

### Thick Film Chip Resistors 01005, 0201, 0402, 0603, 0805, 1206, 1210, 1812, 2010, 2512

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

■ Packaging Methods Please see Pages 40 to 43

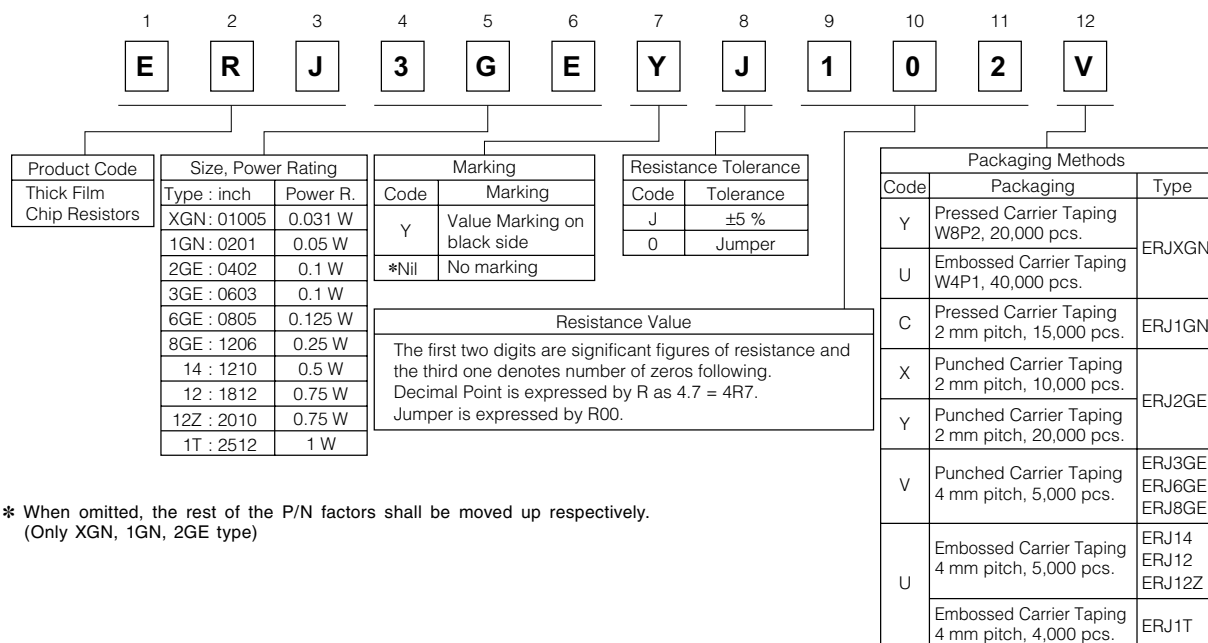
■ Recommended Land Pattern Please see Pages 44 to 45

■ Recommended Soldering Conditions Please see Page 46

■ Safety Precautions Please see Page 47

#### ■ Explanation of Part Numbers

- ERJXGN, 1GN, 2GE, 3GE, 6GE, 8GE, 14, 12, 12Z, 1T Series, ±5 % type



\* 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)



| Type<br>(inch size) | Dimensions (mm)                        |  |                       |                       |                       | Mass (Weight)<br>(g/1000 pcs.) |
|---------------------|--|--|-----------------------|-----------------------|-----------------------|--------------------------------|
|                     | L                                      | W                                      | a                     | b                     | t                     |                                |
| ERJXG<br>(01005)    | 0.40 <sup>+0.02</sup>                  | 0.20 <sup>+0.02</sup>                  | 0.10 <sup>+0.03</sup> | 0.10 <sup>+0.03</sup> | 0.13 <sup>+0.02</sup> | 0.04                           |
| ERJ1G<br>(0201)     | 0.60 <sup>+0.03</sup>                  | 0.30 <sup>+0.03</sup>                  | 0.10 <sup>+0.05</sup> | 0.15 <sup>+0.05</sup> | 0.23 <sup>+0.03</sup> | 0.15                           |
| ERJ2G<br>(0402)     | 1.00 <sup>+0.05</sup>                  | 0.50 <sup>+0.05</sup>                  | 0.20 <sup>+0.10</sup> | 0.25 <sup>+0.05</sup> | 0.35 <sup>+0.05</sup> | 0.8                            |
| ERJ3G<br>(0603)     | 1.60 <sup>+0.15</sup>                  | 0.80 <sup>+0.15</sup> <sub>-0.05</sub> | 0.30 <sup>+0.20</sup> | 0.30 <sup>+0.15</sup> | 0.45 <sup>+0.10</sup> | 2                              |
| ERJ6G<br>(0805)     | 2.00 <sup>+0.20</sup>                  | 1.25 <sup>+0.10</sup>                  | 0.40 <sup>+0.20</sup> | 0.40 <sup>+0.20</sup> | 0.60 <sup>+0.10</sup> | 4                              |
| ERJ8G<br>(1206)     | 3.20 <sup>+0.05</sup> <sub>-0.20</sub> | 1.60 <sup>+0.05</sup> <sub>-0.15</sub> | 0.50 <sup>+0.20</sup> | 0.50 <sup>+0.20</sup> | 0.60 <sup>+0.10</sup> | 10                             |
| ERJ14<br>(1210)     | 3.20 <sup>+0.20</sup>                  | 2.50 <sup>+0.20</sup>                  | 0.50 <sup>+0.20</sup> | 0.50 <sup>+0.20</sup> | 0.60 <sup>+0.10</sup> | 16                             |
| ERJ12<br>(1812)     | 4.50 <sup>+0.20</sup>                  | 3.20 <sup>+0.20</sup>                  | 0.50 <sup>+0.20</sup> | 0.50 <sup>+0.20</sup> | 0.60 <sup>+0.10</sup> | 27                             |
| ERJ12Z<br>(2010)    | 5.00 <sup>+0.20</sup>                  | 2.50 <sup>+0.20</sup>                  | 0.60 <sup>+0.20</sup> | 0.60 <sup>+0.20</sup> | 0.60 <sup>+0.10</sup> | 27                             |
| ERJ1T<br>(2512)     | 6.40 <sup>+0.20</sup>                  | 3.20 <sup>+0.20</sup>                  | 0.65 <sup>+0.20</sup> | 0.60 <sup>+0.20</sup> | 0.60 <sup>+0.10</sup> | 45                             |

### Ratings

<For Resistor>

| Type<br>(inch size) | Power Rating<br>at 70 °C<br>(W) | Limiting Element<br>Voltage <sup>(1)</sup><br>(V) | Maximum Overload<br>Voltage <sup>(2)</sup><br>(V) | Resistance<br>Tolerance<br>(%) | Resistance<br>Range<br>(Ω) | T.C.R.<br>(×10 <sup>-6</sup> /°C)                          | Category<br>Temperature Range<br>(°C) |
|---------------------|---------------------------------|---|---|--------------------------------|----------------------------|--|---------------------------------------|
| ERJXG<br>(01005)    | 0.031                           | 15  | 30  | ±5                             | 4.7 to 1 M (E24)           | <10 Ω: -100 to +600<br>10 Ω to 100 Ω: ±300<br>100 Ω<: ±200 | -55 to +125                           |
| ERJ1G<br>(0201)     | 0.05                            | 25  | 50  | ±5                             | 1 to 10 M (E24)            | <10 Ω:<br>-100 to +600                                     | -55 to +125                           |
| ERJ2G<br>(0402)     | 0.1                             | 50  | 100   | ±5                             | 1 to 10 M (E24)            |  | -55 to +155                           |
| ERJ3G<br>(0603)     | 0.1                             | 75  | 150   | ±5                             | 1 to 10 M (E24)            |  | -55 to +155                           |
| ERJ6G<br>(0805)     | 0.125                           | 150   | 200   | ±5                             | 1 to 10 M (E24)            |  | -55 to +155                           |
| ERJ8G<br>(1206)     | 0.25                            | 200   | 400   | ±5                             | 1 to 10 M (E24)            |  | -55 to +155                           |
| ERJ14<br>(1210)     | 0.5                             | 200   | 400   | ±5                             | 1 to 10 M (E24)            | 10 Ω to 1 MΩ:<br>±200                                      | -55 to +155                           |
| ERJ12<br>(1812)     | 0.75                            | 200   | 500   | ±5                             | 1 to 10 M (E24)            |  | -55 to +155                           |
| ERJ12Z<br>(2010)    | 0.75                            | 200   | 500   | ±5                             | 1 to 10 M (E24)            | 1 MΩ<:<br>-400 to +150                                     | -55 to +155                           |
| ERJ1T<br>(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  $SOTV = 2.5 \times \text{Power Rating}$  or max. Overload Voltage listed above whichever less.

<For Jumper>

| Type<br>(inch size) | Rated Current<br>(A) | Maximum Overload Current<br>(A) |
|---------------------|----------------------|---------------------------------|
| ERJXG (01005)       | 0.5                  | 1                               |
| ERJ1G (0201)        |                      |                                 |
| ERJ2G (0402)        |                      |                                 |
| ERJ3G (0603)        | 1                    | 2                               |
| ERJ6G (0805)        |                      |                                 |
| ERJ8G (1206)        |                      |                                 |
| ERJ14 (1210)        |                      |                                 |
| ERJ12 (1812)        |                      |                                 |
| ERJ12Z (2010)       | 2                    | 4                               |
| ERJ1T (2512)        |                      |                                 |

### Power Derating Curve

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



Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use. Should a safety concern arise regarding this product, please be sure to contact us immediately.