Plastic Film Capacitors
Metallized Polypropylene
Film Capacitor (For Automotive)
Series: ECQUA [Class X2]

In accordance with UL/CSA and European safety regulation class X2
Equipped with a safety mechanism

**Features**
- High safety (safety function installed)
- High humidity resistance (THB test: 85 °C, 85 %, 240 V.AC, 1000 h)
- High Thermal shock resistance (-40 ⇔ 85 °C, 1000 cycles)
- Flame-retardant plastic case and non-combustible resin
- AEC-Q200 compliant
- RoHS compliant

**Recommended applications**
- Interference suppressors for automotive

**Explanation of part number**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>10</th>
<th>11</th>
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<tbody>
<tr>
<td>E</td>
<td>C</td>
<td>Q</td>
<td>U</td>
<td>A</td>
<td>A</td>
<td>F</td>
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- **Product code**
- **Dielectric & construction**
- **Rated voltage**
- **Capacitance**
- **Suffix 1**
- **Suffix 2**
- **Code**
- **Cap. Tol.**
- **Lead form**

**Applicable standard**

*It is certified as type ECQUA in the following approval.*

<table>
<thead>
<tr>
<th>Approval</th>
<th>Class</th>
<th>Certification</th>
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<tbody>
<tr>
<td>UL</td>
<td>Class X2</td>
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<tr>
<td>CSA</td>
<td>Class X2</td>
<td>VDE</td>
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<td>Europe</td>
<td>Class X2</td>
<td></td>
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<tr>
<td>International</td>
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</table>

*When applying this capacitor to European and American safety standards, please use type designation and rating such as ECQUA, 0.1 μF.
*Approval number (File No.) of safety regulations are subject to revision without notice. Ask factory for a copy of the latest file No.

**Specifications**

- **Category temp. range**: -40 °C to +110 °C
- **Rated voltage**: 275 V.AC
- **Capacitance range**: 0.10 μF to 4.7 μF
- **Capacitance tolerance**: ±10 % (K), ±20 % (M)
- **Dissipation factor (tan δ)**
  - C ≤ 1.0 μF: tan δ ≤ 0.1 % (20 °C, 1 kHz)
  - C > 1.0 μF: tan δ ≤ 0.2 % (20 °C, 1 kHz)
- **Withstand voltage**
  - Between terminals: 633 V.AC, 1183 V.DC, 60 s
  - Between terminals to enclosure: 2050 V.AC, 60 s
- **Insulation resistance (IR)**
  - C ≤ 0.33 μF: IR ≥ 15,000 MΩ (20 °C, 100 V.DC, 60 s)
  - C > 0.33 μF: IR ≥ 5,000 MΩ ∙ μF (20 °C, 100 V.DC, 60 s)
  - C ≤ 0.47 μF: IR ≥ 2,000 MΩ (20 °C, 500 V.DC, 60 s)
- **Maximum AC voltage**
  - 310 V.AC

*Use of this capacitor is limited to AC voltage (50 Hz or 60 Hz sine wave).
*A faint corona discharge may occur inside of the capacitor element at rated voltage, however there is no influence on the reliability of the capacitor.
*Maximum AC voltage including line voltage fluctuation is 310 V.AC.
310 V.AC is not nominal continuous applied voltage, but only indicates maximum value including in the voltage of the power supply.
Basic nominal voltage is considered as 240 V.AC.
This maximum AC voltage is specified in only ECQUA type, not specified in other types.
Please refer to individual product specification, and contact us for further questions regarding design life.
### Plastic Film Capacitors

**Note:** Only ±10% as cap. tol. be marked as “K.”

Note: Date code.

*( ) : Suffix for lead crimped

#### Dimensions

![Diagram showing dimensions](image)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Cap. (µF)</th>
<th>Dimensions (mm)</th>
<th>Min. order qty</th>
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</thead>
<tbody>
<tr>
<td>ECQUAAF104T( )</td>
<td>0.10</td>
<td>L±0.5 T±0.5</td>
<td>1000</td>
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<tr>
<td>ECQUAAF104S( )</td>
<td>0.05</td>
<td>L±0.5 T±0.5</td>
<td>1000</td>
</tr>
<tr>
<td>ECQUAAF154T( )</td>
<td>0.15</td>
<td>L±0.5 T±0.5</td>
<td>800</td>
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<tr>
<td>ECQUAAF154S( )</td>
<td>0.15</td>
<td>L±0.5 T±0.5</td>
<td>800</td>
</tr>
<tr>
<td>ECQUAAF224T( )</td>
<td>0.22</td>
<td>L±0.5 T±0.5</td>
<td>600</td>
</tr>
<tr>
<td>ECQUAAF224S( )</td>
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<td>L±0.5 T±0.5</td>
<td>600</td>
</tr>
<tr>
<td>ECQUAAF334T( )</td>
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<td>L±0.5 T±0.5</td>
<td>500</td>
</tr>
<tr>
<td>ECQUAAF334S( )</td>
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<td>500</td>
</tr>
<tr>
<td>ECQUAAF474T( )</td>
<td>0.47</td>
<td>L±0.5 T±0.5</td>
<td>300</td>
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<tr>
<td>ECQUAAF474S( )</td>
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<td>300</td>
</tr>
<tr>
<td>ECQUAAF684T( )</td>
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<td>L±0.5 T±0.5</td>
<td>200</td>
</tr>
<tr>
<td>ECQUAAF684S( )</td>
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<td>L±0.5 T±0.5</td>
<td>200</td>
</tr>
<tr>
<td>ECQUAAF105T( )</td>
<td>1.0</td>
<td>L±0.5 T±0.5</td>
<td>150</td>
</tr>
<tr>
<td>ECQUAAF105S( )</td>
<td>1.0</td>
<td>L±0.5 T±0.5</td>
<td>150</td>
</tr>
<tr>
<td>ECQUAAF155T( )</td>
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<td>L±0.5 T±0.5</td>
<td>100</td>
</tr>
<tr>
<td>ECQUAAF155S( )</td>
<td>1.5</td>
<td>L±0.5 T±0.5</td>
<td>100</td>
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<tr>
<td>ECQUAAF225T( )</td>
<td>2.2</td>
<td>L±0.5 T±0.5</td>
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<tr>
<td>ECQUAAF225S( )</td>
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<td>75</td>
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<tr>
<td>ECQUAAF335T( )</td>
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<tr>
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</tbody>
</table>

*Unit: mm

#### Rating - Dimensions

- Solder-plated copper wire or Solder-plated copper-clad steel wire
- P(Lead location limits from center)

**Rating Example**

- ECQUA104 275V~ X2 K
- Note: Only ±10% as cap. tol. be marked as “K.”
- Note: Date code.

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.

27-Aug-18

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