

Thick Film Chip Resistors

Type: **ERJ XG, 1G, 2G, 3G, 6G, 8G, 14, 12, 12Z, 1T**



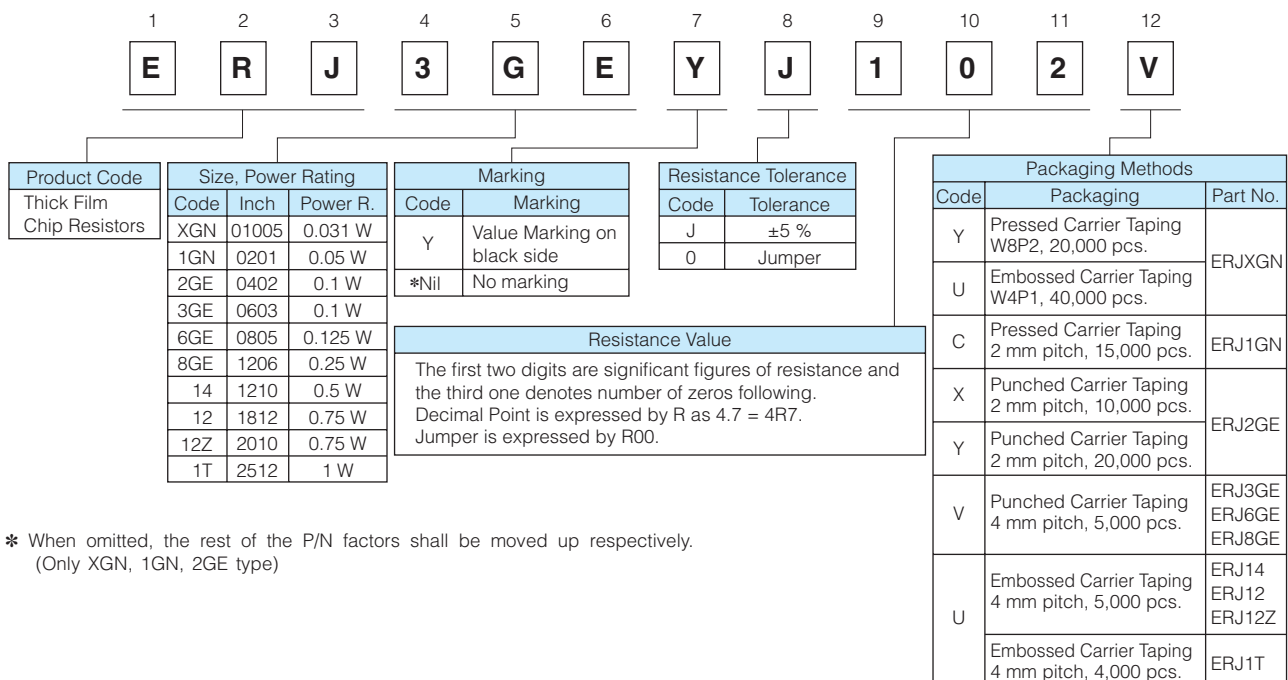
Features

- Small size and lightweight
- High reliability
Metal glaze thick film resistive element and three layers of electrodes
- Compatible with placement machines
Taping packaging available
- Suitable for both reflow and flow soldering
- Reference Standards
IEC 60115-8, JIS C 5201-8, EIAJ RC-2134B
- AEC-Q200 qualified (Exemption ERJXG)
- RoHS compliant

As for Packaging Methods, Land Pattern, Soldering Conditions and Safety Precautions,
Please see Data Files

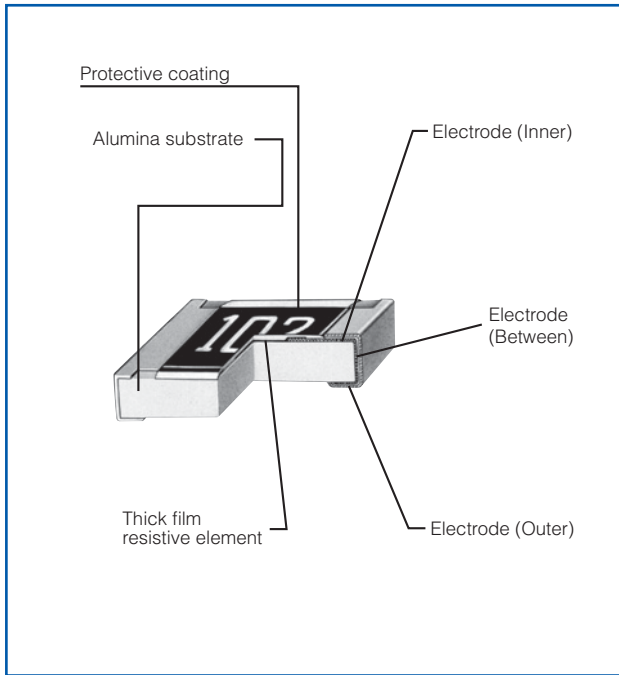
Explanation of Part Numbers

- ERJXGN, 1GN, 2GE, 3GE, 6GE, 8GE, 14, 12, 12Z, 1T Type, $\pm 5\%$



* When omitted, the rest of the P/N factors shall be moved up respectively.
(Only XGN, 1GN, 2GE type)

Construction



Dimensions in mm (not to scale)



| Part No. (inch size) | Dimensions (mm) | | | | | Mass (Weight) (g/1000 pcs.) |
|-------------------------|-----------------------------|-----------------------------|-----------------------|-----------------------|-----------------------|--------------------------------|
| | L | W | a | b | t | |
| ERJXG (01005) | 0.40 ^{±0.02} | 0.20 ^{±0.02} | 0.10 ^{±0.03} | 0.10 ^{±0.03} | 0.13 ^{±0.02} | 0.04 |
| ERJ1G (0201) | 0.60 ^{±0.03} | 0.30 ^{±0.03} | 0.10 ^{±0.05} | 0.15 ^{±0.05} | 0.23 ^{±0.03} | 0.15 |
| ERJ2G (0402) | 1.00 ^{±0.05} | 0.50 ^{±0.05} | 0.20 ^{±0.10} | 0.25 ^{±0.05} | 0.35 ^{±0.05} | 0.8 |
| ERJ3G (0603) | 1.60 ^{±0.15} | 0.80 ^{+0.15/-0.05} | 0.30 ^{±0.20} | 0.30 ^{±0.15} | 0.45 ^{±0.10} | 2 |
| ERJ6G (0805) | 2.00 ^{±0.20} | 1.25 ^{±0.10} | 0.40 ^{±0.20} | 0.40 ^{±0.20} | 0.60 ^{±0.10} | 4 |
| ERJ8G (1206) | 3.20 ^{+0.05/-0.20} | 1.60 ^{+0.05/-0.15} | 0.50 ^{±0.20} | 0.50 ^{±0.20} | 0.60 ^{±0.10} | 10 |
| ERJ14 (1210) | 3.20 ^{±0.20} | 2.50 ^{±0.20} | 0.50 ^{±0.20} | 0.50 ^{±0.20} | 0.60 ^{±0.10} | 16 |
| ERJ12 (1812) | 4.50 ^{±0.20} | 3.20 ^{±0.20} | 0.50 ^{±0.20} | 0.50 ^{±0.20} | 0.60 ^{±0.10} | 27 |
| ERJ12Z (2010) | 5.00 ^{±0.20} | 2.50 ^{±0.20} | 0.60 ^{±0.20} | 0.60 ^{±0.20} | 0.60 ^{±0.10} | 27 |
| ERJ1T (2512) | 6.40 ^{±0.20} | 3.20 ^{±0.20} | 0.65 ^{±0.20} | 0.60 ^{±0.20} | 0.60 ^{±0.10} | 45 |

Ratings

[For Resistor]

| Part No. (inch size) | Power Rating at 70 °C (W) | Limiting Element Voltage ⁽¹⁾ (V) | Maximum Overload Voltage ⁽²⁾ (V) | Resistance Tolerance (%) | Resistance Range (Ω) | T.C.R. (×10 ⁻⁶ /°C) | Category Temperature Range (°C) |
|-------------------------|---------------------------------|---|---|--------------------------------|----------------------------|---|---------------------------------------|
| ERJXG (01005) | 0.031 | 15 | 30 | ±5 | 4.7 to 1 M (E24) | <10 Ω: -100 to +600 10 Ω to 100 Ω: ±300 100 Ω <: ±200 | -55 to +125 |
| ERJ1G (0201) | 0.05 | 25 | 50 | ±5 | 1 to 10 M (E24) | <10 Ω: -100 to +600 | -55 to +125 |
| ERJ2G (0402) | 0.1 | 50 | 100 | ±5 | 1 to 10 M (E24) | | -55 to +155 |
| ERJ3G (0603) | 0.1 | 75 | 150 | ±5 | 1 to 10 M (E24) | 10 Ω to 1 M Ω: ±200 | -55 to +155 |
| ERJ6G (0805) | 0.125 | 150 | 200 | ±5 | 1 to 10 M (E24) | | -55 to +155 |
| ERJ8G (1206) | 0.25 | 200 | 400 | ±5 | 1 to 10 M (E24) | | -55 to +155 |
| ERJ14 (1210) | 0.5 | 200 | 400 | ±5 | 1 to 10 M (E24) | 1 M Ω <: -400 to +150 | -55 to +155 |
| ERJ12 (1812) | 0.75 | 200 | 500 | ±5 | 1 to 10 M (E24) | | -55 to +155 |
| ERJ12Z (2010) | 0.75 | 200 | 500 | ±5 | 1 to 10 M (E24) | -400 to +150 | -55 to +155 |
| ERJ1T (2512) | 1 | 200 | 500 | ±5 | 1 to 1 M (E24) | | -55 to +155 |

(1) Rated Continuous Working Voltage (RCWV) shall be determined from $RCWV = \sqrt{\text{Power Rating} \times \text{Resistance Values}}$, or Limiting Element Voltage listed above, whichever less.

(2) Overload (Short-time Overload) Test Voltage (SOTV) shall be determined from $SOTV = 2.5$ (Only ERJ2G=2.0) × RCWV or max. Overload Voltage listed above whichever less.

[For Jumper]

| Part No. (inch size) | Rated Current (A) | Maximum Overload Current (A) |
|-------------------------|----------------------|---------------------------------|
| ERJXG (01005) | 0.5 | 1 |
| ERJ1G (0201) | | |
| ERJ2G (0402) | | |
| ERJ3G (0603) | 1 | 2 |
| ERJ6G (0805) | | |
| ERJ8G (1206) | | |
| ERJ14 (1210) | | |
| ERJ12 (1812) | | |
| ERJ12Z (2010) | | |
| ERJ1T (2512) | 2 | 4 |

Power Derating Curve

For resistors operated in ambient temperatures above 70 °C, power rating shall be derated in accordance with the figure below.

