High accuracy, SMD chip type thermistor

KT Thermistor

The KT series SMD thermistor features high accuracy with tight resistance and B-value tolerances of ±1%, high performance, high reliability and complies with EIAJ standards (dimensions: 1005, 1608).

Product number explanation

- **103 KT 1608T**
  - R₂₅ tolerance
    - 1P: ± 1%
    - 2P: ± 2%
    - 3P: ± 3%
  - Size according to EIAJ standard: See Fig. 1
  - High accuracy SMD chip thermistor
  - Rated zero-power resistance at 25 ℃
  - E.g.: 103 = 10 x 10³ Ω

Applications

- Office automation equipment, communication equipment, IT equipment, mobile devices, battery packs, battery chargers, LCDs, hybrid ICs, AV equipment

Specifications

- **Product number**
  - 103KT1608T 1 kΩ ± 1%
  - 503KT1608T 50 kΩ ± 2%
  - 104KT1608T 100 kΩ ± 3%
  - 103KT1005T 10 kΩ ± 1%

- **Dissipation factor (mw / °C)**
  - approx. 0.9
  - approx. 5
  - 4.5

- **Thermal time constant (s)**
  - approx. 0.7
  - approx. 2.2
  - 3.5

- **Rated power at 25 ℃ (mW)**
  - approx. 0.9
  - approx. 2.2
  - 3.5

- **Operating temperature range (℃)**
  - ~ 40 to 125

Reliability data

- **Resistance to soldering heat**
  - 10 s at 260 ℃ (wave soldering)
  - ∆R, ∆B ± 3%

- **Solderability**
  - 5 s at 235 ℃
  - Flux material: Rosin 25%, ethyl alcohol 75%
  - More than 75% soldered

- **Electrode connection strength vs. circuit board (horizontal)**
  - After mounting the thermistor body is pushed horizontally with a jig with a force of 5 N for 10 s.
  - ∆R, ∆B ± 3% and visual inspection

- **Electrode connection strength vs. circuit board (vertical)**
  - After mounting the circuit board is bent from the back side to a maximum of 2 mm for 5 s.
  - ∆R, ∆B ± 3% and visual inspection

- **Strength of NTC body**
  - A force of 10 N is applied vertically with a jig for 10 s.
  - ∆R, ∆B ± 3%

- **Dry heat**
  - 1000 hours at 125 ℃

- **Damp heat**
  - 1000 hours at 40 ℃ and 90% humidity

- **Temperature cycle (thermal shock)**
  - 50 cycles as below:
    1. - 25 ℃ for 30 minutes
    2. Room temperature for 15 minutes
    3. 100 ℃ for 30 minutes
    4. Room temperature for 15 minutes
  - ∆R, ∆B ± 3%

Recommended temperature profile for wave soldering

- 260 ± 5 ℃
- 220 ± 5 ℃
- 190 ± 15 ℃

Recommended soldering pad size

<table>
<thead>
<tr>
<th>Size (EIAJ)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<tbody>
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<td>0.6</td>
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<td>1608</td>
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Unit: mm
### Resistance / temperature characteristics

<table>
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<tr>
<th>Temperature (℃)</th>
<th>Product number</th>
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<td></td>
<td>103KT1608T</td>
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<td>B_{polar}</td>
<td>3435 K</td>
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</table>

Unit: kΩ

### Taping dimensions

**1608: 4,000 pcs / reel**

- 1.5 ± 0.1
- 4.0 ± 0.1
- 0.75 ± 0.02
- 0.6 ± 0.03

**1005: 10,000 pcs / reel**

- 1.5 ± 0.1
- 4.0 ± 0.1
- 0.75 ± 0.02
- 0.6 ± 0.10

Unit: kΩ