Metallized Polypropylene Film Capacitor

Type: ECQUA [Class X2]

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

Features

- High humidity resistance (THB test: 85 °C/85 %/240 V AC/1000 h (C ≤ 1.0 μF))
- High safety (safety function installed)
- Compact
- Flame-retardant plastic case and non-combustible resin
- RoHS directive compliant

Recommended applications

- Interference suppressors

Explanation of part number

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>C</td>
<td>Q</td>
<td>U</td>
<td>A</td>
<td>F</td>
<td></td>
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</table>

Product code
Dielectric & construction
Rated voltage
Capacitance
Cap. Tol.
Suffix

K ±10 %
M ±20 %

Code
Lead Form
Blank
Straight
A
Cut lead

Applicable standard

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

<table>
<thead>
<tr>
<th>Approval</th>
<th>Class</th>
<th>Certification organization</th>
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<tbody>
<tr>
<td>UL</td>
<td>UL60384-14</td>
<td>Class X2</td>
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<td>CSA</td>
<td>CAN/CSA E60384-14</td>
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<td>Europe</td>
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<td>Class X2</td>
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<td>International</td>
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<td>Class X2</td>
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<tr>
<td>VDE</td>
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</tbody>
</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 temperature range: -40 °C to +110 °C
- Rated voltage: 275 VAC
- Rated capacitance: 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 VAC, 1183 VDC, 60 s
  - Between terminals to enclosure: 2050 VAC, 60 s
- Insulation resistance (IR):
  - C ≤ 0.33 μF: IR ≥ 15000 MΩ (20 °C, 100 VDC, 60 s)
  - C > 0.33 μF: IR ≥ 5000 MΩ · μF (20 °C, 100 VDC, 60 s)
  - C ≤ 0.47 μF: IR ≥ 2000 MΩ (20 °C, 500 VDC, 60 s)
- Maximum AC voltage:
  - 310 VAC

* 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. (Suitable for series to the mains usage – for more details, please contact your Panasonic contact person.)
* Maximum AC voltage including line voltage fluctuation is 310 VAC.
  310 VAC is not nominal continuous applied voltage, but only indicates maximum value including in the voltage ofthe power supply. Basic nominal voltage is considered as 240 VAC.
  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.

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.

03 Feb. 2018
Plastic Film Capacitors

**Dimensions**

![Dimensions Diagram]

**Rating • Dimensions • Quantity**

 Capacitance tolerance: \( \pm 10 \% \) (K), \( \pm 20 \% \) (M)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Cap. (( \mu )F)</th>
<th>Dimensions (mm)</th>
<th>Min. order Q’ty</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>L T H F ( \phi_d ) P Q</td>
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</tr>
<tr>
<td>ECQUAAF104□( )</td>
<td>0.10</td>
<td>0.6 0±0.8 1.3</td>
<td>1000 1000</td>
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<tr>
<td>ECQUAAF154□( )</td>
<td>0.15</td>
<td>0.6 0±0.8 1.3</td>
<td>800 800</td>
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<td>ECQUAAF224□( )</td>
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<td>0.6 0±0.8 1.3</td>
<td>600 600</td>
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<tr>
<td>ECQUAAF334□( )</td>
<td>0.33</td>
<td>0.8 0±0.8 1.3</td>
<td>500 500</td>
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<tr>
<td>ECQUAAF474□( )</td>
<td>0.47</td>
<td>0.8 0±0.8 1.8</td>
<td>300 300</td>
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<tr>
<td>ECQUAAF684□( )</td>
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<td>200 200</td>
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<td>ECQUAAF105□( )</td>
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<td>150 150</td>
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<tr>
<td>ECQUAAF155□( )</td>
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<td>0.8 0±0.8 1.8</td>
<td>150 150</td>
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<td>ECQUAAF225□( )</td>
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<td>0.8 0±0.8 1.8</td>
<td>150 150</td>
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<tr>
<td>ECQUAAF335□( )</td>
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<td>0.8 0±0.8 1.8</td>
<td>150 150</td>
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<tr>
<td>ECQUAAF475□( )</td>
<td>4.7</td>
<td>0.8 0±0.8 1.8</td>
<td>150 150</td>
</tr>
</tbody>
</table>

* □: Capacitance tolerance code
( ) : Suffix for lead form

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February 2018

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