NTC Thermistors, Standard Lug Sensors

LINKS TO ADDITIONAL RESOURCES

3D Models | Design Tools | SPICE Models | Related Documents | Capabilities and Custom Options

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 ΔT = 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 cm^2, 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

Pb-free Available

e2

e4

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

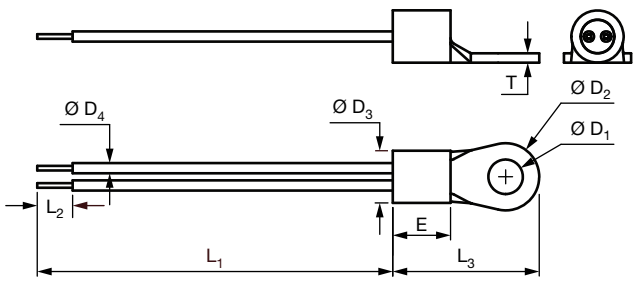
The thermistors are packed in cardboard boxes; the smallest packaging quantity is 500 units.

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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