

### Metal Film Chip Resistors, Rectangular Type 0603, 0805

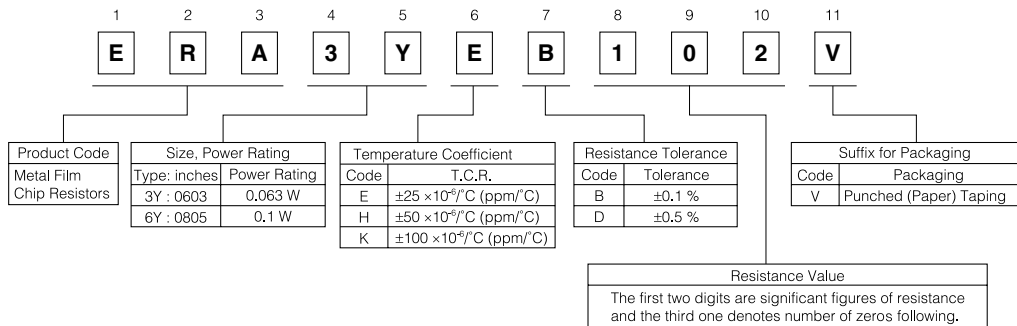
Type: **ERA 3Y, 6Y**



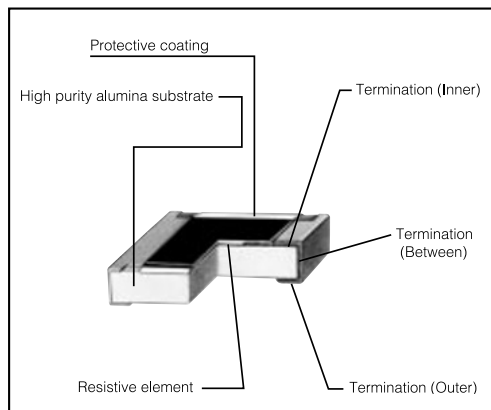
#### ■ Features

- Small size and lightweight  
PWB size reduction and lightweight products
- High reliability  
Low T.C.R. & current noise, excellent non-linearity.
- Solderability  
Suitable for both reflow soldering and flow soldering
- Approved under the ISO 9001 system
- Reference Standards  
IEC 60115-8, JIS C 5201-8, EIAJ RC-2133A

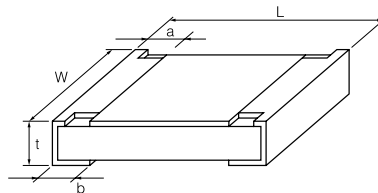
#### ■ Explanation of Part Numbers



#### ■ Construction



#### ■ Dimensions in mm (not to scale)



| Type<br>(inches) | Dimensions (mm) |                 |                 |                 |                 | Net Weight<br>(1000 pcs.) |
|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------------------|
|                  | L               | W               | a               | b               | t               |                           |
| ERA3Y<br>(0603)  | 1.60 $\pm$ 0.20 | 0.80 $\pm$ 0.20 | 0.30 $\pm$ 0.20 | 0.30 $\pm$ 0.20 | 0.45 $\pm$ 0.10 | 2 g                       |
| ERA6Y<br>(0805)  | 2.00 $\pm$ 0.20 | 1.25 $\pm$ 0.10 | 0.40 $\pm$ 0.25 | 0.40 $\pm$ 0.25 | 0.50 $\pm$ 0.10 | 4 g                       |

### ■ Ratings

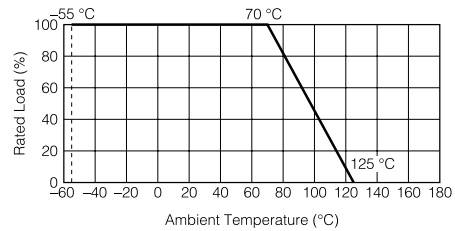
| Type<br>(inches) | Power Rating<br>at 70 °C<br>(W) | Limiting Element<br>Voltage (Maximum<br>RCWV) <sup>(1)</sup> (V) | Maximum Overload<br>Voltage <sup>(2)</sup><br>(V) | Resistance<br>Tolerance (%) | Resistance Range (Ω) |       | T.C.R.<br>×10 <sup>-6</sup> /°C<br>(ppm/°C) | Standard<br>Resistance Values |
|------------------|---------------------------------|------------------------------------------------------------------|---------------------------------------------------|-----------------------------|----------------------|-------|---------------------------------------------|-------------------------------|
|                  |                                 |                                                                  |                                                   |                             | min.                 | max.  |                                             |                               |
| ERA3Y<br>(0603)  | 0.063                           | 75                                                               | 150                                               | ±0.5                        | 10                   | 91    | ±50                                         | E24                           |
|                  |                                 |                                                                  |                                                   |                             | 100                  | 33 K  | ±25                                         |                               |
|                  |                                 |                                                                  |                                                   |                             | 36 K                 | 330 K | ±100                                        |                               |
|                  |                                 |                                                                  |                                                   | ±0.1                        | 100                  | 33 K  | ±25                                         |                               |
| ERA6Y<br>(0805)  | 0.1                             | 100                                                              | 200                                               | ±0.5                        | 10                   | 91    | ±50                                         | E24                           |
|                  |                                 |                                                                  |                                                   |                             | 100                  | 100 K | ±25                                         |                               |
|                  |                                 |                                                                  |                                                   |                             | 110 K                | 1 M   | ±100                                        |                               |
|                  |                                 |                                                                  |                                                   | ±0.1                        | 100                  | 100 K | ±25                                         |                               |

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

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

### Power Derating Curve

For resistors operated in ambient temperatures above 70 °C, power rating must be derated in accordance with the curve on the right.

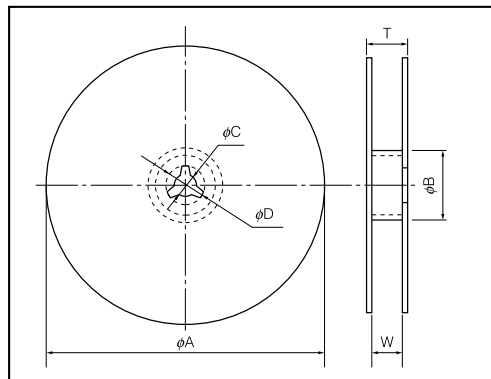


### ■ Packaging Methods

#### ● Standard Quantity

| Type<br>(inches) | Thickness (mm) | Punched (Paper) Taping |
|------------------|----------------|------------------------|
| ERA3Y<br>(0603)  | 0.45           | 5000 pcs./reel         |
| ERA6Y<br>(0805)  | 0.5            | 5000 pcs./reel         |

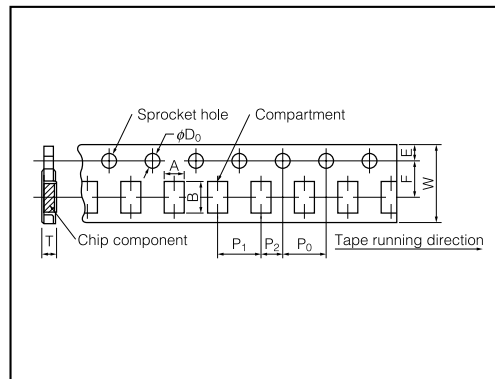
#### ● Taping Reel



| Dimensions<br>(mm) | Type | φA                                    | φB      | φC                   |
|--------------------|------|---------------------------------------|---------|----------------------|
|                    | 3Y   | 180.0 <sup>+0.0</sup> <sub>-3.0</sub> | 60 min. | 13.0 <sup>+1.0</sup> |
|                    | 6Y   |                                       |         |                      |

| Dimensions<br>(mm) | Type | W                   | T                    |
|--------------------|------|---------------------|----------------------|
|                    | 3Y   | 9.0 <sup>+1.0</sup> | 11.4 <sup>+2.0</sup> |
|                    | 6Y   |                     |                      |

#### ● Punched (Paper) Taping

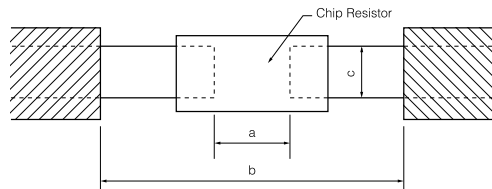


| Dimensions<br>(mm) | Type | A                     | B                     | W                     | F                     | E                     |
|--------------------|------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                    | 3Y   | 1.10 <sup>+0.10</sup> | 1.90 <sup>+0.10</sup> | 8.00 <sup>+0.20</sup> | 3.50 <sup>+0.05</sup> | 1.75 <sup>+0.10</sup> |
|                    | 6Y   | 1.65 <sup>+0.15</sup> | 2.50 <sup>+0.20</sup> |                       |                       |                       |

| Dimensions<br>(mm) | Type | P1                    | P2                    | P0                    | φD0                   | T                     |
|--------------------|------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                    | 3Y   | 4.00 <sup>+0.10</sup> | 2.00 <sup>+0.05</sup> | 4.00 <sup>+0.10</sup> | 1.50 <sup>+0.10</sup> | 0.64 <sup>+0.05</sup> |
|                    | 6Y   |                       |                       |                       |                       | 0.84 <sup>+0.05</sup> |

### ⚠ Safety Precautions

In the case of flow soldering, the land width must be smaller than the Chip Resistor width to properly control the solder amount properly. Generally, the land width should be 0.7 to 0.8 times the width of chip resistor (W). In the case of reflow soldering, solder amount can be adjusted, therefore the land width should be set to 1.0 to 1.3 times chip resistor width (W).



| Type<br>(inches)              | Dimensions (mm) |            |            |
|-------------------------------|-----------------|------------|------------|
|                               | a               | b          | c          |
| <b>ERA3Y</b><br><b>(0603)</b> | 0.7 to 0.9      | 2 to 2.2   | 0.8 to 1   |
| <b>ERA6Y</b><br><b>(0805)</b> | 1 to 1.4        | 3.2 to 3.8 | 0.9 to 1.4 |

#### 1. Rated Power and Ambient Temperature

Keep the rated power and ambient temperature within the specified derating curve.

- \* Place and fit resistors and other heating components on board, taking into consideration the temperature rise due to these components' proximity to each other.

#### 2. External Shock

Mechanical shock during automatic mounting or handling of board after chip being mounted may cause break, flaw or fall-off of paint film of resistor that may impair initial characteristics.

Avoid nipping of resistor with hard tool (a pair of pliers or tweezers) as it may damage protective film or electrode of resistor and may affect resistor's performance.

#### 3. Application of Pulse

When pulse is applied to a resistor, the peak value of the pulse should be within rated value.

#### 4. The resistor is neither non-combustible nor flame-retardant.

#### 5. When soldering with soldering iron, never touch the body of the chip resistor with a tip of the soldering iron. When using a soldering iron with a tip at high temperature, solder for as short a time as possible (three seconds or less up to 350°C).

#### 6. Avoid immersion of chip resistor in solvent for a long time. Use solvent after the effect of immersion is confirmed.

#### 7. Do not use the product in dewy atmospheres.