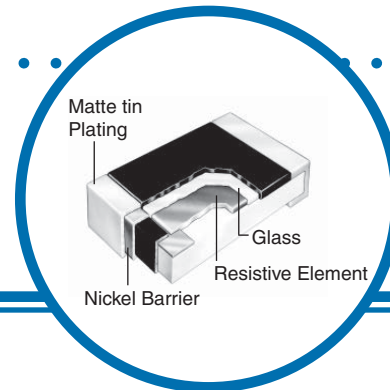


# Precision Thin Film Nichrome Chip Resistor

## PCF Series

- TCR to  $\pm 5$  ppm/ $^{\circ}$ C
- Tolerances to  $\pm 0.05\%$
- Available in 8 standard sizes
- Wide ohmic range  $10\Omega$  to  $2.0M\Omega$
- RoHS compliant Pb-free terminations



## Electrical Data

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

### General Note

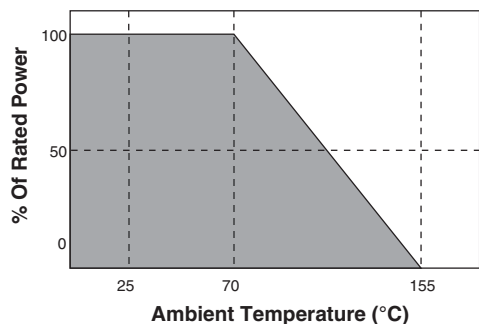
IRC reserves the right to make changes in product specification without notice or liability. All information is subject to IRC's own data and is considered accurate at time of going to print.

# Precision Thin Film Nichrome Chip Resistor

## Environmental Data

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

## Power Derating Curve

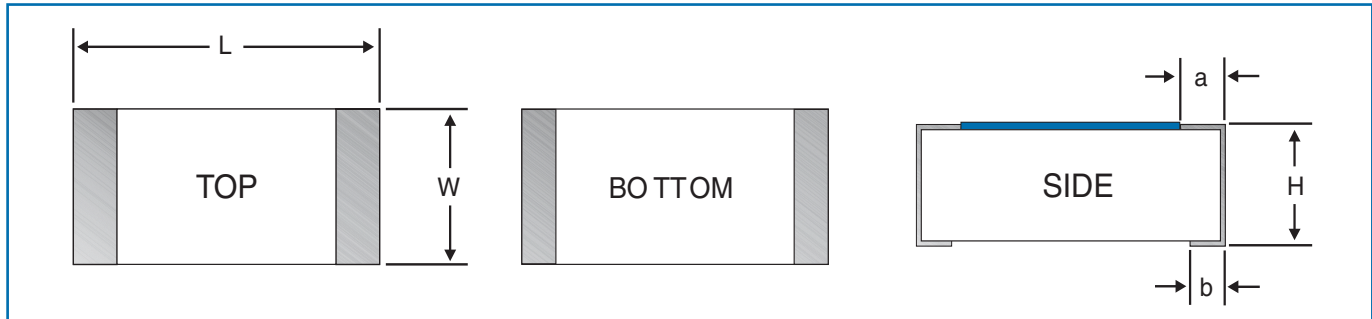


## Packaging Data

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.