

NTC Thermistors, Standard Lug Sensors



LINKS TO ADDITIONAL RESOURCES



3D Models



Design Tools



SPICE Models



Related Documents

QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at 25 °C	10K	Ω
Tolerance on R_{25} -value	± 2	%
$B_{25/85}$ -value	3435; 3984	K
Tolerance on $B_{25/85}$ -value	± 0.5 to ± 1	%
Operating temperature range (without connector)	-55 to +150	°C
Storage temperature range	-55 to +150	°C
Response time (for info) ⁽¹⁾	4	s
Thermal time constant τ_c ⁽²⁾	5	s
Dissipation factor δ ⁽²⁾	13	mW/K
Max. power dissipation at 55 °C ⁽³⁾	400	mW
Minimum dielectric withstanding voltage between terminals and lug	1500	V _{AC}
Minimum insulation resistance between terminals and lug at 500 V _{DC}	100	MΩ
Weight	1.6 to 4.3	g

Notes

- (1) The response time is the time the sensor responds to a 63.2 % step change in temperature, usually set to $\Delta T = 60$ °C (25 to 85) unless mentioned differently. This step is generally conducted by quickly transferring the NTC from one liquid to another (generally water or oil)
- (2) Measured with screw mounted on an aluminum heatsink of 100 cm², thickness 1.5 mm, in still air at $T_{amb} = +25$ °C
- (3) In still air on an aluminum plate

AGENCY APPROVALS

- cUL certificate XGPU8.E148885
- ULus certificate XGPU2.E148885

Note

- Agency approval documents, please see: www.vishay.com/ppg?29195&documents

FEATURES

- Easy mounting using ring tongue terminal
- Rugged construction
- Cable of PTFE insulation according to NEMA HP-3, type E, rated 600 V_{RMS} ⁽¹⁾
- AEC-Q200 qualified (grade 1)
- cULus recognized, file E148885 (UL category XGPU2/XGPU8)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Note

- (1) Formerly MIL-W-16878/4, type E, cable test voltage 3.4 kV

APPLICATIONS

Suitable for surface sensing applications, especially when a good electrical insulation and a good thermal contact with the chassis is required.

DESCRIPTION

A NTC thermistor chip is soldered to AWG#24 stranded silver plated copper leads with PTFE insulation and insulated with epoxy coating. The insulated sensor is attached to a tin plated copper ring lug. The lead wires are stripped.

PACKAGING

The thermistors are packed in cardboard boxes.

CAUTIONS AND WARNINGS ON MOUNTING AND HANDLING

Please read the special instructions:

see www.vishay.com/doc?29221

- By means of M6 (stud #1/4) screw. Leads to be soldered or crimped
- The device is suitable for screwing e.g. on metal surface
- The leads are suitable for soldering e.g. on PCB

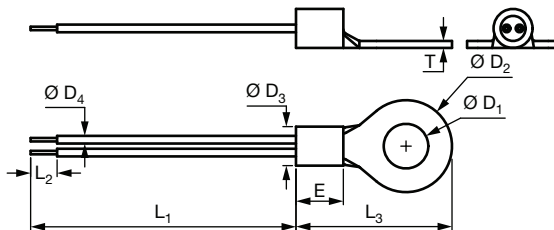
DESIGN-IN SUPPORT

- Other resistance curves and tolerances are available on request
- Consult Vishay for other lead length, other connector crimping, or other features
<https://info.vishay.com/vishay-ntc-modification-request>
- 3D solid models: www.vishay.com/doc?29200
- NTC curve computation:
www.vishay.com/thermistors/ntc-rt-calculator/



RoHS COMPLIANT

DIMENSIONS in millimeters



L ₁	L ₂	Ø D ₁	Ø D ₂	Ø D ₃	T	L ₃	E	D ₄
Refer to the ordering table	3.8 ± 1	6.4 + 0.4 / - 0	13.2 ± 0.3	5.6 + 0.3 / - 0.2	1.0	22.4 ± 0.4	6.8 ± 0.3	1.12 ± 0.1

ELECTRICAL DATA AND ORDERING INFORMATION

R ₂₅ (Ω)	R ₂₅ - TOL. (± %)	B _{25/85} (K)	B _{25/85} -TOL. (± %)	L ₁ (mm)	DESCRIPTION	UL RECOG. 	SAP MATERIAL AND ORDERING NUMBER	
							RoHS-COMPLIANT WITH EXEMPTION ⁽¹⁾	RoHS-COMPLIANT
10 000	2	3984	0.5	38.1 ± 3.8	NTC Lug85 M6 10K 2 % 3984 K PTFE AWG#24 38 mm	✓	NTCALUG85A103G	NTCALUG85A103GA
10 000	2	3435	1	38.1 ± 3.8	NTC Lug85 M6 10K 2 % 3435 K PTFE AWG#24 38 mm	✓	NTCALUG85A103GL	NTCALUG85A103GLA
10 000	2	3984	0.5	150 +10 / -5	NTC Lug85 M6 10K 2 % 3984 K PTFE AWG#24 150 mm	✓	NTCALUG85A103G151	NTCALUG85A103G151A

Notes

 Preferred versions for new designs

⁽¹⁾ RoHS exemption 7(c)-I: electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezo-electronic devices, or in a glass or ceramic matrix compound



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.