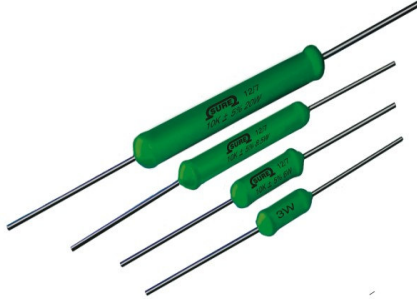




## SURE RESISTORS

## AXIAL MOUNTED WIREWOUND RESISTORS - SSA

## 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	SSA 01	SSA 02	SSA 2.5	SSA 04	SSA 06	SSA 09	SSA 12	SSA 15	SSA 20
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	1 W	2 W	2.5 W	4 W	6 W	9 W	12 W	15 W	20 W
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**

SSA: The resistor element is a resistive wire, which is wound, in a single layer, on a ceramic rod. Metal caps are pressed over the ends of the rod. The ends of the resistive wire and the leads are connected to the caps by welding. Tinned copper clad iron leads with poor heat conductivity are employed permitting the use of relatively short leads to obtain stable mounting without overheating. 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**

Table 1. Mechanical data

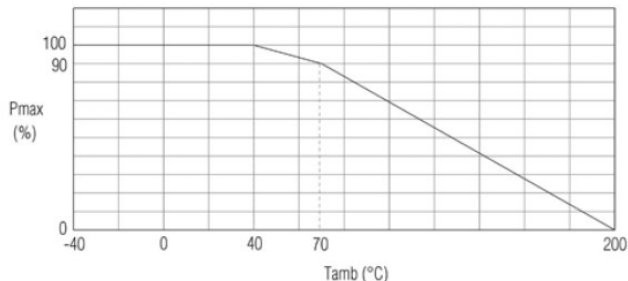
PRODUCT	L	D	d
SSA01	12.0 ± 1.5	4.5 ± 0.5	0.80 ± 0.03
SSA02	14.0 ± 1.5	5.5 ± 0.5	0.80 ± 0.03
SSA2.5	16.0 ± 1.5	5.5 ± 0.5	0.80 ± 0.03
SSA04	18.0 ± 1.5	6.5 ± 0.5	0.80 ± 0.03
SSA06	26.0 ± 1.5	7.5 ± 0.5	0.80 ± 0.03
SSA09	34.0 ± 1.5	8.5 ± 0.5	0.80 ± 0.03
SSA12	54.0 ± 1.5	7.5 ± 0.5	0.80 ± 0.03
SSA15	54.0 ± 1.5	8.5 ± 0.5	0.80 ± 0.03
SSA20	67.0 ± 1.5	9.5 ± 0.5	0.80 ± 0.03

**OPTIONS AVAILABLE:**

- Long lead (50 mm) on either side
- Extra Long Lead (65 mm) on either side.
- Thick lead (1.0 mm) on both sides.

**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