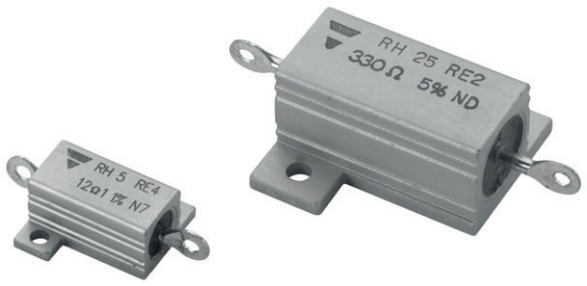
Heatsink Encased Wirewound Power Resistors



FEATURES

- 5 W to 50 W at 25 °C
- NF C 83-210
- According to CECC 40 203
- High stability < 0.05 % year
- Low temperature coefficient typically ± 15 ppm/°C
- Wide range of values from 0.006 Ω to 130 kΩ
- Termination = Sn/Ag/Cu
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

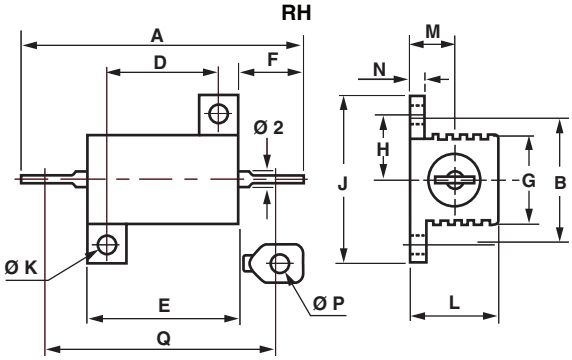
Pb-free

RoHS COMPLIANT

Encased in a compact and light heatsink offering complete environmental protection, great mechanical strength and easy mounting. Non inductive versions can be supplied under the RHNI designation (please indicate required specifications and frequency range upon ordering).

NF F 16101, 10/1988 and 16102, 04/1992: Not applicable (our parts contain less than 10 g of combustible materials).

DIMENSIONS in millimeters



SERIES	A	B ± 0.2	D ± 0.2	E ± 0.5	F	G ± 1	H ± 0.7	J ± 0.5	Ø K ± 0.1	L MAX.	M ± 0.5	N ± 0.3	Ø P MIN.	Q	WEIGHT g
RH5	28.5 ± 1.5	12.5	11.3	16.3	6.8 ± 1.5	8.5	6.2	16.4	2.4	8.9	4.3	1.6	2.1	25.3 ± 1.5	4
RH10	35.5 ± 1.5	15.9	14	19	7.9 ± 1.5	11	7.9	20.6	2.4	11	5.6	2	2.1	30.6 ± 1.5	6.4
RH25	49 ± 1.3	19.8	18.3	28	11.1 ± 1.5	14	9.9	27.5	3.2	15	8	2.4	2.1	44.6 ± 1.3	16.1
RH50	70.2 ± 1.4	21.4	39.7	50	11 ± 1.2	14	10.7	29.4	3.2	15	8	2.4	2.1	66.5 ± 1.4	28.6

OHMIC RANGE IN RELATION TO TOLERANCE

		RH5	RH10	RH25	RH50
10 %	E24	0.01 Ω to 12 kΩ	0.006 Ω to 20 kΩ	0.006 Ω to 62 kΩ	0.006 Ω to 130 kΩ
5 %	E24	0.01 Ω to 12 kΩ	0.01 Ω to 20 kΩ	0.01 Ω to 62 kΩ	0.01 Ω to 130 kΩ
2 %	E48	0.01 Ω to 12 kΩ	0.01 Ω to 20 kΩ	0.01 Ω to 62 kΩ	0.01 Ω to 130 kΩ
1 %	E96	0.1 Ω to 12 kΩ	0.1 Ω to 20 kΩ	0.05 Ω to 62 kΩ	0.05 Ω to 130 kΩ
0.5 %	E96	0.1 Ω to 12 kΩ	0.1 Ω to 20 kΩ	0.1 Ω to 62 kΩ	0.1 Ω to 130 kΩ

For technical questions, contact: sferfixedresistors@vishay.com

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STANDARD ELECTRICAL SPECIFICATIONS

MODEL	RATED POWER $P_{25\ °C}$ W	VOLTAGE LIMIT V_{RMS}	TOLERANCE ± %	RESISTANCE RANGE Ω	TEMPERATURE COEFFICIENT ± ppm/°C
RH5	10	160	2, 5, 10	0.01 to 12K	< 5 Ω ± 100, 5 Ω to 10 Ω ± 50, > 10 Ω ± 25
	10		0.5, 1	0.1 to 12K	
RH10	12.5	250	10	0.006 to 20K	
	12.5		2, 5	0.01 to 20K	
	12.5		0.5, 1	0.1 to 20K	
RH25	25	550	10	0.006 to 62K	
	25		2, 5	0.01 to 62K	
	25		1	0.05 to 62K	
	25		0.5	0.1 to 62K	
RH50	50	1285	10	0.006 to 130K	
	50		2, 5	0.01 to 130K	
	50		1	0.05 to 130K	
	50		0.5	0.1 to 130K	

TECHNICAL SPECIFICATIONS

VISHAY SFERNICE MODEL AND STYLE			RH5	RH10	RH25	RH50
Power Rating Chassis Mounted Resistors 413 cm^2 for RH5 and RH10 536 cm^2 for RH25 and RH50	MIL Limits	25 °C	5 W	10 W	20 W	30 W
		70 °C	4 W	8 W	16 W	24 W
	Vishay Sfernice Limits	25 °C	10 W	12.5 W	25 W	50 W
		70 °C	8 W	10 W	20 W	40 W
Unmounted Resistors	Vishay Sfernice Limits	25 °C	4 W	6 W	9 W	12 W
		70 °C	3.2 W	4.8 W	7.2 W	9.6 W
Rated Maximum Voltage (V_{RMS})			160 V	250 V	550 V	1285 V
Dielectric Strength V_{RMS}			1000 V	1500 V	2500 V	2500 V

PERFORMANCE

MIL-R-18546 D / NF C 83-210					TYPICAL DRIFTS
TESTS	CONDITIONS			REQUIREMENTS	
Operating Temperature Range	-55 °C +200 °C			-	-
Momentary Overload	5 P_r/5 s			± (0.25 % + 0.05 Ω)	± (0.1 % + 0.05 Ω)
Climatic Sequence	-55 °C +200 °C 5 cycles			± (0.25 % + 0.05 Ω)	± (0.1 % + 0.05 Ω)
Load Life Test at High Temperature	2 h at +275 °C			± (1 % + 0.05 Ω) Ins. resistance ≥ 1 GΩ	± (0.1 % + 0.05 Ω)
Humidity (Steady State)	56 days			± (1 % + 0.05) Ins. resistance ≥ 100 MΩ	± (0.5 % + 0.05 Ω)
Resistance to Moisture	Climatic sequences test, with load and polarisation			± (1 % + 0.05 Ω)	± (0.5 % + 0.05 Ω)
Temperature Coefficient	5 Ω to 10 Ω > 10 Ω			± 50 ppm/°C ± 25 ppm/°C	± 15 ppm/°C
Load Life at Maximum Temperature	1000 h 25 °C	P_nMIL	Vishay	± (1 % + 0.05 Ω)	± (0.1 % + 0.05 Ω)
	200 °C	30 % of P_n	Sfernice	Ins. resistance ≥ 1 GΩ	± (0.5 % + 0.05 Ω)

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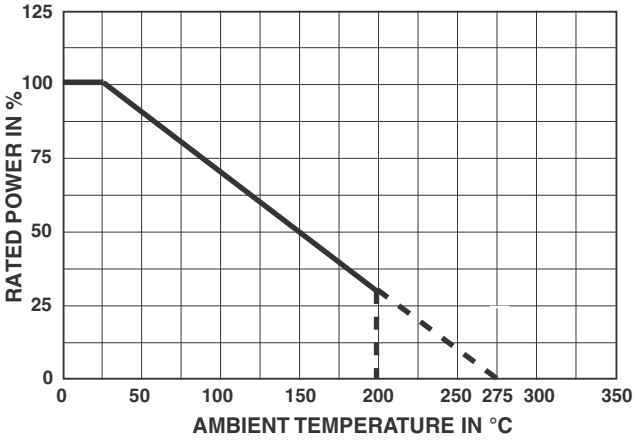
MOMENTARY OVERLOAD

1. Momentary overload (> 2 s):
See example in table below. In all cases, it should be understood that:
- The 12 P_n overload applies only to ohmic values 0.1.
- The overload voltage shall not be higher than that used for the dielectric strength test (see Standard Electrical Specifications).

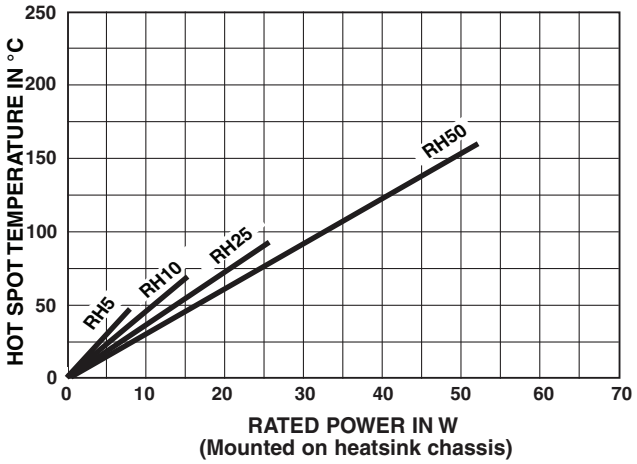
2. Short time overload (< 2 s):
For times shorter than 2 s, higher overloads can be sustained in some cases. Consult Vishay Sfernice.

POWER LOADING	DURATION
2.5 P_n	10 s
5 P_n	5 s
12 P_n	2 s

POWER RATING



TEMPERATURE RISE



MARKING

Vishay Sfernice trademark, model, style, nominal resistance (in Ω), tolerance (in %), manufacturing date.

PACKAGING

Bag of 10 units

ORDERING INFORMATION

RH	05	N	18R00	J	S03
MODEL	STYLE	NON INDUCTIVE WINDING Optional	OHMIC VALUE	TOLERANCE	PACKAGING

GLOBAL PART NUMBER INFORMATION

R	H	5	0	3	3	0	0	1	J	S	0	3

GLOBAL MODEL	SIZE	OPTION	OHMIC VALUE	TOLERANCE	PACKAGING	SPECIAL
RH	**05** **10** **25** **50**	**N** = Non inductive winding	The first four digits are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point. **33001** = 33 kΩ **680R0** = 680 Ω **20301** = 20.3 kΩ **88R88** = 88.88 Ω ...	**D** = 0.5 % **F** = 1 % **G** = 2 % **J** = 5 % **K** = 10 %	**Standard Packaging:** S03 = Bag, 10 pieces	As applicable **Ex** = HDX

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RELATED DOCUMENTS	
APPLICATION NOTES	
Potentiometers and Trimmers	www.vishay.com/doc?51001
Guidelines for Vishay Sfernice Resistive and Inductive Components	www.vishay.com/doc?52029

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