



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	4.7K to 100K	Ω
Tolerance on R_{25} -value	± 1 to ± 5	%
$B_{25/85}$ -value	3435 to 4190	K
Tolerance on $B_{25/85}$ -value	± 0.5 to ± 1.5	%
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
Maximum power dissipation at 55 °C ⁽³⁾	400	mW
Min. dielectric withstanding voltage between terminals and lug	1500	V _{AC}
Min. insulation resistance between terminals and lug at 500 V _{DC}	100	MΩ
Weight	1.5 to 2.3	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?29092&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?29144
- NTC curve computation:
www.vishay.com/thermistors/ntc-rt-calculator/

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⁾, cable test voltage 3.4 kV
- 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



RoHS COMPLIANT

Note

- (1) Formerly MIL-W-16878/4, type E

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, twisted and dipped in a tin-silver solder alloy with (e2) termination logo, or naked stripped wires with (e4) termination logo.

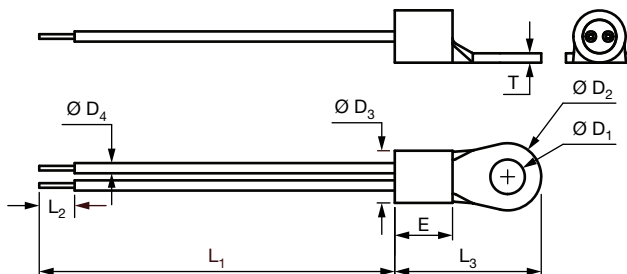
PACKAGING

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.

- By means of M3 (stud #3, #4) or M3,5 (stud #5, #6) 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

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	3.7 + 0.2 / - 0	7.2 ± 0.2	5.6 + 0.3 / - 0.2	1.0	15.70 ± 0.3	6.2 ± 0.2	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) (e2)	RoHS-COMPLIANT (2) (e4)
4700	3	3984	0.5	38.1 ± 3.8	NTC Lug01 4.7K 3 % 3984K PTFE AWG#24 38 mm		NTCALUG01A472H	NTCALUG01A472HA
10 000	1	3435	1	38.1 ± 3.8	NTC Lug01 10K 1 % 3435K PTFE AWG#24 38 mm	✓	NTCALUG01A103FL	NTCALUG01A103FLA
10 000	1	3984	0.5	38.1 ± 3.8	NTC Lug01 10K 1 % 3984K PTFE AWG#24 38 mm	✓	NTCALUG01A103F	NTCALUG01A103FA
10 000	1	3984	0.5	80 ± 5	NTC Lug01 10K 1 % 3984K PTFE AWG#24 80 mm	✓	NTCALUG01A103F800	NTCALUG01A103F800A
10 000	1	3435	1	80 ± 5	NTC Lug01 10K 1 % 3435K PTFE AWG#24 80 mm	✓	NTCALUG01A103F800L	NTCALUG01A103F804A
10 000	1	3984	0.5	160 + 10 / - 5	NTC Lug01 10K 1 % 3984K PTFE AWG#24 160 mm	✓	NTCALUG01A103F161	NTCALUG01A103F161A
10 000	1	3435	1	160 + 10 / - 5	NTC Lug01 10K 1 % 3435K PTFE AWG#24 160 mm	✓	NTCALUG01A103F161L	NTCALUG01A103F165A
10 000	2	3984	0.5	38.1 ± 3.8	NTC Lug01 10K 2 % 3984K PTFE AWG#24 38 mm	✓	NTCALUG01A103G	NTCALUG01A103GA
10 000	3	3984	0.5	38.1 ± 3.8	NTC Lug01 10K 3 % 3984K PTFE AWG#24 38 mm	✓	NTCALUG01A103H	NTCALUG01A103HA
10 000	5	3984	0.5	38.1 ± 3.8	NTC Lug01 10K 5 % 3984K PTFE AWG#24 38 mm	✓	NTCALUG01A103J	NTCALUG01A103JA
47 000	3	4090	1.5	38.1 ± 3.8	NTC Lug01 47K 3 % 4090K PTFE AWG#24 38 mm		NTCALUG01A473H	NTCALUG01A473HA
100 000	1	4190	1.5	38.1 ± 3.8	NTC Lug01 100K 1 % 4190K PTFE AWG#24 38 mm		NTCALUG01A104F	NTCALUG01A104FA
100 000	2	4190	1.5	38.1 ± 3.8	NTC Lug01 100K 2 % 4190K PTFE AWG#24 38 mm		NTCALUG01A104G	NTCALUG01A104GA

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.
(e2) The end conductor is dipped in tin-silver alloy solder
(2) RoHS I, RoHS II, RoHS III, without exemption, and lead (Pb)-free.
(e4) The end conductor is multistranded silver plated copper



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