

High Power Thick Film Chip Resistors

Performance Specification

Temperature Coefficient	HP02 :	1Ω ~ 10Ω	± 400PPM/°C
		10.1Ω ~100 Ω	± 200PPM/°C
		>100Ω	± 100PPM/°C
		HP03~ HP12, SP12 : 1Ω ~ 10Ω	≤± 200PPM/°C
		10.1Ω ~ 10MΩ	≤±100PPM/°C
Short Time Overload	±5%: ±(2.0% + 0.1Ω)Max		
		±1%: ±(1.0% + 0.1Ω)Max	
Terminal Bending	±(1.0% + 0.05Ω)Max		
Soldering Heat	±(1.0% + 0.05Ω)Max		
Solderability	Min. 95% coverage.		
Humidity (Steady State)	±5%: ±(3.0% + 0.1Ω)Max		
		±1%: ±(0.5% + 0.1Ω)Max	
Load Life in Humidity	±5%: ±(3.0% + 0.1Ω)Max		
		±1%: ±(1.0% + 0.1Ω)Max	
Load Life	±5%: ±(3.0% + 0.1Ω)Max		
		±1%: ±(1.0% + 0.1Ω)Max	
Temperature Cycling	±5%: ±(1.0% + 0.05Ω)Max		
		±1%: ±(0.5% + 0.05Ω)Max	
Insulation Resistance	Min. 1,000 Mega Ohm		
Dielectric Withstanding Voltage	No evidence of flashover, mechanical damage, arcing or insulation breakdown.		

Ordering Procedure: Ex.: HP05, 1/3W, +/-5%, 1Ω T/R-5000

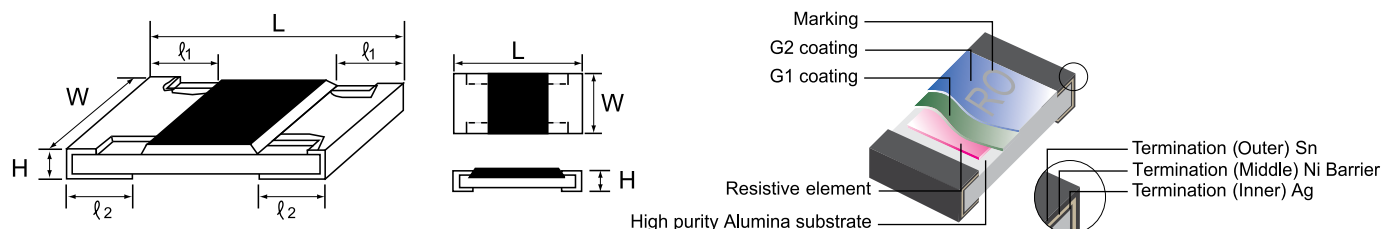
H	P	0	5	W	3	J	0	1	0	J	T	5	E		
Resistor Size: HP02 = 0402 HP03 = 0603 HP05 = 0805 HP06 = 1206 HP07 = 1210 HP10 = 2010 HP12 = 2512 SP12 = 2512				Wattage: WA = 1/10W W5 = 1/5W W3 = 1/3W W2 = 1/2W 34 = 3/4W 1W = 1W WJ = 1.5W 2W = 2W 3W = 3W		Resistance Value: - E-24 series: 1st digit is "0" 2nd & 3rd digits are significant figures of the resistance 4th indicates the number of zeros - E-96 series: 1st to 3rd digits are significant figures of the resistance 4th digit indicates the number of zeros. "J" ~ 0.1, "K" ~ 0.01, "L" ~ 0.001 Ex. 012J ~ 1Ω2, 226K ~ 2Ω26				Packing Type: T = Tape/Reel		Packing Qty: 4 = 4,000 pcs. 5 = 5,000 pcs. C = 10,000 pcs. E = 15,000 pcs.		Special Feature: E = Lead (Pb) Free Plating Type RoHS compliant	

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Features

- High power in standard size
- Suitable for both wave and reflow soldering
- Application: AV adapters, LCD back light, Camera strobe

Dimension



Type	Power Rating at 70°C	Max Working Voltage	Max Overload Voltage	Dielectric Withstanding Voltage	Tol %	Resistance Range	Dimension (mm)				
							L	W	H	l ₁	l ₂
HP02 (0402)	1/10W	50V	100V	100V	±1% ±5%	1Ω ~ 10MΩ 1Ω ~ 10MΩ	1.00 ± 0.10	0.50 ± 0.05	0.35 ± 0.05	0.20 ± 0.10	0.25 ± 0.10
HP03 (0603)	1/5W	50V	100V	300V	±1% ±5%	1Ω ~ 10MΩ 1Ω ~ 10MΩ	1.60 ± 0.10	0.80 ^{+0.15} -0.10	0.45 ± 0.10	0.30 ± 0.20	0.30 ± 0.20
HP05 (0805)	1/3W	150V	300V	500V	±1% ±5%	1Ω ~ 10MΩ 1Ω ~ 10MΩ	2.00 ± 0.15	1.25 ^{+0.15} -0.10	0.55 ± 0.10	0.40 ± 0.20	0.40 ± 0.20
HP06 (1206)	1/2W	200V	400V	500V	±1% ±5%	1Ω ~ 10MΩ 1Ω ~ 10MΩ	3.10 ± 0.15	1.55 ^{+0.15} -0.10	0.55 ± 0.10	0.45 ± 0.20	0.45 ± 0.20
HP07 (1210)	3/4W	200V	500V	500V	±1% ±5%	1Ω ~ 10MΩ 1Ω ~ 10MΩ	3.10 ± 0.10	2.60 ^{+0.15} -0.10	0.55 ± 0.10	0.50 ± 0.20	0.50 ± 0.20
HP10 (2010)	1W	200V	500V	500V	±1% ±5%	1Ω ~ 10MΩ 1Ω ~ 10MΩ	5.00 ± 0.10	2.50 ± 0.15	0.55 ± 0.10	0.60 ± 0.25	0.50 ± 0.20
HP12 (2512)	2W	250V	500V	500V	±1% ±5%	1Ω ~ 10MΩ 1Ω ~ 10MΩ	6.35 ± 0.10	3.20 ± 0.15	0.55 ± 0.10	0.60 ± 0.25	0.50 ± 0.20

Note:

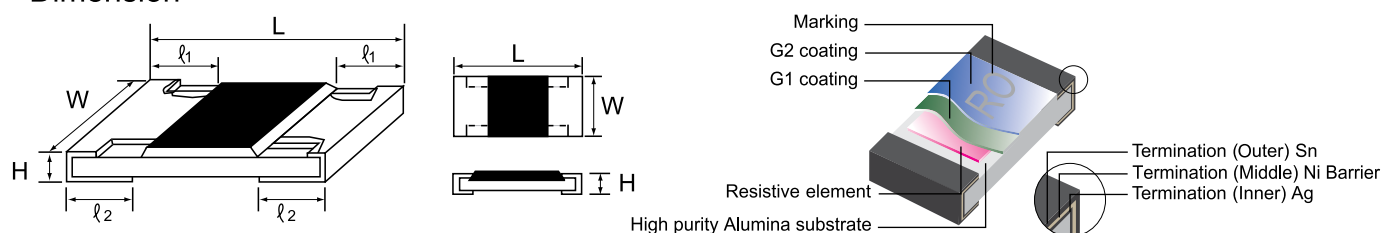
- 1.) Standard Operating Temp (°C): -55 ~ +155 2.) Standard : E-96 series : 1% & E-24 series : 5%
- 2.) HP12 1Ω ~ 10MΩ Low TCR available case by case on basis.
- 3.) HP low resistance range : 0.1Ω ~ 1Ω available,
TCR for HP03, HP05 at +/-200ppm°C, HP06 ~ HP12 at +/-100ppm°C,
Electrical performance same as above.

Extra High Power Thick Film Chip Resistors

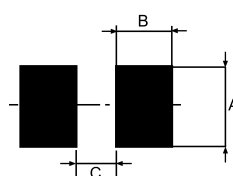
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Recommended solder pad



Size	A Width (mm)	B Pad (mm)	C Spacing (mm)
HP12 SP12	3.70	2.80	2.70

4 layers PCB specification:

- 1) Outside 2 layers (Top and Bottom) with copper foil thickness at 2oz.
- 2) Inside 2 layers (Middle layers) with copper foil thickness at 4 oz.

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							L	W	H	l ₁	l ₂
SP12 (2512)	3W	250V	500V	500V	±1% ±5%	1Ω ~ 10MΩ 1Ω ~ 10MΩ	6.35 ± 0.10	3.20 ± 0.15	1.10 ± 0.10	0.60 ± 0.25	1.80 ± 0.20