

PTC Thermistors, Mini Radial Leaded for Over-Temperature Protection



| QUICK REFERENCE DATA | | |
|--|-------------|----------|
| PARAMETER | VALUE | UNIT |
| Resistance at 25 °C (R_{25}) | 20 to 120 | Ω |
| Nominal working temperature T_n | 80 to 150 | °C |
| Max. voltage | 30 | V |
| Operating temperature range ⁽¹⁾ | -40 to +165 | °C |
| Dissipation factor | 5 | mW/K |
| Thermal time constant (still air) | 6 | s |
| Weight | ≈ 0.12 | g |

Note

⁽¹⁾ Max operating temperature range is $T_n + 15$ °C, indicated value is for $T_n = 150$ °C.

FEATURES

- Well-defined protection temperature levels
- Fast response time
- Accurate resistance for ease of circuit design
- Excellent long term behavior ($\Delta T \leq 1$ °C after 1000 h at $T_n + 15$ °C)
- Wide range of protection temperatures (80 °C to 150 °C)
- Small size and rugged
- Coated leaded (bare pellets available)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

APPLICATIONS

Over-temperature protection and control in:

- Industrial electronics, motor drives, and lighting drivers
- Power supplies, converters, and heat-sink
- Motor protection

DESCRIPTION

These PTC sensing thermistors consist of a medium resistivity doped barium titanate ceramic with copper clad steel wires lead (Pb)-free soldered to the Ag metalized pellet. A high temperature silicone coating covers the sensing body and has a temperature marking character.

PACKAGING

PTC thermistors are available in 500 pieces bulk packed or 2000 pieces tape on reel.

| NOMINAL WORKING TEMPERATURES AND ORDERING INFORMATION | | | |
|---|----------------------------|-----------------|--------------|
| NOMINAL WORKING TEMPERATURE T_n (°C) | VISHAY SAP ORDERING NUMBER | | |
| | BULK | TAPE AND REEL | MARKING CODE |
| 80 | PTCSL03T081DB1E | PTCSL03T081DT1E | 8 |
| 90 | PTCSL03T091DB1E | PTCSL03T091DT1E | 9 |
| 100 | PTCSL03T101DB1E | PTCSL03T101DT1E | 0 |
| 110 | PTCSL03T111DB1E | PTCSL03T111DT1E | 1 |
| 120 | PTCSL03T121DB1E | PTCSL03T121DT1E | 2 |
| 130 | PTCSL03T131DB1E | PTCSL03T131DT1E | 3 |
| 140 | PTCSL03T141DB1E | PTCSL03T141DT1E | 4 |
| 150 | PTCSL03T151DB1E | PTCSL03T151DT1E | 5 |

Note

- 2E pitch version in bulk or tape and reel available on request.

| ELECTRICAL CHARACTERISTICS | | |
|---|-----------|--------------|
| PARAMETER | VALUES | UNIT |
| Resistance at 25 °C | 20 to 120 | Ω |
| Maximum resistance between -20 °C and $(T_n - 20)$ °C | 250 | Ω |
| Maximum resistance at -40 °C | 300 | Ω |
| Maximum resistance at $(T_n - 5)$ °C | 550 | Ω |
| Minimum resistance at $(T_n + 5)$ °C | 1330 | Ω |
| Minimum resistance at $(T_n + 15)$ °C | 4000 | Ω |
| Maximum voltage | 30 | V (AC or DC) |

DIMENSIONS in millimeters


| COMPONENT DIMENSIONS in millimeters | |
|--|----------------|
| D | 4.0 max. |
| H1 | 7.0 max. |
| H2 | 3 max. |
| d | 0.5 ± 0.05 |
| L | 30 ± 3 |
| F | 2.5 |
| T | 3.0 max. |

| TAPING DATA DIMENSIONS in millimeters (based on IEC 60286-2) | | |
|---|--|---------------------|
| D | Body Diameter | 4.0 max. |
| d | Lead Diameter | 0.5 ± 0.05 |
| F | Lead to lead center distance | $2.5 + 0.5 / - 0.2$ |
| H | Component seating plane to tape-center | $18.0 + 2.0$ |
| H1 | Component top to tape-center | 25 max. |
| Δh | Component alignment | 0 ± 2 |
| P, P0 | Component pitch, sprocket hole pitch | 12.7 |
| T | Total thickness | 3.0 max. |
| T1 | Total thickness in line of tape | 3.5 max. |
| W | Tape width | $18 + 1.0 / - 0.5$ |





RESISTANCE vs. TEMPERATURE

Typical ($\leq 5 V_{DC}$)





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