

**Metal Film (Thin Film) Chip Resistors,  
High Reliability Type  
0402, 0603, 0805, 1206**

Type: **ERA 2A, 3A, 6A, 8A**

■ **Features**

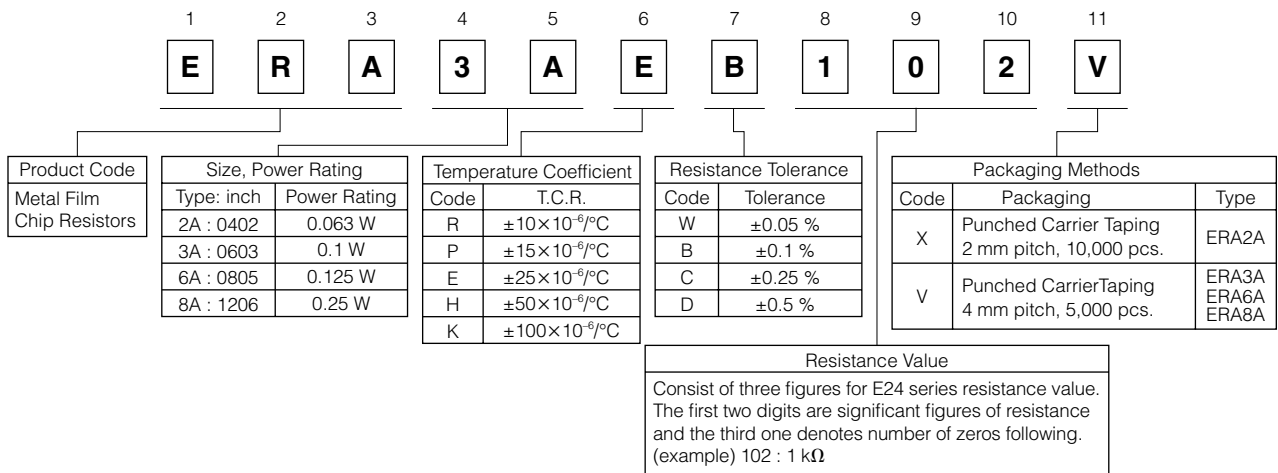
- High reliability .....Stable at high temperature and humidity  
(85 °C 85 %RH rated load, Category temperature range : -55 to +155 °C)
- High accuracy.....Small resistance tolerance and Temperature Coefficient of Resistance
- High performance.....Low current noise, excellent linearity
- Reference Standard.....IEC 60115-8, JIS C 5201-8, EIAJ RC-2133B
- RoHS compliant

■ **Packaging Methods, Land Pattern, Soldering Conditions and Safety Precautions**

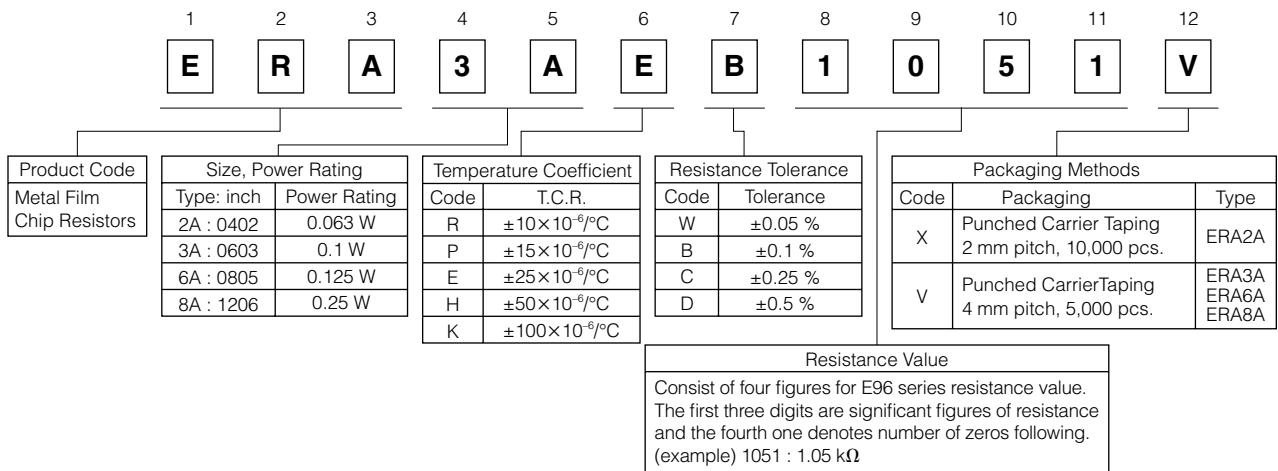
Please see Data Files

■ **Explanation of Part Numbers**

- E24 Series

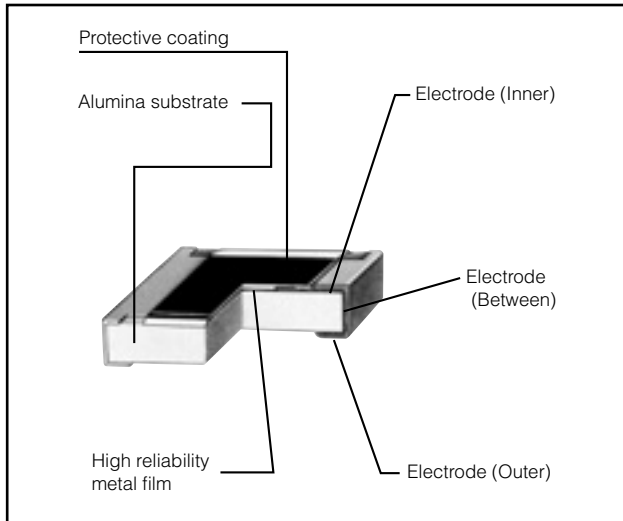


- E96 Series and other Resistance values

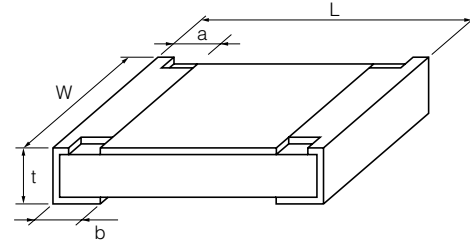


note : Duplicated resistance values as E24 series part numbers shall follow E24 part numbers. (apply three digit resistance value)

### Construction



### Dimensions in mm (not to scale)



| Type<br>(inch size) | Dimensions (mm)       |                                        |                       |                       |                       | Mass (Weight)<br>[g/1000pcs.] |
|---------------------|-----------------------|----------------------------------------|-----------------------|-----------------------|-----------------------|-------------------------------|
|                     | L                     | W                                      | a                     | b                     | t                     |                               |
| ERA2A<br>(0402)     | 1.00 <sup>+0.10</sup> | 0.50 <sup>+0.10</sup> <sub>-0.05</sub> | 0.15 <sup>+0.10</sup> | 0.25 <sup>+0.10</sup> | 0.35 <sup>+0.05</sup> | 0.6                           |
| ERA3A<br>(0603)     | 1.60 <sup>+0.20</sup> | 0.80 <sup>+0.20</sup>                  | 0.30 <sup>+0.20</sup> | 0.30 <sup>+0.20</sup> | 0.45 <sup>+0.10</sup> | 2                             |
| ERA6A<br>(0805)     | 2.00 <sup>+0.20</sup> | 1.25 <sup>+0.10</sup>                  | 0.40 <sup>+0.25</sup> | 0.40 <sup>+0.25</sup> | 0.50 <sup>+0.10</sup> | 4                             |
| ERA8A<br>(1206)     | 3.20 <sup>+0.20</sup> | 1.60 <sup>+0.05</sup> <sub>-0.15</sub> | 0.50 <sup>+0.25</sup> | 0.50 <sup>+0.25</sup> | 0.60 <sup>+0.10</sup> | 8                             |

### Ratings

| Type<br>(inch size) | Power Rating<br>at 85 °C<br>(W) | Limiting<br>Element<br>Voltage <sup>(1)</sup><br>(V) | Maximum<br>Overload<br>Voltage <sup>(2)</sup><br>(V) | Type<br>(detail) | Resistance<br>Tolerance<br>(%) | T.C.R.<br>(×10 <sup>-6</sup> /°C) | Resistance<br>Range <sup>(3)(4)</sup><br>(Ω) | Category<br>Temperature<br>Range<br>(°C) |
|---------------------|---------------------------------|------------------------------------------------------|------------------------------------------------------|------------------|--------------------------------|-----------------------------------|----------------------------------------------|------------------------------------------|
| ERA2A<br>(0402)     | 0.063                           | 25                                                   | 50                                                   | ERA2AKD          | ±0.5                           | ±100                              | 10 to 46.4 (E24, E96)                        | -55 to +155                              |
|                     |                                 |                                                      |                                                      | ERA2AED          | ±0.5                           | ±25                               | 47 to 100 k (E24, E96)                       |                                          |
|                     |                                 |                                                      |                                                      | ERA2AEB          | ±0.1                           | ±15                               | 200 to 47 k (E24, E96)                       |                                          |
|                     |                                 |                                                      |                                                      | ERA2APB          | ±0.1                           | ±10                               | 200 to 47 k (E24, E96)                       |                                          |
|                     |                                 |                                                      |                                                      | ERA2ARC          | ±0.25                          | ±10                               | 200 to 47 k (E24, E96)                       |                                          |
| ERA2ARB             | ±0.1                            | ±10                                                  | 200 to 47 k (E24, E96)                               |                  |                                |                                   |                                              |                                          |
| ERA3A<br>(0603)     | 0.1                             | 75                                                   | 150                                                  | ERA3AHD          | ±0.5                           | ±50                               | 10 to 46.4 (E24, E96)                        |                                          |
|                     |                                 |                                                      |                                                      | ERA3AED          | ±0.5                           | ±25                               | 47 to 330 k (E24, E96)                       |                                          |
|                     |                                 |                                                      |                                                      | ERA3AEB          | ±0.1                           | ±15                               | 470 to 100 k (E24, E96)                      |                                          |
|                     |                                 |                                                      |                                                      | ERA3APB          | ±0.1                           | ±10                               | 470 to 100 k (E24, E96)                      |                                          |
|                     |                                 |                                                      |                                                      | ERA3ARB          | ±0.1                           | ±10                               | 1 k to 100 k (E24, E96)                      |                                          |
| ERA3ARW             | ±0.05                           | ±10                                                  | 1 k to 100 k (E24, E96)                              |                  |                                |                                   |                                              |                                          |
| ERA6A<br>(0805)     | 0.125                           | 100                                                  | 200                                                  | ERA6AHD          | ±0.5                           | ±50                               | 10 to 46.4 (E24, E96)                        |                                          |
|                     |                                 |                                                      |                                                      | ERA6AED          | ±0.5                           | ±25                               | 47 to 1 M (E24, E96)                         |                                          |
|                     |                                 |                                                      |                                                      | ERA6AEB          | ±0.1                           | ±15                               | 470 to 100 k (E24, E96)                      |                                          |
|                     |                                 |                                                      |                                                      | ERA6APB          | ±0.1                           | ±10                               | 470 to 100 k (E24, E96)                      |                                          |
|                     |                                 |                                                      |                                                      | ERA6ARB          | ±0.1                           | ±10                               | 1 k to 100 k (E24, E96)                      |                                          |
| ERA6ARW             | ±0.05                           | ±10                                                  | 1 k to 100 k (E24, E96)                              |                  |                                |                                   |                                              |                                          |
| ERA8A<br>(1206)     | 0.25                            | 150                                                  | 300                                                  | ERA8AHD          | ±0.5                           | ±50                               | 10 to 46.4 (E24, E96)                        |                                          |
|                     |                                 |                                                      |                                                      | ERA8AED          | ±0.5                           | ±25                               | 47 to 1 M (E24, E96)                         |                                          |
|                     |                                 |                                                      |                                                      | ERA8AEB          | ±0.1                           | ±15                               | 470 to 100 k (E24, E96)                      |                                          |
|                     |                                 |                                                      |                                                      | ERA8APB          | ±0.1                           | ±10                               | 470 to 100 k (E24, E96)                      |                                          |
|                     |                                 |                                                      |                                                      | ERA8ARB          | ±0.1                           | ±10                               | 1 k to 100 k (E24, E96)                      |                                          |
| ERA8ARW             | ±0.05                           | ±10                                                  | 1 k to 100 k (E24, E96)                              |                  |                                |                                   |                                              |                                          |

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

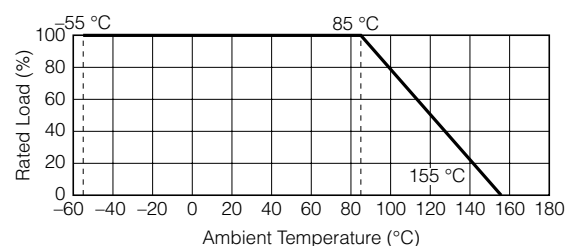
(2) Overload (Short-time Overload) Test Voltage (SOTV) shall be determined from  $SOTV = 2.5 \times \text{Power Rating}$  or max. Overload Voltage listed above whichever less.

(3) E192 series resistance values are also available. Please contact us for details.

(4) Duplicated resistance values between E96, E192 and E24 series shall follow E24 Part Numbers. (apply three digit resistance value)

### Power Derating Curve

For resistors operated in ambient temperatures above 85 °C, power rating shall be derated in accordance with the figure on the right.



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