

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

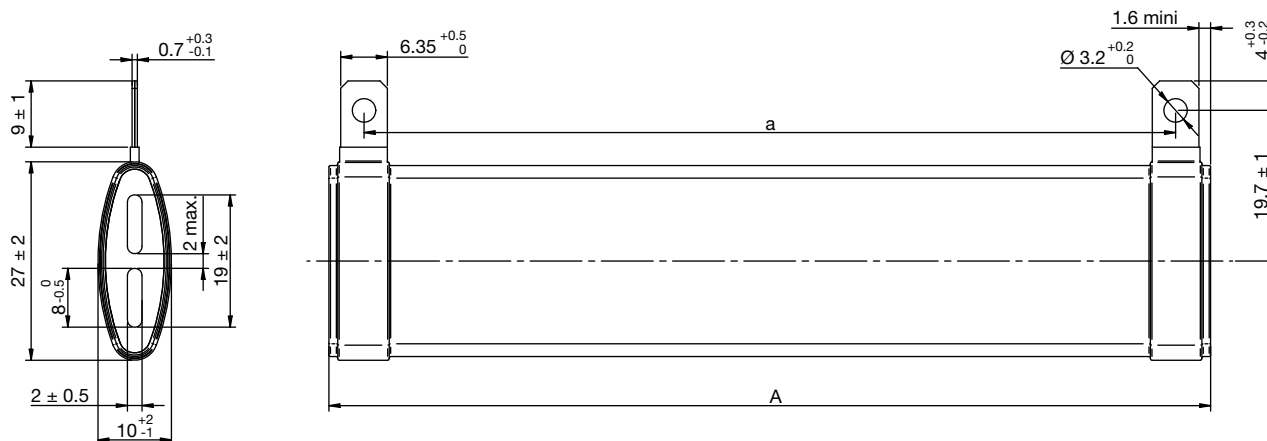
GLOBAL MODEL	POWER RATING W	RESISTANCE RANGE Ω	TOLERANCE $\pm$ %	$U_{LIM.}$ V	MIL-R-26-D
VNPC 150	150	4.7 to 100K	5	1500	RW 24 V
VNPC 120	120	3.9 to 68K	5	1250	-
VNPC 90	90	2.7 to 47K	5	1000	RW 22 V
VNPC 50	50	1.8 to 22K	5	600	-
VNPC 30	30	1.0 to 8.2K	5	400	RW 20 V

TECHNICAL SPECIFICATIONS

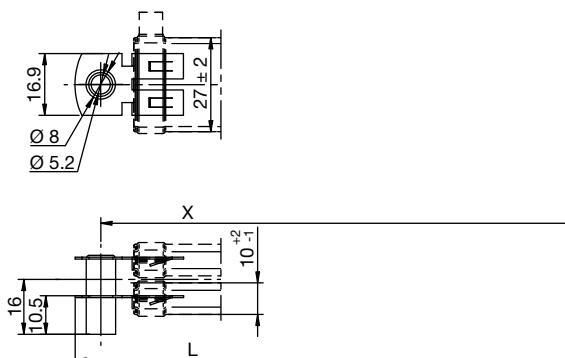
PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/ $^{\circ}$ C	75 ppm/ $^{\circ}$ C (typical)
Operating temperature range	$^{\circ}$ C	-55 to +450

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

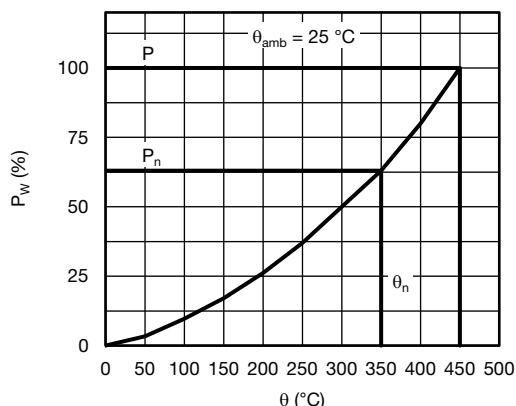
- Supporter Z and insulated mounting are available as accessories and not supplied with the part

SPECIFIC NON-INDUCTIVE “A” VNPC MODEL CHARACTERISTICS

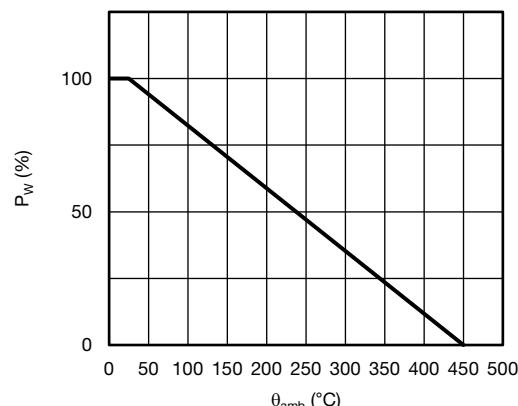
TYPE	150A	120A	90A	50A	30A
R _{min.}	4.7 Ω	3.9 Ω	2.7 Ω	1.8 Ω	1.0 Ω
R _{max.}	560 Ω	470 Ω	330 Ω	150 Ω	68 Ω

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 %

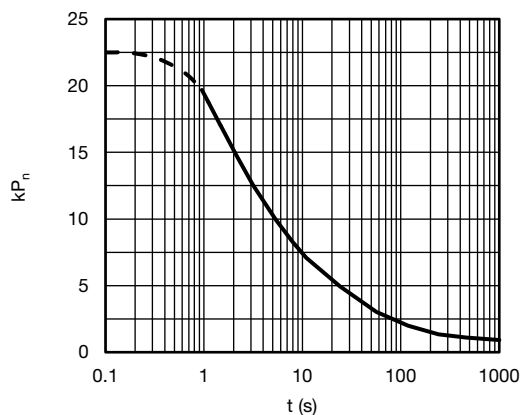
Note
⁽¹⁾ The higher of either value.

DISSIPATION


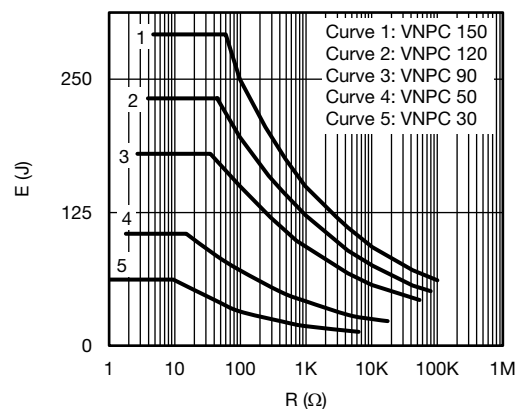
Power P_W as a Function of Surface Temperature
P(W) = f (Temperature Surface)



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

V N P C 0 9 0 A 1 0 R 0 J B 8 9 9 1 2 3 4 5 6 7																
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



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.