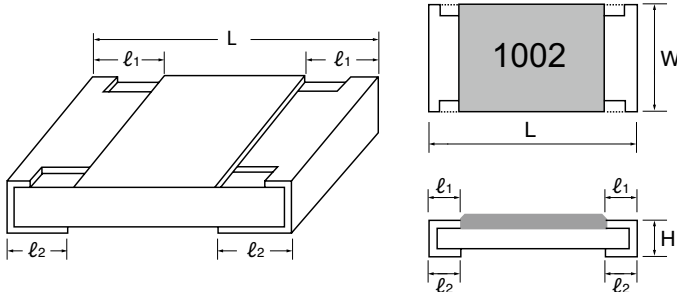


# CPT Thin Film Chip Resistor

Quality • Reliability  
Cost-Down via Technology



## Features

- Tolerance from  $\pm 0.1\%$ ~ $\pm 1\%$
- Thin film TaN & Ni/Cr Conductor
- TCR from  $\pm 25\text{PPM}$ ~ $\pm 50\text{PPM}$

## DIMENSIONS

| Type   | Size | L (mm)      | W (mm)      | H (mm)      | l1 (mm)     | l2 (mm)     |
|--------|------|-------------|-------------|-------------|-------------|-------------|
| CPT04  | 0402 | 1.00 ± 0.10 | 0.50 ± 0.05 | 0.30 ± 0.05 | 0.20 ± 0.10 | 0.20 ± 0.10 |
| CPT06  | 0603 | 1.60 ± 0.20 | 0.80 ± 0.15 | 0.40 ± 0.10 | 0.30 ± 0.20 | 0.30 ± 0.15 |
| CPT12  | 0805 | 2.00 ± 0.20 | 1.25 ± 0.15 | 0.50 ± 0.15 | 0.35 ± 0.15 | 0.35 ± 0.15 |
| CPT25  | 1206 | 3.20 ± 0.20 | 1.60 ± 0.20 | 0.55 ± 0.15 | 0.45 ± 0.20 | 0.45 ± 0.20 |
| CPT33  | 1210 | 3.20 ± 0.20 | 2.50 ± 0.20 | 0.55 ± 0.15 | 0.50 ± 0.20 | 0.50 ± 0.20 |
| CPT50  | 2010 | 5.00 ± 0.20 | 2.50 ± 0.20 | 0.55 ± 0.10 | 0.60 ± 0.20 | 0.60 ± 0.20 |
| CPT100 | 2512 | 6.30 ± 0.20 | 3.20 ± 0.20 | 0.55 ± 0.10 | 0.60 ± 0.20 | 0.60 ± 0.20 |

## SPECIFICATIONS

| Type   | Power Rating<br>(At 70°C) | Max Working Voltage | Max Overload Voltage | Resistance |      | Resistance Tolerance (%) | Jumper Rated Current | Jumper Resistance Value |
|--------|---------------------------|---------------------|----------------------|------------|------|--------------------------|----------------------|-------------------------|
|        |                           |                     |                      | Min.       | Max. |                          |                      |                         |
| CPT04  | 1/16W                     | 25V                 | 50V                  | 10Ω        | 1MΩ  | ± 0.1, 0.5, 1            | 1A                   | 50mΩ Max                |
| CPT06  | 1/10W                     | 50V                 | 100V                 | 10Ω        | 1MΩ  | ± 0.1, 0.5, 1            | 1A                   | 50mΩ Max                |
| CPT12  | 1/8W                      | 50V                 | 150V                 | 10Ω        | 1MΩ  | ± 0.1, 0.5, 1            | 1A                   | 50mΩ Max                |
| CPT25  | 1/4W                      | 100V                | 200V                 | 10Ω        | 1MΩ  | ± 0.1, 0.5, 1            | 2A                   | 50mΩ Max                |
| CPT33  | 1/3W                      | 100V                | 200V                 | 10Ω        | 1MΩ  | ± 0.1, 0.5, 1            | 2A                   | 50mΩ Max                |
| CPT50  | 1/2W                      | 100V                | 200V                 | 10Ω        | 1MΩ  | ± 0.1, 0.5, 1            | 2A                   | 50mΩ Max                |
| CPT100 | 1W                        | 100V                | 200V                 | 10Ω        | 1MΩ  | ± 0.1, 0.5, 1            | 2A                   | 50mΩ Max                |

Special values and specifications not listed available on special order.

## TECHNICAL SPECIFICATIONS

| Characteristics                   | Limits                             |              |
|-----------------------------------|------------------------------------|--------------|
| Power Derating, Linear            | 100% @ <+70°C, down to 0% @ +125°C |              |
| Temperature Coefficient, PPM / °C | ± 0.1%, ± 0.5%<br>± 1%             | ± 25<br>± 50 |
| Operating Temperature Range, °C   | -55 ~ +125                         |              |
| Insulation Resistance, MΩ         | 10 <sup>4</sup>                    |              |
| Voltage Coefficient, PPM / V      | 25                                 |              |

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## ■ PERFORMANCE SPECIFICATIONS

| Tests Characteristics        | Test Conditions   |             | Limits         |
|------------------------------|---|-------------|----------------|
| Short Time Overload          | <b>IEC 60115-1 4.13</b><br>5 seconds 2.5x rated voltage (not over max. overload voltage)  | ± 0.1, 0.5% | ±(0.5% + 0.1R) |
|                              |   | ± 1%        | ±(1% + 0.1R)   |
| Load Life In Humidity        | <b>IEC 60115-1 4.24</b><br>56 days at 40°C and 93% relative humidity  |             | ±(1.5% + 0.1R) |
| Load Life 1,000 hours        | <b>IEC 60115-1 4.25.1</b><br>Rated load 1.5 hours ON, 0.5 hours OFF, at 70°C  |             | ±(1% + 0.1R)   |
| Resistance To Soldering Heat | <b>IEC 60115-1 4.18</b><br>10 seconds at 260°C solder bath temperature  |             | ±(1% + 0.1R)   |
| Solderability                | <b>MIL-STD-202 Method 208</b><br>Solder area covered after 230±5°C/5±0.5 seconds w/ flux applied  |             | 95% Min..      |
| Vibration                    | <b>IEC 60115-1 4.22</b><br>Six hours in each parallel and axial direction w/ a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz. |             | ±(1.5% + 0.1R) |
| Thermal Endurance            | <b>IEC 60115-1 4.25.3</b><br>1000 hours at 125°C without load   |             | ±(1% + 0.1R)   |
| Thermal Shock                | <b>IEC 60115-1 4.19</b><br>-55°C 30minutes, +125°C 30minutes, 5 cycles  |             | ±(1% + 0.1R)   |

## ■ ORDERING INFORMATION

| Type            | Tolerance                      | Temperature Coefficient | Resistance Value | Packaging         | Special Request (Optional) |
|-----------------|--------------------------------|-------------------------|------------------|-------------------|----------------------------|
| CPT25<br>CPT100 | B (0.1%)<br>D (0.5%)<br>F (1%) | TK25                    | 10K              | TR<br>(Tape/Reel) | LV<br>(Low value)          |