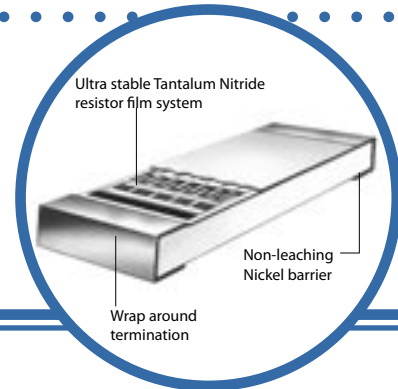


# Precision Thin Film Chip Resistors

## PFC Series

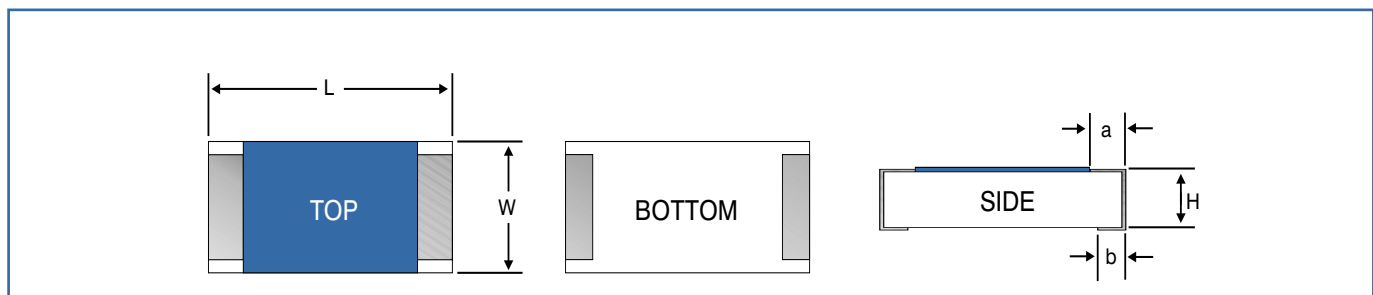
- Available in 0603, 0805, 1206, 1505, 2010 and 2512 chip sizes
- Standard 60/40 and lead-free terminations available
- Tested for COTS applications
- Absolute TCR to  $\pm 10\text{ppm}/^\circ\text{C}$
- Mil screening available



The IRC TaNFilm® PFC chip resistor series provides the high precision and ultra stable performance of our Tantalum Nitride Resistive Film System in 0603, 0805, 1206, 1505, 2010 and 2512 sizes. The unique characteristics of the passivated Tantalum Nitride film insure long term life stability and stability in most environments.

Using the same manufacturing line as the PFC Military Series, IRC's precision chips maintain the same superior environmental performance. Specially selected materials and processes insure initial precision is maintained in the harshest surface mount soldering environment. Solder coated wrap-around terminations with leach-resistant nickel barriers insure high integrity solder connections.

## Physical Data



	L	W	H	a	b
W0603	0.063"±.004"	0.031"±.004"	0.020"±.004"	0.012"±.005"	0.015"±.005"
W0805	0.081"±.005"	0.050"±.005"	0.020"±.006"	0.016"±.008"	0.016"±.008"
W1206	0.126"±.006"	0.063"±.005"	0.024"±.004"	0.025"±.010"	0.025"±.010"
W1505	0.155"±.007"	0.050"±.005"	0.024"±.004"	0.020"±.010"	0.020"±.010"
W2010	0.203"±.007"	0.103"±.005"	0.024"±.004"	0.020"±.008"	0.020"±.008"
W2512	0.255"±.007"	0.124"±.005"	0.024"±.004"	0.020"±.008"	0.020"±.008"

### 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 Chip Resistors

## Electrical Data

Model	Power Rating (70°C)	Max Voltage Rating ( $\leq \sqrt{P \times R}$ )	Temperature Range	ESD Sensitivity	Noise	Termination	Substrate
W0603	100mW	75V	-55°C to +150°C	2KV-4KV (HBM)	< -25dB	Solder plated over nickel barrier	99.5% Alumina
W0805	250mW	100V					
W1206	333mW	200V					
W1505	350mW	100V					
W2010	800mW	175V					
W2512	1.0 W	200V					

## Environmental Data

Environmental Test MIL-PRF-55342	Maximum $\Delta R$ per Characteristic E	Performance	
		Typical	Maximum
Thermal Shock	$\pm 0.10\%$	$\pm 0.02\%$	$\pm 0.10\%$
Low Temperature Operation	$\pm 0.10\%$	$\pm 0.01\%$	$\pm 0.05\%$
Short Time Overload	$\pm 0.10\%$	$\pm 0.01\%$	$\pm 0.05\%$
High Temperature Exposure	$\pm 0.10\%$	$\pm 0.03\%$	$\pm 0.10\%$
Effects of Solder	$\pm 0.20\%$	$\pm 0.01\%$	$\pm 0.10\%$
Moisture Resistance	$\pm 0.20\%$	$\pm 0.03\%$	$\pm 0.10\%$
Life	$\pm 0.50\%$	$\pm 0.03\%$	$\pm 0.10\%$

# Precision Thin Film Chip Resistors



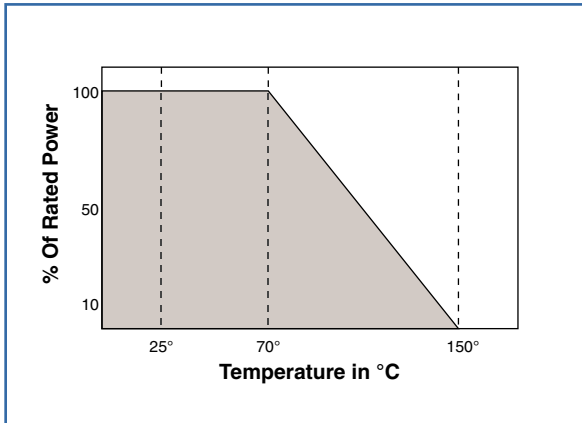
## Manufacturing Capabilities Data

TCR (ppm/°C)	W0603		W0805		W1206	
	Ohmic Range	Available Tolerances	Ohmic Range	Available Tolerances	Ohmic Range	Available Tolerances
±100	5 - 100KΩ	J G F D	5 - 267KΩ	J G F D	5 - 1MΩ	J G F D
±50	5 - 100KΩ	J G F D B	10 - 267KΩ	J G F D B	10 - 1MΩ	J G F D B
±25	10 - 75KΩ	J G F D B	10 - 267KΩ	J G F D B	10 - 1MΩ	J G F D B
	50 - 100KΩ	J G F D B A Q	50 - 267KΩ	J G F D B A	50 - 1MΩ	J G F D B A
±15	50 - 50KΩ	J G F D B A Q	201 - 267KΩ	J G F D B A Q	201 - 1MΩ	J G F D B A Q
			50 - 267KΩ	J G F D B A	50 - 400KΩ	J G F D B A
±10	50 - 50KΩ	J G F D B A	201 - 267KΩ	J G F D B A Q	201 - 400KΩ	J G F D B A Q
			100 - 100KΩ	J G F D B A	100 - 250KΩ	J G F D B A

TCR (ppm/°C)	W1505		W2010		W2512	
	Ohmic Range	Available Tolerances	Ohmic Range	Available Tolerances	Ohmic Range	Available Tolerances
±100	5 - 1MΩ	J G F D	5 - 1MΩ	J G F D	5 - 1MΩ	J G F D
±50	10 - 1MΩ	J G F D B	10 - 1MΩ	J G F D B	10 - 1MΩ	J G F D B
±25	50 - 1MΩ	J G F D B A	50 - 1MΩ	J G F D B A	50 - 1MΩ	J G F D B A

# Precision Thin Film Chip Resistors

## Power Derating Curve



## Ordering Data Commercial

<b>Prefix</b> .....	<b>PFC</b> - <b>W1206</b> - <b>R</b> - <b>01</b> - <b>1001</b> - <b>B</b>
<b>Model</b> .....	W0603; W0805; W1206 W1505, W2010, W2512
<b>Termination</b> .....	R= 60/40 plated solder LF=100% tin plated (lead-free)
<b>TCR Code</b> .....	01 = ±100ppm/°C; 02 = ±50ppm/°C; 03 = ±25ppm/°C 11 = ±15ppm/°C; 12 = ±10ppm/°C
<b>Resistance Code</b> .....	4-Digit resistance code. Ex: 1002 = 10KΩ; 50R0 = 50Ω
<b>Tolerance Code</b> .....	J = ±5%; G = ±2%; F = ±1%; D = ±0.5% B = ±0.1%; A = ±0.05%; Q = ±0.02%

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

## Mil-Screened Precision Chip Resistors

IRC's PFC chip resistors are available with Mil screening. These chips are manufactured on the same production line as our Mil-qualified chip resistors and screened in accordance with MIL-PRF-55342. These chips are identified with IRC's ordering information and not with Mil marking.

Please refer to our PFC Military datasheet for parts qualified to MIL-PRF-55342.

## Ordering Data Mil Screening

<b>Prefix</b> .....	<b>PFC</b> - <b>W1206</b> - <b>R</b> - <b>04</b> - <b>1001</b> - <b>B</b>
<b>Model</b> .....	W0603; W0805; W1206 W1505, W2010, W2512
<b>Termination</b> .....	R= 60/40 plated solder LF=100% tin plated (lead-free)
<b>Mil-Screened TCR Code</b> .....	04 = ±300ppm/°C; 05 = ±100ppm/°C 06 = ±50ppm/°C; 07 = ±25ppm/°C 14 = ±20ppm/°C; 15 = ±15ppm/°C; 16 = ±10ppm/°C
<b>Resistance Code</b> .....	4-Digit resistance code. Ex: 1002 = 10KΩ; 50R0 = 50Ω
<b>Tolerance Code</b> .....	J = ±5%; G = ±2%; F = ±1%; D = ±0.5% B = ±0.1%; A = ±0.05%; Q = ±0.02%

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