## Thick Film Chip Resistors

#### Performance Specification

Temperature Coefficient  $1\Omega \sim 10\Omega$ ±400PPM/°C  $11\Omega \sim 100\Omega$ ±200PPM/°C

> ±100PPM/°C  $(0201: >100 \Omega \le \pm 200 PPM/^{\circ}C)$ >100Ω

Short Time Overload  $\pm 5\%$ :  $\pm (2.0\% + 0.1\Omega)$ Max

 $\pm 1\%$ :  $\pm (1.0\% + 0.1\Omega)$ Max

Insulation Resistance Min. 1,000 Mega Ohm

Dielectric Withstanding Voltage No evidence of flashover, mechanical damage, arcing or insulation

breakdown.

**Terminal Bending**  $\pm (1.0\% + 0.05\Omega)$  Max

Soldering Heat Resistance change rate is  $\pm (1.0\% + 0.05\Omega)$ Max

Solderability Min. 95% coverage.

Temperature Cycling  $\pm 5\%$ :  $\pm (1.0\% + 0.05\Omega)$ Max

 $\pm 1\%$ :  $\pm (0.5\% + 0.05\Omega)$ Max

Humidity (Steady State)  $\pm 5\%$ :  $\pm (3.0\% + 0.1\Omega)$ Max

 $\pm 1\%$ :  $\pm (0.5\% + 0.1\Omega)$ Max

Load Life in Humidity  $\pm 5\%$ :  $\pm (3.0\% + 0.1\Omega)$ Max

 $\pm 1\%$ :  $\pm (1.0\% + 0.1\Omega)$ Max

Load Life  $\pm 5\%$ :  $\pm (3.0\% + 0.1\Omega)$ Max  $\pm 1\%$ :  $\pm (1.0\% + 0.1\Omega)$ Max

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

#### 1 2 0 6 S 4 J 0 1 0 0 Т 5 E

Resistor Size:

0201, 0402, 0603, 0805, 1206,

1210, 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

Extra small size: U2=1/2W-SS (1210) Applicable for Wide Terminal only: WJ=1.5W

Tolerance:

 $G = \pm 2\%$  $J = \pm 5\%$ 

0 = Jumper  $D = \pm 0.5\%$  $F = \pm 1\%$ 

Resistance Value:

E-24 series:

1st digit is "0"

2<sup>nd</sup> & 3<sup>rd</sup> 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

"J" ~ 0.1, "K" ~ 0.01, "L" ~ 0.001 **Ex.**  $012J \sim 1\Omega 2$ ,  $226K \sim 2\Omega 26$ 

Jumper: use "0" for 1st to 4th

digits

Packing Type: T = Tape/Reel

Packing Qty:

2 = 2,000 pcs. 3 = 3,000 pcs.1 = 1,000 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.

#### Note:

- 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

#### Special Feature:

E = Lead (Pb) Free Plating Type/ RoHS compliant



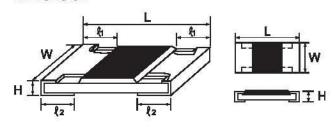


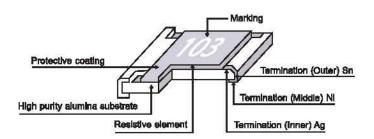
# Thick Film Chip Resistors

## Features

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

### **Dimension**





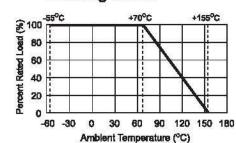
Туре	Power Rating at 70°C	Max Working Voltage	Max Overload Voltage	Dielectric Withstanding Voltage	Tolerance %	Resistance Range	Dimension (mm)				
							L	W	Н	l1	l2
0201 (0603)	1/20W	0.5A	1A	20	Jumper	<50mΩ	0.60±0.03	0.30±0.03	0.23±0.03	0.10±0.05	0.15±0.05
		25V	50V	=:	±1% ±2% ±5%	$10\Omega \sim 1 M\Omega$ $10\Omega \sim 1 M\Omega$ $1\Omega \sim 1 M\Omega$					
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 - 1ΜΩ 1Ω - 10ΜΩ 1Ω - 10ΜΩ					
(0805) (2012)	1/8W-S 1/10W	2A	5A		Jumper	<50mΩ	2.00±0.15	1.25 <sup>+0.15</sup> -0.10	0.5 <del>5±</del> 0.10	0.40±0.20	0.40±0.20
		150V	300V	500V	±1% ±2% ±5%	10Ω – 1ΜΩ 1Ω – 10ΜΩ 1Ω – 10ΜΩ					
1206 (3216)	1/4W-S 1/8W	2A	10A		Jumper	<50mΩ	3.10±0.15	1.55 <sup>+0.15</sup> -0.10	0.5 <del>5±</del> 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	0.5 <del>51</del> 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**





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1GMF1R20C ERJ-1GMF2R55C ERJ-1GMF8R66C 25121WF1003T4E 25121WF100JT4E 25121WF220JT4E 25121WF470KT4E

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