

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


RoHS
COMPLIANT

APPLICATIONS

- Filter
- Precharge
- Braking

DESIGN SUPPORT TOOLS AVAILABLE



3D Models

STANDARD ELECTRICAL SPECIFICATIONS

| GLOBAL MODEL | POWER RATING W | RESISTANCE RANGE Ω | TOLERANCE ⁽¹⁾ \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

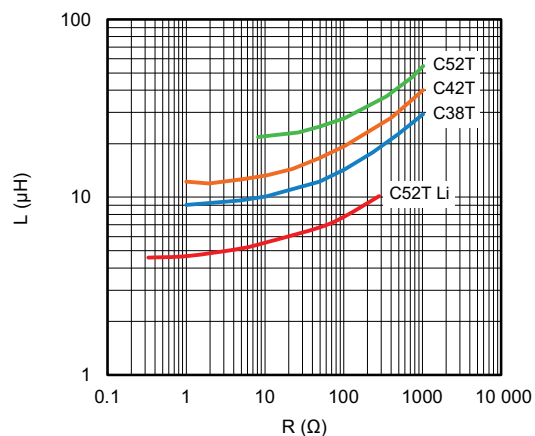
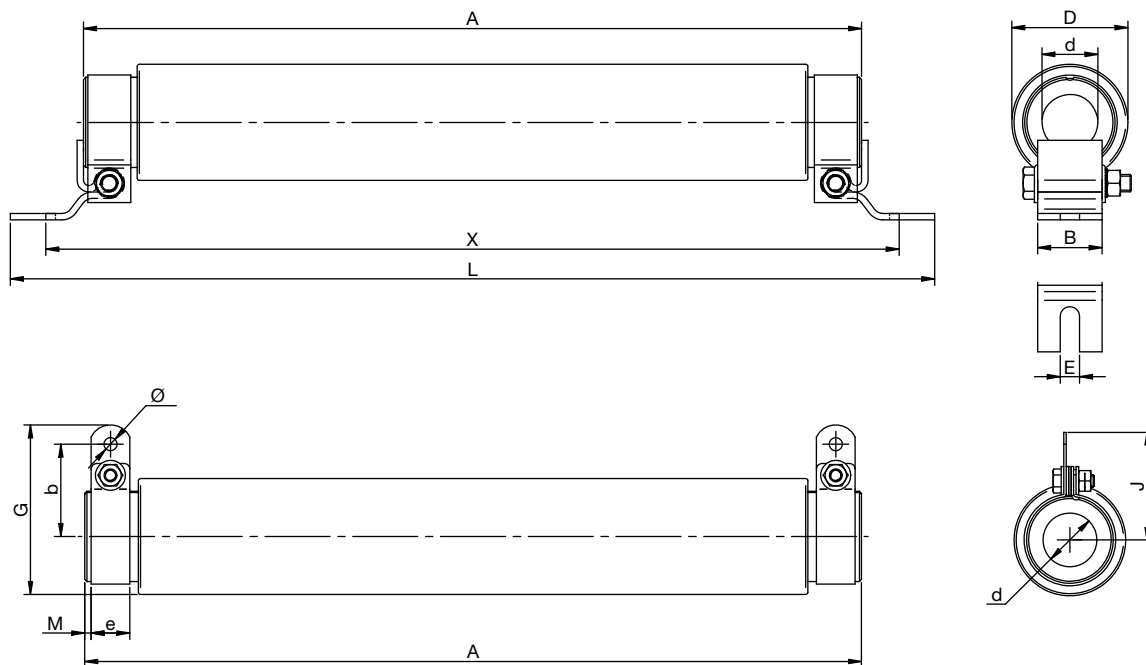
⁽¹⁾ For $R_n < 3.3 \Omega$, tolerance 10 %

TECHNICAL SPECIFICATIONS

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

GENERAL CHARACTERISTICS

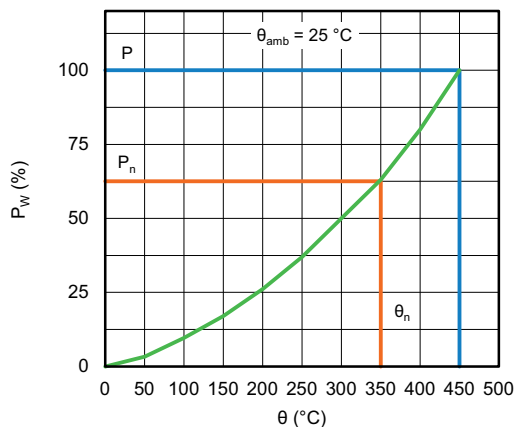
| | |
|----------------------|-------------------------------------|
| Core | Grooved ceramic |
| Winding | Double spiral, NiCr alloy |
| Coating | Special and vitreous |
| Ohmic values | E12 |
| Traction lug outputs | C..TF version |
| Collars outputs | C..TN version |
| Low inductance | Li version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

INDUCTANCE VALUE AS A FUNCTION OF R_n

DIMENSIONS in millimeters AND WEIGHT in g


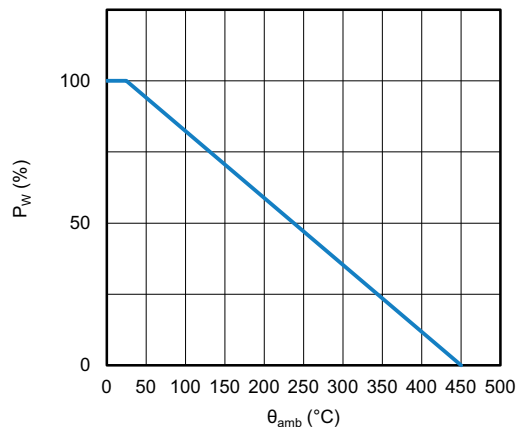
| TYPE | C52T | C42T | C38T |
|---------|-----------|-----------|-----------|
| A | 362 ± 7 | 250 ± 4 | 168 ± 4 |
| B 0 + 1 | 30 | 25 | 24 |
| b | 43 ± 1.5 | 33 ± 1 | 28.5 ± 1 |
| D max. | 54 | 44 | 40 |
| d | 26 ± 0.5 | 20 ± 0.5 | 17 ± 0.35 |
| E | 9 ± 0.5 | 9 ± 0.5 | 6.5 ± 0.2 |
| e ± 1 | 18 | 13 | 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 _n (temp. nom.), 5 s | ± 2 % | 10 P _n , 30 s, 1 % |
| Climatic | -55 °C, 5 cycles, +200 °C | 3 % or 0.05 Ω ⁽¹⁾ | 1 % |
| 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⁾ | 0.5 % |
| Vibrations | Severity 55/10 | 0.5 % or 0.05 Ω ⁽¹⁾ | 0.5 % |
| Endurance | 500 cycles P _n 90 min/30 min | 5 % | 1.5 % |

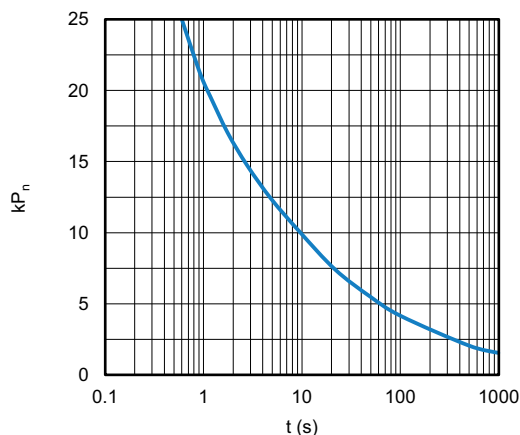
Note
⁽¹⁾ The higher of either value

DISSIPATION


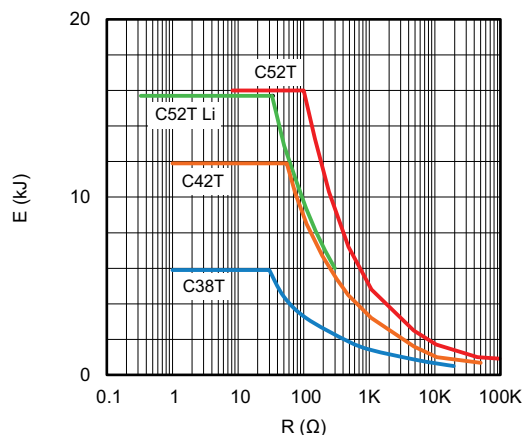
Power P_W as a Function of Surface Temperature
P(W) = f (Temperature Surface)



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
- Intermediate terminals
- Insulated mounting

ORDERING INFORMATION

| C52T | F | LI | 10K | ± 5 % | XXX | BO1 |
|-------------|-------------|-----------------------------------|------------------|--|--|------------|
| 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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