



NTC Thermistors, Standard Lug Sensors



LINKS TO ADDITIONAL RESOURCES



| QUICK REFERENCE DATA | | |
|--|----------------|-----------------|
| PARAMETER | VALUE | UNIT |
| Resistance value at 25 °C ⁽¹⁾ | 4.7K to 100K | Ω |
| Tolerance on R ₂₅ -value ⁽¹⁾ | ± 1 to ± 5 | % |
| B _{25/85} -value ⁽¹⁾ | 3435 to 4190 | K |
| Tolerance on B _{25/85} -value | ± 0.5 to ± 1.5 | % |
| Operating temperature range at: Zero dissipation | -40 to +150 | °C |
| Dissipation factor ⁽²⁾ | ≈ 23 | mW/K |
| Thermal time constant ⁽²⁾ | ≈ 7.5 | s |
| 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) | 40 / 150 / 56 | |
| Weight | 1.5 to 2.3 | g |

Notes

- ⁽¹⁾ Other R₂₅-values, B_{25/85}-values, and tolerances are available upon request
- ⁽²⁾ Measured with screw mounted on an aluminum heatsink of 100 cm², thickness 1.5 mm, in still air at T_{amb} = +25 °C

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
- 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 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 twisted and tinned.

PACKAGING

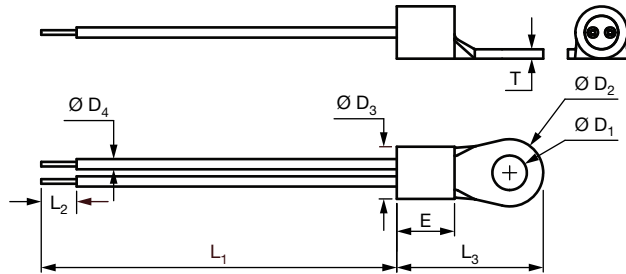
The thermistors are packed in cardboard boxes; the smallest packaging quantity is 500 units.

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. US | SAP MATERIAL AND ORDERING NUMBER | |
|------------------------|------------------------------------|---------------------------|---------------------------------------|------------------------|---|--------------------|--------------------------------------|--------------------|
| | | | | | | | RoHS-COMPLIANT WITH EXEMPTION (1) | RoHS-COMPLIANT |
| 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 (2) | 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

(2) NTCALUG01A103J identical to NTCALUGE2C90169 = 2381 645 90169



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