

Surface Mounted Thermistors

PTCR Series

- TCR's up to +3500 ppm
- Custom designs available
- Solder terminations have a nickel barrier layer
- Resistance range 10 ohms to 800 ohms
- Tolerances down to 2%
- Available in 0805 and 1206 sizes

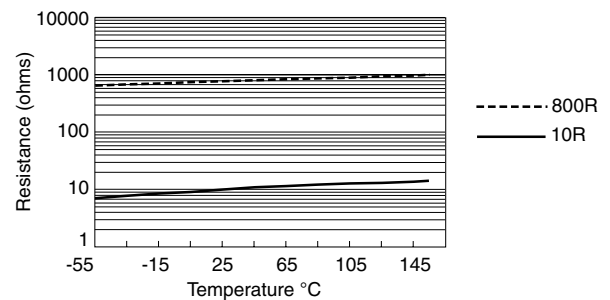


Electrical Data

| Commercial | | PTCR 0805 | PTCR 1206 | Notes |
|------------------------------|---------|---------------------|-------------|---|
| Power rating at 70°C | watts | 0.1 | 0.25 | |
| Resistance range | ohms | 10R to 400R | 10R to 800R | |
| Limiting element voltage | volts | 100 | 200 | |
| TCR -55°C to 155°C | ppm/°C | | | See table below |
| Resistance tolerance at 20°C | % | 2, 5, 10 | | |
| Ambient temperature range | °C | -55 to 155 | | |
| Values | ohms | E24 & E96 preferred | | Any value to order |
| Thermal impedance | °C/watt | 360 | 200 | For 10 devices mounted on a 50 x 25mm p.c.b. area |

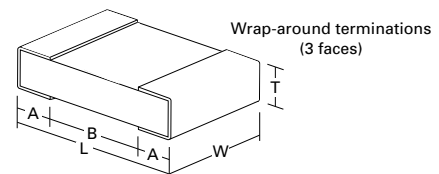
Variation of TCR within Value Range

| Value range (ohms) | TCR (ppm/°C) |
|--------------------|--------------|
| 10 to <25 | 3500 ± 10% |
| 25 to <50 | 3100 ± 10% |
| 50 to <100 | 2900 ± 10% |
| 10 to <200 | 2700 ± 15% |
| 200 to <400 | 2400 ± 15% |
| 400 to <800 | 2200 ± 15% |



Physical Data

| Dimensions (mm) and weight (g) | | | | | | |
|--------------------------------|-----------|------------|-------|------------|---------|--------|
| Style | L | W | T max | A | B* | Wt nom |
| 0805 | 2.0 ± 0.3 | 1.25 ± 0.2 | 0.6 | 0.3 ± 0.15 | 0.9 min | 0.009 |
| 1206 | 3.2 ± 0.4 | 1.6 ± 0.2 | 0.7 | 0.4 ± 0.2 | 1.7 min | 0.0090 |



*This dimension determines the number of conductors which may pass under the surface mounted device.

General Note

TT electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT electronics' own data and is considered accurate at time of going to print.

Construction

Thick film resistor material, overglaze and organic protection are screen printed on a 96% alumina substrate.

Terminations

Wrap-around terminations are suitable for soldering.

Solderability

Wrap-around terminations have an electroplated nickel barrier and solder coating. This ensures excellent leach resistance properties and solderability. They will withstand immersion in solder at 260°C for 10 seconds.

Marking

All relevant information recorded on the primary package or reel.

Solvent Resistance

The chips are resistant to all normal industrial cleaning fluids suitable for printed circuits.

Performance Data

| | | Maximum | Typical |
|---|-------|---------------|---------|
| Load at rated power: 1000 hours at 70°C | ΔR% | 5 | 1 |
| Shelf life: 12 months at room temperature | ΔR% | 3 | 0.5 |
| Derating from rated power at 70°C | | Zero at 155°C | |
| Dry heat: 1000 hours at 155°C | ΔR% | 2.5 | 1 |
| Climatic category | | 55 / 155 / 56 | |
| Long term damp heat | ΔR% | 3 | 1 |
| Temperature rapid change | ΔR% | 2 | 0.5 |
| Resistance to solder heat | ΔR% | 2 | 0.5 |
| Voltage proof | volts | 500 | |

Application Notes

Operating Temperature Range

The chips themselves can operate at a maximum temperature of 155°C (see performance claims above). For soldered chips, the joint temperature should not exceed 110°C. This condition is met when the stated power levels at 70°C are used.

Mounting

This chip resistor is ideally suited for handling by automatic methods due to its rectangular shape and small dimensional tolerances. Electrical connection to a ceramic substrate or to a printed circuit board can be made by flow or reflow soldering of wraparound terminations. The terminations provide good 'leach' properties and ensure reliable contact. Due to the robust construction the resistor chip can be immersed in a solder bath for 10 seconds at 260°C. This enables the resistor to be mounted on one side of a printed circuit board and wire-led components on the other side.

Packing

As standard 3000 chips are supplied taped and reeled on 8mm tape to IEC 286-3.

Ordering Procedure

Specify type reference, value and tolerance as shown in this example of PTCR1206 400R 2%:



Resistance value
(IEC62 code)

Tolerance
(IEC62 code)

| | |
|---|----|
| F | 1% |
| G | 2% |
| J | 5% |

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