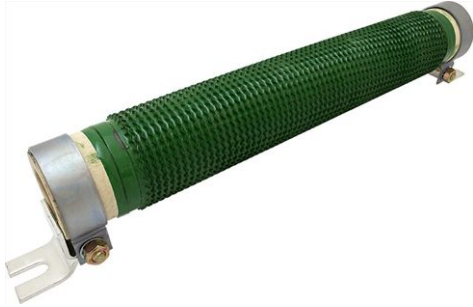


Vitreous Wirewound Power Resistor with Corrugated Ribbon



FEATURES

- Excellent power dissipation
- Robust mechanical
- Good thermal shock characteristics
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

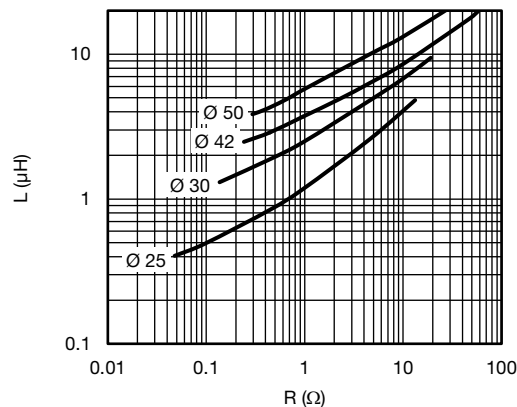
| STANDARD ELECTRICAL SPECIFICATIONS | | | |
|------------------------------------|-------------------|------------------------------|-------------------------------------|
| GLOBAL MODEL | POWER RATING W | RESISTANCE RANGE Ω | TOLERANCE ⁽¹⁾ \pm % |
| VC 50 x 370 | 1000 | 0.39 to 68 | 5, 10 |
| VC 42 x 362 | 700 | 0.33 to 56 | 5, 10 |
| VC 30 x 250 | 350 | 0.22 to 33 | 5, 10 |
| VC 30 x 153 | 220 | 0.18 to 22 | 5, 10 |
| VC 25 x 168 | 200 | 0.10 to 18 | 5, 10 |
| VC 25 x 138 | 160 | 0.068 to 12 | 5, 10 |
| VC 25 x 110 | 130 | 0.068 to 10 | 5, 10 |
| VC 25 x 84 | 90 | 0.068 to 8.2 | 5, 10 |

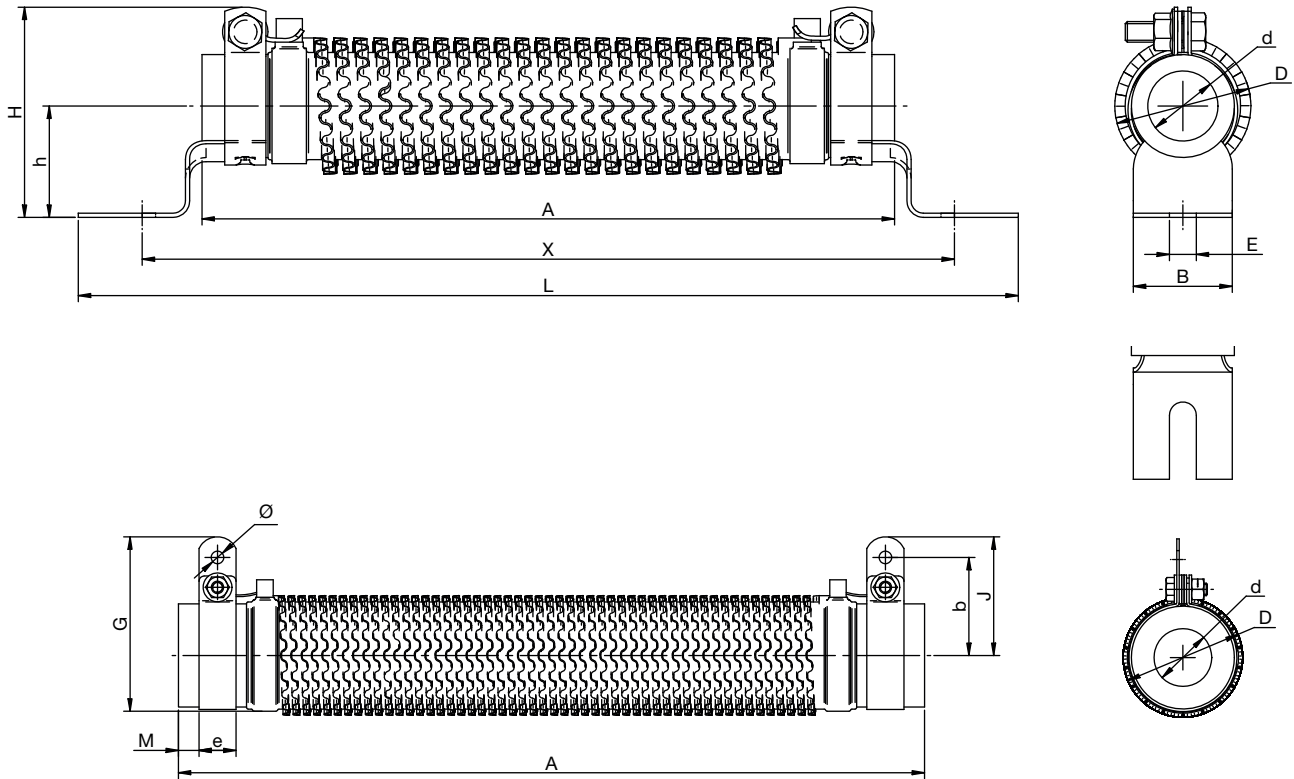
Note
⁽¹⁾ For $R_n < 1 \Omega$

| TECHNICAL SPECIFICATIONS | | |
|-----------------------------|-------------------|---------------------------------|
| PARAMETER | UNIT | RESISTOR CHARACTERISTICS |
| Temperature coefficient | ppm/ $^{\circ}$ C | 180 ppm/ $^{\circ}$ C (typical) |
| Operating temperature range | $^{\circ}$ C | -55 to +450 |

| GENERAL CHARACTERISTICS | |
|-------------------------|--------------|
| Core | Ceramic |
| Winding | Nickel alloy |
| Coating | Vitreous |
| Ohmic values | E12 |
| Traction lug outputs | VCF version |
| Collars outputs | VCN version |

INDUCTANCE VALUE AS A FUNCTION OF R_n



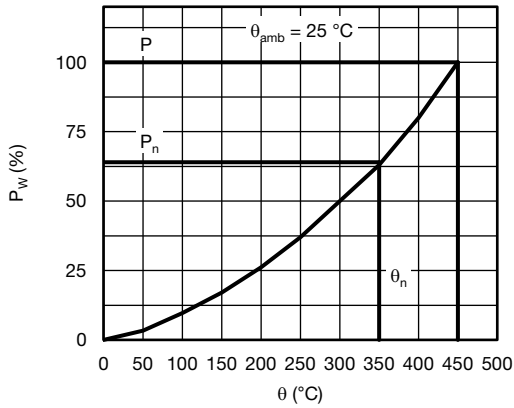
DIMENSIONS in millimeters **AND WEIGHT** in g


| TYPE | 50 x 370 | 42 x 362 | 30 x 250 | 30 x 153 | 25 x 168 | 25 x 138 | 25 x 110 | 25 x 84 |
|-------------|------------|------------|-----------|-------------|-----------|-----------|-----------|-----------|
| A | 362 ± 7 | 362 ± 7 | 250 ± 2 | 152.5 ± 1.5 | 168 ± 2 | 138 ± 2 | 110 ± 2 | 84 ± 2 |
| B + 0.5/- 0 | 30 | 30 | 25 | 25 | 24 | 24 | 24 | 24 |
| b | 48 ± 1.5 | 45 ± 1.5 | 33 ± 1 | 33 ± 1 | 28.5 ± 1 | 28.5 ± 1 | 28.5 ± 1 | 28.5 ± 1 |
| D max. | 65 | 55 | 44 | 44 | 39 | 39 | 39 | 39 |
| d | 28.6 ± 0.6 | 26.5 ± 0.5 | 17 min. | 17 min. | 17 ± 0.35 | 17 ± 0.35 | 17 ± 0.35 | 17 ± 0.35 |
| E | 9 ± 0.5 | 9 ± 0.5 | 9 ± 0.5 | 9 ± 0.5 | 6.5 ± 0.2 | 6.5 ± 0.2 | 6.5 ± 0.2 | 6.5 ± 0.2 |
| e ± 1 | 18 | 18 | 13 | 13 | 9 | 9 | 9 | 9 |
| G max. | 92 | 88 | 63 | 63 | 55 | 55 | 55 | 55 |
| H max. | 80 | 72 | 62 | 62 | 53 | 53 | 53 | 53 |
| h ± 2 | 47.5 | 45 | 30 | 30 | 27 | 27 | 27 | 27 |
| J | 58 ± 2.5 | 52 ± 1.5 | 39 ± 1 | 39 ± 1 | 33.5 ± 1 | 33.5 ± 1 | 33.5 ± 1 | 33.5 ± 1 |
| L max. | 436 | 433 | 320 | 222.5 | 230 | 200 | 171 | 145 |
| M | 10 + 0/- 3 | 10 + 0/- 3 | 5 ± 1.5 | 5 ± 1.5 | 6 ± 1.5 | 6 ± 1.5 | 6 ± 1.5 | 6 ± 1.5 |
| Ø | 6.1 ± 0.5 | 6.1 ± 0.5 | 5.7 ± 0.5 | 5.7 ± 0.5 | 5 ± 0.8 | 5 ± 0.8 | 5 ± 0.8 | 5 ± 0.8 |
| X ± 2 | 400 | 398 | 285 | 187.5 | 198 | 168 | 141 | 115 |
| Mass | 1600 | 1350 | 400 | 270 | 270 | 210 | 170 | 130 |

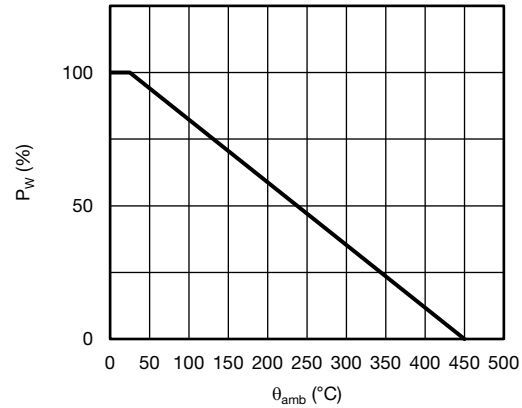


| PERFORMANCES | | | |
|----------------|--|--------------|----------------|
| TESTS | CONDITIONS | REQUIREMENTS | TYPICAL VALUES |
| Overloads | 10 P _n (temp. nom.), 5 s | 2 % | 1 % |
| Climatic | -55 °C, 5 cycles, +200 °C | 3 % | 1 % |
| Thermal shocks | P _n -55 °C | 2 % | 0.4 % |
| Endurance | 500 cycles P _n 90 min / 30 min | 5 % | 2 % |

DISSIPATION

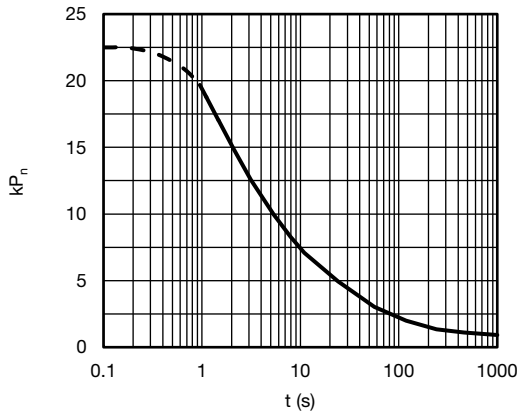


Power P_w as a Function of Surface Temperature
 $P(W) = f(\text{Temperature Surface})$



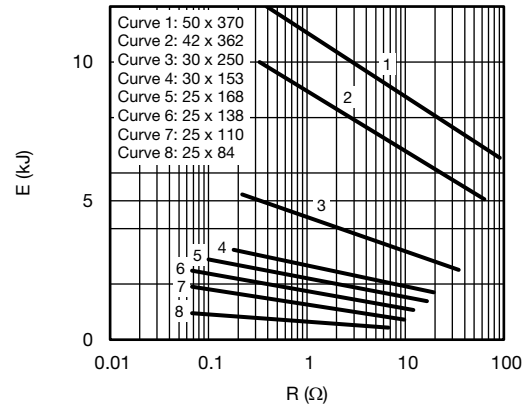
Derating in Power as a Function of Ambient Temperature

OVERLOADS



Intermittent Overloads
Exceptional Operation
Initial Temperature < 70 °C
 $k \times P_n = f(t)$

PERMISSIBLE ENERGY



Repetitive Operation
Energy as a Function of R_n
Pulse Duration < 100 ms
 $E = f(R)$

OPTIONS (Consult us)

- Other values than E12 series
- Intermediate terminals
- Insulated electrical output of fixed lugs



| ORDERING INFORMATION | | | | | | |
|----------------------|-------------|-----------------|------------------|-------------------------------------|--|------------|
| VC | F | 30 x 250 | U22 | ± 10 % | XXX | BO3 |
| MODEL | CONNECTIONS | STYLE | RESISTANCE VALUE | TOLERANCE | CUSTOM DESIGN | PACKAGING |
| | | | | ± 5 % ± 10 % Other on request | Optional On request: special value, tolerance, terminals, etc. | |

| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | | | |
|--------------------------------|--------|--|--|---------------------|---|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|--|
| V | C | F | 2 | 5 | 0 | 8 | 4 | 0 | R | 0 | 6 | 8 | K | B | 9 | 9 | 9 | |
| 1 | | 2 | 3 | | | 4 | | | | 5 | 6 | 7 | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | | | | | | |
| PRODUCT TYPE | LEADS | SIZE | RESISTANCE VALUE | TOLERANCE | PACKAGING | INDUSTRIALIZATION NUMBER | | | | | | | | | | | | |
| VC | F N | 25084 25110 25138 25168 30153 30250 42362 50370 | The first three digits are significant figures and the last specifies the number of zeros to follow, R designates decimal point. 8R2 = 8.2 Ω 0R068 = 0.068 Ω | J = 5 % K = 10 % | B = box Box quantity depends of model and size | 3 specific digits (if applicable) | | | | | | | | | | | | |

| EXAMPLES | | |
|----------|------------------------------|--------------------|
| MODEL | DESCRIPTION | PART NUMBER |
| VCF | VCF 25X138 U068 10 % 999 BO3 | VCF251380R068KB999 |
| VCN | VCN 25X168 U1 10 % B03 | VCN251680R10KB |



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