

Specifications Per

• IEC 60115-1

Features

- Excellent in heat dissipation than fiberglass resistor
- Dedicatedly designed for high-voltage spark ignition systems.
- Proprietary ceramic composite withstands high-voltage surge impacts with long-term stability.
- One of few sources in the world capable of manufacturing such type of resistor.
- RoHS and REACH compliant

DIMENSIONS

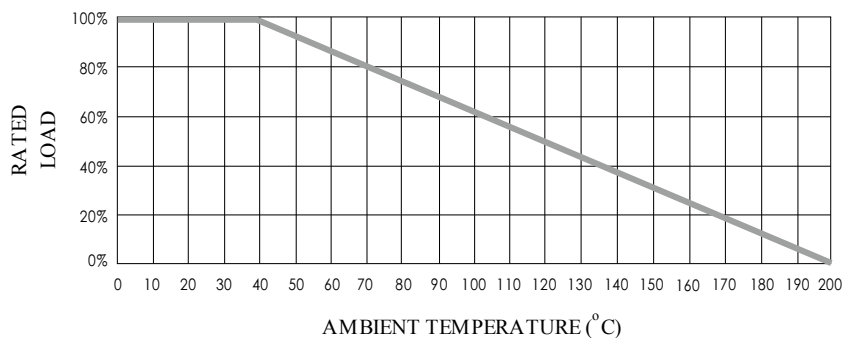
Type	Body Length (L, mm)	Body Diameter (D, mm)	Cap Length (B, mm)	Net Weight Per 1000 pcs
ISC20K	10.5 ± 1.0	4.0 ± 0.5	2.2 ± 0.3	390 grams
ISC25K	11.0 ± 1.0	3.5 ± 0.5	2.2 ± 0.3	400 grams
ISC50K	18.5 ± 1.0	4.5 ± 0.7	2.2 ± 0.3	700 grams
ISC50K1	22.5 ± 1.5	4.5 ± 0.7	2.2 ± 0.3	1300 grams

GENERAL SPECIFICATIONS

Type	Power Rating (at 40°C)	Maximum Working Voltage	Maximum Surge Load	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
ISC20K	0.5W	350V	25KV / 10nS	1KΩ	10KΩ	±5% ~ ±20%	E-6/E-24
ISC25K	0.5W	350V	25KV / 10nS	1KΩ	10KΩ	±5% ~ ±20%	E-6/E-24
ISC50K	2W	400V	50KV / 20nS	1KΩ	10KΩ	±5% ~ ±20%	E-6/E-24
ISC50K1	3W	450V	50KV / 30nS	1KΩ	10KΩ	±5% ~ ±20%	E-6/E-24

Special sizes, values, and specifications not listed available on special order.

POWER DERATING CURVE



Quality • Reliability
Cost-Down via Innovation

■ PART NUMBER

Example: ISC20KM5K00TKZBK500

ISC20K	M	5K00	TKZ	BK500
Type	Tolerance	Resistance	TCR	Packaging
	J (5%) K (10%) M (20%)	5KΩ 4-character code containing - 3 significant digits 1 letter multiplier OHM MULTIPLIER R = 1 K = 10 ³ M = 10 ⁶ G = 10 ⁹	3-character code TKZ = Default Product Temperature Coefficient. Information of typical product temperature coefficient can be found in the Technical Summary Section of the datasheet.	Bulk 500 pieces 5-character code BK = Bulk BK + Quantity

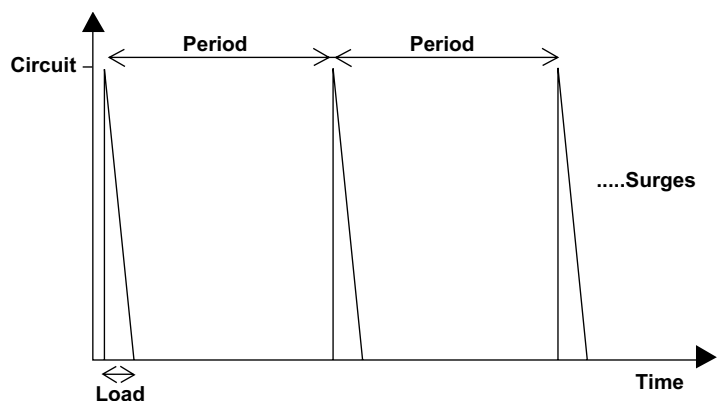
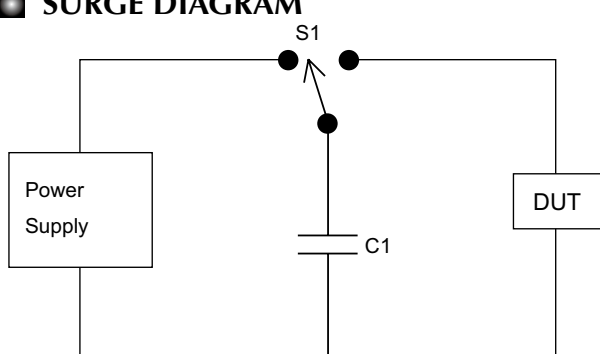
ISC

■ TECHNICAL SUMMARY

Characteristics	Limits	
Dielectric Withstanding Voltage, VAC or DC	ISC20K ISC25K ISC50K ISC50K1	500
Temperature Coefficient, PPM / °C*	±2000 (typical)	
Operating Temperature Range, °C	-55 ~ +200	
Insulation Resistance, MΩ	>10 ⁴	
Failure Rate in Time, pcs / 10 ⁹ device hours	<1	

* Not applicable to all resistance values. Please check with us regarding the PPM of specific resistance value(s).

■ SURGE DIAGRAM



S1: High-voltage insulated switch

C1: High-voltage variable capacitor

Power supply: Variable 0 ~ 50KV DC

DUT: Device Under Test.

■ SURGE TEST

Type	Circuit	Load	Period	Surges
ISC20K	25KV	20nS	20mS	200,000
ISC25K	25KV	20nS	20mS	200,000
ISC50K	50KV	30nS	20mS	200,000
ISC50K1	50KV	45nS	20mS	200,000

■ PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits
Short Time Overload	IEC 60115-1 4.13 5 seconds 2.5x rated voltage (not over 2X max. working voltage)	±2%
Load Life In Humidity	IEC 60115-1 4.24 56 days rated load (not over max. working voltage) at (40±2)°C and (93±3)% relative humidity	±5%
Load Life	IEC 60115-1 4.25.1 Rated load (not over max. working voltage) 1,000 hours with 1.5 hours ON, 0.5 hours OFF, at (40±2)°C	±5%
Vibration	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.	±0.25%
Thermal Endurance	IEC 60115-1 4.25.3 1000 hours at 200°C without load	±5%
Thermal Shock	IEC 60115-1 4.19 -55°C 30minutes, +155°C 30minutes, 500 cycles	±5%
Surge Test	200,000 impacts at period 20ms (3000rpm/1hour) at 180°C according to the following chart.	±5%