


**SURE RESISTORS**
**SILICON COATED SCREW TYPE WIRE WOUND RESISTORS - SSS**
**FEATURES**


- High Power to size ratio.
- High pulse load handling capabilities
- High temperature silicone coating with flame proof property.
- Non-inductive / Low inductive available on request
- Robust - Welded Construction
- Reliability against severity of environmental abuses.
- Instant Solderability
- Resistant to Solvent
- Resistant to Alcohol
- ERTL type tested as per IS 8909

**QUICK REFERENCE DATA**

DESCRIPTION	SSS 04	SSS 06	SSS 12
Resistance (1) range Series And tolerance (2)	E24 Series		
± 10 %	0.01 Ω - 0.05 Ω		
± 5 %	0.06 Ω - 100 KΩ		
Rated dissipation at T <sub>amb</sub> = 70 °C	4 Watt	6 Watt	12 Watt
Temperature coefficient. (3)	± 90 ppm/°C for below 10Ω, ± 50 ppm/°C for 10 Ω and above		
Operating temperature	- 40 °C to + 200 °C		
Basic specification	IEC60 115-1		
Limiting voltage	$\sqrt{P_n \times R}$		
Insulation resistance	>1000 M [Dry]		
Stability $\Delta R/R_{max}$ after:			
Load	± 5.0% + 0.1 Ω		
Climate tests	± 1.0% + 0.05 Ω		
Resistance to soldering heat	± 0.5% + 0.05 Ω		
Short time overload	± 2.0% + 0.1 Ω		

(1) Special resistive values available on request

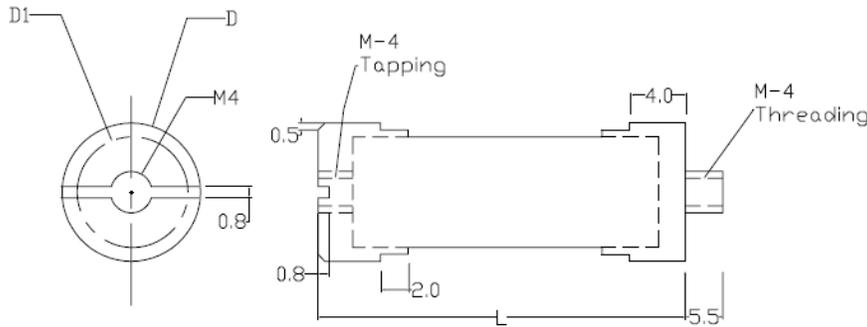
(2) Tolerances, 0.5, 1, 3 and 10% available on request

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

**TECHNOLOGY**

SSS: The resistor element is a resistive wire, which is wound, in a single layer, on a ceramic rod. Brass caps with threading is press fitted over one ends of the rod and on the other end the brass caps with tapping are press fitted. The ends of the resistive wire and the caps are connected by welding. The resistor is coated with green silicon cement which is non-flammable, will not drip even at high overloads and is resistant to most commonly used cleaning solvents

**MECHANICAL DATA**



SSS - 'SURE' SCREW TERMINAL RESISTOR

Table 1. Mechanical data

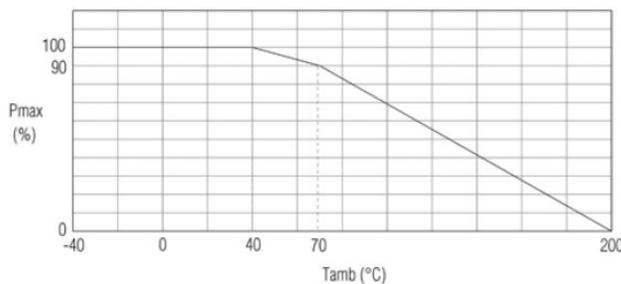
PRODUCT	L	D	D1
SSS04	26.5 ± 1.5	10.00 ± 0.5	8.00 ± 0.03
SSS06	35.5 ± 1.5	10.00 ± 0.5	8.00 ± 0.03
SSS12	69.5 ± 1.5	10.00 ± 0.5	8.00 ± 0.03

OPTIONS AVAILABLE:

- M3 Screw type
- M4 Screw type

**ELECTRICAL CHARACTERISTICS**

DERATING: The power that the resistor can dissipate depends on the operating temperature.



Maximum dissipation (Pmax) in percentage of rated as a function of ambient temperature (Tamb)

**TESTS AND REQUIREMENTS**

Essentially all tests are carried out in accordance to the schedule of IEC publications 60115-1, category 40/200/56 (rated temperature range -40 to +200 °C; damp heat, long term, 56 days and along the lines of IEC publications 60068-2); "Recommended basic climatic and mechanical robustness testing procedure for electronic components" and under standard atmosphere conditions according to IEC 60068-1 subclause 5.3, unless otherwise specified.

In some instances deviations from IEC applications were necessary for our method specified.

Table 8. Test and requirements

TEST	PROCEDURE	REQUIREMENTS
Temperature coefficient	Between - 40 °C and + 200 °C:  R < 10 Ω R > 10 Ω	± 90 ppm/°C ± 50 ppm/°C
Short time overload	Room temperature; dissipation 10 x P <sub>n</sub> ; 5 s (voltage not more than 1000 V / 25 mm)	ΔR/R <sub>max</sub> ±2% +0.1
Thermal Shock	Rated Power applied until thermally stable, then a min. of 15 minutes at -55 °C	± (0.2 % + 0.05 Ω) ΔR
Robustness of terminations:  Tensile all samples  Bending half number of samples  Torsion other half number of samples	Load 10 N; 10 s  Load 5 N; 4 x 90°  2 x 180° in opposite directions	No visual damage ΔR/R <sub>max</sub> ±0.5% +0.05
Solderability (after ageing)	16 h at 155 °C; leads immersed in flux 600, leads immersed 2 mm for 2 ± 0.5 s in a solder bath at 235 ±5 °C	Good tinning; (≥95% covered) No Visible Damage
Resistance to soldering heat	Thermal shock: 3 s; 10 °C; 2.5 mm from body	ΔR/R <sub>max</sub> ±0.5% + 0.05
Rapid change of temperature	30 minutes at - 40°C and 30 minutes at + 200°C; 5 cycle	No visible damage ΔR/R <sub>max</sub> ±1% + 0.05
Vibration	Frequency 10 to 500 Hz (1 to 7W) and 10 to 55 Hz (10 to 20W), displacement 0.75 mm or acceleration 10 g, three directions; total 6 h (3x2 h)	No visible damage ΔR/R <sub>max</sub> ±0.5% + 0.05