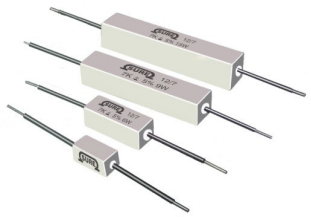
SURE RESISTORS

ISO 9001:2000 COMPANY

AXIAL MOUNTED WIREWOUND RESISTOR - SCA

FEATURES



- High Power dissipation in small volume
- High surface insulation property
- Completely fire proof and welded construction
- Available in PCB type and capacitor type terminals
- Formed leads available on request
- Low inductance type available on request
- Long leads also available

QUICK REFERENCE DATA

DESCRIPTION	SCA03	SCA04	SCA06	SCA09	SCA12	SCA20
Resistance range, Series And tolerance (1)	E24 Series					
± 10 %	0.01 Ω - 0.05 Ω					
± 5 %	0.06 Ω - 100 KΩ					
Maximum dissipation at Tamb = 40 °C	03 W	04W	06 W	09 W	12 W	20 W
Maximum permissible voltage (volts DC or RMS)	$V = \sqrt{(Pn \times R)}$					
Insulation voltage	> 2000 V					
Temperature coefficient. (2)	R < 10 Ω: 0 to +600ppm/°C					
Operating temperature	R ≥ 10 Ω: -100 to +150ppm/°C - 55 °C to + 275 °C					
Stability ΔR/Rmax after: Lead, 1000 hours Climate tests Short time overload	 ± 5.0% + 0.1 Ω ± 3.0% + 0.05 Ω ± 4.0% + 0.05 Ω					

(1) Tolerances, 1% and 3% available on request
(2) Temperature coefficient, 30, 50 and 90ppm/°C, available on request

TECHNOLOGY

SCA: The resistor element is a resistive wire, which is wound, on ceramic rod. Tinned copper leads are connected to the caps by welding. The resistor body is housed in a rectangular ceramic case with a special inorganic potting which is non-flammable, will not melt even at high overloads and is resistant to most commonly used cleaning solvents and moisture.

MECHANICAL DATA

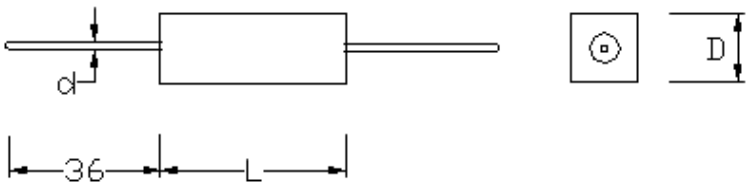


Table 1

TYPE	L	D	d
SCA03	15 ± 1.5	7.5 ± 0.8	0.81 ± 0.03
SCA04	25 ± 1.5	7.5 ± 0.8	0.81 ± 0.03
SCA06	25 ± 1.5	9.5 ± 0.8	0.81 ± 0.03
SCA09	38 ± 1.5	9.5 ± 0.8	0.81 ± 0.03
SCA12	38 ± 1.5	11.0 ± 0.8	0.81 ± 0.03
SCA20	50 ± 1.5	11.0 ± 0.8	0.81 ± 0.03

Dimensions in mm

ELECTRICAL CHARACTERISTICS

DERATING

The power that the resistor can dissipate depends on the operating temperature; see bellow.

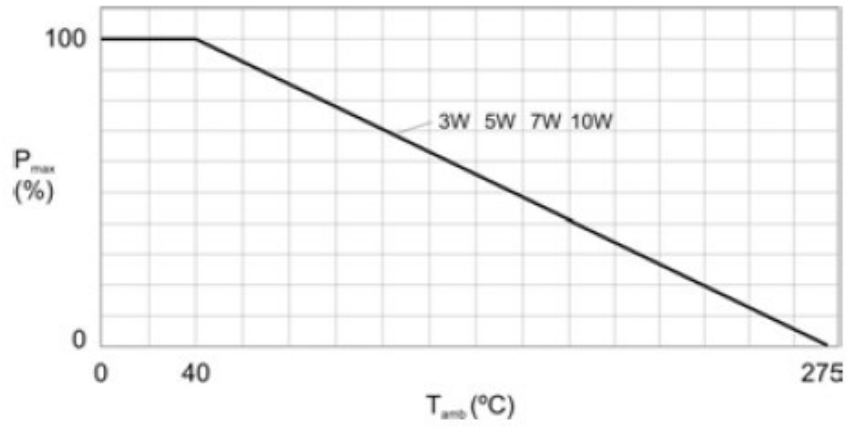


Fig - Maximum dissipation (Pmax) in percentage of rated power as a function of the ambient temperature (Tamb)

TESTS AND REQUIREMENTS

Essentially all tests and requirements present in table below follow the schedule of IEC standard publication 60115-1, 60115-4 and 60068.

TEST	PROCEDURE	REQUIREMENTS
Insulation resistance	500 V (DC); during 1 minute V-block method.	Rins min 100 MΩ
Voltage proof on insulation	1000 V (RMS); during 1 minute V-block method.	No breakdown or flashover
Temperature Coefficient	Between -55 °C at +275 °C: R ≤ 10 Ω R ≥10Ω	0 to +600ppm/°C + 150 to - 100ppm/°C
Short time overload	Dissipation 10 x Pn; 5 s	ΔR/Rmax: ±2% +0.05Ω
Robustness of terminations: Tensile all samples Bending half number of samples Torsion other half Number of samples	 Load 10N; 10 s Load 5N; 4× 90° 3×360° in opposite Directions	 No visible damage ΔR/Rmax; ±2% + 0.05Ω
Solderability (after ageing)	16h at 155 °C, leads Immersed in flux 600, leads immersed 2 mm for 2 ± 0.5 s in a solder bath a 235 ± 5 °C	Good tinning; No damage ΔR/Rmax; ±0.5% ±0.05Ω
Resistance to Soldering heat	Thermal shock; 3s, 350 °C; 6mm from body	ΔR/Rmax; ±4% + 0.05Ω
Rapid change of temperature	30 minutes at – 55 °C and 30 minutes at + 275 °C; 5 cycles	No visual damage ΔR/Rmax; ± 5% +0.05Ω
Climate sequence: Dry heat Damp heat (accelerated) 1st cycle Cold Damp heat (accel) remaining cycles	 16h, 275 °C 24h; 25 °C to 55 °C; 90% to 98% R.H. 2h; - 65 °C 6 days; 55 °C; 90% to 98% R.H;	 ΔR/Rmax; ±3%+ 0.05Ω
Damp heat (steady state)	56 days; 40 °C; 90 to 95% RH Loaded with 0.01 Pn	ΔR/Rmax; ±5% +0.05
Endurance 40 °C	1000 hours load with Pn or Vmax 1.5h ON 0.5h OFF	No damage ΔR/Rmax ±5% +0.1Ω