

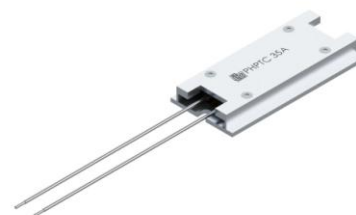


## PTC BRAKING RESISTOR



PHPTC

The PHPTC type Braking resistor is designed to withstand high energy pulses and overloads encountered in applications like Motor Braking and Capacitor Inrush Suppression. It has a self-protecting PTC resistor element which limits current and body temperature rise when sustained high voltage appears across the resistor in short circuit conditions. The resistor has an efficient Aluminium package which can be mounted on available heat sinks. This package is ideally suited for use as an internal braking resistor in drives.



### ELECTRICAL SPECIFICATIONS

Resistor Type	Nominal Power For free convection @25°C	Nominal Power on Heat sink (1.75K/W) @25°C	Resistance Values <sup>1</sup> @ 25°C	Tolerance	Maximum operating Voltage	Surface Temperature at Rated Load <sup>3</sup>	Surface Temperature on Heat sink at Rated Load <sup>4</sup>	Pulse Energy Rating (1% Duty Cycle) <sup>2</sup>
PHPTC35	10W	35W	260Ω, 350Ω	±35%	600VAC / 848VDC	120±10°C	105±10°C	660J in 1.2s
PHPTC35A	10W	35W	260Ω, 350Ω	±35%	600VAC / 848VDC	120±10°C	105±10°C	660J in 1.2s
PHPTC35B <sup>5</sup>	5W	15W	700Ω	±35%	600VAC / 848VDC	120±10°C	105±10°C	300J in 1.2s
PHPTC70	20W	70W	175Ω, 240Ω	±35%	600VAC / 848VDC	115±10°C	95±10°C	960J in 1.2s
PHPTC70A	20W	70W	175Ω, 240Ω	±35%	600VAC / 848VDC	115±10°C	95±10°C	960J in 1.2s
PHPTC105	30W	105W	60Ω, 120Ω	±35%	600VAC / 848VDC	115±10°C	95±10°C	1300J in 1.2s
PHPTC140	40W	140W	105Ω, 140Ω, 88Ω	±35%	600VAC / 848VDC	125±10°C	115±10°C	1600J in 1.2s
PHPTC140A <sup>5</sup>	30W	105W	525Ω, 700Ω	±35%	600VAC / 848VDC	115±10°C	95±10°C	1300J in 1.2s

1. New Resistance Values being added. If you need any specific value, please contact us.

2. A standard Duty Cycle of 120s is used.

3. Resistor is not mounted on a heat sink. Cooling is only by free convection

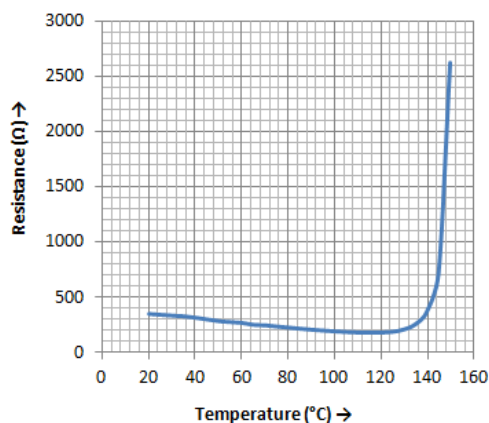
4. Mounted on a Heat Sink. A thermal transfer compound must be applied to ensure low thermal resistance between resistor and heat sink. The heat sink must be flat to ensure good contact with the resistor.

5. PHPTC35B and PHPTC140A Resistors are currently not UL approved.

### ADDITIONAL SPECIFICATIONS

Breakdown Voltage (V <sub>BD</sub> )	1100VDC
Dielectric Strength (V <sub>AC</sub> at 50Hz) for 1 minute	4000 V <sub>AC</sub>
Cable	Standard Insulated 18AWG, 600Vac
Resistor Body	Anodized Extruded Aluminium Profile
Curie Temperature	140°C
UL File Number	E514636

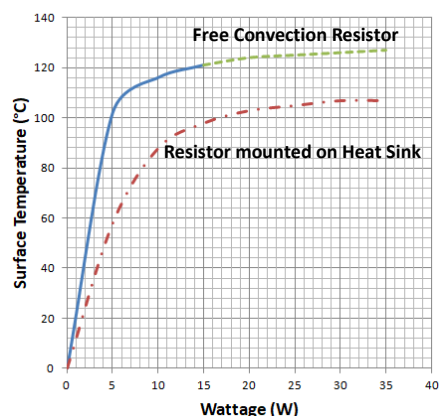
### RESISTANCE TEMPERATURE CHARACTERISTIC FOR 350Ω<sup>6</sup>



6. At 155°C the Resistance Value is >2MΩ.

7. It is not advisable to load the resistor beyond 10W without attaching it to a heat sink to effectively absorb braking energy. Considering resistor mounted on heat sink, all tests are conducted using 1.26°C/W rated heat sink.

### POWER VS SURFACE TEMPERATURE PHPTC35/35A<sup>7</sup>



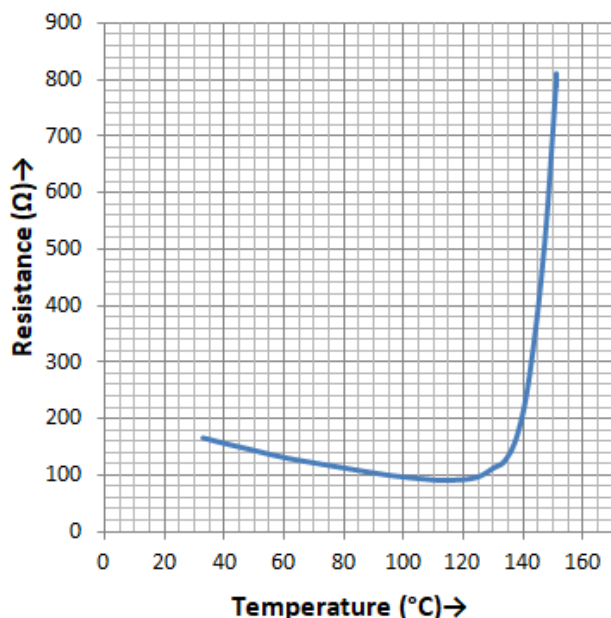


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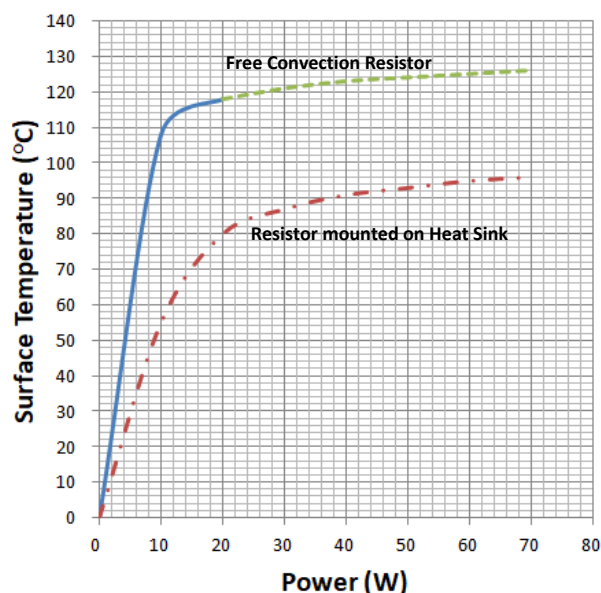


PHPTC

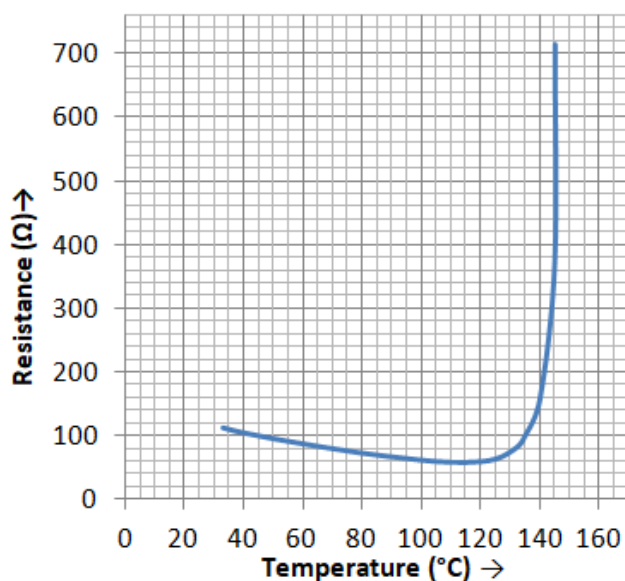
RESISTANCE TEMPERATURE CHARACTERISTIC FOR 175Ω



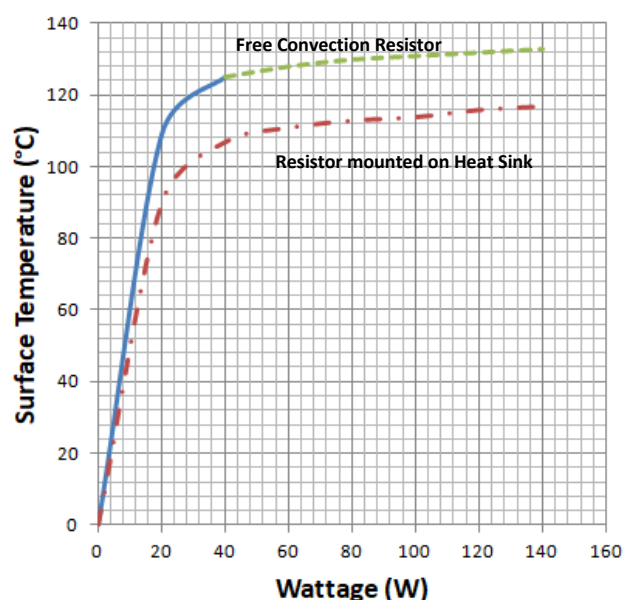
POWER VS SURFACE TEMPERATURE PHPTC70/70A<sup>8</sup>



RESISTANCE TEMPERATURE CHARACTERISTIC FOR 105Ω



POWER VS SURFACE TEMPERATURE PHPTC140<sup>9</sup>



8. It is not advisable to load the resistor beyond 20W without attaching it to a heat sink to effectively absorb braking energy. Considering resistor mounted on heat sink, all tests are conducted using 0.5°C/W rated heat sink.
9. It is not advisable to load the resistor beyond 40W without attaching it to a heat sink to effectively absorb braking energy. Considering resistor mounted on heat sink, all tests are conducted using 0.5°C/W rated heat sink.

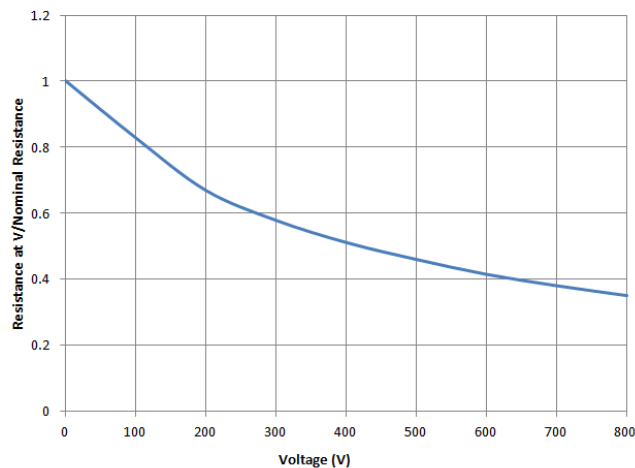


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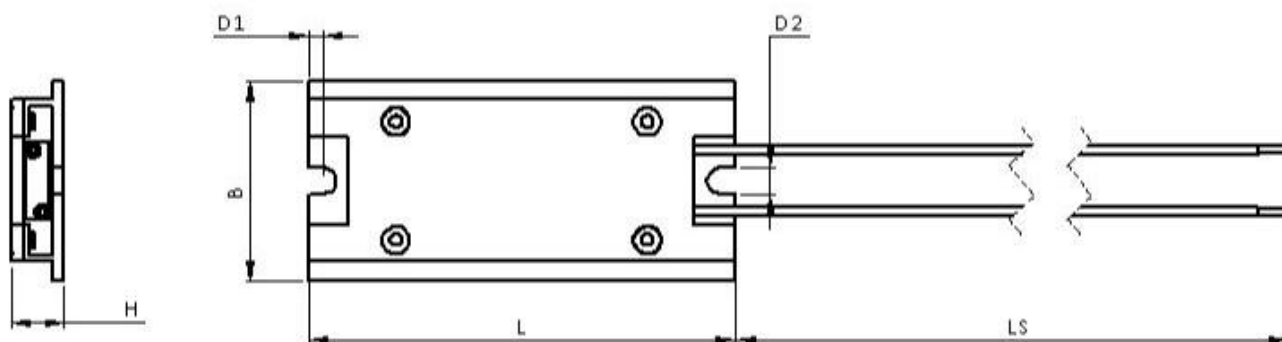


PHPTC

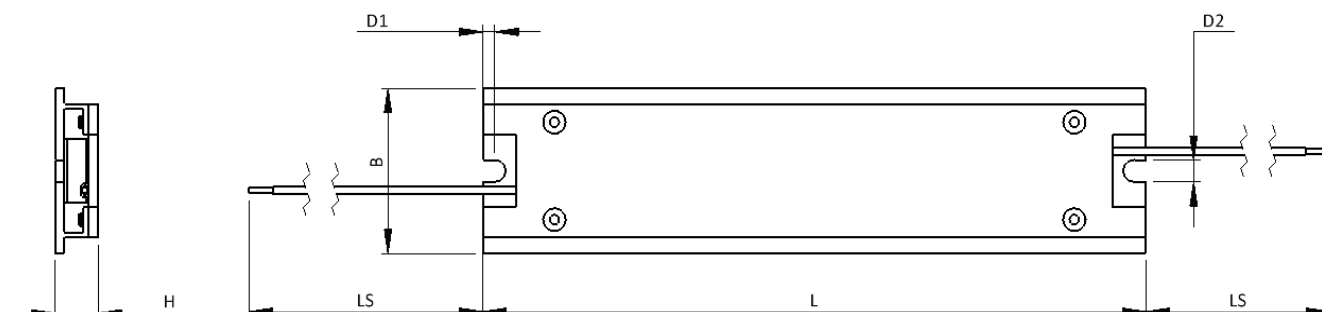
### RESISTANCE-VOLTAGE-CHARACTERISTIC:



### COMPONENT DRAWING AND DIMENSIONAL SPECIFICATION:



### COMPONENT DRAWING FOR PHPTC 140A:





The PHPTC Series						
Resistor	Length (L)	Breadth (B)	Height (H)	Wire Length (LS)	Mounting Slot Length (D1)	Mounting Slot Width (D2)
PHPTC35	89±0.5mm	34±0.3mm	10mm	100±5mm	3.5	4.5
PHPTC35A	73±0.5mm	34±0.3mm	10mm	100±5mm	2.5	4.5
PHPTC35B	73±0.5mm	34±0.3mm	10mm	100±5mm	2.5	4.5
PHPTC70	115±0.5mm	34±0.3mm	10mm	100±5mm	3.5	4.5
PHPTC70A	100±0.5mm	34±0.3mm	10mm	100±5mm	3.5	4.5
PHPTC105	139±0.5mm	34±0.3mm	10mm	100±5mm	3.5	4.5
PHPTC140	167±0.5mm	34±0.3mm	10mm	100±5mm	3.5	4.5
PHPTC140A	167±0.5mm	34±0.3mm	10mm	100±5mm	3.5	4.5

#### ORDERING CODE:

To Order, Please Specify;

PEC Type	Ohmic Value	Tolerance	Termination	Cable Length	Cable Termination
PHPTC35A	350Ω- 350R	N=±35%	Cable-C Special-M	Standard-X Custom- M	Wire Ends- X Connectors- M

FULL ORDERING CODE EXAMPLE: PHPTC35A-350R-NCXX

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