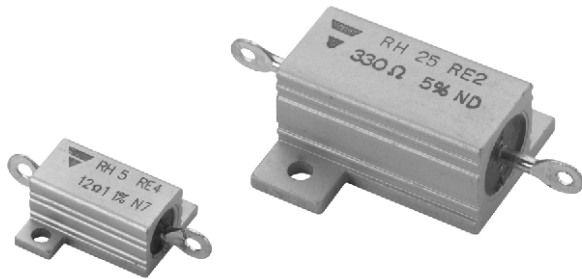


## Heatsink Encased Wirewound Power Resistors



### FEATURES

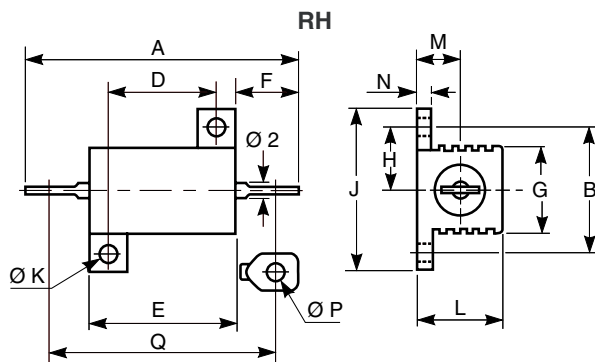
- 5 Watt to 50 Watt at 25 °C
- NF C 83-210
- CECC 40 203
- High stability < 0.05 % year
- Low temperature coefficient typically  $\pm 15$  ppm/°C
- Wide range of values from 0.006  $\Omega$  to 130 k $\Omega$
- Termination = Sn/Ag/Cu



**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).

### DIMENSIONS in millimeters



| MODEL AND STYLE    | RH5        | RH10       | RH25       | RH50       |
|--------------------|------------|------------|------------|------------|
| <b>A</b>           | 28.5 ± 1.5 | 35 ± 1.5   | 49 ± 1.3   | 70.2 ± 1.4 |
| <b>B ± 0.2</b>     | 12.5       | 15.9       | 19.8       | 21.4       |
| <b>D ± 0.2</b>     | 11.3       | 14         | 18.3       | 39.7       |
| <b>E ± 0.5</b>     | 16.3       | 19         | 28         | 50         |
| <b>F</b>           | 6.8 ± 1.5  | 7.9 ± 1.5  | 11.1 ± 1.5 | 11 ± 1.2   |
| <b>G ± 1</b>       | 8.5        | 11         | 14         | 15.5       |
| <b>H ± 0.7</b>     | 6.2        | 7.9        | 9.9        | 10.7       |
| <b>J ± 0.5</b>     | 16.4       | 20.6       | 27.5       | 29.4       |
| <b>Ø K ± 0.1</b>   | 2.4        | 2.4        | 3.2        | 3.2        |
| <b>L max.</b>      | 8.9        | 11         | 15         | 15         |
| <b>M ± 0.5</b>     | 4.3        | 5.6        | 8          | 8          |
| <b>N ± 0.3</b>     | 1.6        | 2          | 2.4        | 2.4        |
| <b>Ø P min.</b>    | 2.1        | 2.1        | 2.1        | 2.1        |
| <b>Q</b>           | 25.3 ± 1.5 | 30.6 ± 1.5 | 44.6 ± 1.3 | 66.5 ± 1.4 |
| <b>Weight in g</b> | 3          | 8.8        | 16.5       | 30.8       |

| ELECTRICAL SPECIFICATIONS                     |   |                        |                                |                                 |                                 |                                  |      |
|---|---|------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------------|------|
| VISHAY SFERNICE MODEL AND STYLE               |   |                        | RH5                            | RH10                            | RH25                            | RH50                             |      |
| NF C 83-210 (CECC 40 203)                     |   |                        | RE4                            | RE1                             | RE2                             | RE3                              |      |
| Power Rating                                  | Chassis Mounted Resistors   | MIL Limits             | 25 °C                          | 5 W                             | 10 W                            | 20 W                             | 30 W |
|   |   |                        | 70 °C                          | 4 W                             | 8 W                             | 16 W                             | 24 W |
|   | 413 cm <sup>2</sup> for RH5 and RH10<br>536 cm <sup>2</sup> for RH25 and RH50 | 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 (VRMS)                  |   |                        | 160 V                          | 250 V                           | 550 V                           | 1285 V                           |      |
| Dielectric Strength VRMS                      |   |                        | 1000 V                         | 1500 V                          | 2500 V                          | 2500 V                           |      |
| Ohmic Range                                   |   |                        | VISHAY SFERNICE                |                                 |                                 |                                  |      |
|   |   |                        | 0.01 $\Omega$<br>12 k $\Omega$ | 0.006 $\Omega$<br>20 k $\Omega$ | 0.006 $\Omega$<br>62 k $\Omega$ | 0.006 $\Omega$<br>130 k $\Omega$ |      |
| Qualified Ohmic Range                         |   |                        | NF C 83-210                    |                                 |                                 |                                  |      |
|   |   |                        | 0.1 $\Omega$<br>2.7 k $\Omega$ | 0.1 $\Omega$<br>4.99 k $\Omega$ | 0.1 $\Omega$<br>11.8 k $\Omega$ | 0.1 $\Omega$<br>33.2 k $\Omega$  |      |
| Minimum Ohmic Values in Relation to Tolerance | E 96  | ± 0.1 %                | 1 $\Omega$                     |                                 | 1 $\Omega$                      |                                  |      |
|   | E 96  | ± 0.5 %                | 0.1 $\Omega$                   |                                 | 0.1 $\Omega$                    |                                  |      |
|   | E 96  | ± 1 %                  | 0.1 $\Omega$                   |                                 | 0.05 $\Omega$                   |                                  |      |
|   | E 48  | ± 2 %                  | 0.01 $\Omega$                  |                                 | 0.01 $\Omega$                   |                                  |      |
|   | E 24  | ± 5 %                  | 0.01 $\Omega$                  |                                 | 0.01 $\Omega$                   |                                  |      |
|   | E 12  | ± 10 %                 | 0.01 $\Omega$                  | 0.008 $\Omega$                  | 0.006 $\Omega$                  |                                  |      |

 Undergoes European Quality Insurance System (CECC)



| <b>PERFORMANCE</b>                 |   |               |  |  |
|------------------------------------|---|---------------|--|--|
|                                    |   | MIL-R-18546 D | NF C 83-210                                |  |
| TESTS                              | CONDITIONS  |               | REQUIREMENTS                               | TYPICAL DRIFTS                               |
| Operating Temperature Range        | - 55 °C + 200 °C                                    |               | -  | -  |
| Momentary Overload                 | 5 Pr/5 s  |               | ± (0.25 % + 0.05 Ω)                        | ± (0.1 % + 0.05 Ω)                           |
| Climatic Sequence                  | - 55 °C + 200 °C<br>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)<br>Ins. resistance ≥ 1 GΩ | ± (0.1 % + 0.05 Ω)                           |
| Humidity (Steady State)            | 56 days   |               | ± (1 % + 0.05)<br>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 to 10<br>> 10                                     |               | ± 50 ppm/°C<br>± 25 ppm/°C                 | ± 15 ppm/°C                                  |
| Load Life at Maximum Temperature   | 1000 h 25 °C  | Pn MIL        | VISHAY                                     | ± (0.1 % + 0.05 Ω)                           |
|                                    | 200 °C  | 30 % of Pn    | SFERNICE                                   | Ins. resistance ≥ 1 GΩ<br>± (0.5 % + 0.05 Ω) |

**MOMENTARY OVERLOAD**

**1. Momentary overload (> 2 s):**

See example in table below. In all cases, it should be understood that:

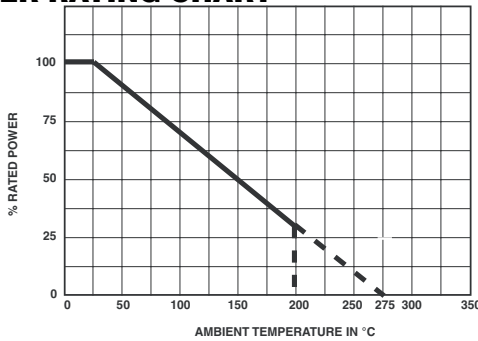
- the 12 Pn overload applies only to ohmic values 0.1.
- the overload voltage shall not be higher than that used for the dielectric strength test (see Standard Electrical Specifications).

**2. Short time overload (< 2 s):**

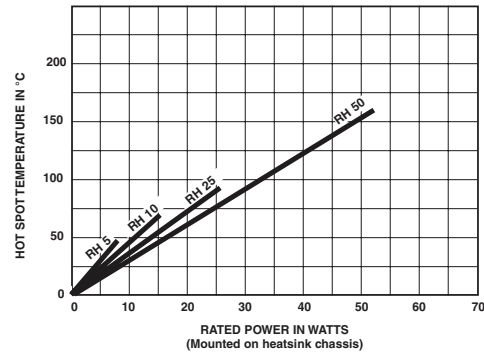
For times shorter than 2 seconds, higher overloads can be sustained in some cases. Consult VISHAY SFERNICE.

| POWER LOADING | DURATION |
|---------------|----------|
| 2.5 Pn        | 10 s     |
| 5 Pn          | 5 s      |
| 12 Pn         | 2 s      |

**POWER RATING CHART**



**TEMPERATURE RISE**



**MARKING**

VISHAY SFERNICE trademark, model, style, CECC style (if applicable) nominal resistance (in Ω), tolerance (in %), manufacturing date.

**PACKAGING**

Bag of 10 units

| <b>ORDERING INFORMATION</b> |       |                                   |   |   |           |           |                |
|-----------------------------|-------|-----------------------------------|---|---|-----------|-----------|----------------|
| RH                          | 5     | NI                                |   | 18U   | ± 5 %     | BA10      | e1             |
| MODEL                       | STYLE | NON INDUCTIVE WINDING<br>Optional | SPECIAL DESIGN<br>Method N°<br>Optional | OHMIC VALUE<br>Custom items are subject to extra-charge and min. order.<br>Please see price list. | TOLERANCE | PACKAGING | LEAD (Pb)-FREE |

| <b>SAP PART NUMBERING GUIDELINES</b> |       |                                   |             |           |           |
|--------------------------------------|-------|-----------------------------------|-------------|-----------|-----------|
| RH                                   | 05    | N                                 | 18R00       | J         | S03       |
| MODEL                                | STYLE | NON INDUCTIVE WINDING<br>Optional | OHMIC VALUE | TOLERANCE | PACKAGING |



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