

PTC Thermistors, Mini Radial Leaded for Over-Temperature Protection



FEATURES

- Well-defined protection temperature levels
- Fast response time
- Accurate resistance for ease of circuit design
- Excellent long term behavior ($\Delta T \leq 1^\circ\text{C}$ after 1000 h at $T_n + 15^\circ\text{C}$)
- Wide range of protection temperatures (80°C to 150°C)
- Small size and rugged
- Coated leaded (bare pellets available)
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

QUICK REFERENCE DATA

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

Note

- ⁽¹⁾ Max operating temperature range is $T_n + 15^\circ\text{C}$, indicated value is for $T_n = 150^\circ\text{C}$

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

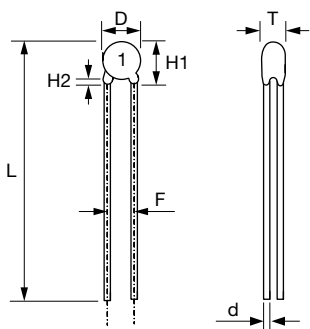
| NOMINAL WORKING TEMPERATURE | VISHAY SAP ORDERING NUMBER | | |
|-------------------------------|----------------------------|-----------------|--------------|
| T_n ($^\circ\text{C}$) | BULK | TAPE AND REEL | MARKING CODE |
| 80 | PTCSL03T081DB1E | PTCSL03T081DT1E | 8 |
| 90 | PTCSL03T091DB1E | PTCSL03T091DT1E | 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

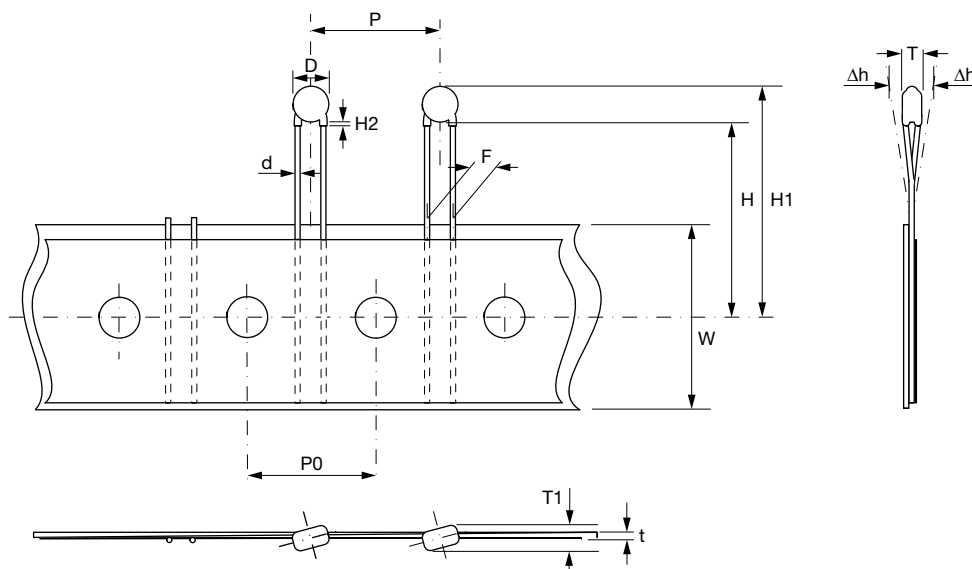
| PARAMETER | VALUES | UNIT |
|--|-----------|--------------|
| Resistance at 25 °C | 20 to 120 | Ω |
| Maximum resistance between -20 °C and (T _n - 20) °C | 250 | Ω |
| Maximum resistance at -40 °C | 300 | Ω |
| Maximum resistance at (T _n - 5) °C | 550 | Ω |
| Minimum resistance at (T _n + 5) °C | 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 | 3.3 ± 0.4 |
| H1 | 4.7 ± 1.5 |
| H2 | 1.5 ± 1.0 |
| d | 0.5 ± 0.05 |
| L | 30 ± 3 |
| F | 2.5 + 1.0 / -0.5 |
| T | 2.1 ± 0.3 |

TAPING DATA DIMENSIONS in millimeters (based on IEC 60286-2)

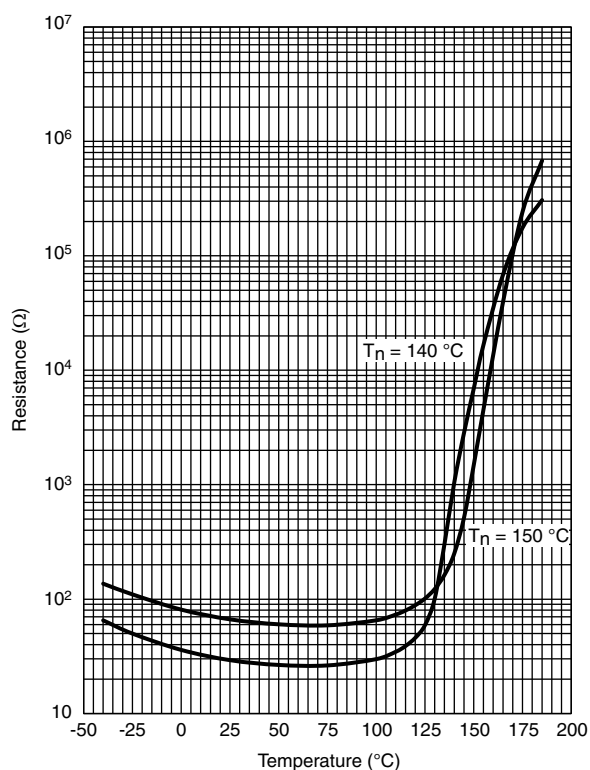
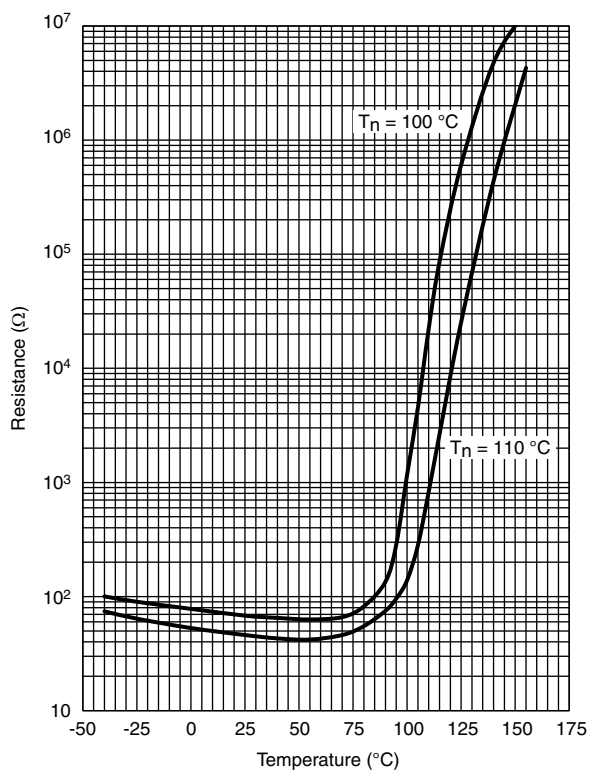
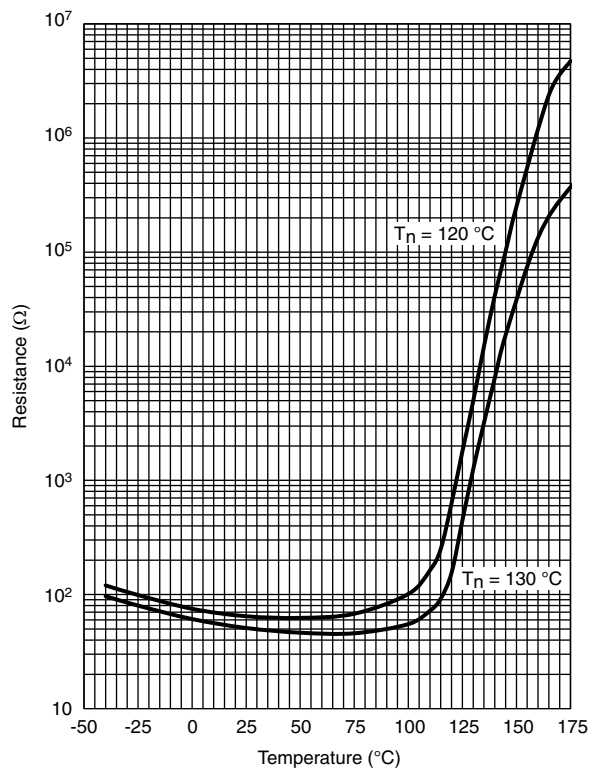
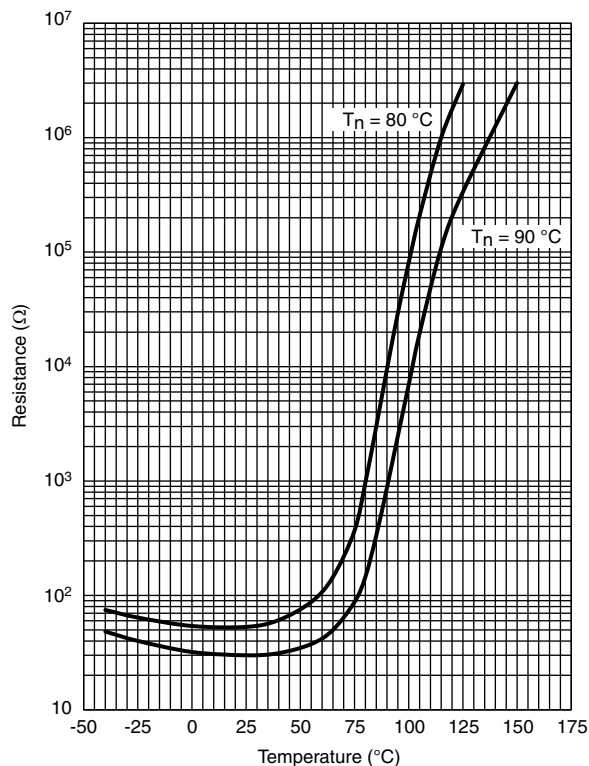
| | | |
|----|--|-------------------|
| D | Body diameter | 3.3 ± 0.4 |
| d | Lead diameter | 0.5 ± 0.05 |
| F | Lead to lead center distance | 2.5 + 0.5 / - 0.2 |
| H | Component seating plane to tape-center | 18.0 + 2.0 |
| H1 | Component top to tape-center | 25 max. |
| Δh | Component alignment | 0 ± 2 |
| P | Component pitch | 12.7 |
| T | Total thickness | 2.1 ± 0.3 |
| T1 | Total thickness in line of tape | 3.5 max. |
| t | Total tape thickness | 0.9 max. |





RESISTANCE VS. TEMPERATURE

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





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