

Vitreous Wirewound Power Resistor, Flat



FEATURES

- High dissipation
- Reduced space
- Embedded collars
- Insulated mounting
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

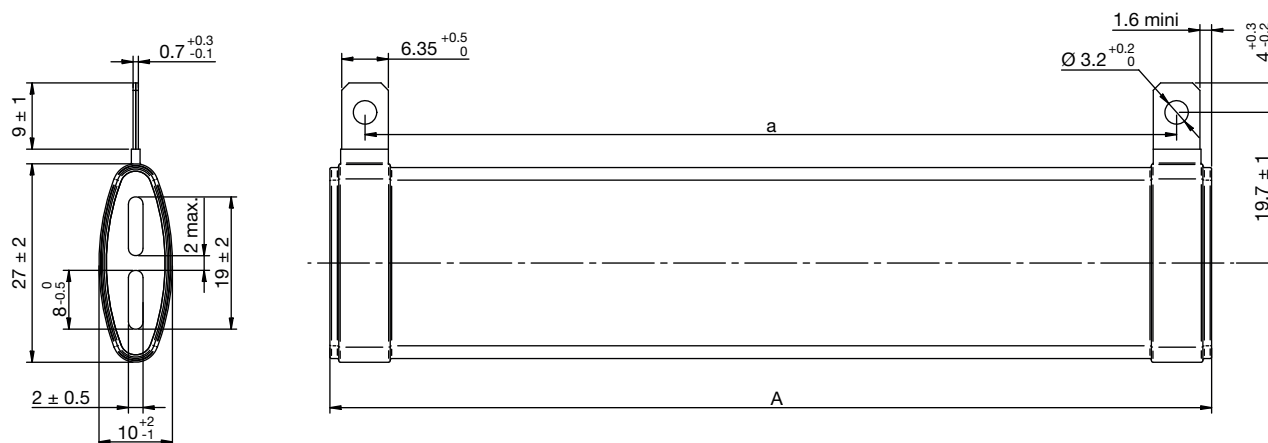
| GLOBAL MODEL | POWER RATING W | RESISTANCE RANGE Ω | TOLERANCE \pm % | $U_{LIM.}$ V | MIL-R-26-D |
|--------------|-------------------|------------------------------|----------------------|-----------------|------------|
| VNPC 150 | 150 | 4.7 to 100K | 5 | 1500 | RW 24 V |
| VNPC 120 | 120 | 3.9 to 68K | 5 | 1250 | - |
| VNPC 90 | 90 | 2.7 to 47K | 5 | 1000 | RW 22 V |
| VNPC 50 | 50 | 1.8 to 22K | 5 | 600 | - |
| VNPC 30 | 30 | 1.0 to 8.2K | 5 | 400 | RW 20 V |

TECHNICAL SPECIFICATIONS

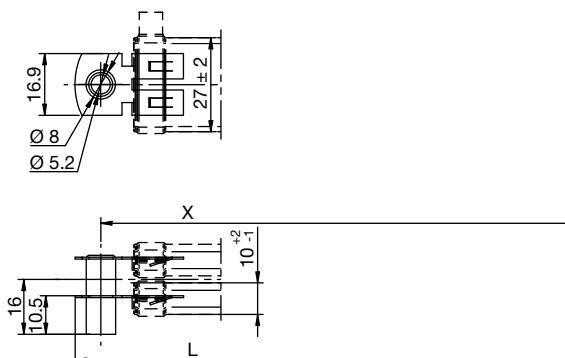
| PARAMETER | UNIT | RESISTOR CHARACTERISTICS |
|-----------------------------|--------|--------------------------|
| Temperature coefficient | ppm/°C | 75 ppm/°C (typical) |
| Operating temperature range | °C | -55 to +450 |

GENERAL CHARACTERISTICS

| | |
|------------------------|-----------------|
| Core | Ceramic |
| Winding | NiCr alloy |
| Coating | Vitreous enamel |
| Ohmic values | E12 |
| Insulated mounting (Z) | On request |

DIMENSIONS in millimeters AND WEIGHT in g


| TYPE | 150 | 120 | 90 | 50 | 30 |
|------|-----------|-----------|------------|----------|------------|
| A | 150 ± 3 | 120 ± 2.4 | 90 ± 1.8 | 50 ± 1 | 30 ± 0.6 |
| a | 140.2 ± 3 | 110 ± 2.4 | 78.5 ± 1.8 | 38.3 ± 1 | 18.9 ± 0.6 |
| Mass | 64 | 51 | 39 | 25 | 15 |

DIMENSIONS SUPPORTER Z in millimeters AND WEIGHT in g
INSULATED MOUNTING ALLOWS DE-STACKING


| TYPE | 150 | 120 | 90 | 50 | 30 |
|------|---------|-----------|---------|--------|----------|
| X | 168 ± 3 | 136 ± 2.4 | 108 ± 2 | 68 ± 1 | 48 ± 0.5 |
| L | 182 ± 3 | 152 ± 2.4 | 122 ± 2 | 82 ± 1 | 62 ± 0.5 |
| Mass | 4 | 4 | 4 | 4 | 4 |

Note

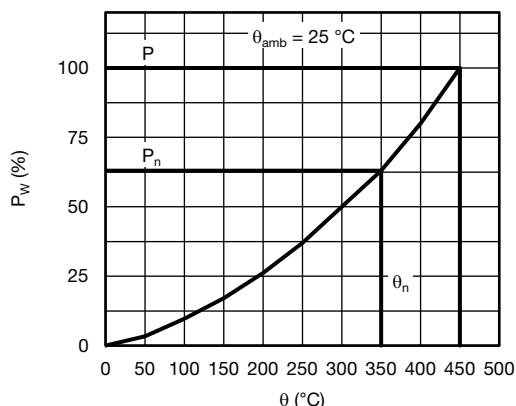
- Supporter Z and insulated mounting are available as accessories and not supplied with the part

SPECIFIC NON-INDUCTIVE "A" VNPC MODEL CHARACTERISTICS

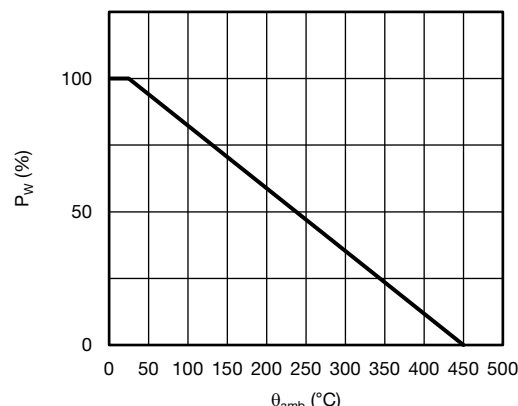
| TYPE | 150A | 120A | 90A | 50A | 30A |
|-------------------|-------|-------|-------|-------|-------|
| R _{min.} | 4.7 Ω | 3.9 Ω | 2.7 Ω | 1.8 Ω | 1.0 Ω |
| R _{max.} | 560 Ω | 470 Ω | 330 Ω | 150 Ω | 68 Ω |

| PERFORMANCES | | | |
|-----------------------|--|--------------------------------|----------------|
| TESTS | CONDITIONS | REQUIREMENTS | TYPICAL VALUES |
| Overloads | 10 P _n (temp. nom.), 5 s | 2 % or 0.05 Ω ⁽¹⁾ | 0.4 % |
| Climatic | -55 °C, 5 cycles, +200 °C | 3 % or 0.05 Ω ⁽¹⁾ | 0.2 % |
| Damp heat | 56 days 95 % HR | 2 % or 0.05 Ω ⁽¹⁾ | 0.1 % |
| Thermal shocks | P _n -55 °C | 2 % or 0.05 Ω ⁽¹⁾ | 0.2 % |
| Shocks | Severity 50 A | 0.5 % or 0.05 Ω ⁽¹⁾ | 0.25 % |
| Vibrations | Severity 55/10 | 0.5 % or 0.05 Ω ⁽¹⁾ | 0.25 % |
| Strength of terminals | Collar 40 N | 1 % or 0.05 Ω ⁽¹⁾ | 0.1 % |
| Endurance | 500 cycles P _n 90 min / 30 min | 5 % | 1 % |

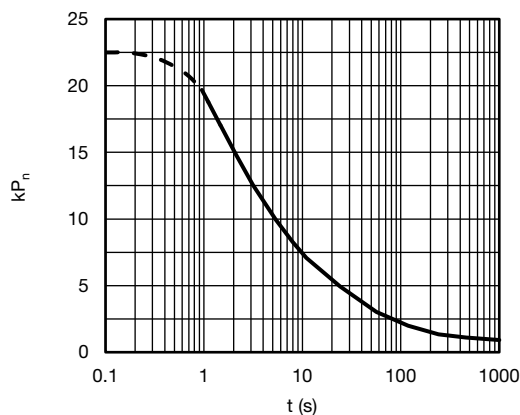
Note
⁽¹⁾ The higher of either value.

DISSIPATION


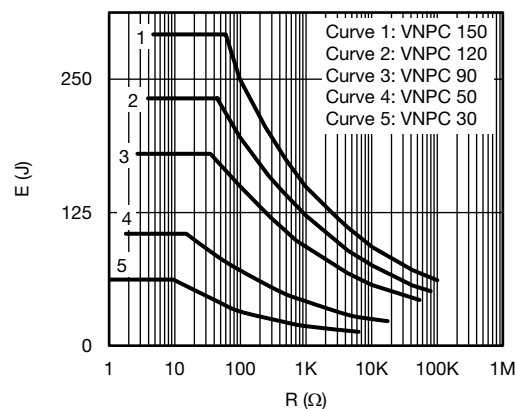
Power P_W as a Function of Surface Temperature
P(W) = f (Temperature Surface)



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

ORDERING INFORMATION

| VNPC | 30 | A | 120U | ± 5 % | XXX | BO40 |
|-------|-------|-----------------------------------|------------------|--|---|-----------|
| MODEL | STYLE | NON-INDUCTIVE WINDING Optional | RESISTANCE VALUE | TOLERANCE ± 5 % ± 10 % Other on request | CUSTOM DESIGN Optional On request: special value, tolerance, terminals, etc. | PACKAGING |

GLOBAL PART NUMBER INFORMATION

| | | | | | | | | | | | | | | | | |
|---|---------------------------------|---------------------------|---|---------------------|---|-----------------------------------|--|--|--|--|--|--|--|--|--|--|
| <div><div>V</div><div>N</div><div>P</div><div>C</div><div>0</div><div>9</div><div>0</div><div>A</div><div>1</div><div>0</div><div>R</div><div>0</div><div>J</div><div>B</div><div>8</div><div>9</div><div>9</div></div> <div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div></div> | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | | | | |
| PRODUCT TYPE | TYPE | OPTION (if applicable) | RESISTANCE VALUE | TOLERANCE | PACKAGING | INDUSTRIALIZATION NUMBER | | | | | | | | | | |
| VNPC | 030 050 090 120 150 | A = non-inductive winding | The first three digits are significant figures and the last specifies the number of zeros to follow, R designates decimal point. 4702 = 47 kΩ 47R0 = 47 Ω | J = 5 % K = 10 % | B = box Box quantity depends of model and size | 3 specific digits (if applicable) | | | | | | | | | | |

EXAMPLES

| MODEL | DESCRIPTION | PART NUMBER |
|-------|----------------------------|-------------------|
| VNPC | VNPC 90 A 10U 5 % 899 BO40 | VNPC090A10R0JB899 |
| VNPC | VNPC 30 12U 5 % BO40 | VNPC03012R0JB |



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