

PTC Thermistors, Inrush Current Limiters



DESCRIPTION

With its industry high voltage rating, Vishay Ametherm's inrush PTC thermistors can withstand hundreds of hits of maximum inrush current without degrading.

The device offers a short reset time, and as a PTC thermistor a quick reset will not result in a large inrush current, as its resistance is already at a high state. The result is extremely high reliability and stability in high voltage applications.

This solution provides designers with a more compact and cost-effective alternative to combining a power resistor, relay, and timer on one circuit to achieve the same functionality.

QUICK REFERENCE DATA

PARAMETER	VALUE	UNIT
Resistance at 25 °C (R_{25})	47	Ω
Tolerance on R_{25} value	± 25	%
Switching temperature	130	$^{\circ}\text{C}$
Maximum inrush current	20	A
Maximum voltage	1000	V_{DC}
Breakdown voltage	1200	V_{DC}
Operating temperature range	-50 to +150	$^{\circ}\text{C}$
Min. switching current at 25 °C	0.22	A
Max. continuous current at 25 °C	0.11	A
Heat capacity	2.4	J/ $^{\circ}\text{C}$
Thermal time constant	65	s

FEATURES

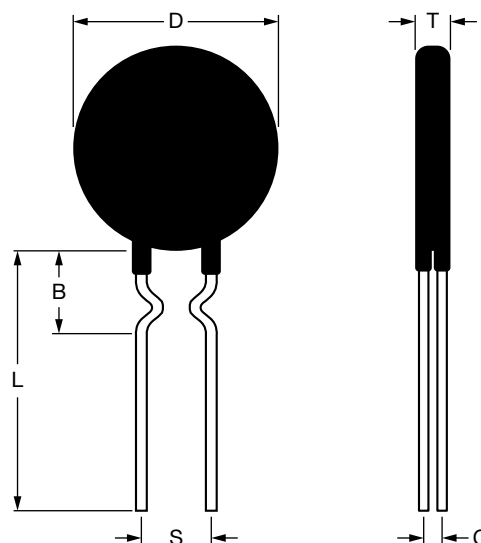
- Short reset time
- High reliability and stability
- Compact and cost-effective solution
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS
COMPLIANT

APPLICATIONS

- Limiting inrush current in the EV chargers, usually used to protect contractors in the chargers
- Temperature sensing
- Overcurrent protection
- Temperature compensation
- Motor starters
- Liquid level sensing
- Heating elements

MECHANICAL SPECIFICATIONS in millimeters



SYMBOL	MCL20500100A
B	8.0 ± 1.0
C	4.8 ± 0.5
D	22.0 max.
L	40.0 nom.
S	7.8 ± 1.0
T	7.0 ± 1.0
Lead diameter	1.0 ± 0.1

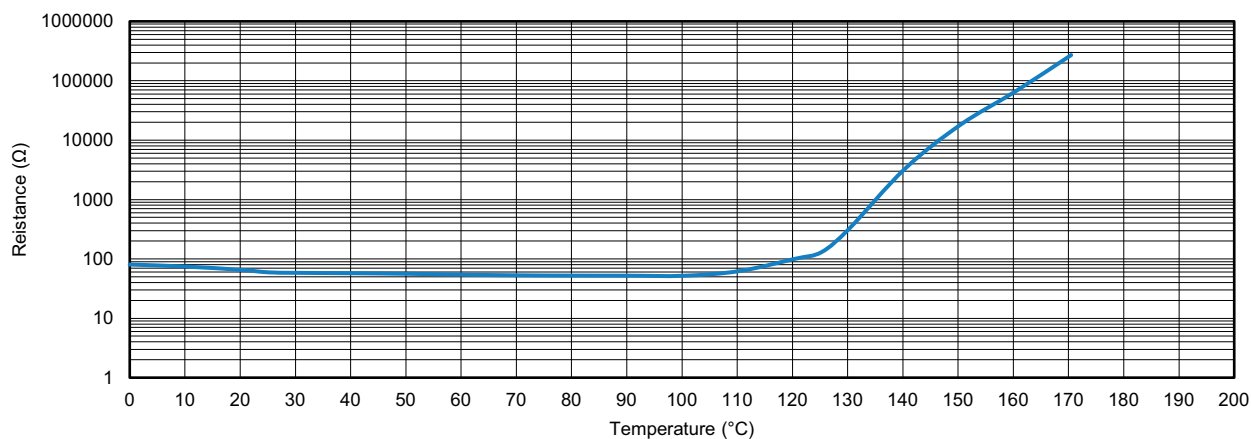


Fig. 1 - Resistance vs. Temperature

RESISTANCE VS. TEMPERATURE	
RESISTANCE (Ω)	TEMPERATURE (°C)
81.3	-40
72.6	-30
64.2	-20
58.2	-10
50.2	0
47.0	25
37.7	50
34.7	75
34.7	100
45.7	125
482.0	150
2570 000	175
23 340 000	200



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.