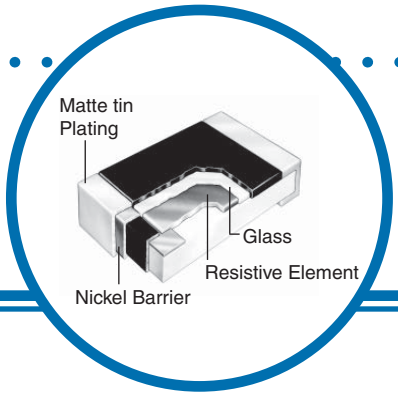
# Precision Thin Film Nichrome Chip Resistor

**PCF Series**

- TCR to ±5 ppm/°C
- Tolerances to ±0.05%
- Available in 8 standard sizes
- Wide ohmic range 10Ω to 2.0MΩ
- RoHS compliant Pb-free terminations




## Electrical Data

| Size | Ohmic Range (Ω) | Resistance Tolerance | TCR (ppm/°C) | Rated Power at 70°C (mW) | Max Working Voltage (volts) | Max Overload Voltage (volts) |
|---|---|---|---|---|---|---|
| 0201 | 33 - 22K | ±0.5% | ±25 | 50 | 15 | 30 |
| | 10 - 30 | ±1% | ±100 | | | |
| 0402 | 50 - 2K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±5 | 62.5 | 25 | 50 |
| | 50 - 12K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±10, ±15, ±25, ±50 | | | |
| | 10 - 200K | ±0.1%, ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| 0603 | 50 - 8K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±5 | 62.5 | 50 | 100 |
| | 25 - 100K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±10, ±15, ±25, ±50 | | | |
| | 4.7 - 150K | ±0.05% | ±25, ±50 | | | |
| | 4.7 - 800K | ±0.1%, ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| | 2 - 4.6 | ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| 0805 | 50 - 16K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±5 | 100 | 100 | 200 |
| | 25 - 200K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±10, ±15, ±25, ±50 | | | |
| | 4.7 - 500K | ±0.05% | ±25, ±50 | | | |
| | 4.7 - 2M | ±0.1%, ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| | 1 - 4.6 | ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| 1206 | 50 - 30K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±5 | 125 | 150 | 300 |
| | 25 - 500K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±10, ±15, ±25, ±50 | | | |
| | 4.7 - 1M | ±0.05%, ±0.1%, ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| | 1 - 4.6 | ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| | 1M - 2M | ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| 1210 | 100 - 330K | ±0.1%, ±0.5% | ±5, ±10 | 250 | 200 | 400 |
| | 51R0 - 2.0M | ±0.1%, ±0.5% | ±25 | | | |
| 2010 | 50 - 30K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±5 | 250 | 150 | 300 |
| | 25 - 500K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±10, ±15, ±25, ±50 | | | |
| | 4.7 - 1M | ±0.05%, ±0.1%, ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| | 1 - 4.6 | ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| | 1M - 2M | ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| 2512 | 50 - 50K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±5 | 500 | 150 | 300 |
| | 25 - 500K | ±0.01%, ±0.05%, ±0.1%, ±0.25%, ±0.5% | ±10, ±15, ±25, ±50 | | | |
| | 4.7 - 1M | ±0.05%, ±0.1%, ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |
| | 1 - 4.6, 1M - 2M | ±0.25%, ±0.5%, ±1% | ±25, ±50 | | | |

**General Note**
IRC reserves the right to make changes in product specification without notice or liability.
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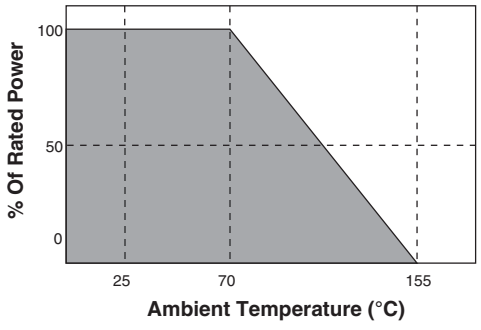
# Precision Thin Film Nichrome Chip Resistor

## Environmental Data

| Test Conditions | | Test Method | Performance | |
|---|---|---|---|---|
| | | | Tolerance ≤ 0.05% | Tolerance > 0.05% |
| Short-time Overload | | JIS-C-5202-5.5<br>5 Seconds at 2.5 X Rated Voltage<br>(not to exceed 2 X Max Voltage) | ±0.05% (+0.05Ω) | ±0.5% (+0.05Ω) |
| Thermal Shock | | MIL-STD-202 Method 107<br>100 Cycles<br>-55°C to 150°C | ±0.05% (+0.05Ω) | ±0.25% (+0.05Ω) |
| Humidity (Steady State) | | MIL-STD-202 Method 103<br>1000 Hours 40°C 90-95% RH<br>1.5 Hours On / 0.5 Hours Off<br>Rated Voltage | ±0.05% (+0.05Ω) | ±0.3% (+0.05Ω) |
| Load Life | R ≤ 7.0KΩ | MIL-STD-202 Method 108<br>1000 Hours 70°C<br>1.5 Hours On / 0.5 Hours Off<br>Rated Voltage, Rated Power | ±0.05% (+0.05Ω) | ±0.2% (+0.05Ω) |
| | R > 7.0KΩ | | ±0.5% (+0.05Ω) | ±0.5% (+0.05Ω) |
| High Temperature Exposure | | JIS-C-5202-7.2<br>96 Hours 155°C | ±0.05% (+0.05Ω) | ±0.2% (+0.05Ω) |
| Low Temperature Operation | | JIS-C-5202-7.2<br>96 Hours 155°C | ±0.05% (+0.05Ω) | ±0.2% (+0.05Ω) |
| Resistance to Solder Heat | | MIL-STD-202 Method 210<br>10 ±1 Seconds 260°C | ±0.05% (+0.05Ω) | ±0.2% (+0.05Ω) |
| Solderability | | MIL-STD-202 Method 208<br>3 ±0.5 Seconds 235°C | 95% Min Coverage | |

## Power Derating Curve

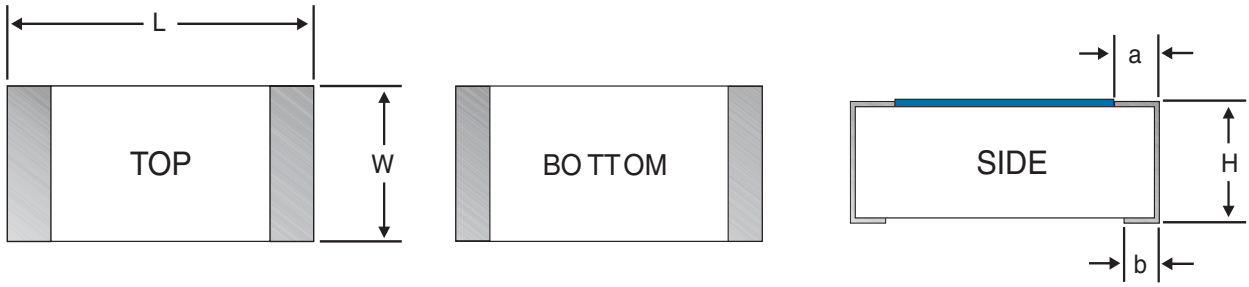



## Packaging Data

| Chip Size | Tape Type | Reel Quantity |
|---|---|---|
| 0201 | Paper | 5,000 |
| 0402 | Paper | 10,000 |
| 0603 | Paper | 5,000 |
| 0805 | Paper | 5,000 |
| 1206 | Paper | 5,000 |
| 1210 | Paper or Plastic | 5,000 |
| 2010 | Plastic | 4,000 |
| 2512 | Plastic | 4,000 |

# Precision Thin Film Nichrome Chip Resistor

## Physical Data




**Dimensions (inches)**

| Model | L | W | H | a | b |
|---|---|---|---|---|---|
| **PCF0201LF** | 0.024±0.002 | 0.012±0.002 | 0.009±0.002 | 0.005±0.002 | 0.005±0.002 |
| **PCF0402LF** | 0.039±0.002 | 0.020±0.002 | 0.012±0.002 | 0.008±0.004 | 0.008±0.004 |
| **PCF0603LF** | 0.061±0.004 | 0.031±0.004 | 0.018±0.004 | 0.012±0.008 | 0.012±0.008 |
| **PCF0805LF** | 0.079±0.007 | 0.049±0.007 | 0.021±0.004 | 0.012±0.008 | 0.016±0.010 |
| **PCF1206LF** | 0.120±0.007 | 0.061±0.007 | 0.021±0.004 | 0.016±0.008 | 0.014±0.010 |
| **PCF1210LF** | 0.126±0.008 | 0.102±0.008 | 0.018±0.002 | 0.020±0.008 | 0.018±0.008 |
| **PCF2010LF** | 0.193±0.007 | 0.094±0.007 | 0.021±0.004 | 0.023±0.005 | 0.020±0.010 |
| **PCF2512LF** | 0.248±0.007 | 0.122±0.007 | 0.021±0.004 | 0.023±0.005 | 0.020±0.010 |

## Ordering Data

**Prefix** ..... PCF - W1206LF - 03 - 1001 - B - P - LT

**Model**
W0201LF, W0402LF, W0603LF, W0805LF, W1206LF, W1210LF, W2010LF, W2512LF
Note: LF = 100% matte tin, Pb-free terminations

**TCR Characteristic**
01=±100ppm/°C, 02=±50ppm/°C,
03=±25ppm/°C, 12=±10ppm/°C
13=±5ppm/°C

**Resistance Code**
Standard 4-digit resistance code. Examples: 1004=1.0MΩ, 1003=100KΩ, 51R0=51Ω

**Tolerance Code**
F= ±1%, D=±0.5%, C=±0.25%, B=±0.1%, A=±0.05%, T=±0.01%

**Tape Type**
P=Paper, E=Plastic

**Tape & Reel Packaging**

For additional information or to discuss your specific requirements,
please contact our Applications Team using the contact details below.

# Mouser Electronics

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W1206R036122B-R1 W1206R039092BT W1206R128661A-R1 W1206R013322B-R1 W1206LF0347R0B-R1