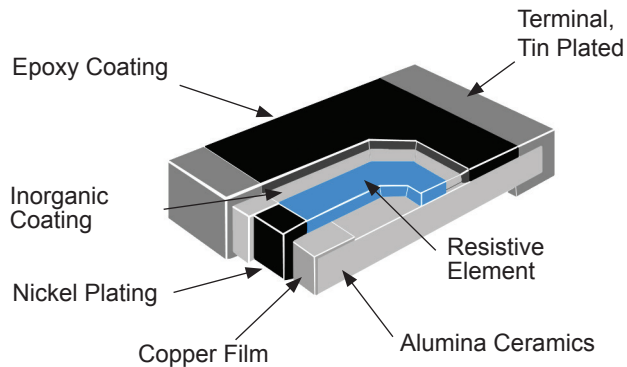


RESISTORS

SMD Precision Resistors

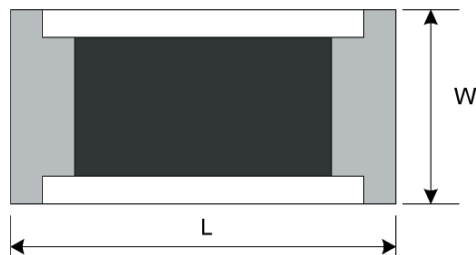
CPM series



- High Precision Thin Film NiCr Chip Resistor
- Advanced Thin Film Technology
- Excellent Long Term Stability
- Low Noise Design
- Resistant to Corrosion (Passivation)
- Resistance Tolerances up to $\pm 0,02\%$
- Temperature Coefficient: up to $\pm 5\text{ppm}/^\circ\text{C}$

| Type | Power Rating at 70°C | Temperature Range | Operating Voltage | Operating Voltage (max) | Resistance Tolerance (%) | Resistance Value | TCR (ppm/°C) |
|---------|----------------------|-------------------|-------------------|-------------------------|--|------------------|--------------|
| CPH0402 | 1/16W | -25°C+155°C | 25V | 50V | $\pm 0,5; \pm 0,1; \pm 0,05; \pm 0,02$ | 100Ω - 2,94KΩ | 5 |
| | | | | | $\pm 0,5; \pm 0,1; \pm 0,05$ | 47Ω - 100KΩ | 10 |
| CPH0603 | 1/10W | -25°C+155°C | 75V | 150V | $\pm 0,5; \pm 0,1; \pm 0,05; \pm 0,02$ | 100Ω - 4,99KΩ | 5 |
| | | | | | $\pm 0,5; \pm 0,1; \pm 0,05$ | 47Ω - 270KΩ | 10 |
| CPH0805 | 1/8W | -25°C+155°C | 100V | 150V | $\pm 0,5; \pm 0,1; \pm 0,05; \pm 0,02$ | 100Ω - 10kΩ | 5 |
| | | | | | $\pm 0,5; \pm 0,1; \pm 0,05$ | 47Ω - 475KΩ | 10 |
| CPH1206 | 1/4W | -25°C+155°C | 150V | 200V | $\pm 0,5; \pm 0,1; \pm 0,05; \pm 0,02$ | 100Ω - 33,2KΩ | 5 |
| | | | | | $\pm 0,5; \pm 0,1; \pm 0,05$ | 47Ω - 1MΩ | 10 |

Technical Drawing



| Type | L | W | T | D1 |
|---------|----------------|----------------|-----------------|-----------------|
| CPH0402 | $1,0 \pm 0,05$ | $0,5 \pm 0,05$ | $0,35 \pm 0,05$ | $0,25 \pm 0,05$ |
| CPH0603 | $1,6 \pm 0,2$ | $0,8 \pm 0,2$ | $0,4 \pm 0,1$ | $0,3 \pm 0,2$ |
| CPH0805 | $2,0 \pm 0,2$ | $1,25 \pm 0,2$ | $0,4 \pm 0,1$ | $0,4 \pm 0,2$ |
| CPH1206 | $3,2 \pm 0,2$ | $1,6 \pm 0,2$ | $0,4 \pm 0,1$ | $0,5 \pm 0,2$ |

All Dimensions in mm

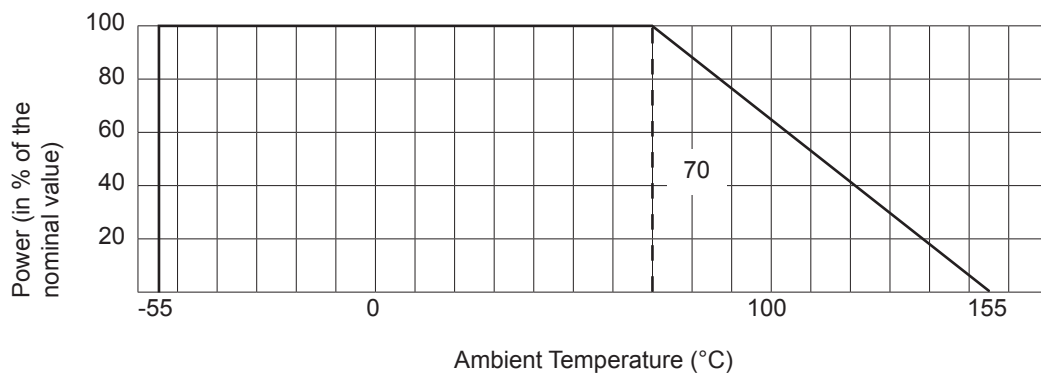
SMD Precision Resistors

CPM series

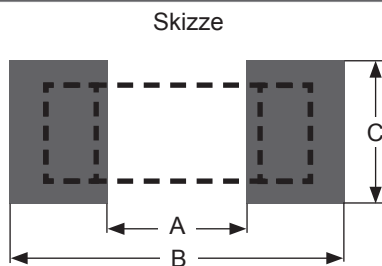
Mechanical Specification

| | |
|-------------------|------------------------------------|
| Housing | Epoxy, Inorganic Passivation Layer |
| Resistive Element | NiCr |
| Carrier | Alumina Substrate |
| Terminals | Tin |

Power Derating Curve

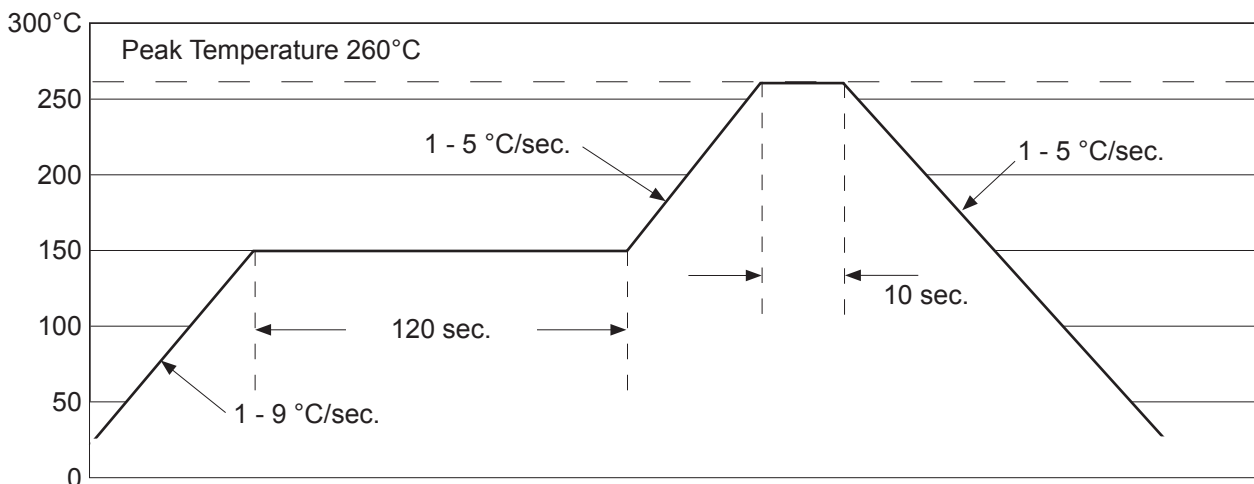


Recommended Foot Prints



| Type | A | B | C |
|---------|-------|-------|-------|
| CPM0402 | 0,5mm | 1,6mm | 0,6mm |
| CPM0603 | 1,0mm | 3,0mm | 1,2mm |
| CPM0805 | 1,2mm | 4,0mm | 1,7mm |
| CPM1206 | 2,2mm | 5,0mm | 2,0mm |

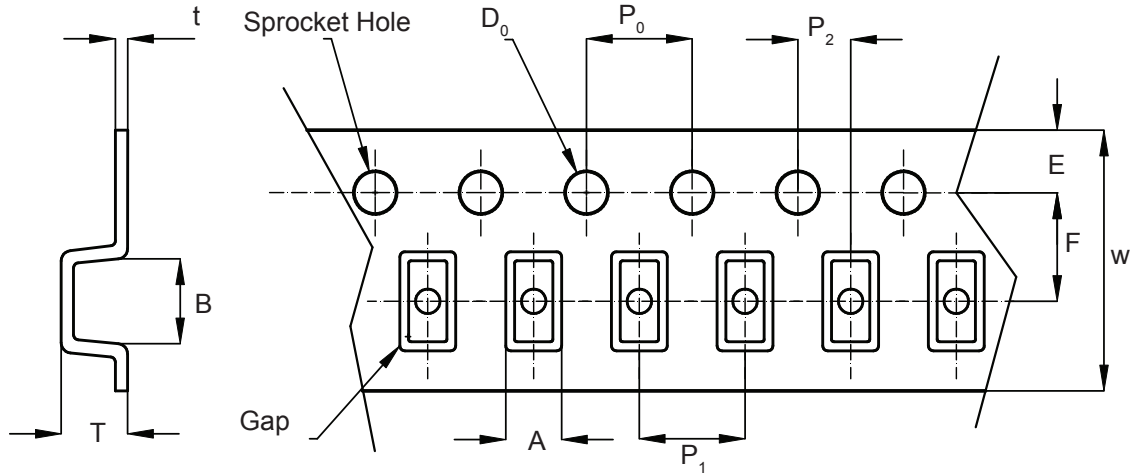
Recommendation for Reflow Soldering (Temperature Profile)



SMD Precision Resistors

CPM series

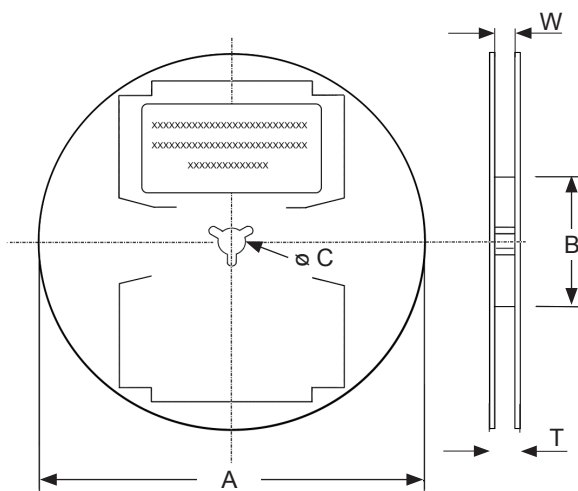
Tape Dimensions



| Size | A | B | E | F | W | P0 | P1 | P2 | D ₀ | T | t |
|------|-----------|----------|----------|----------|---------|-----------|-----------|-----------|----------------|-----------|----------|
| 0402 | 0,63±0,05 | 1,13±0,1 | 1,75±0,1 | 3,5±0,05 | 8,0±0,3 | 4,00±0,15 | 2,0±0,05 | 2,00±0,05 | ∅1,5±0,1 | 0,43±0,05 | 0,3 max. |
| 0603 | 1,10±0,2 | 1,90±0,2 | 1,75±0,1 | 3,5±0,05 | 8,0±0,3 | 4,00±0,15 | 4,00±0,15 | 2,00±0,05 | ∅1,5±0,1 | 0,6±0,05 | 0,3 max. |
| 0805 | 1,65±0,2 | 2,40±0,2 | 1,75±0,1 | 3,5±0,05 | 8,0±0,3 | 4,00±0,15 | 4,00±0,15 | 2,00±0,05 | ∅1,5±0,1 | 0,75±0,05 | 0,3 max. |
| 1206 | 2,00±0,2 | 3,60±0,2 | 1,75±0,1 | 3,5±0,05 | 8,0±0,3 | 4,00±0,15 | 4,00±0,15 | 2,00±0,05 | ∅1,5±0,1 | 1,0±0,2 | 0,3 max. |

All Dimensions in mm

Reel Dimensions (Injection Molded)



| Type | 0402 ▼ 1206 |
|------|-------------------|
| ∅A | 180 -1,5 |
| ∅B | 60,0 +1,0 |
| ∅C | 13,0±0,2 |
| W | 9,0 +1,0 |
| T | 11,5±1,0 |

All Dimensions in mm

RESISTORS

SMD Precision Resistors

CPM series

| Parameter | Conditions | Specification |
|-----------------------|---|---------------------------|
| Thermal Shock | -55°C to +125°C, 1000 Cycles | $\Delta R \pm 0,05\%$ |
| Short Time Overload | Related Voltage x 2,5, 5sec. | $\Delta R \pm 0,05\%$ |
| Soldering | 245°C, 2,5sec. | 95% Terminals Tin covered |
| Insulation Resistance | 100 \pm VDC, 1 min. | 100M Ω |
| Stability | 85 \pm 2°C, Nominal Power, 90min. on, 30min. off, 1000 Cycles | $\Delta R \pm 0,25\%$ |
| Stability (Moisture) | 85°C, 85% r.H. 10% Nominal Power, 30min. on, 30min. off 1000 Cycles | $\Delta R \pm 0,25\%$ |
| Shelf Stability | 25°C, 1 Year | $\Delta R \pm 0,01\%$ |

Processing and storage instructions

- Do not store in high temperatures (>40°C) high humidity (>70% RH).
- Hand Soldering: soldering temperature 240°C - 265°C with soldering tip \leq 3mm
- Soldering furnace: max. temperature 250°C+0/-5°C, holding time max. 10sec.
- Dip Soldering: max. temperature of the soldering bath 260°C
- After the different soldering methods an even cooling down has to be ensured. Avoid parts from any mech. stress.

| Packaging | Size 0402 | Size 0603, 0805, 1206 |
|-----------|---|-------------------------------------|
| | 1000pcs. / 5000pcs. / 10000pcs. Tape on Reel | 1000pcs. / 5000pcs. Tape on Reel |

Ordering Information

| | | | | |
|-------------|-------------|-----------------------------|------------|------------------------------|
| CPM | 0603 | W0,1% | TK5 | 10k000 |
| TYPE | SIZE | RESISTANCE TOLERANCE | TCR | Resistance Value |
| | 0402 | (see page 1) | 10ppm/°C | (47 Ω - 1M Ω) |
| | 0603 | | 5ppm/°C | |
| | 0805 | | | |
| | 1206 | | | |