

## 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

### 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  $R_n < 3.3 \Omega$ 

### 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	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>	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>	0.2 %
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**

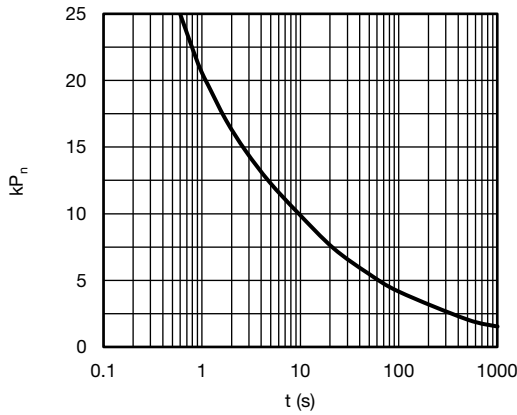


Power  $P_W$  as a Function of Surface Temperature  
 $P(W) = f(\text{Temperature Surface})$



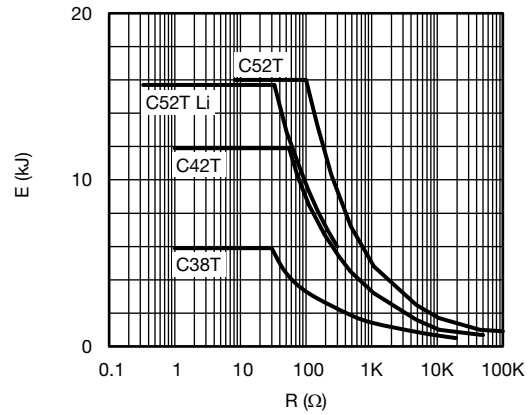
Derating in Power as a Function of Ambient Temperature

**OVERLOADS**



Intermittent Overloads  
 Exceptional Operation  
 Initial Temperature < 70 °C  
 $k \times P_n = f(t)$

**PERMISSIBLE ENERGY**



Repetitive Operation  
 Energy as a Function of  $R_n$   
 Pulse Duration < 100 ms  
 $E = f(R)$

**OPTIONS** (Consult us)

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

PART NUMBER INFORMATION			
C52T	F	10 Ω	10 %
MODEL	"TF" or "TN" TERMINALS (SEE DIMENSIONS)	VALUE (E12 SERIES) "LI" FOR REDUCED INDUCTANCE	TOLERANCE (± 5 % or ± 10 %)



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