SURE RESISTORS

ISO 9001:2000 COMPANY

SURE CERAMIC TYPE MOUNTED WIREWOUND RESISTOR - SBR

FEATURES

- High Power dissipation in small volume
- Very stable mounting
- Non – flammable
- High pulse load handling capabilities
- High heat and moisture resistance
- Wire Wound
- Various terminal styles

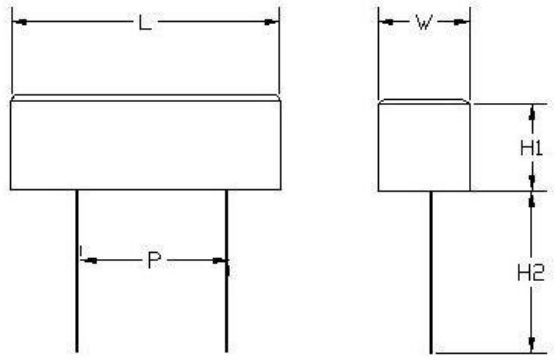
QUICK REFERENCE DATA

	SBR05	SBR08	SBR10	SBR15	SBR20
Resistance range, Series And tolerance	E24 Series				
± 10 %	0.005 Ω - 0.05 Ω				
± 5 %	0.06 Ω - 100 KΩ				
Maximum dissipation At T amb = 70 ˚ C	05 W	08 W	10 W	15 W	20 W
Limiting Voltage	Sq. Rt (Pn x R)				
Temperature coefficient	R<10 Ω: 0 to 600 ppm/ ˚ C R ≥ 10 Ω: - 80 to + 140 ppm/° C				
Insulation voltage	> 2000 V				
Maximum permissible Body temperature	275 ° C				
Basic specification	IEC60115-1				
Operating temperature	- 25 ° C to + 155 ° C				
Stability Δ R/Rmax after Load Climatic tests Short time overload	 ± 5.0% + 0.1Ω ± 3.0% + 0.1Ω ± 2.0% + 0.1Ω				

TECHNOLOGY

SBR: The resistive element is a wire that is wound on a high grade porcelain rod. The terminals have fully welded construction to provide a good mechanical and electrical contact. To ensure a flexible assembling process, the resistors are offered in radial terminals styles. The resistor body and lead ends are housed within a rectangular ceramic case which is non-flammable will not melt even at high overloads and is resistant to most commonly used cleaning solvents.

MECHANICAL DATA



Mechanical data

Watt	L	W	H1	H2	P
05 - 07	22.5 ± 0.5	9.5 ± 0.5	10.0 ± 0.5	25.0 ± 1.0	15.0 ± 0.5
08	38.0 ± 0.5	9.5 ± 0.5	9.0 ± 0.5	25.0 ± 1.0	28.0 ± 0.5
10	46.0 ± 0.5	9.5 ± 0.5	9.5 ± 0.5	25.0 ± 1.0	35.0 ± 0.5
15	50.0 ± 0.5	12.5 ± 0.5	12.5 ± 0.5	30.0 ± 1.0	32.5 ± 1.0
20	63.0 ± 1.0	12.5 ± 0.5	12.5 ± 0.5	30.0 ± 1.0	47.5 ± 1.0

Dimensions unless specified in mm

ELECTRICAL CHARACTERISTICS

DERATING

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

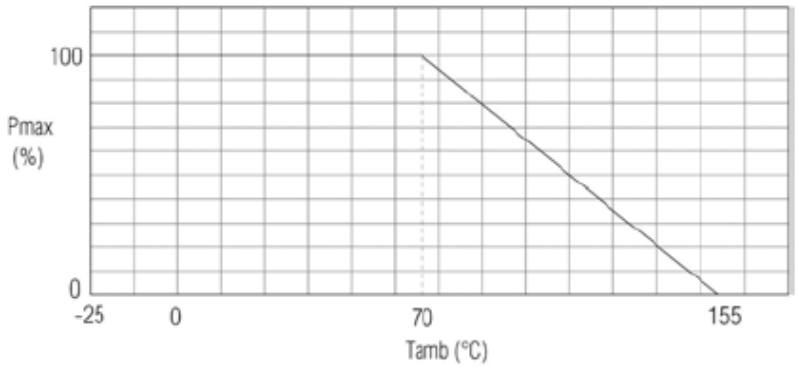


Fig. 2 Maximum dissipation (P_{max}) in percentage of rated power as a function of the ambient temperature (T_{amb})

TESTS AND REQUIREMENTS

Essentially all tests are carried out in accordance with the schedule of IEC publications 60115 – 1, category 25/155/56 (rated temperature range - 25 to + 155 °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 sub clause 5.3, unless otherwise specified.
In some instances deviations from IEC applications were necessary for our specified method.

TEST	PROCEDURE	REQUIREMENTS
Insulation resistance	500 V (DC) during 1 minute; V-block method	$R_{ins\ min}$ 100 MΩ
Voltage proof on insulation	1000 V (RMS) during 1minute; V-block method	No damage $\Delta R/R_{max}$ ±0.5% + 0.05 Ω
Temperature coefficient	Between - 25 °C and + 155 °C: RMW: R < 10 Ω: R ≥ 10 Ω: RMF:	 0 to 600 ppm/°C - 80 to + 140 ppm/°C ±250 ppm/°C
Short time overload	Room temperature P = 10 x Pn, 5 s, V_{max} for: RMF03 ≤ 1500 V RMF05 ≤ 2000 V RMF07 ≤ 2500 V RMF10 ≤ 3000 V	$\Delta R/R_{max}$ ±2% + 0.1 Ω
Robustness of resistor body	Load 200 ±10 N	No damage $\Delta R/R_{max}$ ±0.5% +0.05Ω
Robustness of termination Tensile all samples	 Load 45 N; 10 s	No damage
Solderability (after ageing)	16 h at 155 °C; leads immersed in flux 600, 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, 350 °C	$\Delta R/R_{max}$ ±1% +0.05Ω
Rapid change of temperature	30 minutes at -25 °C and 30 minutes at +155 °C; 5 cycles	No visual damage $\Delta R/R_{max}$ ±1% +0.05Ω
Vibration	Frequency 10 a 55 Hz, displacement 0.75 mm or acceleration 10 g, three directions; total 6 h (3x2 h)	No damage $\Delta R/R_{max}$ ±1% +0.05Ω