**EN:** This Datasheet/Document is presented by the manufacturer.

Please visit our website for pricing and availability at www.hestore.hu.

# 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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

**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
- Jumper : use "0" for 1st to 4th digits

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

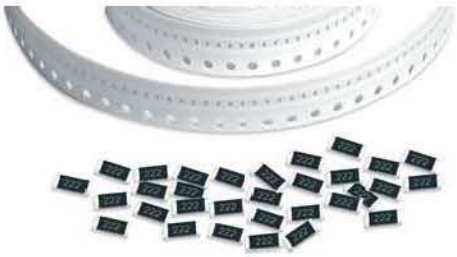
**Packing Qty:**
1 = 1,000 pcs. 2 = 2,000 pcs. 3 = 3,000 pcs.
4 = 4,000 pcs. 5 = 5,000 pcs.
A = 500 pcs. B = 2,500 pcs. C = 10,000 pcs.
D = 20,000 pcs. E = 15,000 pcs.

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

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

RoHS Compliant

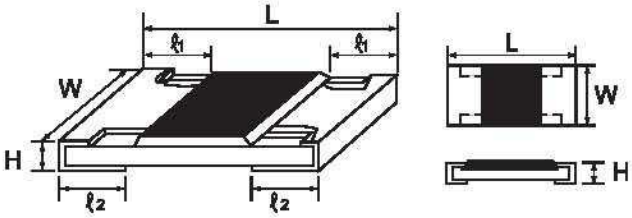
# Thick Film Chip Resistors

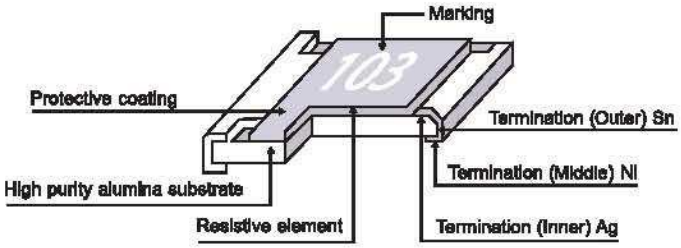


## Features

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

## Dimension



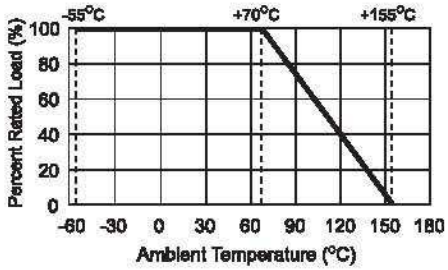




| Type | Power Rating at 70°C | Max Working Voltage | Max Overload Voltage | Dielectric Withstanding Voltage | Tolerance % | Resistance Range | Dimension (mm) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | L | W | H | $\ell_1$ | $\ell_2$ |
| 0201 (0603) | 1/20W | 0.5A | 1A | - | 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%<br>±2%<br>±5% | 10Ω ~ 1MΩ<br>10Ω ~ 1MΩ<br>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%<br>±2%<br>±5% | 10Ω ~ 1MΩ<br>1Ω ~ 10MΩ<br>1Ω ~ 10MΩ | | | | | |
| 0603 (1608) | 1/10W-S 1/16W | 1A | 2A | | Jumper | <50mΩ | 1.60±0.10 | $0.80^{+0.15}_{-0.10}$ | 0.45±0.10 | 0.30±0.20 | 0.30±0.20 |
| | | 50V | 100V | 300V | ±1%<br>±2%<br>±5% | 10Ω ~ 1MΩ<br>1Ω ~ 10MΩ<br>1Ω ~ 10MΩ | | | | | |
| (0805) (2012) | 1/8W-S 1/10W | 2A | 5A | | Jumper | <50mΩ | 2.00±0.15 | $1.25^{+0.15}_{-0.10}$ | 0.55±0.10 | 0.40±0.20 | 0.40±0.20 |
| | | 150V | 300V | 500V | ±1%<br>±2%<br>±5% | 10Ω ~ 1MΩ<br>1Ω ~ 10MΩ<br>1Ω ~ 10MΩ | | | | | |
| 1206 (3216) | 1/4W-S 1/8W | 2A | 10A | | Jumper | <50mΩ | 3.10±0.15 | $1.55^{+0.15}_{-0.10}$ | 0.55±0.10 | 0.45±0.20 | 0.45±0.20 |
| | | 200V | 400V | 500V | ±1%<br>±2%<br>±5% | 10Ω ~ 1MΩ<br>1Ω ~ 10MΩ<br>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%<br>±2%<br>±5% | 10Ω ~ 1MΩ<br>1Ω ~ 10MΩ<br>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%<br>±2%<br>±5% | 10Ω ~ 1MΩ<br>1Ω ~ 10MΩ<br>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%<br>±2%<br>±5% | 10Ω ~ 1MΩ<br>1Ω ~ 10MΩ<br>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




RoHS Compliant