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

e4

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

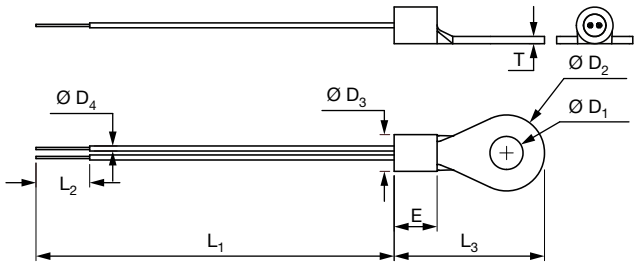
The thermistors are packed in cardboard boxes; the smallest packaging quantity is 500 units.

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

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

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