

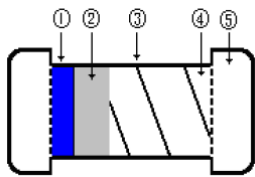
MELF High Voltage Resistor



■ Features

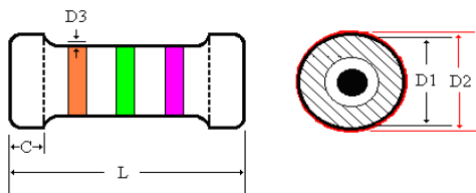
- For SMD enabled structure
- it is epoxy resin coating material
- Lowest TCR control to 25ppm, normal type is 5% 200ppm, 1% 100ppm, 0.5% 50ppm
- high voltage applications for power capacitor, motor start-up protection, car & motorcycle engine ignition, etc. other surge energy request able to design for engineer design request

■ Construction & Dimension



① Insulation Coating	④ Ceramic Rod
② Marking	⑤ Electrode Cap
③ Conductive Layer	

■ Dimension

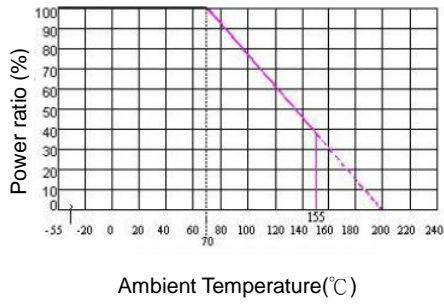


Type	L (mm)	D1 (mm)	D2 max (mm)	D3 max (mm)	C min (mm)	Packaging	
						180mm/7"	330mm/13"
CSRH0207	6.00±0.50	2.20±0.20	2.40	0.3	1.2	2000EA	—
CSRH0309	8.50±0.50	3.20±0.20	3.40	0.3	1.2	—	2500EA

■ Part Numbering

CSRH	0207	F	T	E	U	1001
Product Type	Dimensions (LxD2)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance
	0207: 6.0x2.4 0309: 8.5x3.4	F: ±1% J: ±5%	T: Taping Reel	E: ±100 F: ±200	U: 1/2W T: 1W	1001: 1KΩ 1004: 1MΩ

Derating Curve



Standard Electrical Specifications

Item Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Surge Voltage For EN60065	Resistance Range		TCR (PPM/°C)
						±1%	±5%	
0207	1/2W	-55 ~ +155°C	1000V	1500V	1500V Max	1KΩ-100MΩ		±100 ±200
0309	1W	-55 ~ +155°C	2500V	2500V	2500V Max	1KΩ-100MΩ		±100 ±200

TCR ±25ppm ~ ±50ppm and resistance tolerance ±0.5% can design is depending on client request

Pulse Properties

This test condition is follow UL 1676 and EN 60065 is pulse wave and test circuit, but the high voltage test is follow standard electrical specification

Technical Specification

Characteristics	Standard	
	0207	0309
Dielectric Voltage for AC Source	200V	250V
Insulation Resistance(MΩ)	≥ 1000	
Temperature Coefficient(ppm/°C)	±25~200ppm	
Short Time Overload Test	±1% within	

■ Environmental Characteristics

Item	Requirement	Test Method
Short Time Overload	±1.0%	IEC 60115-1 4.13 RCWV*2.5 or Max. Overload voltage whichever is lower for 5 seconds
Resistance to Soldering Heat	±0.5%	IEC 60115-1 4.18.2 260°C for 10±1 seconds
Solderability	95% min. coverage	IEC 60115-1 4.17.2 230±3°C for 2±0.2 seconds
Thermal Shock Test	±2.0%	IEC 60115-1 4.17.2 5cycle for -55°C 30minute 155°C 30minute
Thermal Endurance Test	±1.0%	IEC 60115-1 4.25.3 1000 hrs at 200°C and without load
Load Life Test	±1.5%	IEC 60115-1 4.25.1 70±2°C, condition apply rated power for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Load Life In Humidity Test	±1.5%	IEC 60115-1 4.24 40±2°C, 90~95% R.H., for 56 days, loaded with 0.1 times rate power
Periodic Electric Overload	±2.5%	IEC 60115-1 4.39 3.9x rated voltage (not over max. overload voltage) With 0.1s ON, 2.5s OFF for 1000 cycles
Vibration	±2.5%	IEC 60115-1 4.22 Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz
Single Pulse High Voltage Overload	±2%	IEC 60115-1 4.27 10 pulses of 10/700µs at 10x rated voltage (not over max. overload voltage) with interval of 60 sec
Electrostatic Discharge (Human Body Model)	±2.5%	IEC 60115-1 4.38 3 positive & 3 negative discharges with 4KV source
Bending Test	±1%	IEC 60115-1 4.33 Pressing depth 2mm, 3 times
Flammability	No burning after 30s	IEC 60115-1 4.35 Needle flame test 10s
Climatic Test	±2%	IEC 60115-1 4.23 4.23.2 Dry heat: 16 hours 155°C 4.23.3 Damp heat: 24 hours 55°C with 95% relative humidity 4.23.4 Cold: 2 hours -55°C 4.23.5 Negative air pressure: 2 hour 8.5KPa at 25±10°C 4.23.6 Damp heat cyclic: 5 days 55°C with 95% relative humidity 4.23.7 DC load: rated voltage at -55°C and 155°C each 1 min

■ Storage Temperature: 15~28°C; Humidity < 80%RH