

# 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS			
GLOBAL MODEL	POWER RATING W	RESISTANCE RANGE $\Omega$	TOLERANCE <sup>(1)</sup> $\pm$ %
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

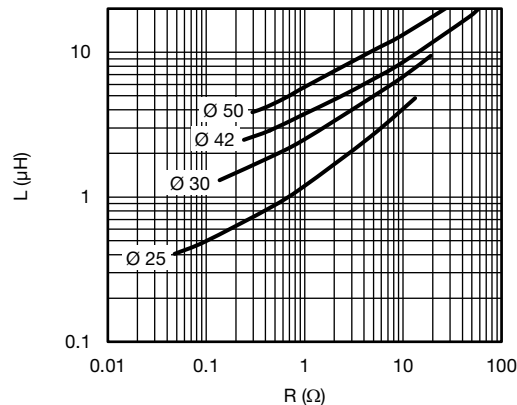
**Note**

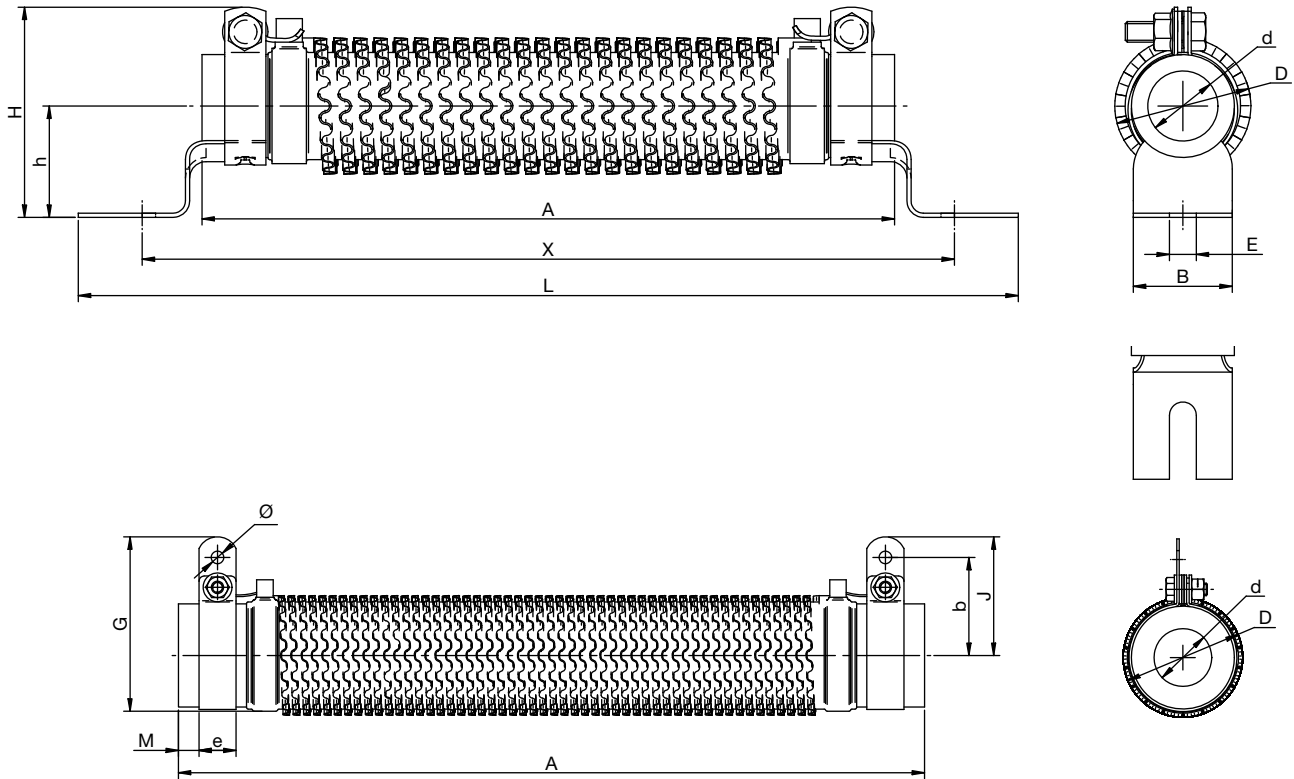
<sup>(1)</sup> For  $R_n < 1 \Omega$

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

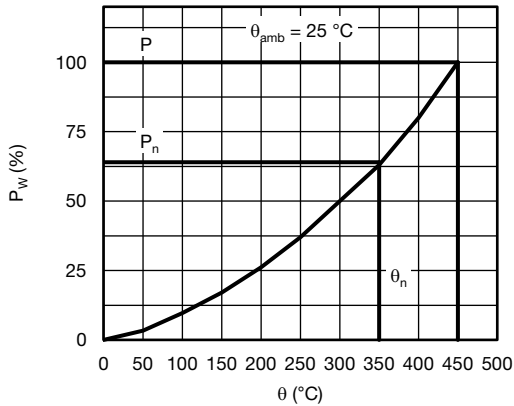
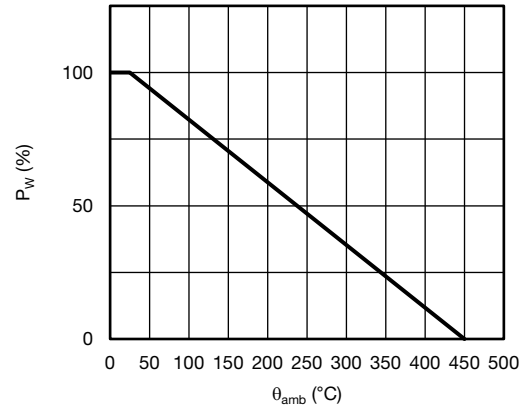
## INDUCTANCE VALUE AS A FUNCTION OF $R_n$

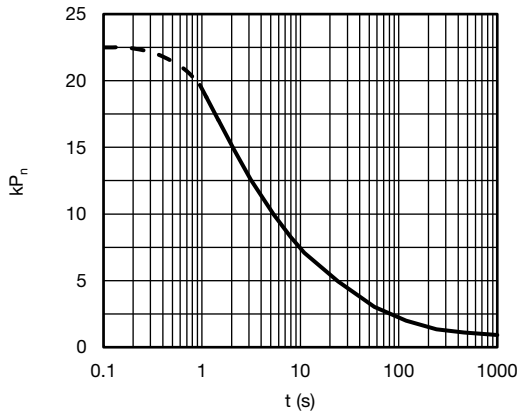
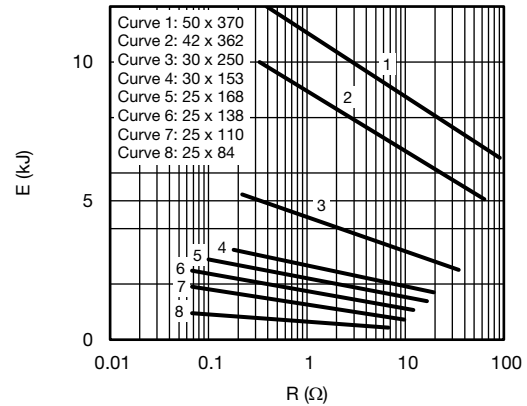


**DIMENSIONS** in millimeters **AND WEIGHT** in g


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 <sub>n</sub> (temp. nom.), 5 s	2 %	1 %
Climatic	-55 °C, 5 cycles, +200 °C	3 %	1 %
Thermal shocks	P <sub>n</sub> -55 °C	2 %	0.4 %
Endurance	500 cycles P <sub>n</sub> 90 min / 30 min	5 %	2 %

**DISSIPATION**

 Power P<sub>w</sub> 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<sub>n</sub>  
 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						
<b>VC</b>	<b>F</b>	<b>30 x 250</b>	<b>U22</b>	<b>± 10 %</b>	<b>XXX</b>	<b>BO3</b>
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



## 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.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. 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.