Metallized Polypropylene Film Capacitor

Related Document: IEC 60384-16

MAIN APPLICATIONS
Oscillator, timing and LC/RC filter circuits, high frequency coupling/decoupling, sample and hold circuits.

MARKING
Manufacturer’s logo/type/C-value/rated voltage/tolerance/date of manufacture

DIELECTRIC
Polypropylene film

ELECTRODES
Vacuum deposited aluminum

COATING
Flame retardant plastic case (UL-class 94 V-0), blue, epoxy resin sealed

CONSTRUCTION
Extended metallized film (refer to general information)

LEADS
Tinned wire

IEC TEST CLASSIFICATION
55/100/56, according to IEC 60068

OPERATING TEMPERATURE RANGE
-55°C to +100°C

CAPACITANCE RANGE
0.01µF to 0.1µF

CAPACITANCE DRIFT
Up to +40°C, < 0.5% for a period of two years

FEATURES
Product is completely lead (Pb)-free
Product is RoHS-compliant

CAPACITANCE TOLERANCES
± 10% (K), ± 5% (J), ± 2.5% (H), ± 1% (F)

RATED VOLTAGES (U_R)
160 VDC

PERMISSIBLE AC VOLTAGES (RMS) UP TO 60HZ
100 VAC

TEST VOLTAGE (ELECTRODE/ELECTRODE)
1.6 x U_R for 2 s

INSULATION RESISTANCE
Measured at 100 VDC after one minute
100,000 MΩ minimum value

TEMPERATURE COEFFICIENT
-250°C x 10^{-6}/°C (typical value)

MAXIMUM PULSE RISE TIME
dv/dt = 390 V/µs
If the maximum pulse voltage is less than the rated voltage, higher dv/dt values can be permitted.

DERATING FOR DC AND AC CATEGORY VOLTAGE U_C
At +85°C: U_C = 1.0 U_R
At +100°C: U_C = 0.7 U_R

SELF-inductance
~ 6 nH measured with 2mm long leads

PULL TEST ON LEADS
≥ 30 N in direction of leads according to IEC 60068-2-21

DIELECTRIC ABSORPTION
0.05% (typical value) acc. to IEC 60384-1

RELIABILITY
Operational life > 300,000 h
Failure rate < 5 FIT (40°C and 0.5 x U_R)

For further details, please refer to the general information available at www.vishay.com/doc?26033.

DISSIPATION FACTOR TAN δ

<table>
<thead>
<tr>
<th>MEASURED AT</th>
<th>C ≤ 0.1µF</th>
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<tbody>
<tr>
<td>1kHz</td>
<td>0.4 x 10^{-3}</td>
</tr>
<tr>
<td>10kHz</td>
<td>0.6 x 10^{-3}</td>
</tr>
<tr>
<td>100kHz</td>
<td>4 x 10^{-3}</td>
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</tbody>
</table>

Maximum values
### MKP 1837
Vishay Roederstein
Metallized Polypropylene Film Capacitor
Related Document: IEC 60384-16

#### CAPACITANCE

<table>
<thead>
<tr>
<th>CAPACITANCE</th>
<th>CAPACITANCE CODE</th>
<th>VOLTAGE CODE 16 160 VDC/100 VAC</th>
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<tbody>
<tr>
<td>0.01µF</td>
<td>- 310</td>
<td>W 5.5</td>
</tr>
<tr>
<td>0.015µF</td>
<td>- 315</td>
<td>W 5.5</td>
</tr>
<tr>
<td>0.022µF</td>
<td>- 322</td>
<td>W 5.5</td>
</tr>
<tr>
<td>0.033µF</td>
<td>- 333</td>
<td>W 7.5</td>
</tr>
<tr>
<td>0.047µF</td>
<td>- 347</td>
<td>W 7.5</td>
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<tr>
<td>0.068µF</td>
<td>- 368</td>
<td>W 7.5</td>
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<tr>
<td>0.1µF</td>
<td>- 410</td>
<td>W 9.0</td>
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</table>

Further C-values upon request

#### RECOMMENDED PACKAGING

<table>
<thead>
<tr>
<th>LETTER CODE</th>
<th>TYPE OF PACKAGING</th>
<th>HEIGHT (H) (mm)</th>
<th>REEL DIAMETER (mm)</th>
<th>ORDERING CODE EXAMPLES</th>
<th>PCM 5</th>
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<tbody>
<tr>
<td>D</td>
<td>AMMO</td>
<td>16.5</td>
<td>S*</td>
<td>MKP 1837-322-162-D</td>
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<tr>
<td>G</td>
<td>AMMO</td>
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<td>S*</td>
<td>MKP 1837-322-162-G</td>
<td>X</td>
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<tr>
<td>F</td>
<td>REEL</td>
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<td>350</td>
<td>MKP 1837-322-162-F</td>
<td>X</td>
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<tr>
<td>W</td>
<td>REEL</td>
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<tr>
<td>—</td>
<td>BULK</td>
<td>—</td>
<td>—</td>
<td>MKP 1837-322-162</td>
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#### Permissible AC Voltage versus Frequency

<table>
<thead>
<tr>
<th>VRMS</th>
<th>Capacitance in µF</th>
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<tbody>
<tr>
<td>10^{-3}</td>
<td>10^{-2}</td>
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<tr>
<td>160 VDC</td>
<td>0.01</td>
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</tbody>
</table>

#### Impedance versus Frequency Z = f(f) (Lead length 2.0mm)

<table>
<thead>
<tr>
<th>f [MHz]</th>
<th>Z [Ω]</th>
</tr>
</thead>
<tbody>
<tr>
<td>10^{-3}</td>
<td>10^{-2}</td>
</tr>
<tr>
<td>0.01</td>
<td>0.05</td>
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</tbody>
</table>
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