

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

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

■ Features

- High reliabilityStable at high temperature and humidity
(85 °C 85 %RH rated load, Category temperature range : -55 to +155 °C)
- High accuracySmall resistance tolerance and Temperature Coefficient of Resistance
- High performanceLow current noise, excellent linearity
- Reference StandardIEC 60115-8, JIS C 5201-8, EIAJ RC-2133B
- RoHS compliant

■ 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

- E24 Series



- E96 Series



Construction



Dimensions in mm (not to scale)



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

Ratings

| Type (inch size) | Power Rating at 85 °C (W) | Limiting Element Voltage ⁽¹⁾ (V) | Maximum Overload Voltage ⁽²⁾ (V) | Type (detail) | Resistance Tolerance (%) | T.C.R. (×10 ⁻⁶ /°C) | Resistance Range ⁽³⁾ (Ω) | Category Temperature Range (°C) |
|---------------------|---------------------------------|---|--|------------------|--------------------------------|-----------------------------------|---|--|
| ERA2A (0402) | 0.063 | 25 | 50 | ERA2AKD | ±0.5 | ±100 | 10 to 46.4 (E24, E96) | -55 to +155 |
| | | | | ERA2AED | ±0.5 | | ±25 | |
| | | | | ERA2AEB | ±0.1 | | | |
| ERA3A (0603) | 0.1 | 75 | 150 | ERA3AHD | ±0.5 | ±50 | 10 to 46.4 (E24, E96) | |
| | | | | ERA3AED | ±0.5 | | ±25 | |
| | | | | ERA3AEB | ±0.1 | ±15 | 470 to 100 k (E24, E96) | |
| | | | | ERA3APB | ±0.1 | | 1 k to 100 k (E24, E96) | |
| | | | | ERA3ARB | ±0.1 | ±10 | 1 k to 100 k (E24, E96) | |
| | | | | ERA3ARW | ±0.05 | | 1 k to 100 k (E24, E96) | |
| ERA6A (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 | | 1 k to 100 k (E24, E96) | |
| | | | | ERA6ARB | ±0.1 | ±10 | 1 k to 100 k (E24, E96) | |
| | | | | ERA6ARW | ±0.05 | | 1 k to 100 k (E24, E96) | |
| ERA8A (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 | | 1 k to 100 k (E24, E96) | |
| | | | | ERA8ARB | ±0.1 | ±10 | 1 k to 100 k (E24, E96) | |
| | | | | ERA8ARW | ±0.05 | | 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.

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.

