(0.3±0.2)*
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)*
1812	.177±.012 *(4.5±0.3)*	.126±.012 *(3.2±0.3)*	.039±.008 *(1.0±0.2)*	.039±.012 *(1.0±0.3)*	

* KGM0805 470
KGM0805 101
KGM0805 222
t = .035 ± .008 *(0.9 ± 0.2)*

KGM1206CHT221/2A:
t = .043 ± .008 *(1.1 ± 0.2)*

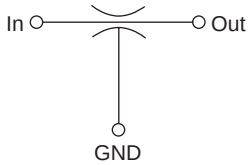
ordering information

New Part #

KGM	0805	H	C	T	TE	220	2A
Type	Size	Rated Voltage	Temp. Charact.	Termination Material	Packaging	Capacitance	Rated Current
	0603 0805 1206 1812	C: 16V E: 25V V: 35V H: 50V	C F	T: Sn	TE: 7" embossed plastic (0603 - 4,000 pieces/reel) (0805 - 4,000 pieces/reel) (1206 - 2,000 pieces/reel) (1812 - 1,000 pieces/reel)	2 significant digits + no. of zeros	1A 2A 4A

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

circuit schematic



temperature characteristics

Temperature Character	Temperature Range	Standard Temperature	Rate of Change (Capacitance)
C F	-25°C to +85°C	20°C	±15% -80 ~ +30%

EMI/EMC filtering

2/24/08

applications and ratings

	Part Designation	Capacitance (pF)	Capacitance Tolerance (%)	Rated Voltage DC (V)	Rated Current DC (A)	Insulation Resistance Minimum (MΩ)	Operating Temperature Range
NEW	KGM0603ECTTE2202A	22	+50 ~ -20	25	2	1000	-55°C to +125°C
NEW	KGM0603ECTTE4702A	47					
NEW	KGM0603ECTTE1012A	100					
NEW	KGM0603ECTTE2212A	220					
NEW	KGM0603ECTTE4712A	470					
NEW	KGM0603ECTTE1022A	1000					
NEW	KGM0603ECTTE2222A	2200					
NEW	KGM0603CCTTE3322A	3300		16			
	KGM0603CFTTE2232A	22,000					
	KGM0603CFTTE1042A	100,000					
	KGM0805HCTTE2202A	22	+50 ~ -20	50	2	1000	-55°C to +125°C
	KGM0805HCTTE4702A	47					
	KGM0805HCTTE1012A	100					
	KGM0805ECTTE2212A	220		25			
	KGM0805ECTTE4712A	470					
	KGM0805ECTTE1022A	1000					
	KGM0805ECTTE2222A	2200					
	KGM0805ECTTE3322A	3300					
NEW	KGM0805EFTTE1032A	10,000					
NEW	KGM0805EFTTE2232A	22,000					
NEW	KGM0805EFTTE1042A	100,000					
	KGM0805ECTTE2224A	2,000			4		
	KGM0805CFTTE1044A	100,000		16			
NEW	KGM1206ECTTE2201A	22	+50 ~ -20	25	1	1000	-55°C to +125°C
NEW	KGM1206ECTTE4701A	47					
NEW	KGM1206ECTTE1011A	100					
NEW	KGM1206ECTTE2211A	220					
NEW	KGM1206ECTTE4711A	470					
NEW	KGM1206ECTTE1021A	1000					
NEW	KGM1206ECTTE2221A	2200					
NEW	KGM1206CCTTE3321A	3300		16			
	KGM1206HCTTE2202A	22		50	2		
	KGM1206HCTTE4702A	47					
	KGM1206HCTTE1012A	100					
	KGM1206HCTTE2212A	220					
	KGM1206HCTTE4712A	470					
	KGM1206HCTTE1022A	1000					
	KGM1206VCTTE2222A	2200		35			
	KGM1206ECTTE2722A	2700		25			
	KGM1206ECTTE3322A	3300					
	KGM1206ECTTE1032A	10,000					
	KGM1206EFTTE1042A	100,000					
	KGM1812HCTTE4714A	470	+50 ~ -20	50	4	1000	-55°C to +125°C
	KGM1812HCTTE1024A	1000					
	KGM1812HCTTE2224A	2200					
	KGM1812ECTTE6824A	6800		25			

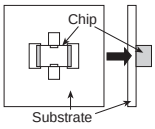
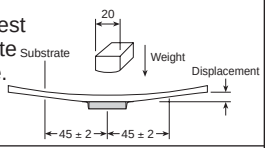
environmental applications

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	60 MΩ Maximum	DC: 0.3V Maximum
Dielectric Withstanding Strength	No breakdown	Applied 250% of the rated voltage for 1 second to 5 seconds, limit surge current 50mA maximum

environmental applications (continued)

Performance Characteristics

Parameter	Requirement	Test Method
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
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: Temperature: Time: 1 -40°C ± 3°C 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.