

# Thick Film Chip Resistors

## Performance Specification

Temperature Coefficient	0.1Ω ~ 0.99Ω    ±800PPM/°C 1Ω ~ 10Ω        ±400PPM/°C 11Ω ~ 100Ω     ±200PPM/°C >100Ω           ±100PPM/°C    (0201: >100 Ω ≤ ±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	±(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**

**Resistor Size:**  
0201, 0402, 0603, 0805, 1206, 1210, 1812, 2010, 2512  
**Wide Terminals:**  
0508, 0612, 1020, 1218, 1225

**Wattage:**  
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, U2=1/2W-SS  
Applicable for Wide Terminal only: WJ=1.5W, 2W, 3W

**Tolerance:**  
D = ±0.5%  
F = ±1%  
G = ±2%  
J = ±5%

**Resistance Value:**

- E-24 series:  
1<sup>st</sup> digit is "0"  
2<sup>nd</sup> & 3<sup>rd</sup> digits are significant figures of the resistance  
4<sup>th</sup> indicates the number of zeros
- 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  
Ex. 012J ~ 1Ω2, 226K ~ 2Ω26
- Jumper : use "0" for 1<sup>st</sup> to 4<sup>th</sup> digits

**Packing Type:**  
T = Tape/Reel

**Packing Qty:**  
1 = 1,000 pcs.    2 = 2,000 pcs.  
4 = 4,000 pcs.    5 = 5,000 pcs.  
A = 500 pcs.      C = 10,000 pcs.  
D = 20,000 pcs.    E = 15,000 pcs.

**Note :**

- 1.) Special resistance value, tolerance, T.C.R. requirement is available on a case-to-case basis.
- 2.) Standard reel size = 7"
- 3.) 4", 10", & 13" reels are available upon request

**Special Feature:**  
E = Lead (Pb) Free Plating Type/  
RoHS compliant



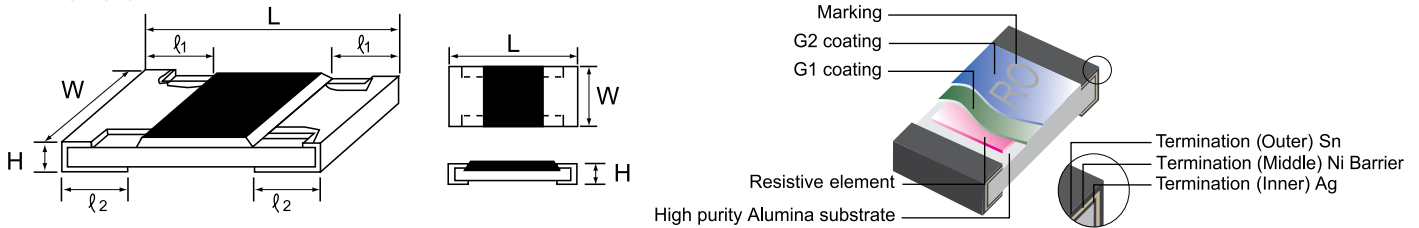
## Thick Film Chip Resistors



### Features

- Small size and light weight
- Suitable for both wave 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> <sub>-0.10</sub>	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> <sub>-0.10</sub>	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> <sub>-0.10</sub>	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					
1812	1/2W 3/4W-S	2A	10A	-	Jumper	<50mΩ	4.50±0.20	3.20±0.20	0.55±0.20	0.50±0.20	0.050±0.20
		200V	500V	500V	±1% ±5%	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	2.5A	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: E-96 series: 0.5%, 1%  
E-24 series: 2%, 5%
- 4.) Low resistance range (0.1Ω ~ 0.99Ω) is also available for 0402, 0603, 0805, 1206, 1210, 2010 and 2512

### Derating Curve

