

## Reinforced Winding Wirewound Power Resistor



### FEATURES

- Very high dissipation
- High energy absorption and high overloads
- Suitable for the most severe conditions
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### APPLICATIONS

- Filter
- Precharge
- Braking

### DESIGN SUPPORT TOOLS AVAILABLE



3D Models

### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING W	RESISTANCE RANGE $\Omega$	TOLERANCE <sup>(1)</sup> $\pm$ %	$U_{LIM.}$ V
C52T	900	8.2 to 100K	5, 10	4200
C52T Li	900	0.33 to 270	5, 10	4200
C42T	480	1.0 to 56K	5, 10	3000
C38T	270	1.0 to 27K	5, 10	1900

#### Note

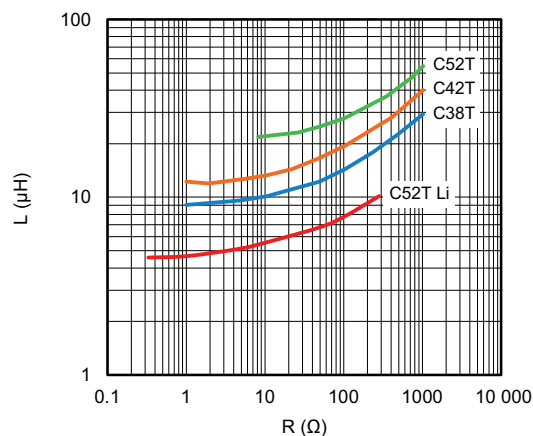
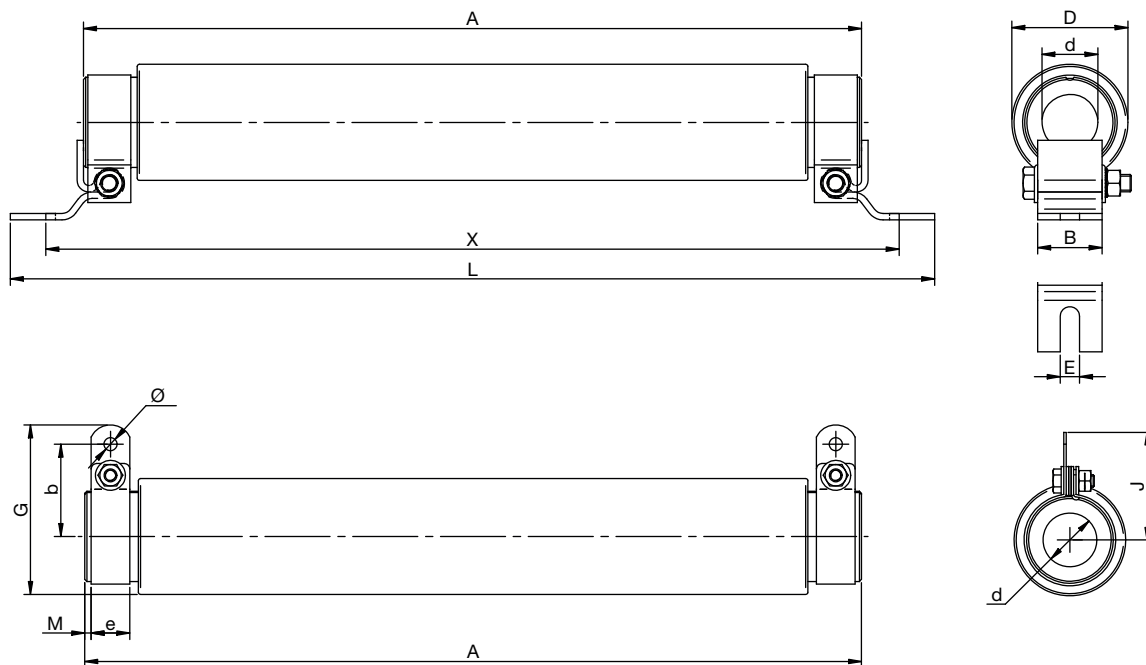
<sup>(1)</sup> For  $R_n < 3.3 \Omega$ , tolerance 10 %

### TECHNICAL SPECIFICATIONS

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

### GENERAL CHARACTERISTICS

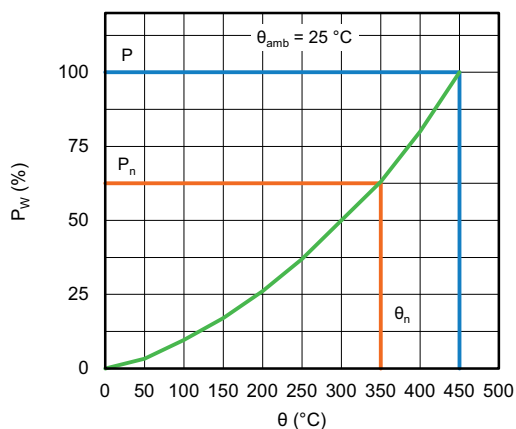
Core	Grooved ceramic
Winding	Double spiral, NiCr alloy
Coating	Special and vitreous
Ohmic values	E12
Traction lug outputs	C..TF version
Collars outputs	C..TN version
Low inductance	Li version (with TF terminals only)

**INDUCTANCE VALUE AS A FUNCTION OF  $R_n$** 

**DIMENSIONS in millimeters AND WEIGHT in g**


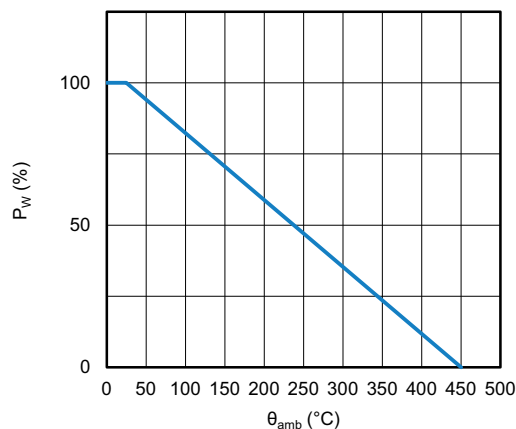
TYPE	C52T	C42T	C38T
A	362 ± 7	250 ± 4	168 ± 4
B 0 + 1	30	25	24
b	43 ± 1.5	33 ± 1	28.5 ± 1
D max.	54	44	40
d	26 ± 0.5	20 ± 0.5	17 ± 0.35
E	9 ± 0.5	9 ± 0.5	6.5 ± 0.2
e ± 1	18	13	9
G max.	88	63	55
H max.	72	62	53
h ± 2	45	30	27
J ± 1	52	39	33.5
L max.	440	320	230
M	8 + 0/- 4	5 + 0/-2	5 ± 2
Ø	6.2 ± 0.2	5.7 ± 0.5	5 ± 0.8
X	400 ± 6	285 ± 2	198 ± 2
Weight	1500	550	350

PERFORMANCES			
TESTS	CONDITIONS	REQUIREMENTS	TYPICAL VALUES
Overloads	10 P <sub>n</sub> (temp. nom.), 5 s	± 2 %	10 P <sub>n</sub> , 30 s, 1 %
Climatic	-55 °C, 5 cycles, +200 °C	3 % or 0.05 Ω <sup>(1)</sup>	1 %
Damp heat	56 days 95 % HR	2 % or 0.05 Ω <sup>(1)</sup>	0.1 %
Thermal shocks	P <sub>n</sub> -55 °C	2 % or 0.05 Ω <sup>(1)</sup>	0.2 %
Shocks	Severity 50 A	0.5 % or 0.05 Ω <sup>(1)</sup>	0.5 %
Vibrations	Severity 55/10	0.5 % or 0.05 Ω <sup>(1)</sup>	0.5 %
Endurance	500 cycles P <sub>n</sub> 90 min/30 min	5 %	1.5 %

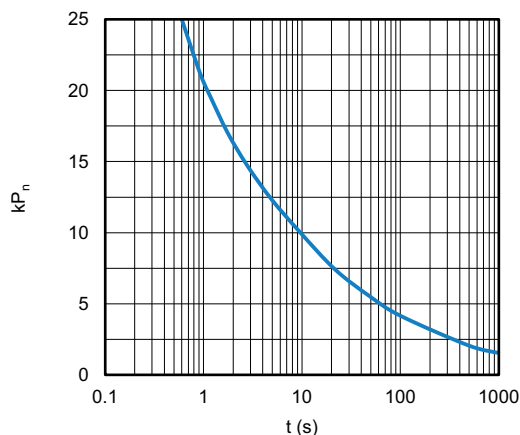
**Note**
<sup>(1)</sup> The higher of either value

**DISSIPATION**


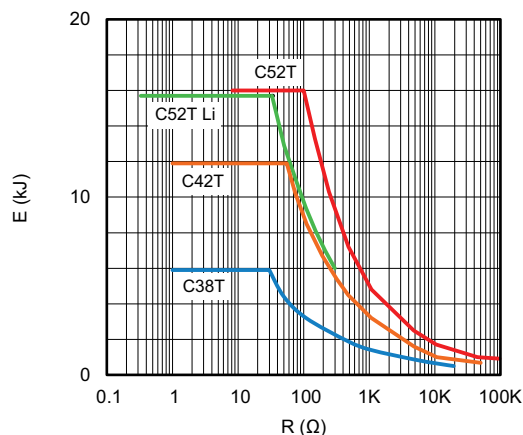
Power P<sub>W</sub> as a Function of Surface Temperature  
P(W) = f (Temperature Surface)



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<sub>n</sub>  
Pulse Duration < 100 ms  
 $E = f(R)$

**OPTIONS** (Consult us)

- Other values than E12 series
- Intermediate terminals
- Insulated mounting

**ORDERING INFORMATION**

<b>C52T</b>	<b>F</b>	<b>LI</b>	<b>10K</b>	<b>± 5 %</b>	<b>XXX</b>	<b>BO1</b>
MODEL	CONNECTIONS	LOW INDUCTIVE WINDING Optional	RESISTANCE VALUE	TOLERANCE  ± 5 % ± 10 % Other on request	CUSTOM DESIGN  Optional On request: special value, tolerance shape, M5 terminals, etc.	PACKAGING

**GLOBAL PART NUMBER INFORMATION**

C	5	2	T	F	L	I	6	R	6	0	J	B	8	3	7
1				2	3		4				5	6	7		
1		2		3		4		5		6		7			
PRODUCT TYPE		LEADS		OPTION (if applicable)		RESISTANCE VALUE		TOLERANCE		PACKAGING		INDUSTRIALIZATION NUMBER			
C38T C42T C52T		F = traction lugs N = collars		LI		The first three digits are significant figures and the last specifies the number of zeros to follow, R designates decimal point. 4702 = 47 kΩ 4R7 = 4.7 Ω		J = 5 % K = 10 %		B = box Box quantity depends of model and size		3 specific digits (if applicable)			

**EXAMPLES**

MODEL	DESCRIPTION	PART NUMBER
C52TF	C 52 TF LI 6U6 5 % 837 BO1	C52TFLI6R60JB837
C42TF	C 42 TF 4U7 5 % BO14	C42TF4R70JB



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