

## 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

### ADDITIONAL RESOURCES


[3D Models](#)

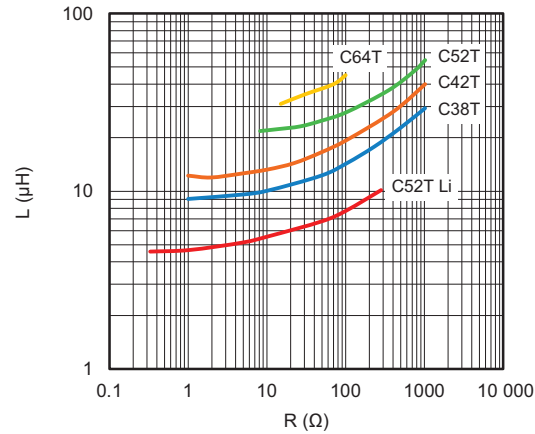
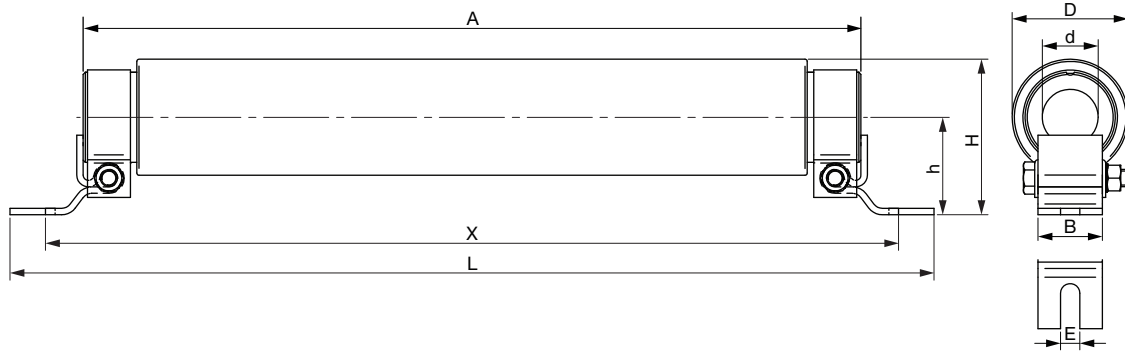
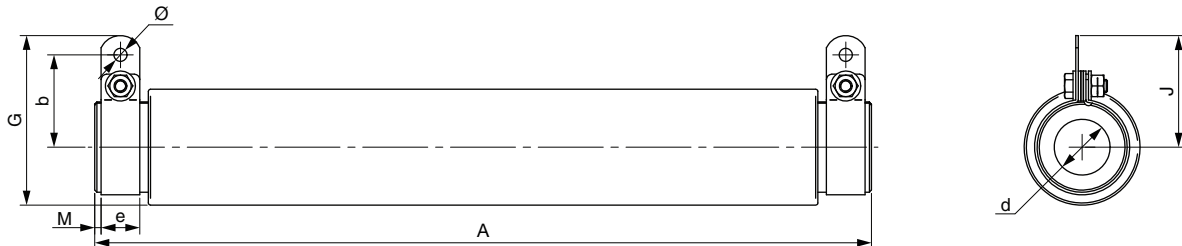
STANDARD ELECTRICAL SPECIFICATIONS				
GLOBAL MODEL	POWER RATING W	RESISTANCE RANGE $\Omega$	TOLERANCE <sup>(1)</sup> $\pm$ %	$U_{LIM.}$ V
C64T	1200	15 to 100R	5	4200
C52T	900	8.2 to 100K	5, 10	4200
C52T Li	900	0.33 to 270	5, 10	4200
C42T	480	1.0 to 56K	5, 10	3000
C38T	270	1.0 to 27K	5, 10	1900

#### 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 (except for C52T Li and C64T)
Low inductance	Li version (for C52TF only)

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

**DIMENSIONS in millimeters AND WEIGHT in g**
**C38TF, C42TF, C52TF, C52TF Li, C64TF**

**C38TN, C42TN, C52TN**


TYPE	C64T	C52T	C42T	C38T
A	367 ± 5.5	362 ± 7	250 ± 4	168 ± 4
B 0 + 1	30 ± 1	30	25	24
b	n/a	43 ± 1.5	33 ± 1	28.5 ± 1
D max.	64	54	44	40
d	36 ± 0.65	26 ± 0.5	20 ± 0.5	17 ± 0.35
E	9 ± 0.5	9 ± 0.5	9 ± 0.5	6.5 ± 0.2
e ± 1	20	18	13	9
G max.	n/a	88	63	55
H max.	85	72	62	53
h ± 2	53	45	30	27
J ± 1	n/a	52	39	33.5
L max.	451	440	320	230
M	n/a	8 + 0 / - 4	5 + 0 / - 2	5 ± 2
Ø	n/a	6.2 ± 0.2	5.7 ± 0.5	5 ± 0.8
X	415 ± 6	400 ± 6	285 ± 2	198 ± 2
Weight	1580	1500	550	350

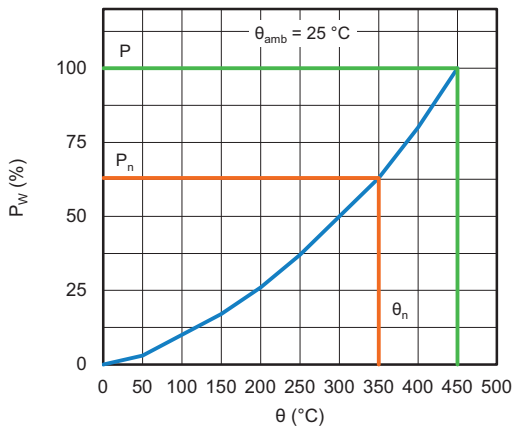


PERFORMANCES			
TESTS	CONDITIONS	REQUIREMENTS	TYPICAL VALUES
Overloads	10 P <sub>n</sub> (temp. nom.), 5 s	± 2 %	10 P <sub>n</sub> , 30 s, 1 %
Climatic	-55 °C, 5 cycles, +200 °C	3 % or 0.05 Ω <sup>(1)</sup>	Collar insulated N 10 <sup>2</sup> MΩ
Damp heat	56 days 95 % HR	2 % or 0.05 Ω <sup>(1)</sup>	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

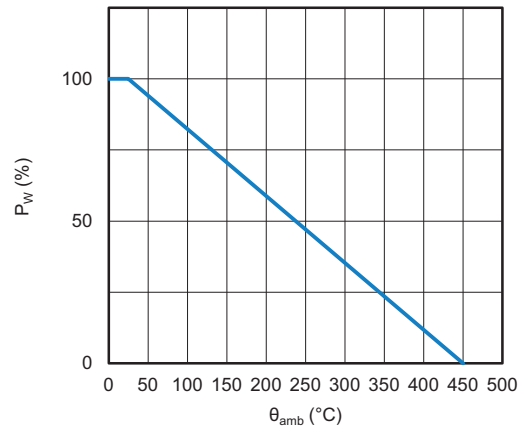
**Note**

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

**DISSIPATION**

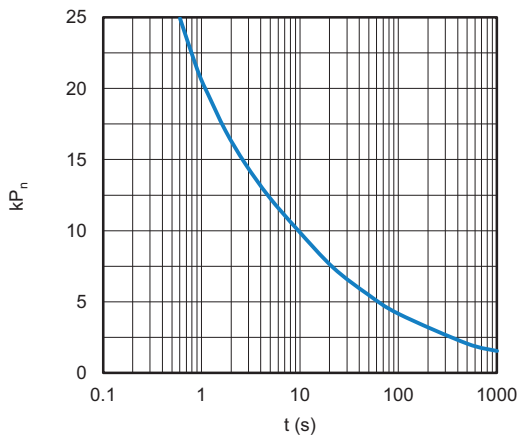


Power P<sub>W</sub> as a Function of Surface Temperature  
P(W) = f (Temperature Surface)



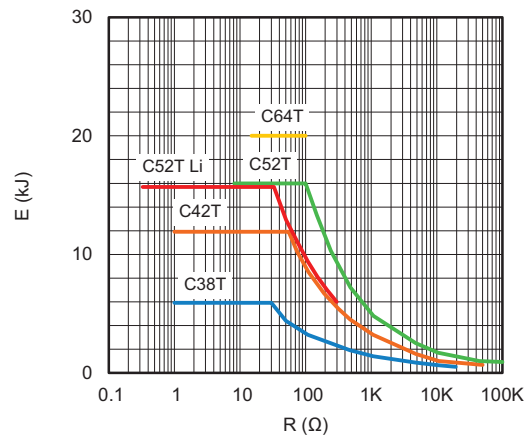
Derating in Power as a Function of Ambient Temperature

**OVERLOADS**



Intermittent Overloads  
Exceptional Operation  
Initial Temperature < 70 °C  
k x P<sub>n</sub> = 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

<b>ORDERING INFORMATION</b>						
<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

<b>GLOBAL PART NUMBER INFORMATION</b>															
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 C64T	<b>F = traction lugs</b> C64TF C52TF C52TFLI C42TF C38TF  <b>N = collars</b> C52TN C42TN C38TN			<b>LI</b> (only for C52TF)		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				<b>J = 5 %</b> <b>K = 10 %</b>	<b>B = box</b> <b>Box quantity depends of model and size</b>	<b>3 specific digits (if applicable)</b>			

<b>EXAMPLES</b>		
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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