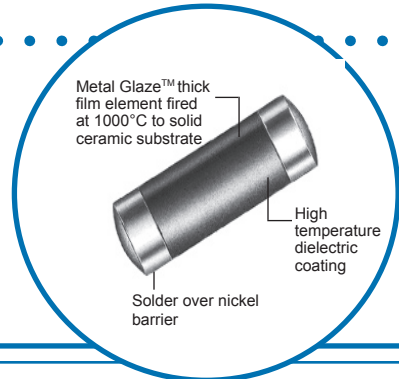


**METAL GLAZE™ GENERAL PURPOSE SURFACE MOUNT POWER RESISTOR**

- Up to 2 watts
- 0.2 ohm to 2.2 megohm range
- Up to 1000 volts
- 150°C maximum operating temperature
- RoHS-compliant version available



**CHP SPECIFICATIONS:**

Size Code <sup>1</sup>	Industry Footprint	IRC Type	Maximum Power Rating	Working Voltage <sup>2</sup>	Maximum Voltage	Resistance Range (ohms) <sup>3</sup>	Tolerance (±%) <sup>3</sup>	TCR (ppm/°C) <sup>3</sup>	Product Category
B	1206	CHP 1/8	1/4W @ 70°C	200	400	0.1 to 0.99	1, 2, 5	100	Low Range
						1.0 to 1.0 M	1, 2, 5	50, 100	Standard
						20 to 348K	0.25, 0.5	50, 100	Tight Tolerance
D	2010	CHP 1/2	1/2W @ 70°C	300	600	0.1 to 0.99	1, 2, 5	100	Low Range
						1.0 to 348K	1, 2, 5	50, 100	Standard
F	2512	CHP 1	1W @ 70°C	 - 350 - 	700	0.1 to 0.99	1, 2, 5	100	Low Range
						1.0 to 2.21M	1, 2, 5	50, 100	Standard
						20 to 348K	0.25, 0.5	50, 100	Tight Tolerance
H	3610	CHP 2	2W @ 25°C	500	1000	0.1 to 0.99	1, 2, 5	100	Low Range
			1.33W @ 70°C			1.0 to 2.21M	1, 2, 5	50, 100	Standard

<sup>1</sup>See page 8 for product dimensions, recommended solder pads, and standard packaging.    <sup>2</sup> Not to exceed  $\sqrt{P \times R}$     <sup>3</sup> Consult factory for tighter TCR, tolerance, or resistance values.

**CHP PERFORMANCE CHARACTERISTICS:**

Characteristics	Maximum Change	Test Method
Temperature Coefficient	As specified	MIL-R-55342E Par 4.7.9 (-55°C +125°C)
Thermal Shock	±0.5% +0.01 ohm	MIL-R-55342E Par 4.7.3 (-65°C +150°C, 5 cycles)
Low Temperature Operation	±0.25% +0.01 ohm	MIL-R-55342E Par 4.7.4 (-65°C @ working voltage)
Short Time Overload	±0.5% +0.01 ohm ±1% for R>100K ohm	MIL-R-55342E Par 4.7.5 2.5 x $\sqrt{\text{---}}$ for 5 seconds
High Temperature Exposure	±0.5% +0.01 ohm	MIL-R-55342E Par 4.7.6 (+150°C for 100 hours)
Resistance to Bonding	±0.25% 0.01 ohm	MIL-R-55342E Par 4.7.7 (Reflow soldered to board at 260°C for 10 seconds)
Exposure	95% minimum coverage	MIL-STD-202, Method 208 (245°C for 5 seconds)
Solderability	±0.5% +0.01 ohm	MIL-R-55342E Par 4.7.8 (10 cycles, total 240 hours)
Moisture Resistance	±0.5% +0.01 ohm	MIL-R-55342E Par 4.7.10 (2000 hour at 70°C intermittent)
Life Test	±1% +0.01 ohm	1200 gram push from underside of mounted chip for 60 seconds
Terminal Adhesion Strength	no mechanical damage	
	±1% + 0.01 ohm no mechanical damage	Chip mounted in center of 90mm long board, deflected 1mm so as to exert pull on chip contacts for 5 seconds

**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.

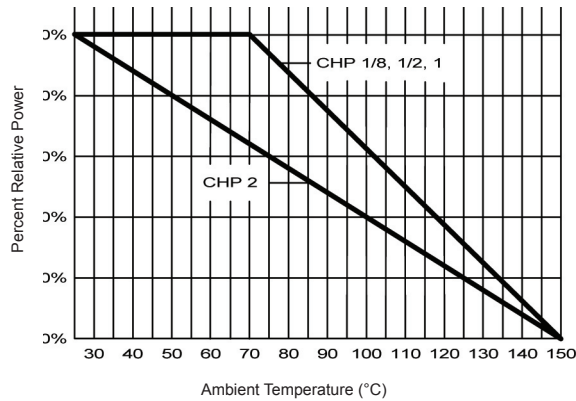
**WIREWOUND AND FILM TECHNOLOGIES DIVISION**

736 Greenway Road • Boone, North Carolina 28607-1860 • Tel: 828-264-8861 • Fax: 828-264-8866 • www.irctt.com

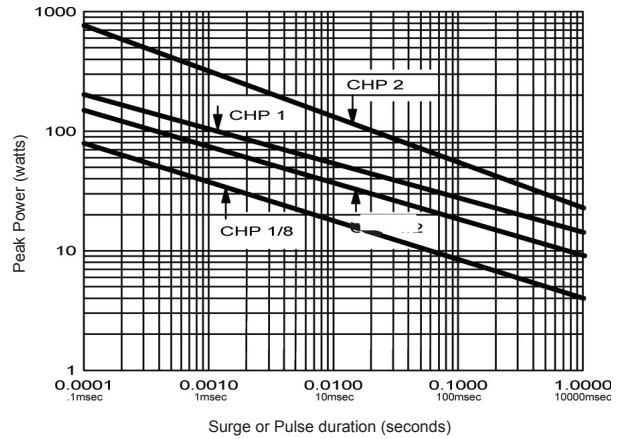


A subsidiary of  
TT electronics plc

### CHP POWER DERATING CURVE:



### CHP REPETITIVE SURGE CURVE:



Note: Use for repetitive pulses where the average power dissipation is not to exceed the component rating at 70°C. Surge handling capacity for low-repetitive surges may be significantly greater than shown above. Contact factory for recommendations.

### HOW TO ORDER:

Sample Part No.

**CHP 1 100 2203 F 13 LF**

**IRC Type** \_\_\_\_\_

(CHP 1/8, CHP 1/2, CHP 1, or CHP 2)

**Temperature Coefficient** \_\_\_\_\_

(50 or 100)

**Resistance Value** \_\_\_\_\_

(100 ohms and greater - First 3 significant figures plus 4th digit multiplier)

Example: 100 ohms = 1000, 1000 ohms = 1001, 150,000 ohms = 1503

(Less than 100 ohms - "R" is used to designate decimal)

Example: 51 ohms = 51R0, 1 ohm = 1R00, 0.25 ohm = R250

**Tolerance** \_\_\_\_\_

(C = 0.25%, D = 0.5%, F = 1.0%, G = 2.0%, J = 5.0%)

**Packaging Code\*** \_\_\_\_\_

(BLK = Bulk, 7=7" Reel, 13=13" Reel)

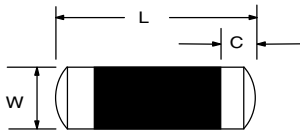






\*See page 8 for packaging details

**Lead Free Construction** \_\_\_\_\_

\*For packaging information, see Appendix "A".

**CHP FAMILY STANDARD SIZES, SOLDER PADS AND PACKAGING:**

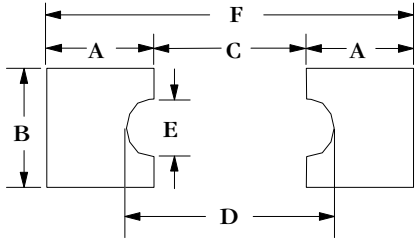
**DIMENSIONS** (Inches and (mm)):

Size Code	Industry Footprint	Actual Size			
			L	W	C
B	1206		0.128±0.007 (3.25±0.18)	0.057±0.006 (1.45±0.15)	0.020±0.010 (0.51±0.25)
C	1206		0.128±0.007 (3.25±0.18)	0.063±0.010 (1.60±0.25)	0.020±0.010 (0.51±0.25)
D	2010		0.200±0.010 (5.08±0.25)	0.079±0.006 (2.01±0.15)	0.030±0.010 (0.761±0.25)
E	2010		0.200±0.010 (5.08±0.25)	0.105±0.006 (2.67±0.15)	0.040±0.015 (1.02±0.38)
F	2512		0.251±0.010 (6.38±0.25)	0.079±0.006 (2.01±0.15)	0.040±0.010 (1.02±0.25)
H	3610		0.367±0.010 (9.32±0.25)	0.105±0.006 (2.67±0.15)	0.050±0.010 (1.27±0.25)

**RECOMMENDED SOLDER PAD DIMENSIONS (REFLOW):**

To ensure excellent solderability performance, IRC recommends the following pad design. This design will provide a large repeatable solder fillet to the CHP resistor on reflow processes and will provide maximum heat transfer to the PC board in high power applications. By placing the CHP on the solder paste while the paste is in the "tacky" state, the CHP will be held in position until solder reflow begins. The pad design then uses the surface tension of the molten solder to pull the component to the center of the solder pad. The placement of a via rising above the board level directly beneath the CHP is not recommended.

Size Code	Industry Footprint	Dimensions (Inches and (mm))					
		A	B	C	D	E	F
B&C	1206	0.076 (1.93)	0.093 (2.36)	0.058 (1.47)	0.098 (2.49)	0.032 (0.81)	0.211 (5.36)
D	2010	0.111 (2.82)	0.126 (3.20)	0.096 (2.44)	0.152 (3.86)	0.040 (1.02)	0.318 (8.08)
E	2010	0.170 (4.32)	0.160 (4.06)	0.072 (1.83)	0.132 (3.35)	0.044 (1.12)	0.412 (10.46)
F	2512	0.121 (3.07)	0.126 (3.20)	0.127 (3.23)	0.183 (4.65)	0.040 (1.02)	0.369 (9.37)
H	3610	0.170 (4.32)	0.160 (4.06)	0.213 (5.41)	0.273 (6.93)	0.044 (1.12)	0.553 (14.05)



**STANDARD REEL PACKAGING PER EIA-481:**

Size Code	Industry Footprint	Reel Diameter*	Quantity Per Reel	Carrier Tape Width	Component Pitch
B&C	1206	7"	2,500 max.	8mm	4mm
		13"	10,000 max.		
D	2010	7"	1,500 max.	12mm	4mm
		13"	5,000 max.		
E	2010	7"	1,500 max.	12mm	4mm
		13"	5,000 max.		
F	2512	13"	5,000 max.	12mm	4mm
H	3610	7"	1,500 max.	24mm	4mm

\* The 13" reel is considered standard and will be supplied unless otherwise specified.