Metal Film (Thin Film) Chip Resistors, High Reliability Type

Type: ERA 1A, 2A, 3A, 6A, 8A

Features

- High reliability ........................ Stabilized at high temperature and humidity (85 °C 85 %RH rated load, Category temperature range: −55 °C 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
- AEC-Q200 qualified
- RoHS compliant

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

Explanation of Part Numbers

- E24 Series

<table>
<thead>
<tr>
<th>Code</th>
<th>0201</th>
<th>0402</th>
<th>0603</th>
<th>0805</th>
<th>1206</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size, Power Rating</td>
<td>0.05 W</td>
<td>0.063 W</td>
<td>0.1 W</td>
<td>0.125 W</td>
<td>0.25 W</td>
</tr>
</tbody>
</table>

- E96 Series and other Resistance Values

<table>
<thead>
<tr>
<th>Code</th>
<th>0301</th>
<th>0402</th>
<th>0603</th>
<th>0805</th>
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</tr>
</tbody>
</table>

Resistance Value

Consist of four figures for E96 series resistance value. The first two digits are significant figures of resistance and the third one denotes number of zeros following.
(example) 1051 : 1.05kΩ

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

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Feb. 2016
### Construction

- **Protective coating**
- **Alumina substrate**
- **Electrode (Inner)**
- **Electrode (Between)**
- **High reliability metal film**
- **Electrode (Outer)**

### Dimensions in mm (not to scale)

<table>
<thead>
<tr>
<th>Part No. (inch size)</th>
<th>Dimensions (mm)</th>
<th>Mass (Weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>W</td>
</tr>
<tr>
<td>ERA1A (0201)</td>
<td>0.60±0.03</td>
<td>0.30±0.03</td>
</tr>
<tr>
<td>ERA2A (0402)</td>
<td>1.00±0.10</td>
<td>0.50±0.10</td>
</tr>
<tr>
<td>ERA3A (0603)</td>
<td>1.60±0.20</td>
<td>0.80±0.20</td>
</tr>
<tr>
<td>ERA6A (0805)</td>
<td>2.00±0.20</td>
<td>1.25±0.20</td>
</tr>
<tr>
<td>ERA8A (1206)</td>
<td>2.20±0.20</td>
<td>1.60±0.20</td>
</tr>
</tbody>
</table>

### Ratings

<table>
<thead>
<tr>
<th>Part No. (inch size)</th>
<th>Power Rating at 55 °C (W)</th>
<th>Limiting Element Voltage (^{(1)}) (V)</th>
<th>Maximum Overload Voltage (^{(2)}) (V)</th>
<th>Part No. (detail)</th>
<th>Resistance Tolerance (%)</th>
<th>T.C.R. ((\times 10^{-6}/°C))</th>
<th>Resistance Range (^{(3)}) (Ω)</th>
<th>Category Temperature Range (^{(4)}) (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERA1A (0201)</td>
<td>0.05</td>
<td>25</td>
<td>50</td>
<td>ERA1AE ±0.1</td>
<td>±25</td>
<td>100 to 10k (E24, E96)</td>
<td>-55 to +155</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ERA1AC ±0.25</td>
<td>±10</td>
<td>100 to 10k (E24, E96)</td>
<td></td>
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</tr>
<tr>
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<td></td>
<td></td>
<td>ERA1AR ±0.1</td>
<td>±10</td>
<td>100 to 10k (E24, E96)</td>
<td></td>
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</tr>
<tr>
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<td></td>
<td>ERA1ARW ±0.05</td>
<td>±10</td>
<td>100 to 10k (E24, E96)</td>
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</tr>
<tr>
<td>ERA2A (0402)</td>
<td>0.063</td>
<td>50</td>
<td>100</td>
<td>ERA2AKD ±0.5</td>
<td>±100</td>
<td>10 to 46.4 (E24, E96)</td>
<td>-55 to +155</td>
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</tr>
<tr>
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<td>ERA2AED ±0.5</td>
<td>±25</td>
<td>47 to 100k (E24, E96)</td>
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<td></td>
<td>ERA2AEC ±0.25</td>
<td>±25</td>
<td>47 to 100k (E24, E96)</td>
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<tr>
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<td></td>
<td></td>
<td>ERA2ARB ±0.1</td>
<td>±25</td>
<td>100 to 47k (E24, E96)</td>
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</tr>
<tr>
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<td>ERA2ARC ±0.25</td>
<td>±10</td>
<td>200 to 47k (E24, E96)</td>
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<tr>
<td>ERA3A (0603)</td>
<td>0.1</td>
<td>75</td>
<td>150</td>
<td>ERA3AH ±0.5</td>
<td>±50</td>
<td>10 to 46.4 (E24, E96)</td>
<td>-55 to +155</td>
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<tr>
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<td>ERA3AE ±0.5</td>
<td>±25</td>
<td>47 to 330k (E24, E96)</td>
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<td>ERA3AC ±0.25</td>
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<td>47 to 330k (E24, E96)</td>
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<td>ERA3ACB ±0.1</td>
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<td>47 to 330k (E24, E96)</td>
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<td>ERA3ARC ±0.25</td>
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<td>ERA3ARW ±0.05</td>
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<td>200 to 47k (E24, E96)</td>
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<tr>
<td>ERA6A (0805)</td>
<td>0.125</td>
<td>100</td>
<td>200</td>
<td>ERA6AH ±0.5</td>
<td>±50</td>
<td>10 to 46.4 (E24, E96)</td>
<td>-55 to +155</td>
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<td>ERA6AE ±0.5</td>
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<td>47 to 1M (E24, E96)</td>
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<td>ERA6AC ±0.25</td>
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<tr>
<td>ERA8A (1206)</td>
<td>0.25</td>
<td>150</td>
<td>300</td>
<td>ERA8AH ±0.5</td>
<td>±50</td>
<td>10 to 46.4 (E24, E96)</td>
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<td>ERA8AE ±0.5</td>
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**Notes:**
1. Rated Continuous Working Voltage (RCWV) shall be determined from RCWV = V × Resistance × Power, or Limiting Element Voltage listed above, whichever less.
2. Overload (Short-time Overload) Test Voltage (SOTV) shall be determined from SOTV = 2.5 × RCWV or max. Overload Voltage listed above whenever 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)

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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.
Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Panasonic:
- ERA-6AEB105V
- ERA-6AEB111V
- ERA-6AEB112X
- ERA-6AEB123X
- ERA-6AEB131X
- ERA-2AED101X
- ERA-2AED102X
- ERA-2AED103X
- ERA-2AED104X
- ERA-2AED111X
- ERA-2AED112X
- ERA-2AED113X
- ERA-2AED121X
- ERA-2AED122X
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- ERA-2AED131X
- ERA-2AED132X
- ERA-2AED133X
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- ERA-2AED820X
- ERA-2AED821X
- ERA-2AED822X
- ERA-2AED823X
- ERA-2AED910X
- ERA-2AED911X
- ERA-2AED912X
- ERA-2AED913X
- ERA-2AKD100X
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- ERA-2AKD150X
- ERA-2AKD160X
- ERA-2AKD180X
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- ERA-2AKD220X
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- ERA-2AKD270X
- ERA-2AKD300X
- ERA-2AKD330X
- ERA-2AKD360X
- ERA-2AKD390X
- ERA-2AKD430X
- ERA-2AKD430X
- ERA-3AEB111V