chanhvinh.com

NTC Thermistors, Low Thermal Gradient 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 (1)	4.7K to 100K	Ω
Tolerance on R_{25}-value (1)	± 1; ± 2; ± 3	%
$B_{25/85}$ value (1)	3435 to 4190	K
Tolerance on $B_{25/85}$-value	± 0.5; ± 1.0; ± 1.5	%
Operating temperature range at zero power	-55 to +125	°C
Thermal time constant τ	≈ 5	s
Dissipation factor	10	mW/K
Thermal gradient (2)	< 0.05	K/K
Min. dielectric withstanding voltage between terminals and lug	1500	V_{AC}
Min. insulation resistance between terminals and lug at 500 V_{DC}	100	MΩ
Climatic category (LCT / UCT / days)	55 / 125 / 56	
Weight	≈ 1.0	g

Notes

(1) Other R_{25}-values, $B_{25/85}$-values, and tolerances are available upon request

(2) The thermal gradient is the difference per °C between the true temperature of the surface to be sensed and the temperature measured by the sensor

AGENCY APPROVALS

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

Note

- Agency approval documents, please see: www.vishay.com/ppg?29094&documents

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?29145
- NTC curve computation: www.vishay.com/thermistors/ntc-rt-calculator/

FEATURES

Pb-free Available

RoHS COMPLIANT

- Low thermal gradient due to the use of nickel conductor and low profile closed ring tongue
- AEC-Q200 qualified (grade 1)
- cULus recognized, file E148885 (UL category XGPU2/XGPU8)
- Mounting: assembly screw mounting
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

APPLICATIONS

Thermistors used for accurate surface temperature sensing and control in:

- Computer equipment
- Power electronics, heat-sink temperature control
- Consumer appliances
- Industrial equipment
- Automotive equipment

DESCRIPTION

Vishay thermistor chip NTC with epoxy coating and middle buffer layer mounted in a tin plated copper ring lug with PEEK insulated leads AWG#30 (Ø 0.25 mm), mono-stranded silver-plated nickel.

PACKAGING

The thermistors are packed in cardboard boxes; the smallest packaging quantity is 500 units.

CAUTIONS AND WARNINGS ON MOUNTING AND HANDLING

Please read the special instructions:
see www.vishay.com/doc?29221.

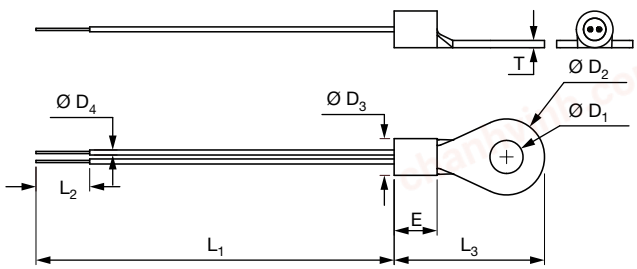
- The device is suitable for screwing e.g. on a metal surface through means of an M3 or M3.5 screw
- The connections are suitable for soldering on a PCB or for connector insertion
- The sensor is not suitable for being in permanent contact with water or liquids
- Other applicable screw hole sizes are available, for example M4 or American Stud #8
- AWG#28 or AWG#26 wires available on request

For technical questions, contact: nlr@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

chanhvinh.com

DIMENSIONS in millimeters



L_1	L_2	L_3	Ø D_1	Ø D_2	Ø D_3	Ø D_4	E	T
Refer to the ordering table	6 ± 1	16.8 ± 0.3	3.7 + 0.2 / - 0	8.5 ± 0.2	4.1 + 0.4 / - 0.1	0.56 ± 0.1	4.8 ± 0.2	0.8

ELECTRICAL DATA AND ORDERING INFORMATION

R_{25} (Ω)	R_{25}-TOL. (± %)	$B_{25/85}$ (K)	$B_{25/85}$-TOL. (± %)	L_1 (mm)	UL RECOG. c UL us	SAP MATERIAL AND ORDERING NUMBER	
						RoHS-COMPLIANT WITH EXEMPTION (1)	RoHS-COMPLIANT
4700	2	3984	0.5	45 ± 3		NTCALUG02A472G	NTCALUG02A472GA
4700	1	3984	0.5	45 ± 3		NTCALUG02A472F	NTCALUG02A472FA
5000	2	3984	0.5	45 ± 3	✓	**NTCALUG02A502G**	**NTCALUG02A502GA**
10 000	2	3984	0.5	45 ± 3	✓	**NTCALUG02A103G (2)**	**NTCALUG02A103GA**
10 000	1	3984	0.5	45 ± 3	✓	NTCALUG02A103F	NTCALUG02A103FA
10 000	1	3984	0.5	80 +5 / -3	✓	NTCALUG02A103F800	NTCALUG02A103F800A
10 000	1	3984	0.5	160 +5 / -3	✓	NTCALUG02A103F161	NTCALUG02A103F161A
10 000	1	3435	1.0	45 ± 3	✓	NTCALUG02A103FL	NTCALUG02A103FLA
10 000	1	3435	1.0	80 +5 / -3	✓	NTCALUG02A103F800L	NTCALUG02A103F804A
10 000	1	3435	1.0	160 +5 / -3	✓	NTCALUG02A103F161L	NTCALUG02A103F165A
100 000	3	4190	1.5	45 ± 3		NTCALUG02A104H	NTCALUG02A104HA

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

(2) Is also known under material number NTCALUGE4C90294

For technical questions, contact: nlr@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

chanhvinh.com

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.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. 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.

© 2023 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED