Dry Film Low Loss AC Filter Capacitor

UL recognized component. Designed to handle high RMS currents for today’s high energy AC filtering applications. Available with optional thermal cut-out.

**FEATURES**
- UL recognized
- Long Life: > 100,000 Hours
- Low ESR
- High RMS Current Capability
- High Surge Voltage Capability: 1.5 x VDC
- Flame Retardant
- Cost Effective Design
- Reference MIL-STD 202 & IEC 61071
- Flexible, Dry Film Fully Encapsulated Construction
- RoHS compliant

**STANDARD CONFIGURATION**
- Integrated Mounting
- Male Terminal Option
- Female Terminal Option
- Thermal Indicator Option
**Specification Summary**

**Capacitance Range**
20μF to 325μF

**Capacitance Tolerance**
Standard capacitance tolerance is ±5%. Tolerance of ±3% is also available.

**Operating Temperature Range**
-55°C to +85°C
Hot Spot Temperature Calculation: H.S. = Tamb + (I x I x Rs)

**Enclosure/Construction**
Dry metallized polypropylene in a thermoplastic housing with flame retardant potting. All construction materials meet or exceed UL94-V2 rating
UL file number: File E225556, Vol. 1

**Voltage Rating**
VAC: 300 VAC to 900 VAC
VDC: 450 VDC to 1350 VDC

**Quality Control**
Capacitors are tested 100% for:
- Capacitance
- Tolerance
- Dissipation Factor
- 1.5x Rated DC Voltage
- Insulation Resistance
- Equivalent Series Resistance (ESR)
Process and inspection data are maintained on file and available upon special request.

**Environmental**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Method</th>
<th>Condition</th>
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</thead>
<tbody>
<tr>
<td>Vibration</td>
<td>204</td>
<td>D</td>
</tr>
<tr>
<td>Shock</td>
<td>213</td>
<td>I</td>
</tr>
<tr>
<td>Humidity</td>
<td>106</td>
<td>-</td>
</tr>
<tr>
<td>Thermal Shock</td>
<td>107</td>
<td>A</td>
</tr>
<tr>
<td>Life</td>
<td>108</td>
<td>F</td>
</tr>
</tbody>
</table>

Reference MIL-STD-202
Complies with IEC 61071

**Characteristics**

**Dielectric Strength**
Capacitors withstand a DC potential of 1.5 x rated voltage for one (1) minute without damage or breakdown. Test voltage is applied and discharged through a minimum resistance of 1 OHM per volt minimum.

**Dissipation Factor**
Polypropylene has an intrinsic dissipation factor of less than 2.1x 10^-4 over the operating temperature range of -55°C to +105°C and frequencies to 1MHz.

**Insulation Resistance vs. Temperature**

**Capacitance Change at 1kHz vs. Temperature**

**Dissipation Factor at 1kHz vs. Temperature**
### Detail Data

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>VOLTAGE VAC</th>
<th>VOLTAGE VDC</th>
<th>CAP µF</th>
<th>HEIGHT (mm)</th>
<th>ESR mOhms</th>
<th>ESL nH</th>
<th>Freq kHz</th>
<th>dV/dt V/µs</th>
<th>I PEAK AMPS</th>
<th>Max RMS Current (10 kHz)</th>
<th>Rth °C/W</th>
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<tbody>
<tr>
<td>3MP_1157___</td>
<td>300</td>
<td>450</td>
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<td>325</td>
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<td>50</td>
<td>39.5</td>
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<td>6969</td>
<td>106 90 70 42</td>
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<td>65</td>
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<td>66</td>
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<td>8270</td>
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<td>900</td>
<td>90</td>
<td>100</td>
<td>1.7</td>
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<td>7094</td>
<td>105 89 70 42</td>
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</tr>
</tbody>
</table>

### Style

**3MP Male Thread Type**

- **Height**: 5.677 mm (144.2 mm)
- **Cap**: 135°
- **Diameter**: Ø 0.700 mm (17.8 mm), Ø 4.72 mm (120 mm)
- **Torque**: M6 x 1.0 2PL, 5Nm Max
- **Optional Thermal Cut-Out**: Specify "S" or "T" in Fourth Character of Part Number

**Tolerances**: ±0.031 mm (±0.8 mm)

**Optional Thermal Cut-Out**

- **S**: Normally Closed, Opens at 85°C ±5%
- **T**: Normally Open, Closes at 85°C ±5%
- **Contact Resistance**: <50 mOhms
- **-Vr**: 250 Vrms
- **-Leads**: #18 AWG (UL3271), 2.5” Minimum Length

Electronic Concepts

Rev. 7
3MP Female Thread Type

- Tolerances: ±0.031 (±0.8mm)
- M5 x 0.8 INTERNAL 2PL
- 4Nm MAX TORQUE

Optional Thermal Cut-Out
Specify "S" or "T" in Fourth Character of Part Number

- S - Normally Closed, Opens at 85°C ±5%
- T - Normally Open, Close at 85°C ±5%

Contact Resistance: <50 mOhms
-Vr: 250 Vrms
-Leads: #18 AWG (UL3271), 2.5" Minimum Length

Tolerances: ±0.031 (±0.8mm)
The 3MP series is designed to handle high RMS currents for today’s high energy AC filtering applications. This series has a robust integrated flange for versatile mounting positions along with male and female terminal options. It’s most unique feature is that it has been outfitted to accept a thermal sensing device located at the capacitor hot spot. A normally open or closed thermal cut-out (TCO) is potted in the geometric center of the device. As the capacitor reaches critical temperatures the TCO opens and a user defined circuit will trigger the appropriate action. The capacitor can also accept other sensing technology per customer specification.

### How to Order

<table>
<thead>
<tr>
<th>TYPE</th>
<th>STYLE</th>
<th>VOLTAGE</th>
<th>CAPACITANCE IN MICROFARADS</th>
<th>TOLERANCE</th>
<th>TERMINAL STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3MP</td>
<td>3MP A</td>
<td>1</td>
<td>150</td>
<td>J</td>
<td>1</td>
</tr>
<tr>
<td>Metallized Polypropylene</td>
<td>No thermal cut-off, S-Normally closed thermal cut-out, T-Normally open thermal cut-out</td>
<td>1 - 300 VAC, 2 - 530 VAC, 3 - 600 VAC, 4 - 900 VAC, 5 - 400 VAC</td>
<td>Capacitance in µF</td>
<td>±3%, ±5%</td>
<td>1 Male Thread (M6), 2 Female Thread (M5)</td>
</tr>
</tbody>
</table>

#### Marking And Date Code
All capacitors are marked with company initials "EC", corporate logo or EC trademark—in addition to type 3MP, capacitance, tolerance, rated DC working voltage and date code. The first two digits of the date code represent the year, the second two digits the week, i.e., 1252 is the 52nd week of 2012, 1202 is the second week of 2012.

#### Quality Assurance
Major emphasis is placed on quality assurance. EC is an ISO 9001 and AS9100 Certified Company. Raw material inspection and the use of SPC manufacturing procedures assure the highest quality standards. Procedures are fully described in the EC Quality Control Manual. Electronic Concepts will continue to advance the state-of-the-art by utilizing leading edge technology, compact capacitor designs and establishing reliability procedures.

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