

# Thick Film Chip Resistors

## Performance Specification

Temperature Coefficient	1Ω ~ 10Ω      ±400PPM/°C 11Ω ~ 100Ω    ±200PPM/°C >100Ω        ±100PPM/°C    (0201: >100Ω ≤ ±200PPM/°C)
Short Time Overload	±5%: ±(2.0% + 0.1Ω)Max ±1%: ±(1.0% + 0.1Ω)Max
Insulation Resistance	Min. 1,000 Mega Ohm
Dielectric Withstanding Voltage	No evidence of flashover, mechanical damage, arcing or insulation breakdown.
Terminal Bending	±(1.0% + 0.05Ω) Max
Soldering Heat	Resistance change rate is ±(1.0% + 0.05Ω)Max
Solderability	Min. 95% coverage.
Temperature Cycling	±5% : ±(1.0% + 0.05Ω)Max ±1% : ±(0.5% + 0.05Ω)Max
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

## Ordering Procedure: Ex.: 1206, 1/4W-S, +/-5%, 10Ω T/R-5000

1	2	0	6	S	4	J	0	1	0	0	T	5	E
<b>Resistor Size:</b> 0201, 0402, 0603, 0805, 1206, 1210, 2010, 2512 <b>Wide Terminals:</b> 0508, 0612, 1020, 1218, 1225							<b>Resistance Value:</b> <ul style="list-style-type: none"> <li>E-24 series: 1<sup>st</sup> digit is "0" 2<sup>nd</sup> &amp; 3<sup>rd</sup> digits are significant figures of the resistance 4<sup>th</sup> indicates the number of zeros</li> <li>E-96 series: 1<sup>st</sup> to 3<sup>rd</sup> digits are significant figures of the resistance 4<sup>th</sup> digit indicates the number of zeros. "J" ~ 0.1, "K" ~ 0.01, "L" ~ 0.001 <b>Ex.</b> 012J ~ 1Ω2, 226K ~ 2Ω26</li> <li>Jumper : use "0" for 1<sup>st</sup> to 4<sup>th</sup> digits</li> </ul>						
<b>Wattage:</b> Normal size: WH=1/32W, WM=1/20W, WG=1/16W, WA=1/10W, W8=1/8W, W4=1/4W, W2=1/2W, 1W=1W Small size: SA=1/10W-S, S8=1/8W-S, S4=1/4W-S, S3=1/3W-S, 07=3/4W-S Extra small size: U2=1/2W-SS (1210) Applicable for Wide Terminal only: WJ=1.5W													
				<b>Tolerance:</b> 0 = Jumper D = ±0.5% F = ±1% G = ±2% J = ±5%							<b>Packing Type:</b> T = Tape/Reel		
							<b>Packing Qty:</b> 1 = 1,000 pcs.    2 = 2,000 pcs.    3 = 3,000 pcs. 4 = 4,000 pcs.    5 = 5,000 pcs. A = 500 pcs.      B = 2,500 pcs.    C = 10,000 pcs. D = 20,000 pcs.    E = 15,000 pcs.						
<b>Note :</b> 1.) Special resistance value, tolerance, T.C.R. requirement is available on a case-to-case basis. 2.) Zero ohm chip tolerance 5% use "J" 3.) Standard reel size = 7" 4.) 4", 10", & 13" reels are available upon request							<b>Special Feature:</b> E = Lead (Pb) Free Plating Type/ RoHS compliant						

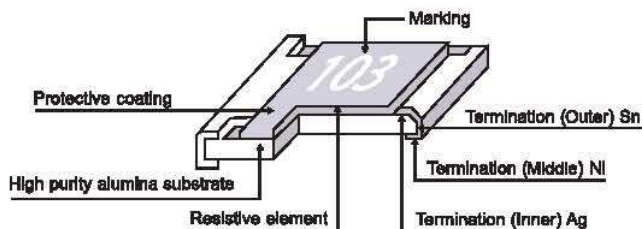
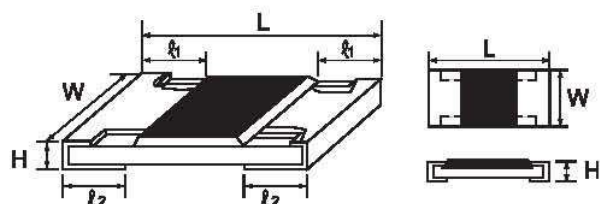
## Thick Film Chip Resistors

### Features

- Small size and light weight
- Suitable for both flow and reflow soldering
- Reduction of assembly costs



### Dimension



Type	Power Rating at 70°C	Max Working Voltage	Max Overload Voltage	Dielectric Withstanding Voltage	Tolerance %	Resistance Range	Dimension (mm)				
							L	W	H	l <sub>1</sub>	l <sub>2</sub>
0201 (0603)	1/20W	0.5A	1A	-	Jumper	<50mΩ	0.60±0.03	0.30±0.03	0.23±0.03	0.10±0.05	0.15±0.05
		25V	50V	-	±1% ±2% ±5%	10Ω ~ 1MΩ 10Ω ~ 1MΩ 1Ω ~ 1MΩ					
0402 (1005)	1/16W	1A	2A		Jumper	<50mΩ	1.00±0.10	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10
		50V	100V	100V	±1% ±2% ±5%	10Ω ~ 1MΩ 1Ω ~ 10MΩ 1Ω ~ 10MΩ					
0603 (1608)	1/10W-S 1/16W	1A	2A		Jumper	<50mΩ	1.60±0.10	0.80 <sup>+0.15</sup> -0.10	0.45±0.10	0.30±0.20	0.30±0.20
		50V	100V	300V	±1% ±2% ±5%	10Ω ~ 1MΩ 1Ω ~ 10MΩ 1Ω ~ 10MΩ					
(0805) (2012)	1/8W-S 1/10W	2A	5A		Jumper	<50mΩ	2.00±0.15	1.25 <sup>+0.15</sup> -0.10	0.55±0.10	0.40±0.20	0.40±0.20
		150V	300V	500V	±1% ±2% ±5%	10Ω ~ 1MΩ 1Ω ~ 10MΩ 1Ω ~ 10MΩ					
1206 (3216)	1/4W-S 1/8W	2A	10A		Jumper	<50mΩ	3.10±0.15	1.55 <sup>+0.15</sup> -0.10	0.55±0.10	0.45±0.20	0.45±0.20
		200V	400V	500V	±1% ±2% ±5%	10Ω ~ 1MΩ 1Ω ~ 10MΩ 1Ω ~ 10MΩ					
1210 (3225)	1/2W-SS 1/3W-S 1/4W	2A	10A		Jumper	<50mΩ	3.10±0.10	2.60±0.15	0.55±0.10	0.50±0.25	0.50±0.20
		200V	400V	500V	±1% ±2% ±5%	10Ω ~ 1MΩ 1Ω ~ 10MΩ 1Ω ~ 10MΩ					
2010 (5025)	3/4W-S 1/2W	2A	10A		Jumper	<50mΩ	5.00±0.10	2.50±0.15	0.55±0.10	0.60±0.25	0.50±0.20
		200V	400V	500V	±1% ±2% ±5%	10Ω ~ 1MΩ 1Ω ~ 10MΩ 1Ω ~ 10MΩ					
2512 (6432)	1W	2A	10A		Jumper	<50mΩ	6.35±0.10	3.20±0.15	0.55±0.10	0.60±0.25	0.50±0.20
		200V	400V	500V	±1% ±2% ±5%	10Ω ~ 1MΩ 1Ω ~ 10MΩ 1Ω ~ 10MΩ					

#### Note:

- 1.) Metric information inside parenthesis.
- 2.) Standard Operating Temp (°C): -55 ~ +155
- 3.) Standard: E96 series: 1%  
E24 series: 2%, 5%, 10%

### Derating Curve

