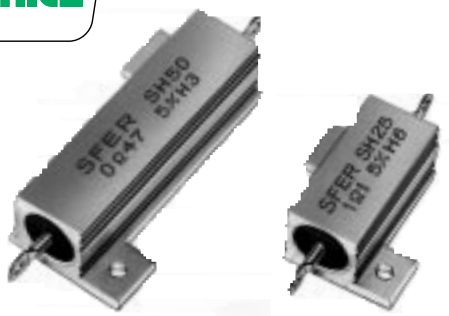
VISHAY SFERNICE

SH

≤ 50 W at +25°C

heat sink encased wirewound power resistors
– industrial applications

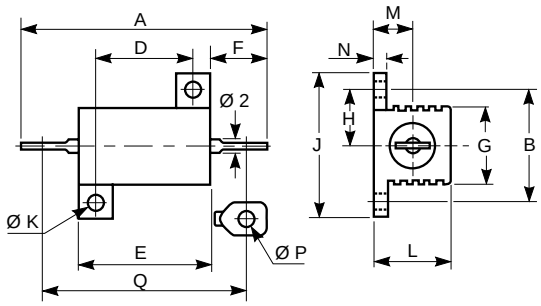


Built for high power dissipation applications, these components have very good overall features for industrial use under harsh environmental conditions. They feature :

- **HIGH POWER CHARACTERISTICS**
- **UTILIZE HEAT SINK CAPABILITY**
- **GOOD MECHANICAL PROTECTION**
- **NDUSTRIALIZE PRODUCT**

Table 1

Series and styles	SH5	SH10	SH25	SH50
A B ±0,2 D ±0,2	28,5 ±1,5 12,5 11,3	35 ±1,5 15,9 14	49 ±1,3 19,8 18,3	70,2 ±1,4 21,4 39,7
E ±0,5 F	16,3 6,8 ±1,5	19 7,9 ±1,5	28 11,1 ±1,5	50 11 ±1,2
G ±1 H ±0,7	8,5 6,2	11 7,9	14 9,9	15,5 10,7
J ±0,5 Ø K ±0,1	16,4 2,4	20,6 2,4	27,5 3,2	29,4 3,2
L max. M ±0,5	8,9 4,3	11 5,6	15 8	15 8
N ±0,3 Ø P min.	1,6 2,1	2 2,1	2,4 2,1	2,4 2,1
Q	25,3 ±1,5	30,6 ±1,5	44,6 ±1,3	66,5 ±1,4
Weight in g	3	8,8	16,5	30,8



Dimensions in mm

Fig. 1

SPECIFICATIONS

Table 2

SFERNICE SERIES AND STYLES			SH5	SH10	SH25	SH50
POWER RATING	Chassis mounted resistors: 413 cm² for SH5 and SH10 536 cm² for SH25 and SH50	at 25°C	10 W	12,5 W	25 W	50 W
		at 70°C	8 W	10 W	20 W	40 W
	Unmounted resistors	at 25°C	4 W	6 W	9 W	12 W
		at 70°C	3,2 W	4,8 W	7,2 W	9,6 W
OHMIC VALUES			0,1 Ω 3,3 kΩ	0,1 Ω 15 kΩ	0,1 Ω 33 kΩ	0,1 Ω 51 kΩ
TOLERANCE			± 1% to ± 5%			
RATED MAXIMUM VOLTAGE			160 V	250 V	550 V	1285 V
DIELECTRIC STRENGTH V RMS			800 V	1000 V	2000 V	2000 V
INSULATION RESISTANCE			>10⁴ MΩ		>3.10⁴ MΩ	
TEMPERATURE COEFFICIENT			± 50 ppm/°C Rn >50 Ω			
CLIMATIC CATEGORY			55 / 200 / 56			
TEMPERATURE LIMITS			–55°C +200°C			

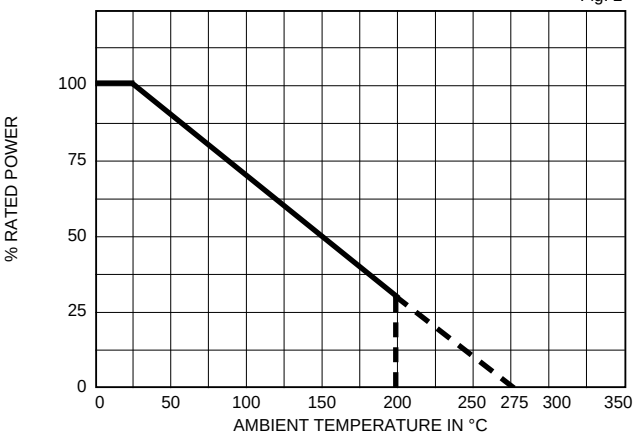
PERFORMANCES

Table 3

TESTS	CONDITIONS	TYPICAL DRIFTS
MOMENTARY OVERLOAD	5 Pn / 5 s	± 0,5% max. + 0,05 Ω
CLIMATIC SEQUENCE	–55°C +200°C 5 cycles	± 1% max. + 0,05 Ω
LOAD LIFE	Nominal power Pn 1000 h at 25°C	± 1% max. + 0,05 Ω

POWER RATING CHART

Fig. 2



DETERMINATION OF THE INTERNAL TEMPERATURE RELATED THE USING CONDITIONS :

Chassis mounted resistors : $P = \frac{\Delta T}{R_{TH1} + R_{TH2}}$

Resistors unmounted on chassis : $P = \frac{\Delta T}{R_{TH3}}$

P = Power dissipation in watt
ΔT = Temperature difference in °C between the wounded wire and the ambient
R_{TH1} = Thermal resistance between the wounded wire and the bottom of the box in °C/W
R_{TH2} = Thermal resistance of the chassis in °C/W (R_{TH3} - R_{TH1})
R_{TH3} = Thermal resistance between the wounded wire and the ambient in °C/W (R_{TH1} + R_{TH2})

TEMPERATURE RISE

Fig. 3

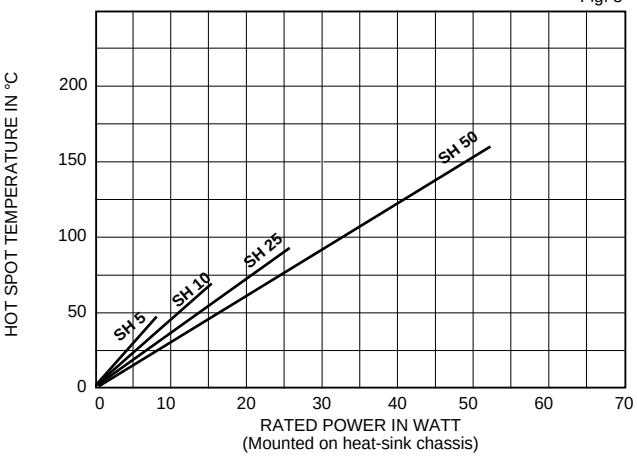


Table 4

	SH5	SH10	SH25	SH50
R_{TH1}	8,5	11	4,5	2
R_{TH3}	47	41	22,5	14

MARKING

SFERNICE trademark, series, style, nominal resistance (in Ω), tolerance (in %), manufacturing date.

ORDERING PROCEDURE

SERIES	STYLE	OHMIC VALUE	TOLERANCE
SH	25	10 kΩ	± 5 %

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