Capacitor Selection Guide
High Voltage
EASY TO DESIGN IN

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EC
Made for Engineers by Engineers
engineeringcenter.com

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KEMET Electronics Corporation is a leading global supplier of electronic components. We offer our customers the broadest selection of capacitor technologies in the industry, along with an expanding range of electromagnetic compatibility solutions and supercapacitors. Our vision is to be the preferred supplier of electronic component solutions for customers demanding the highest standards of quality, delivery and service.
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<td>Double Metallized Polyester</td>
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<td>Metallized Polyester (PET)</td>
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<td>Metallized Paper</td>
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<td>Surface Mount</td>
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<td>Polyester (PET)</td>
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<td>Polyethylene Naphthalate (PEN)</td>
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<td>Aluminum Canister</td>
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</table>
Aluminum Electrolytic Capacitors
Aluminum Electrolytic Capacitors

Screw Terminal

ALS30/31 High CV Value and Long Life 85°C, 25 – 500 VDC
Capacitance Range: 100 to 680,000 µF • Temperature Range: -40°C to +85°C
Lifetime: 20,000 Hours

www.kemet.com/ALS30-31

### Benefits
- Compact size
- Long life, up to 20,000 hours at +85°C (VR, IR applied)
- High ripple current
- Excellent surge voltage capability
- Optimized designs available upon request

### Overview
KEMET’s ALS30/31 Series of screw terminal capacitors covers a wide range of case sizes and voltage ratings featuring high ripple currents and long-life performance. They are ideally suited for industrial and commercial applications demanding high reliability and long-life expectancy such as frequency converters, uninterruptible power supply (UPS) systems and switch mode power supplies (SMPS).

### Applications
Typical applications for KEMET’s ALS30/31 Series of capacitors include smoothing, energy storage or pulse operation in telecommunication demanding power supplies, process control, AC motor control, traction, welding, and measuring.

### Screw Terminal Aluminum Electrolytic

<table>
<thead>
<tr>
<th>ALS30/31 Series</th>
<th>Stud Option</th>
<th>Termination</th>
<th>Capacitance Code (µF)</th>
<th>Size Code</th>
<th>Rated Voltage (VDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screw Terminal</td>
<td>0 = Plain Can 1 = Threaded</td>
<td>See Termination Table</td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td>See Dimension Table</td>
<td>025 = 25 040 = 40 063 = 63 100 = 100 200 = 200 250 = 250 350 = 350 400 = 400 415 = 415 450 = 450 500 = 500</td>
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### Case Size and Voltage

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
</tr>
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<tbody>
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<td>25</td>
<td>40</td>
</tr>
<tr>
<td>36 x 52</td>
<td>15 mF</td>
</tr>
<tr>
<td>36 x 62</td>
<td>22 mF</td>
</tr>
<tr>
<td>36 x 82</td>
<td>33 mF</td>
</tr>
<tr>
<td>36 x 105</td>
<td>47 mF</td>
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<tr>
<td>51 x 82</td>
<td>68 mF</td>
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<tr>
<td>51 x 105</td>
<td>100 mF</td>
</tr>
<tr>
<td>63.5 x 105</td>
<td>150 mF</td>
</tr>
<tr>
<td>66 x 105</td>
<td>150 mF</td>
</tr>
<tr>
<td>77 x 75</td>
<td>220 mF</td>
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<tr>
<td>77 x 115</td>
<td>220 mF</td>
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<tr>
<td>77 x 146</td>
<td>330 mF</td>
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<tr>
<td>77 x 220</td>
<td>470 mF</td>
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<tr>
<td>90 x 67</td>
<td>680 mF</td>
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<tr>
<td>90 x 75</td>
<td>470 mF</td>
</tr>
<tr>
<td>90 x 98</td>
<td>470 mF</td>
</tr>
<tr>
<td>90 x 146</td>
<td>470 mF</td>
</tr>
<tr>
<td>90 x 220</td>
<td>680 mF</td>
</tr>
</tbody>
</table>

Lifetime based on applying rated voltage, temperature and ripple current.
Screw Terminal (cont.)

ALS30/31 High CV Value and Long Life 85°C, 25 – 500 VDC (cont.)
Capacitance Range: 100 to 680,000 µF • Temperature Range: −40°C to +85°C
Lifetime: 20,000 Hours

<table>
<thead>
<tr>
<th>ALS3</th>
<th>0</th>
<th>A</th>
<th>153</th>
<th>DA</th>
<th>025</th>
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<tr>
<td>Series</td>
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<td>Termination</td>
<td>Capacitance Code (µF)</td>
<td>Size Code</td>
<td>Rated Voltage (VDC)</td>
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<tr>
<td>Screw Terminal Aluminum Electrolytic</td>
<td>0 = Plain Can</td>
<td>See Termination Table</td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td>See Dimension Table</td>
<td>025 = 25 040 = 40 063 = 63 100 = 100 200 = 200 250 = 250</td>
</tr>
<tr>
<td></td>
<td>1 = Threaded mounting stud</td>
<td></td>
<td></td>
<td></td>
<td>350 = 350 400 = 400 415 = 415 450 = 450 500 = 500</td>
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</table>

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
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<tbody>
<tr>
<td></td>
<td>400</td>
</tr>
<tr>
<td>36 x 52</td>
<td>220 µF</td>
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<tr>
<td>36 x 62</td>
<td>330 µF</td>
</tr>
<tr>
<td>36 x 82</td>
<td>470 µF</td>
</tr>
<tr>
<td>36 x 105</td>
<td>680 µF</td>
</tr>
<tr>
<td>51 x 82</td>
<td>1 mF</td>
</tr>
<tr>
<td>51 x 105</td>
<td>1.5 mF – 2.2 mF</td>
</tr>
<tr>
<td>63.5 x 105</td>
<td>3.3 mF</td>
</tr>
<tr>
<td>66 x 105</td>
<td>2.2 mF</td>
</tr>
<tr>
<td>77 x 75</td>
<td>1.5 mF</td>
</tr>
<tr>
<td>77 x 105</td>
<td>3.3 mF – 4.7 mF</td>
</tr>
<tr>
<td>77 x 115</td>
<td>4.7 mF</td>
</tr>
<tr>
<td>77 x 146</td>
<td>4.7 mF – 6.8 mF</td>
</tr>
<tr>
<td>77 x 220</td>
<td>6.8 µF – 0.01 F</td>
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<tr>
<td>90 x 67</td>
<td>3.3 mF</td>
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<td>90 x 75</td>
<td>2.2 mF</td>
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<td>90 x 98</td>
<td>3.3 mF – 4.7 mF</td>
</tr>
<tr>
<td>90 x 146</td>
<td>6.8 µF</td>
</tr>
<tr>
<td>90 x 220</td>
<td>10 µF</td>
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</tbody>
</table>

Lifetime based on applying rated voltage, temperature and ripple current.
Aluminum Electrolytic Capacitors

Screw Terminal (cont.)

ALS32/33 High CV Value and Long Life 85°C, 350 – 500 VDC (Primarily for Asian Market)
Capacitance Range: 220 to 18,000 µF • Temperature Range: −40°C to +85°C
Lifetime: 20,000 Hours

www.kemet.com/ALS32-33

<table>
<thead>
<tr>
<th>Series</th>
<th>Stud Option</th>
<th>Termination</th>
<th>Capacitance Code (µF)</th>
<th>Size Code</th>
<th>Rated Voltage (VDC)</th>
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<td>Aluminum Electrolytic</td>
<td>2 = Plain Can</td>
<td>See Termination Table</td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td>See Dimension Table</td>
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<tr>
<td>ALS3</td>
<td>A</td>
<td>391</td>
<td>D2C</td>
<td>350</td>
<td>350 = 350</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>400 = 400</td>
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<td></td>
<td>450 = 450</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>500 = 500</td>
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</table>

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
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<tbody>
<tr>
<td>34.9 x 54</td>
<td>390 µF</td>
</tr>
<tr>
<td>34.9 x 79.4</td>
<td>470 µF – 680 µF</td>
</tr>
<tr>
<td>34.9 x 92.1</td>
<td>820 µF – 1 mF</td>
</tr>
<tr>
<td>50.8 x 66.7</td>
<td>1.2 mF – 1.5 mF</td>
</tr>
<tr>
<td>50.8 x 92.1</td>
<td>1.8 mF – 2.2 mF</td>
</tr>
<tr>
<td>50.8 x 114.3</td>
<td>1.5 mF</td>
</tr>
<tr>
<td>50.8 x 130.2</td>
<td>2.7 mF – 3.3 mF</td>
</tr>
<tr>
<td>63.5 x 92.1</td>
<td>2.7 mF</td>
</tr>
<tr>
<td>63.5 x 114.3</td>
<td>3.9 mF</td>
</tr>
<tr>
<td>63.5 x 130.2</td>
<td>3.9 mF</td>
</tr>
<tr>
<td>76.2 x 114.3</td>
<td>5.6 mF</td>
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<tr>
<td>76.2 x 130.2</td>
<td>6.8 mF</td>
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<tr>
<td>76.2 x 149.2</td>
<td>8.2 mF</td>
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<tr>
<td>88.9 x 149.2</td>
<td>10 mF – 0.012 F</td>
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<tr>
<td>88.9 x 193.7</td>
<td>15 mF</td>
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<tr>
<td>88.9 x 219.1</td>
<td>18 mF</td>
</tr>
</tbody>
</table>

Lifetime based on applying rated voltage, temperature and ripple current.
**Screw Terminal (cont.)**

**ALS36/37 High Ripple Current and Surge Voltage Capability 85°C, 25 – 500 VDC**

(Primarily for American Market – Imperial Sizes)

**Capacitance Range:** 150 to 470,000 µF • **Temperature Range:** −40°C to +85°C

**Lifetime:** 20,000 Hours

### ALS36/37 Series

<table>
<thead>
<tr>
<th>Part Number System</th>
<th>Series</th>
<th>Stud Option</th>
<th>Termination</th>
<th>Capacitance Code</th>
<th>Size Code</th>
<th>Rated Voltage (VDC)</th>
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<tr>
<td>ALS3 6 A 153 D2C 025</td>
<td>Screw Terminal Aluminum Electrolytic</td>
<td>6 = Plain Can</td>
<td>7 = Threaded mounting stud</td>
<td>See Termination Table</td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td>See Dimension Table</td>
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<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
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<tbody>
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<td>25</td>
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<tr>
<td>34.925 x 53.975</td>
<td>15 mF</td>
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<tr>
<td>34.925 x 66.675</td>
<td>22 mF</td>
</tr>
<tr>
<td>34.925 x 79.375</td>
<td>33 mF</td>
</tr>
<tr>
<td>34.925 x 92.075</td>
<td>47 mF</td>
</tr>
<tr>
<td>34.925 x 104.775</td>
<td>10 mF</td>
</tr>
<tr>
<td>34.925 x 130.175</td>
<td>15 mF</td>
</tr>
<tr>
<td>34.925 x 142.875</td>
<td>68 mF</td>
</tr>
<tr>
<td>50.8 x 43.975</td>
<td>33 mF</td>
</tr>
<tr>
<td>50.8 x 66.675</td>
<td>47 mF</td>
</tr>
<tr>
<td>50.8 x 79.375</td>
<td>68 mF</td>
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<td>50.8 x 92.075</td>
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<td>50.8 x 104.775</td>
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<td>50.8 x 117.475</td>
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<td>50.8 x 142.875</td>
<td>150 mF</td>
</tr>
<tr>
<td>63.5 x 79.375</td>
<td>150 mF</td>
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<tr>
<td>63.5 x 92.075</td>
<td>47 mF</td>
</tr>
<tr>
<td>63.5 x 104.775</td>
<td>100 mF</td>
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<td>63.5 x 117.475</td>
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<td>63.5 x 130.175</td>
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<td>76.2 x 92.075</td>
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<td>76.2 x 104.775</td>
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<td>76.2 x 117.475</td>
<td>100 mF</td>
</tr>
<tr>
<td>76.2 x 130.175</td>
<td>220 mF</td>
</tr>
<tr>
<td>76.2 x 142.875</td>
<td>330 mF</td>
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<tr>
<td>76.2 x 168.275</td>
<td>150 mF</td>
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<tr>
<td>76.2 x 219.075</td>
<td>470 mF</td>
</tr>
</tbody>
</table>

Lifetime based on applying rated voltage, temperature and ripple current.
Aluminum Electrolytic Capacitors

Screw Terminal (cont.)

ALS60/61 High CV Value 85°C, 550 VDC
Capacitance Range: 560 to 3,300 μF • Temperature Range: −40°C to +85°C
Lifetime: 20,000 Hours

<table>
<thead>
<tr>
<th>ALS6</th>
<th>0</th>
<th>A</th>
<th>561</th>
<th>KE</th>
<th>550</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Stud Option</td>
<td>Termination</td>
<td>Capacitance Code (μF)</td>
<td>Size Code</td>
<td>Rated Voltage (VDC)</td>
</tr>
<tr>
<td>Screw Terminal Aluminum Electrolytic</td>
<td>0 = Plain Can</td>
<td>1 = Threaded mounting stud</td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td>See Dimension Table</td>
<td>550 = 550</td>
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</table>

Case Size | Voltage | 550 |
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>51 x 82</td>
<td>560 μF</td>
<td></td>
</tr>
<tr>
<td>51 x 105</td>
<td>680 μF – 820 μF</td>
<td></td>
</tr>
<tr>
<td>51 x 115</td>
<td>1 mF</td>
<td></td>
</tr>
<tr>
<td>51 x 131</td>
<td>1.2 mF</td>
<td></td>
</tr>
<tr>
<td>66 x 82</td>
<td>1 mF</td>
<td></td>
</tr>
<tr>
<td>66 x 105</td>
<td>1.2 mF</td>
<td></td>
</tr>
<tr>
<td>66 x 115</td>
<td>1.5 mF</td>
<td></td>
</tr>
<tr>
<td>66 x 131</td>
<td>1.8 mF</td>
<td></td>
</tr>
<tr>
<td>66 x 146</td>
<td>2.2 mF</td>
<td></td>
</tr>
<tr>
<td>77 x 105</td>
<td>1.8 mF</td>
<td></td>
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<td>77 x 115</td>
<td>2.2 mF</td>
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<tr>
<td>77 x 131</td>
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<td></td>
</tr>
<tr>
<td>90 x 98</td>
<td>2.2 mF</td>
<td></td>
</tr>
</tbody>
</table>
Screw Terminal (cont.)

**ALS40/41 High CV Value and Long Life 105°C, 25 – 500 VDC**

Capacitance Range: 150 to 680,000 µF • Temperature Range: -40°C to +105°C

**Lifetime:** 9,000 Hours

**Overview**

KEMET’s ALS40/41 Series of screw terminal capacitors feature the same high ripple currents and long-life characteristics as the ALS30/31 Series but can operate at higher temperatures. They are similarly suited for high reliability and long-life applications such as frequency converters, uninterruptible power supply (UPS) systems, and switch mode power supplies (SMPS) but the extended temperature range allows increased ripple currents at lower temperatures.

**Benefits**

• Compact size
• Long life, up to 9,000 hours at +105°C (VR, IR applied)
• High ripple current
• Excellent surge voltage capability
• Optimized designs available upon request

**applications**

Typical applications for KEMET’s ALS40/41 Series of capacitors include smoothing, energy storage or pulse operation in telecommunication demanding power supplies, process control, frequency inverters, drives, traction, welding, and measuring.

**Screw Terminal Aluminum Electrolytic Capacitors**

ALS40/41 Series, +105°C

**Part Number System**

<table>
<thead>
<tr>
<th>ALS4 0 A 153 DA 025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series Stud Option Termination Capacitance Code (µF) Size Code Rated Voltage (VDC)</td>
</tr>
<tr>
<td>Screw Terminal Aluminum Electrolytic 0 = Plain Can 1 = Threaded mounting stud See Termination Table First two digits represent significant figures. Third digit specifies number of zeros. See Dimension Table 025 = 25 040 = 40 063 = 63 100 = 100 160 = 160 200 = 200 250 = 250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 x 52</td>
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Aluminum Electrolytic Capacitors

Snap-In

ELH General Purpose Low Impedance 85°C, 6.3 – 500 VDC
Capacitance Range: 47 to 120,000 µF • Temperature Range: −40°C to +85°C
Lifetime: 2,000 Hours

Snap-In Aluminum Electrolytic
Lifetime based on applying rated voltage, temperature and ripple current.

Specifications:
- Capacitance Range: 47 to 120,000 µF
- Temperature Range: −40°C to +85°C
- Lifetime: 2,000 Hours

Part Number System:
ELH 159 M 6R3 A Q1 AA
- ELH: Series
- 159: Capacitance Code
- M: Tolerance
- 6R3: Rated Voltage
- A: Electrical Parameters
- Q1: Size Code
- AA: Packaging

Benefits:
- Suited for high quality, high reliability applications
- Low impedance
- Operating temperature of up to 85°C
- 2,000 hour operating life
- RoHS Compliant and lead-free

Overview:
KEMET’s ELH Series of aluminum electrolytic snap-in capacitors are designed with snap-lock terminals for printed circuit board mounting. The case is aluminum with an insulated sleeve and safety vent at the bottom.

Applications:
Typical applications include general purpose power electronics, UPS, SMPS and battery chargers.

Snap-In Aluminum Electrolytic

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<th>16</th>
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<th>50</th>
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<td>8.2 mF</td>
<td>5.6 mF</td>
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<td>1.2 mF</td>
<td>820 µF</td>
<td></td>
</tr>
<tr>
<td>22 x 30</td>
<td>18 mF – 0.022 F</td>
<td>15 mF</td>
<td>10 mF – 0.012 F</td>
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<td>4.7 mF</td>
<td>2.7 mF – 3.3 mF</td>
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<td>10 mF</td>
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<tr>
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Lifetime based on applying rated voltage, temperature and ripple current.
### Aluminum Electrolytic Capacitors

**Snap-In (cont.)**

**ELH General Purpose Low Impedance 85°C, 6.3 – 500 VDC (cont.)**

Capacitance Range: 47 to 120,000 µF • Temperature Range: −40°C to +85°C

Lifetime: 2,000 Hours

---

#### Capacitance Range:
- First two digits represent significant figures for capacitance values. Last digit specifies the number of zeros to be added.

#### Temperature Range:
- −40°C to +85°C

#### Lifetime:
- 2,000 Hours

---

#### Case Size

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<th>200</th>
<th>250</th>
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<th>400</th>
<th>420</th>
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<td>22 x 25</td>
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<td>82 µF</td>
<td>68 µF – 100 µF</td>
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<tr>
<td>22 x 30</td>
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<td>270 µF – 390 µF</td>
<td>220 µF – 330 µF</td>
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Lifetime based on applying rated voltage, temperature and ripple current.
Aluminum Electrolytic Capacitors

终身寿命基于应用额定电压、温度和纹波电流。

**Snap-In (cont.)**

**ALC10 High Ripple and Long Life 85°C, 35 – 550 VDC**

 capacitance range: 56 to 82,000 μF - temperature range: -40°C to +85°C

lifetime: 18,000 hours

<table>
<thead>
<tr>
<th>A</th>
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<th>BB</th>
<th>040</th>
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<td><strong>Termination</strong></td>
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<td>See Termination Table</td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td>See Dimension Table</td>
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</table>

**Applications**

KEMET’s ALC10 Series of capacitors is ideally suited for industrial and commercial applications demanding high reliability and long life expectancy. Typical applications include frequency converters, uninterruptible power supply (UPS) systems and switch mode power supplies (SMPS).

**Part Number System**

| ALC10 A 392 BB 040 |
|---|---|---|---|
| **Case** | **Size** | **Voltage** | |
| 35 | 40 | 63 | 100 | 200 | 250 | 350 | 400 | 450 | 500 | 550 |
| 25 x 30 | 3.9 mF | 2.2 mF | 1 mF | 330 μF | 220 μF | 120 μF | 100 μF | 68 μF | 68 μF | 56 μF | 56 μF |
| 25 x 35 | 4.7 mF | 2.7 mF | 1.2 mF | 390 μF | 270 μF - 330 μF | 150 μF | 120 μF | 100 μF | 68 μF | 68 μF |
| 25 x 40 | 5.6 mF | 3.3 mF | 1.5 mF | 470 μF | 330 μF | 180 μF | 150 μF | 120 μF - 150 μF | 82 μF | 82 μF |
| 30 x 30 | 5.6 mF | 3.3 mF | 1.5 mF | 470 μF | 330 μF | 180 μF | 150 μF | 120 μF - 150 μF | 82 μF - 100 μF | 82 μF |
| 30 x 35 | 6.8 mF | 4.7 mF | 1.8 mF | 560 μF | 470 μF | 270 μF | 180 μF - 220 μF | 150 μF | 100 μF - 120 μF | 120 μF |
| 30 x 40 | 8.2 mF | 5.6 mF | 2.2 mF | 680 μF | 560 μF | 330 μF | 220 μF | 180 μF | 150 μF | 150 μF |
| 30 x 50 | 12 mF | 6.8 mF | 3.3 mF | 1 mF | 680 μF | 390 μF | 330 μF | 220 μF - 330 μF | 180 μF | 180 μF |
| 35 x 35 | 10 mF | 6.8 mF | 2.7 mF | 820 μF | 680 μF | 390 μF | 270 μF - 330 μF | 220 μF - 270 μF | 180 μF | 180 μF |
| 35 x 40 | 12 mF | 8.2 mF | 3.3 mF | 1 mF | 820 μF | 470 μF | 330 μF | 270 μF | 220 μF | 220 μF |
| 35 x 50 | 18 mF | 10 mF | 4.7 mF | 1.2 mF - 1.5 mF | 1 mF | 560 μF | 390 μF - 650 μF | 330 μF - 470 μF | 270 μF | 270 μF |
| 35 x 60 | 1.2 mF | 820 μF | 560 μF - 680 μF | 470 μF | 390 μF | 330 μF |
| 35 x 80 | 1.8 mF | 1 mF | 820 μF - 1 mF | 680 μF | 560 μF | 470 μF |
| 40 x 30 | 15 mF | 8.2 mF | 2.7 mF | 820 μF | 680 μF | 330 μF | 270 μF | 220 μF | 180 μF | 180 μF |
| 40 x 35 | 18 mF | 10 mF | 3.3 mF | 1 mF | 390 μF | 330 μF | 270 μF | 220 μF | 220 μF |
| 40 x 40 | 22 mF | 12 mF | 3.9 mF | 1.2 mF | 820 μF | 470 μF | 390 μF - 470 μF | 330 μF | 270 μF | 270 μF |
| 40 x 45 | 4.7 mF | 1.5 mF | 1 mF | 560 μF | 470 μF | 390 μF | 330 μF | 330 μF |
| 40 x 50 | 33 mF | 27 mF | 15 mF | 5.6 mF | 1.8 mF | 1.2 mF | 680 μF | 560 μF | 470 μF | 390 μF |
| 40 x 55 | 6.8 mF | 1.5 mF | 820 μF |
| 40 x 60 | 33 mF | 18 mF | 8.2 mF | 2.2 mF | 1.8 mF | 820 μF | 680 μF | 560 μF | 470 μF | 470 μF |
| 40 x 80 | 56 mF | 47 mF | 27 mF | 12 mF | 3.3 mF | 2.2 mF | 1.2 mF | 1 mF | 820 μF - 1 mF | 680 μF | 680 μF |
| 40 x 105 | 82 mF | 39 mF | 18 mF | 4.7 mF | 3.9 mF | 1.8 mF | 1.5 mF | 1.2 mF | 1 mF |
| 45 x 105 | 5.6 mF | 4.7 mF | 2.7 mF | 2.2 mF | 1.8 mF | 1.5 mF | 1.2 mF |
| 50 x 105 | 8.2 mF | 5.6 mF | 3.3 mF | 2.7 mF | 2.2 mF | 1.8 mF | 1.5 mF |

Lifetime based on applying rated voltage, temperature and ripple current.
Aluminum Electrolytic Capacitors

**ELG General Purpose Low ESR 85°C, 6.3 – 500 VDC**

*Capacitance Range: 47 to 82,000 µF • Temperature Range: −40°C to +105°C and −25°C to +105°C
*Lifetime: 2,000 Hours*

### Snap-In (cont.)

**ELG General Purpose Low ESR 85°C, 6.3 – 500 VDC**

**Capacitance Range:**
- 47 to 82,000 µF

**Temperature Range:**
- −40°C to +105°C
- −25°C to +105°C

**Lifetime:**
- 2,000 Hours

---

**ELG 129 M 6R3 A Q1 AA**

**Series**

**Capacitance Code (µF)**

**Tolerance**

**Rated Voltage (VDC)**

**Electrical Parameters**

**Size Code**

**Packaging**

**Snap-In Aluminum Electrolytic**

- First two digits represent significant figures for capacitance values. Last digit specifies the number of zeros to be added.
- M = ±20%

**Part Number System**

**ELG**

- First two digits represent significant figures for capacitance values.
- Last digit specifies the number of zeros to be added.

**M = ±20%**

- 6R3 = 6.3
- 010 = 10
- 016 = 16
- 025 = 25
- 035 = 35
- 050 = 50
- 063 = 63
- 080 = 80
- 100 = 100

- 016 = 16
- 025 = 25
- 035 = 35
- 050 = 50
- 063 = 63
- 080 = 80
- 100 = 100

- 016 = 16
- 025 = 25
- 035 = 35
- 050 = 50
- 063 = 63
- 080 = 80
- 100 = 100

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- 100 = 100

- 063 = 63
- 080 = 80
- 100 = 100

- 080 = 80
- 100 = 100

- 100 = 100

**A = Standard**

- See Dimension Table

- See Ordering Options Table

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*Lifetime based on applying rated voltage, temperature and ripple current.*
Aluminum Electrolytic Capacitors

Snap-In (cont.)

ELG General Purpose Low ESR 85°C, 6.3 – 500 VDC (cont.)

Capacitance Range: 47 to 82,000 µF • Temperature Range: -40°C to +105°C and -25°C to +105°C

Lifetime: 2,000 Hours

www.kemet.com/ELG

One world. One KEMET

Benefits
• Suited for high reliability, low ESR applications
• Operating temperature of up to 105°C
• 2,000 hour operating life
• RoHS Compliant and lead-free

Overview
KEMET’s ELG Series of aluminum electrolytic snap-in capacitors are designed with snap-lock terminals for printed circuit board mounting. The case is aluminum with an insulated sleeve and safety vent at the bottom.

Applications
Typical applications include general purpose power electronics, UPS, SMPS and battery chargers.

Snap-In Aluminum Electrolytic Capacitors
ELG Series, +105°C

Part Number System

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<th>A</th>
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<td>Tolerance</td>
<td>Rated Voltage (VDC)</td>
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<td>Size Code</td>
<td>Packaging</td>
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</tr>
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</table>

Lifetime based on applying rated voltage, temperature and ripple current.
Aluminum Electrolytic Capacitors

Snap-In (cont.)

**ELD High Reliability and High Ripple Current 105°C, 10 – 500 VDC**

**Capacitance Range:** 56 to 68,000 µF  
**Temperature Range:** -40°C to +105°C and -25°C to +105°C  
**Lifetime:** 3,000 Hours

---

**Part Number System**

**Series** | **Capacitance Code (µF)** | **Tolerance** | **Rated Voltage (VDC)** | **Electrical Parameters** | **Size Code** | **Packaging**  
--- | --- | --- | --- | --- | --- | ---  
Snap-In Aluminum Electrolytic | First two digits represent significant figures for capacitance values. Last digit specifies the number of zeros to be added. | M ±20% | 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63 80 = 80 100 = 100 | 160 = 160 180 = 180 200 = 200 250 = 250 315 = 315 350 = 350 400 = 400 450 = 450 500 = 500 | A = Standard | See Dimension Table  

---

**Snap-In Aluminum Electrolytic**

**Applications**

Typical applications include circuit smoothing, computer/monitor, adapters and switch mode power supplies (SMPS).

**Benefits**

- Suited for high quality, high reliability applications
- Operating temperature of -40°C to +105°C and -25°C to +105°C
- 3,000 hour operating life
- High ripple current
- RoHS Compliant and lead-free

**Overview**

KEMET’s ELD Series of aluminum electrolytic snap-in capacitors are designed with snap-lock terminals for printed circuit board mounting. The case is aluminum with an insulated sleeve and safety vent at the bottom.

**Voltage**

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<td>4.7 mF</td>
<td>3.3 mF</td>
<td>2.2 mF</td>
<td>1.5 mF</td>
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<td>35 x 30</td>
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<td>22 mF</td>
<td>15 mF</td>
<td>10 mF</td>
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<td>5.6 mF</td>
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<td>2.7 mF</td>
<td>1.8 mF</td>
</tr>
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<td>35 x 35</td>
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<td>18 mF</td>
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<td>3.3 mF</td>
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<td>4.7 mF</td>
<td>3.3 mF</td>
<td>2.2 mF</td>
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</tr>
</tbody>
</table>

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Lifetime based on applying rated voltage, temperature and ripple current.
**Snap-In (cont.)**

**ELD High Reliability and High Ripple Current 105°C, 10 – 500 VDC (cont.)**

**Capacitance Range:** 56 to 68,000 µF • **Temperature Range:** -40°C to +105°C and -25°C to +105°C

**Lifetime:** 3,000 Hours

---

**Part Number System**

```
ELD 109 M 010 A Q1 AA
```

- **Series**: First two digits represent significant figures for capacitance values. Last digit specifies the number of zeros to be added.
- **Capacitance Code (pF)**: M = ±20% 016 = 16

---

**Lifetime based on applying rated voltage, temperature and ripple current.**

---

**Applications**

Typical applications include circuit smoothing, computer/monitor, adapters and switch mode power supplies (SMPS).

---

**Overview**

KEMET's ELD Series of aluminum electrolytic snap-in capacitors are designed with snap-lock terminals for printed circuit board mounting. The case is aluminum with an insulated sleeve and safety vent at the bottom.

---

**Ordering Options Table**

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<thead>
<tr>
<th>Case Size</th>
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</tr>
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<tr>
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</tr>
<tr>
<td>22 x 30</td>
<td>330 µF – 390 µF</td>
</tr>
<tr>
<td>22 x 35</td>
<td>470 µF</td>
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<tr>
<td>22 x 40</td>
<td>560 µF</td>
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<td>22 x 45</td>
<td>680 µF</td>
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</tr>
<tr>
<td>30 x 50</td>
<td>1.5 mF</td>
</tr>
<tr>
<td>35 x 25</td>
<td>820 µF</td>
</tr>
<tr>
<td>35 x 30</td>
<td>1 mF</td>
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<td>35 x 35</td>
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<tr>
<td>35 x 50</td>
<td>2.2 mF</td>
</tr>
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<td>35 x 60</td>
<td></td>
</tr>
</tbody>
</table>

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*Lifetime based on applying rated voltage, temperature and ripple current.*
Aluminum Electrolytic Capacitors

Snap-In (cont.)

ALC40 High Ripple and Long Life 105°C, 25 – 500 VDC

Capacitance Range: 47 to 120,000 µF • Temperature Range: −40°C to +105°C

Lifetime: 9,000 Hours

<table>
<thead>
<tr>
<th>ALC40</th>
<th>A 822</th>
<th>BB</th>
<th>025</th>
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<td>Series</td>
<td>Termination</td>
<td>Capacitance Code (µF)</td>
<td>Size Code</td>
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<tr>
<td>Snap-In type</td>
<td>Aluminum Electrolytic</td>
<td></td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
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</tbody>
</table>

www.kemet.com/ALC40

$\frac{\text{ Benefi ts}}{\text{ Overview}}$

- Compact size
- Long life, up to 9,000 hours at +105°C ($V_R$, $I_R$ applied)
- High ripple current
- Excellent surge voltage capability
- Optimized designs available upon request

$\frac{\text{ Applications}}{\text{ Overview}}$

KEMET's ALC40 Series of capacitors is suited for high reliability and long life applications such as frequency converters, uninterruptible power supply (UPS) systems and switch mode power supplies (SMPS). The extended temperature range allows increased ripple currents at lower temperatures.

$\frac{\text{ Part Number System}}{\text{ Overview}}$

ALC40 A 822 BB 025

Series Termination Capacitance Code (µF) Size Code Rated Voltage (VDC)

| Case Size | Voltage |
|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | 40 | 63 | 100 | 200 | 250 | 350 | 400 | 450 | 500 |
| 25 x 30 | 8.2 mF | 3.9 mF | 2.2 mF | 820 µF | 270 µF | 220 µF | 120 µF | 100 µF | 47 µF | 56 µF |
| 25 x 35 | 10 mF | 5.6 mF | 3.3 mF | 1 mF | 390 µF | 270 µF | 150 µF | 120 µF | 56 µF | 68 µF |
| 25 x 40 | 12 mF | 6.8 mF | 3.9 mF | 1.2 mF | 470 µF | 330 µF | 180 µF | 150 µF | 68 µF | 82 µF |
| 30 x 30 | 12 mF | 5.6 mF | 3.9 mF | 1.2 mF | 470 µF | 330 µF | 180 µF | 150 µF | 68 µF | 82 µF |
| 30 x 35 | 15 mF | 6.8 mF - 8.2 mF | 4.7 mF | 1.5 mF | 560 µF | 390 µF | 220 µF | 180 µF | 82 µF | 120 µF |
| 30 x 40 | 18 mF | 10 mF | 5.6 mF | 1.8 mF | 680 µF | 470 µF | 270 µF | 220 µF | 100 µF |
| 30 x 50 | 27 mF | 12 mF | 6.8 mF - 8.2 mF | 2.2 mF | 820 µF | 560 µF | 390 µF | 330 µF | 150 µF | 180 µF |
| 35 x 35 | 22 mF | 12 mF | 6.8 mF | 2.2 mF | 820 µF | 560 µF | 330 µF | 270 µF | 120 µF | 150 µF |
| 35 x 40 | 27 mF | 15 mF | 8.2 mF | 2.7 mF | 1 mF | 680 µF | 390 µF | 330 µF | 150 µF | 180 µF |
| 35 x 45 | 33 mF | 18 mF | 10 mF | 3.3 mF | 1.2 mF | 820 µF | 470 µF | 390 µF | 470 µF | 330 µF | 180 µF | 180 µF |
| 35 x 50 | 39 mF | 22 mF | 12 mF | 3.9 mF | 1.5 mF | 1 mF | 560 µF | 470 µF | 270 µF | 390 µF |
| 40 x 30 | 27 mF | 12 mF | 5.6 mF | 2.2 mF | 680 µF | 470 µF | 270 µF | 220 µF | 150 µF | 180 µF |
| 40 x 35 | 33 mF | 15 mF | 8.2 mF | 2.7 mF | 1 mF | 680 µF | 390 µF | 330 µF | 220 µF | 100 µF |
| 40 x 40 | 39 mF | 15 mF | 8.2 mF | 1.2 mF | 820 µF | 470 µF | 390 µF | 330 µF | 220 µF | 100 µF |
| 40 x 45 | 47 mF | 22 mF | 12 mF | 3.9 mF | 1.5 mF | 1 mF | 560 µF | 470 µF | 270 µF | 390 µF |
| 40 x 50 | 56 mF | 27 mF | 4.7 mF | 1.2 mF | 560 µF | 330 µF | 180 µF | 180 µF | 100 µF | 56 mF | 470 µF |
| 40 x 60 | 68 mF | 33 mF | 10 mF | 3.9 mF | 2.7 mF | 1.5 mF | 1.2 mF | 1.2 mF | 820 µF | 820 µF |
| 40 x 105 | 120 mF | 68 mF | 33 mF | 10 mF | 3.9 mF | 2.7 mF | 1.5 mF | 1.2 mF | 820 µF | 820 µF |
| 45 x 105 | 5.6 mF | 3.9 mF | 2.2 mF | 1.5 mF | 1.2 mF | 1.2 mF |
| 50 x 105 | 6.8 mF | 4.7 mF | 2.7 mF | 2.2 mF | 1.5 mF | 1.2 mF |

Lifetime based on applying rated voltage, temperature and ripple current.
Aluminum Electrolytic Capacitors

Surface Mount

EDH Low Profile, High Voltage 105°C, 6.3 – 450 VDC

Capacitance Range: 1 to 2,200 µF • Temperature Range: −40°C to +105°C and −25°C to +105°C
Lifetime: 2,000 Hours

www.kemet.com/EDH

Surface Mount Aluminum Electrolytic

First two digits represent significant figures for capacitance values. Last digit specifies the number of zeros to be added.

M = ±20% 6R3 = 6.3
010 = 10 016 = 16
025 = 25 035 = 35
050 = 50 063 = 63
100 = 10
160 = 16
200 = 20
250 = 25
400 = 400
450 = 450

A = Standard
S = AEC-Q200
See Dimension Table
AA = Tape & Reel

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<th>10</th>
<th>16</th>
<th>25</th>
<th>35</th>
<th>50</th>
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<td>4 x 5.4</td>
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<td>22 µF</td>
<td>10 µF – 22 µF</td>
<td>4.7 µF – 10 µF</td>
<td>4.7 µF – 6.8 µF</td>
<td>1 µF – 3.3 µF</td>
<td></td>
</tr>
<tr>
<td>5 x 5.4</td>
<td>47 µF</td>
<td>33 µF – 47 µF</td>
<td>22 µF – 47 µF</td>
<td>10 µF – 22 µF</td>
<td>10 µF</td>
<td>4.7 µF – 10 µF</td>
<td></td>
</tr>
<tr>
<td>6.3 x 5.4</td>
<td>100 µF – 220 µF</td>
<td>47 µF – 100 µF</td>
<td>47 µF – 100 µF</td>
<td>22 µF – 47 µF</td>
<td>22 µF</td>
<td>10 µF – 22 µF</td>
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</tr>
<tr>
<td>6.3 x 7.7</td>
<td>220 µF – 330 µF</td>
<td>100 µF – 220 µF</td>
<td>100 µF</td>
<td>47 µF – 100 µF</td>
<td>33 µF – 47 µF</td>
<td>22 µF – 47 µF</td>
<td></td>
</tr>
<tr>
<td>8 x 10.2</td>
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<td>220 µF – 470 µF</td>
<td>220 µF – 470 µF</td>
<td>100 µF – 220 µF</td>
<td>47 µF – 220 µF</td>
<td>47 µF – 100 µF</td>
<td>33 µF – 47 µF</td>
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<tr>
<td>10 x 10.2</td>
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<td>470 µF – 1 mF</td>
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<td>220 µF – 470 µF</td>
<td>100 µF – 330 µF</td>
<td>100 µF – 220 µF</td>
<td>100 µF – 150 µF</td>
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<td>2.2 mF</td>
<td>2.2 mF</td>
<td>1 mF</td>
<td>1 mF</td>
<td>470 µF – 680 µF</td>
<td>330 µF</td>
<td>220 µF</td>
</tr>
<tr>
<td>12.5 x 16</td>
<td>2.2 mF</td>
<td>2.2 mF</td>
<td>1 mF – 1.5 mF</td>
<td>1 mF</td>
<td>330 µF – 470 µF</td>
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<td></td>
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<tr>
<td>16 x 16.5</td>
<td>2.2 mF</td>
<td>2.2 mF</td>
<td>1 mF – 1.5 mF</td>
<td>1 mF</td>
<td>330 µF – 470 µF</td>
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</table>

Lifetime based on applying rated voltage, temperature and ripple current.
Aluminum Electrolytic Capacitors

Radial/Single-Ended

ESK General Purpose 85°C, 6.3 – 500 VDC
Capacitance Range: 1 to 22,000 μF • Temperature Range: −40°C to +85°C and −25°C to +85°C
Lifetime: 2,000 Hours

![Image of Aluminum Electrolytic Capacitor]

**Overview**
KEMET's ESK Series of single-ended aluminum electrolytic capacitors are designed for high-density printed circuit boards requiring a miniature solution.

**Benefits**
- Operating temperature of up to 85°C
- 2,000 hour operating life
- Case with Ø D ≥ 5 mm
- Safety vent on the capacitor base

**Applications**
Typical applications include general purpose coupling, decoupling, bypass and filtering in consumer electronics.

**Single-Ended Aluminum Electrolytic Capacitors**
**ESK Series, +85°C**

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<thead>
<tr>
<th>Case Size</th>
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</tr>
<tr>
<td>10 x 12.5</td>
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<tr>
<td>10 x 15</td>
<td>2.2 mF – 3.3 mF</td>
</tr>
<tr>
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<td>1 mF</td>
</tr>
<tr>
<td>13 x 16</td>
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<td>16 x 32</td>
<td>6.8 mF</td>
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<tr>
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<td>15 mF</td>
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<td>18 x 32</td>
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<tr>
<td>18 x 40</td>
<td>22 mF</td>
</tr>
<tr>
<td>22 x 40</td>
<td>22 mF</td>
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</table>

**Part Number System**
ESK 226 M 6R3 A C3 AA

**Series**
- Capacitance Code (pF)
- Tolerance: M = ±20%

**Rated Voltage (VDC)**
- 6R3 = 6.3
- 010 = 10
- 016 = 16
- 025 = 25
- 035 = 35
- 050 = 50
- 063 = 63

**Electrical Parameters**
- Size Code
- Packaging

**Lifetime based on applying rated voltage, temperature and ripple current.**
**Aluminum Electrolytic Capacitors**

**Radial/Single-Ended (cont.)**

**ESK General Purpose 85°C, 6.3 – 500 VDC (cont.)**

*Capacitance Range:* 1 to 22,000 µF • *Temperature Range:* -40°C to +85°C and -25°C to +85°C

*Lifetime:* 2,000 Hours

---

**Part Number System**

<table>
<thead>
<tr>
<th>ESK</th>
<th>226</th>
<th>M</th>
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<th>A</th>
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<td>First two digits represent significant figures for capacitance values. Last digit specifies the number of zeros to be added.</td>
<td>M = ±20%</td>
<td>6R3 = 6.3 010 = 10 015 = 15 025 = 25 035 = 35</td>
<td>050 = 50 063 = 63</td>
<td>100 = 100 160 = 160 200 = 200 250 = 250 350 = 350</td>
<td>400 = 400 450 = 450 500 = 500</td>
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**Case Size**

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<td>1 µF - 2.2 µF</td>
<td>1 µF</td>
<td>1 µF - 2.2 µF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 x 11</td>
<td>10 µF</td>
<td>6.8 µF - 10 µF</td>
<td>2.2 µF - 6.8 µF</td>
<td>2.2 µF - 3.3 µF</td>
<td>1 µF - 4.7 µF</td>
<td>1 µF</td>
<td></td>
</tr>
<tr>
<td>8 x 15</td>
<td>6.8 µF</td>
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<td>2.2 µF - 4.7 µF</td>
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<td>18 x 40</td>
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<td>220 µF</td>
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<tr>
<td>22 x 35</td>
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<td></td>
<td></td>
<td></td>
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<td>150 µF</td>
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</tbody>
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*Lifetime based on applying rated voltage, temperature and ripple current.*

---

"One world. One KEMET"
Aluminum Electrolytic Capacitors

Lifetime based on applying rated voltage, temperature and ripple current.

**Radial/Single-Ended (cont.)**

**ESH High Reliability, High CV 105°C, 6.3 – 500 VDC**

**Capacitance Range:** 1 to 22,000 µF  •  **Temperature Range:** −40°C to +105°C and −25°C to +105°C

**Lifetime:** 2,000 Hours

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**Overview**

KEMET's ESH Series of single-ended aluminum electrolytic capacitors offer high CV and are designed for high quality, high reliability applications requiring a miniature solution.

**Benefits**

- Suited for high quality, high reliability applications
- High CV
- 2,000 hour operating life
- Operating temperature of up to +105°C
- Case with Ø D ≥ 5 mm
- Safety vent on the capacitor base

---

**Applications**

Typical applications include general purpose coupling, decoupling, bypass and filtering.

---

**Part Number System**

ESH 107 M 6R3 A C3 AA

**Series Capacitance Code (pF) Tolerance Rated Voltage (VDC) Electrical Parameters Size Code Packaging**

<table>
<thead>
<tr>
<th>ESH</th>
<th>107</th>
<th>M</th>
<th>6R3</th>
<th>A</th>
<th>C3</th>
<th>AA</th>
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<tbody>
<tr>
<td>Single-Ended Aluminum Electrolytic</td>
<td>First two digits represent significant figures for capacitance values. Last digit specifies the number of zeros to be added.</td>
<td>M = ±20%</td>
<td>6R3 = 6.3 010 = 10 016 = 16 025 = 25 035 = 35 050 = 50 063 = 63 100 = 100</td>
<td>160 = 160 200 = 200 250 = 250 350 = 350 400 = 400 420 = 420 450 = 450 500 = 500</td>
<td>A = Standard</td>
<td>See Dimension Table</td>
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**Case Size**

**Voltage**

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<tbody>
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<td>100 µF – 150 µF</td>
<td>47 µF – 150 µF</td>
<td>33 µF – 100 µF</td>
<td>22 µF – 47 µF</td>
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<td>1 µF – 33 µF</td>
<td>1 µF – 15 µF</td>
<td>1 µF – 6.8 µF</td>
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<td>220 µF – 470 µF</td>
<td>150 µF – 220 µF</td>
<td>68 µF – 100 µF</td>
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<td>47 µF</td>
<td>22 µF – 33 µF</td>
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<tr>
<td>8 x 11</td>
<td>680 µF</td>
<td>330 µF – 680 µF</td>
<td>330 µF – 470 µF</td>
<td>150 µF – 330 µF</td>
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<td>22 µF – 33 µF</td>
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<td>680 µF</td>
<td>470 µF</td>
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<td>330 µF – 470 µF</td>
<td>220 µF – 330 µF</td>
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<td>1.5 mF</td>
<td>1 mF</td>
<td>680 µF</td>
<td>330 µF – 470 µF</td>
<td>220 µF</td>
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*Lifetime based on applying rated voltage, temperature and ripple current.*
Aluminum Electrolytic Capacitors

Radial/Single-Ended (cont.)

ESH High Reliability, High CV 105°C, 6.3 – 500 VDC (cont.)
Capacitance Range: 1 to 22,000 µF • Temperature Range: −40°C to +105°C and −25°C to +105°C
Lifetime: 2,000 Hours

www.kemet.com/ESH

**Overview**

KEMET's ESH Series of single-ended aluminum electrolytic capacitors offer high CV and are designed for high quality, high reliability applications requiring a miniature solution.

**Benefits**

- Suited for high quality, high reliability applications
- High CV
- 2,000 hour operating life
- Operating temperature of up to +105°C
- Case with Ø D ≥ 5 mm
- Safety vent on the capacitor base

**Applications**

Typical applications include general purpose coupling, decoupling, bypass and filtering.

---

<table>
<thead>
<tr>
<th>ESH</th>
<th>Capacitance Code (pF)</th>
<th>Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Electrical Parameters</th>
<th>Size Code</th>
<th>Packaging</th>
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<tbody>
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<td>6R3</td>
<td>A</td>
<td>C3</td>
<td>AA</td>
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<td>First two digits represent significant figures for capacitance values. Last digit specifies the number of zeros to be added.</td>
<td>M = ±20%</td>
<td>6R3 = 6.3</td>
<td>010 = 10</td>
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</table>

**Part Number System**

ESH 107 M 6R3 A C3 AA

**Series Capacitance Code (pF) Tolerance**

- M = ±20%
- 6R3 = 6.3
- 010 = 10
- 016 = 16
- 025 = 25
- 035 = 35
- 050 = 50
- 063 = 63
- 100 = 100

**Rated Voltage (VDC)**

- 160 = 160
- 200 = 200
- 250 = 250
- 350 = 350
- 400 = 400
- 420 = 420
- 450 = 450
- 500 = 500

**Electrical Parameters**

- A = Standard

**Size Code**

- See Dimension Table

**Packaging**

- See Ordering Options Table

---

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<td>1 µF – 2.2 µF</td>
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<td>1 µF</td>
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<td>2.2 µF – 4.7 µF</td>
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</tbody>
</table>

**Lifetime based on applying rated voltage, temperature and ripple current.**
### ESG Long Life and and High Reliability 105°C, 160 – 500 VDC

**Capacitance Range:** 3.3 to 330 µF • **Temperature Range:** -40°C to +105°C and -25°C to +105°C

**Lifetime:** 5,000 Hours

#### Radial/Single-Ended (cont.)

**Single-Ended Aluminum Electrolytic**

- First two digits represent significant figures for capacitance values. Last digit specifies the number of zeros to be added.
- M = ±20%

<table>
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<tr>
<th>ESG</th>
<th>226</th>
<th>M</th>
<th>160</th>
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</table>

**Overview**

KEMET's ESG Series of single-ended aluminum electrolytic capacitors are designed for long life (5,000 hours) and high reliability applications.

**Benefits**

- Suited for long life, high reliability applications
- Operating temperature of up to +105°C
- 3,000 – 5,000 hour operating life
- High ripple current
- Safety vent on the capacitor base

**Applications**

Typical applications include electronic ballast, power supplies and long-life equipment.

**Part Number System**

```
ESG 226 M 160 A H4 AA
```

- **Series Capacitance Code (pF) Tolerance Rated Voltage (VDC) Electrical Parameters Size Code Packaging**
- **M = ±20%**
- **160 = 160**
- **200 = 200**
- **250 = 250**
- **350 = 350**
- **400 = 400**
- **450 = 450**
- **500 = 500**

**Case Size**

<table>
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<tr>
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</table>

**, 120 µF**

*Lifetime based on applying rated voltage, temperature and ripple current.*
Ceramic Capacitors
Ceramic Capacitors
Surface Mount

Commercial Grade

High Voltage C0G Dielectric, 500 – 3,000 VDC
Capacitance Range: 1 pF to 15 μF • Temperature Range: -55°C to +125°C

www.kemet.com/HV-C0G

<table>
<thead>
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Ordering Information

C 1210 C 332 J C G A C TU

Ceramic Case Size

Specifi cation/ Series

Capacitance Code (pF)

Capacitance Tolerance

Rated Voltage (VDC)

Dielectric Failure Rate/ Design

Termination Finish

Packaging/ Grade (C-Spec)

C = Standard

Two significant digits and number of zeros.

B = ±0.10 pF
C = ±0.25 pF
D = ±0.5 pF
F = ±1%
G = ±2%
J = ±5%
K = ±10%
M = ±20%

C = 500
B = 630
D = 1,000
F = 1,500
G = 2,000
Z = 2,500
H = 3,000

G = C0G

A = N/A

C = 100% Matte Sn

L = SnPb

(5% Pb minimum)

See "Packaging C-Spec Ordering Options Table" below

Additional capacitance tolerance offerings may be available. Contact KEMET for details.

Additional termination fi nish options may be available. Contact KEMET for details.
### Ceramic Capacitors

#### Surface Mount

#### Commercial Grade (cont.)

**High Voltage with Flexible Termination System (HV FT-CAP), C0G Dielectric, 500 – 3,000 VDC**

Capacitance Range: 1 pF to 0.039 μF • Temperature Range: −55°C to +125°C

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Ceramic</th>
<th>Specification/ Series</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Dielectric</th>
<th>Failure Rate/ Design</th>
<th>Termination Finish</th>
<th>Packaging/Grade (C-Spec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0805</td>
<td>2220</td>
<td>X = Flexible Termination</td>
<td>Two significant digits and number of zeros.</td>
<td>B = ±10 pF +25 D = ±0.5 pF</td>
<td>C = 500</td>
<td>A = 100% Matte Sn</td>
<td>See &quot;Packaging C-Spec Ordering Options Table&quot; below</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1206</td>
<td>100 pF – 0.20 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.01 μF</td>
<td>100 pF – 0.003 μF</td>
<td>100 pF – 0.001 μF</td>
<td>100 pF – 0.0003 μF</td>
<td>100 pF – 0.0001 μF</td>
<td>100 pF – 0.00003 μF</td>
<td></td>
</tr>
<tr>
<td>1210</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.01 μF</td>
<td>100 pF – 0.003 μF</td>
<td>100 pF – 0.001 μF</td>
<td>100 pF – 0.0003 μF</td>
<td>100 pF – 0.0001 μF</td>
<td>100 pF – 0.00003 μF</td>
<td></td>
</tr>
<tr>
<td>1212</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.01 μF</td>
<td>100 pF – 0.003 μF</td>
<td>100 pF – 0.001 μF</td>
<td>100 pF – 0.0003 μF</td>
<td>100 pF – 0.0001 μF</td>
<td>100 pF – 0.00003 μF</td>
<td></td>
</tr>
<tr>
<td>1808</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.01 μF</td>
<td>100 pF – 0.003 μF</td>
<td>100 pF – 0.001 μF</td>
<td>100 pF – 0.0003 μF</td>
<td>100 pF – 0.0001 μF</td>
<td>100 pF – 0.00003 μF</td>
<td></td>
</tr>
<tr>
<td>1825</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.01 μF</td>
<td>100 pF – 0.003 μF</td>
<td>100 pF – 0.001 μF</td>
<td>100 pF – 0.0003 μF</td>
<td>100 pF – 0.0001 μF</td>
<td>100 pF – 0.00003 μF</td>
<td></td>
</tr>
<tr>
<td>2220</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.01 μF</td>
<td>100 pF – 0.003 μF</td>
<td>100 pF – 0.001 μF</td>
<td>100 pF – 0.0003 μF</td>
<td>100 pF – 0.0001 μF</td>
<td>100 pF – 0.00003 μF</td>
<td></td>
</tr>
<tr>
<td>2225</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.01 μF</td>
<td>100 pF – 0.003 μF</td>
<td>100 pF – 0.001 μF</td>
<td>100 pF – 0.0003 μF</td>
<td>100 pF – 0.0001 μF</td>
<td>100 pF – 0.00003 μF</td>
<td></td>
</tr>
</tbody>
</table>

**High Voltage X7R Dielectric, 500 – 3,000 VDC**

Capacitance Range: 10 pF to 0.56 μF • Temperature Range: −55°C to +125°C

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Ceramic</th>
<th>Specification/ Series</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Dielectric</th>
</tr>
</thead>
<tbody>
<tr>
<td>0603</td>
<td>2225</td>
<td>10 pF – 0.039 μF</td>
<td>10 pF – 0.027 μF</td>
<td>10 pF – 0.015 μF</td>
<td>10 pF – 0.007 μF</td>
<td>10 pF – 0.003 μF</td>
</tr>
<tr>
<td>0805</td>
<td>1206</td>
<td>10 pF – 0.015 μF</td>
<td>10 pF – 0.01 μF</td>
<td>10 pF – 0.003 μF</td>
<td>10 pF – 0.001 μF</td>
<td>10 pF – 0.0003 μF</td>
</tr>
<tr>
<td>1206</td>
<td>100 pF – 0.08 μF</td>
<td>100 pF – 0.068 μF</td>
<td>100 pF – 0.04 μF</td>
<td>100 pF – 0.02 μF</td>
<td>100 pF – 0.01 μF</td>
<td>100 pF – 0.003 μF</td>
</tr>
<tr>
<td>1210</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.05 μF</td>
<td>100 pF – 0.03 μF</td>
<td>100 pF – 0.015 μF</td>
<td>100 pF – 0.0075 μF</td>
</tr>
<tr>
<td>1808</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.05 μF</td>
<td>100 pF – 0.03 μF</td>
<td>100 pF – 0.015 μF</td>
<td>100 pF – 0.0075 μF</td>
</tr>
<tr>
<td>1825</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.05 μF</td>
<td>100 pF – 0.03 μF</td>
<td>100 pF – 0.015 μF</td>
<td>100 pF – 0.0075 μF</td>
</tr>
<tr>
<td>2220</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.05 μF</td>
<td>100 pF – 0.03 μF</td>
<td>100 pF – 0.015 μF</td>
<td>100 pF – 0.0075 μF</td>
</tr>
<tr>
<td>2225</td>
<td>100 pF – 0.15 μF</td>
<td>100 pF – 0.1 μF</td>
<td>100 pF – 0.05 μF</td>
<td>100 pF – 0.03 μF</td>
<td>100 pF – 0.015 μF</td>
<td>100 pF – 0.0075 μF</td>
</tr>
</tbody>
</table>

**Ordering Information**

1 Additional capacitance tolerance offerings may be available. Contact KEMET for details.

**Overview**

High Voltage X7R Dielectric, 500 – 3,000 VDC

Capacitance Range: 10 pF to 0.56 μF • Temperature Range: −55°C to +125°C

www.kemet.com/HV-X7R

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Commercial Grade (cont.)

High Voltage with Flexible Termination System (HV FT-CAP) X7R Dielectric, 500 – 3,000 VDC
Capacitance Range: 10 pF to 0.56 μF • Temperature Range: −55°C to +125°C

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>500</td>
</tr>
<tr>
<td>0603</td>
<td>1 nF – 3.9 nF</td>
</tr>
<tr>
<td>0805</td>
<td>10 pF – 0.022 μF</td>
</tr>
<tr>
<td>1206</td>
<td>10 pF – 0.068 μF</td>
</tr>
<tr>
<td>1210</td>
<td>10 pF – 0.15 μF</td>
</tr>
<tr>
<td>1808</td>
<td>10 pF – 0.15 μF</td>
</tr>
<tr>
<td>1812</td>
<td>51 pF – 0.33 μF</td>
</tr>
<tr>
<td>1825</td>
<td>470 pF – 0.39 μF</td>
</tr>
<tr>
<td>2220</td>
<td>470 pF – 0.47 μF</td>
</tr>
<tr>
<td>2225</td>
<td>680 pF – 0.56 μF</td>
</tr>
</tbody>
</table>
Commercial Grade (cont.)

ArcShield™ Technology, High Voltage, X7R Dielectric, 500 – 1,000 VDC
Capacitance Range: 1,000 pF to 0.56 μF • Temperature Range: −55°C to +125°C

**Overview**

KEMET ArcShield high voltage surface mount capacitors in X7R dielectric are designed for use in high voltage applications susceptible to surface arcing (arc-over discharge).

The phenomenon of surface arcing is caused by a high voltage gradient between the two termination surfaces or between one of the termination surfaces and the counter internal electrode structure within the ceramic body. It occurs most frequently at application voltages that meet or exceed 300 V, in high humidity environments, and in chip sizes with minimal bandwidth separation (creepage distance). This phenomenon can either damage surrounding components or lead to a breakdown of the dielectric material, ultimately resulting in a short-circuit condition (catastrophic failure mode).

Patented ArcShield technology features KEMET’s highly reliable base metal dielectric system combined with a unique internal shield electrode structure that is designed to suppress an arc-over event while increasing available capacitance. Developed on the principle of a partial Faraday cage, this internal system offers unrivaled performance and reliability when compared to external surface coating technologies.

For added reliability, KEMET’s Flexible Termination technology is an available option that provides superior flex performance over standard termination systems. This technology was developed to address flex cracks, which are the primary failure mode of MLCCs and typically the result of excessive tensile and shear stresses produced during board flexure and thermal cycling. Flexible Termination technology inhibits the transfer of board stress to the rigid body of the MLCC, therefore mitigating flex cracks which can result in low IR or short circuit failures.

KEMET’s ArcShield high voltage surface mount MLCCs are available in Automotive Grade, which undergo stricter testing protocol and inspection criteria. Whether under-hood or in-cabin, these devices are designed for mission and safety-critical automotive circuits or applications requiring proven, reliable performance in harsh environments. Automotive Grade devices meet the demanding Automotive Electronics Council’s AEC-Q200 qualification requirements.

### Ordering Information

**Ceramic Case Size (L" x W")**

<table>
<thead>
<tr>
<th>Ceramic Case Size (L&quot; x W&quot;)</th>
<th>Specification/Series</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Dielectric Failure Rate/Design</th>
<th>Termination Finish¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>0603 0805 1206 1210 1808 1812 1825 2220 2225</td>
<td>V = ArcShield W = ArcShield with Flexible Termination</td>
<td>Two significant digits and number of zeros</td>
<td>J = ±5% K = ±10% M = ±20%</td>
<td>C = 500 B = 630 D = 1,000</td>
<td>R = X7R A = N/A</td>
<td>C = 100% Matte Sn L = SnPb (5% Pb minimum)</td>
</tr>
</tbody>
</table>

¹ Additional termination finish options may be available. Contact KEMET for details.

² SnPb termination finish option is not available on Automotive Grade product.

² Additional reeling or packaging options may be available. Contact KEMET for details.

---

### Voltage

<table>
<thead>
<tr>
<th>Case Size</th>
<th>500</th>
<th>630</th>
<th>1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>0603</td>
<td>1 nF – 3.9 nF</td>
<td>1 nF – 1.5 nF</td>
<td>1 nF</td>
</tr>
<tr>
<td>0805</td>
<td>2.2 nF – 0.022 μF</td>
<td>2.2 nF – 0.012 μF</td>
<td>2.2 nF – 4.7 nF</td>
</tr>
<tr>
<td>1206</td>
<td>0.012 μF – 0.068 μF</td>
<td>0.012 μF – 0.033 μF</td>
<td>0.012 μF – 0.022 μF</td>
</tr>
<tr>
<td>1210</td>
<td>0.022 μF – 0.15 μF</td>
<td>0.022 μF – 0.1 μF</td>
<td>0.022 μF – 0.068 μF</td>
</tr>
<tr>
<td>1808</td>
<td>0.018 μF – 0.15 μF</td>
<td>0.018 μF – 0.1 μF</td>
<td>0.018 μF – 0.068 μF</td>
</tr>
<tr>
<td>1812</td>
<td>0.027 μF – 0.33 μF</td>
<td>0.027 μF – 0.15 μF</td>
<td>0.027 μF – 0.1 μF</td>
</tr>
<tr>
<td>1825</td>
<td>0.12 μF – 0.39 μF</td>
<td>0.12 μF – 0.27 μF</td>
<td></td>
</tr>
<tr>
<td>2220</td>
<td>0.15 μF – 0.47 μF</td>
<td>0.15 μF – 0.33 μF</td>
<td></td>
</tr>
<tr>
<td>2225</td>
<td>0.18 μF – 0.56 μF</td>
<td>0.18 μF – 0.47 μF</td>
<td></td>
</tr>
</tbody>
</table>
## Commercial Grade (cont.)

### KPS High Voltage, X7R Dielectric, 500 and 630 VDC

**Capacitance Range:** 0.047 μF to 1 μF  •  **Temperature Range:** −55°C to +125°C

![Image](image-url)

<table>
<thead>
<tr>
<th>Case Size (L&quot;x W&quot;)</th>
<th>500</th>
<th>630</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2220-1</td>
<td>0.047 μF – 0.47 μF</td>
<td>0.047 μF – 0.22 μF</td>
</tr>
<tr>
<td>2220-2</td>
<td>0.1 μF – 1 μF</td>
<td>0.1 μF – 0.47 μF</td>
</tr>
</tbody>
</table>

### KPS "L" High Voltage, SnPb Termination, X7R Dielectric, 500 – 630 VDC

**Capacitance Range:** 0.047 μF to 1 μF  •  **Temperature Range:** −55°C to +125°C

![Image](image-url)

<table>
<thead>
<tr>
<th>Case Size (L&quot;x W&quot;)</th>
<th>500</th>
<th>630</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2220-1</td>
<td>0.047 μF – 0.47 μF</td>
<td>0.047 μF – 0.22 μF</td>
</tr>
<tr>
<td>2220-2</td>
<td>0.1 μF – 1 μF</td>
<td>0.1 μF – 0.47 μF</td>
</tr>
</tbody>
</table>

---

**Overview**

KEMET Power Solutions (KPS) High Voltage, X7R Dielectric, 500 – 630 VDC (Commercial Grade) Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

- Capacitance offerings ranging from 0.047 μF up to 1.0 μF
- DC voltage ratings of 500 V and 630 V
- −55°C to +125°C operating temperature range
- Reliable and robust termination system
- −55°C to +125°C measurement accuracy
- EIA 2220 case size
- Double chip stacks (“2“ in the 13th character position of the ordering code) are only available in M (±20%) capacitance tolerance.
- Single chip stacks (“1“ in the 13th character position of the ordering code) are available in K (±10%) or M (±20%) tolerances.
- Ceramic Case Size
- Specified Series
- Nominal Ceramic Capacitance (pF)
- Ceramic Capacitance Tolerance
- Rated Voltage (VDC)
- Dielectric
- Failure Rate/Design
- Leadframe Finish
- Packaging/Grade (C-Spec)
- Packaging/Grade (C-Spec)3
- Leadframe Finish
- See “Packaging C-Spec Ordering Options Table” below

---

**Packaging Options Table**

<table>
<thead>
<tr>
<th>Case Size (L&quot;x W&quot;)</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2220-1</td>
<td>0.047 μF – 0.47 μF</td>
</tr>
<tr>
<td>2220-2</td>
<td>0.1 μF – 1 μF</td>
</tr>
</tbody>
</table>

---

**KEMET's KPS Series devices in X7R dielectric exhibit a reduced ESR, ESL, and a lower ripple current capability when compared to other dielectric solutions.**

- Conventional uses include both snubbers and filters
- In addition to their use in power supplies, these capacitors are widely used in industries related to automotive
- In applications such as switching power supplies and lighting ballasts, their exceptional performance at high frequencies has made high voltage ceramic capacitors the preferred dielectric choice of design engineers worldwide.

---

**KEMET's KPS Series High Voltage stacked devices**

- Present up to 10 mm of board flexibility, compared to traditional surface mount MLCC devices.
- Providing up to double capacitance in the same footprint
- Capacitance tolerances of ±10% and ±20%
- Capacitance offerings ranging from 0.047 μF up to 1.0 μF
- DC voltage ratings of 500 V and 630 V
- −55°C to +125°C operating temperature range
- Reliable and robust termination system
- Two significant digits and number of zeros.
- ±10% tolerance in the 3rd and 4th digits
- ±20% tolerance in the 3rd digit
- ±15% tolerance limited to ±15% from −55°C to +125°C

---

**C-Spec Ordering**

See “Packaging C-Spec Ordering Options Table” below
Automotive Grade
High Voltage C0G Dielectric, 500 – 3,000 VDC
Capacitance Range: 1 pF to 0.15 μF • Temperature Range: −55°C to +125°C

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Ceramic</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>500</td>
</tr>
<tr>
<td>0805</td>
<td>0805</td>
<td>1 pF – 820 pF</td>
</tr>
<tr>
<td>1206</td>
<td>1206</td>
<td>10 pF – 8.2 nF</td>
</tr>
<tr>
<td>1210</td>
<td>1210</td>
<td>10 pF – 8.2 nF</td>
</tr>
<tr>
<td>1808</td>
<td>1808</td>
<td>1 pF – 6.8 nF</td>
</tr>
<tr>
<td>1812</td>
<td>1812</td>
<td>10 pF – 0.015 μF</td>
</tr>
<tr>
<td>1825</td>
<td>1825</td>
<td>10 pF – 0.033 μF</td>
</tr>
<tr>
<td>2220</td>
<td>2220</td>
<td>10 pF – 0.033 μF</td>
</tr>
<tr>
<td>2225</td>
<td>2225</td>
<td>10 pF – 0.039 μF</td>
</tr>
<tr>
<td>2824</td>
<td>2824</td>
<td>2.2 nF – 0.056 μF</td>
</tr>
<tr>
<td>3040</td>
<td>3040</td>
<td>3.3 nF – 0.1 μF</td>
</tr>
<tr>
<td>3640</td>
<td>3640</td>
<td>3.9 nF – 0.12 μF</td>
</tr>
<tr>
<td>4540</td>
<td>4540</td>
<td>4.7 nF – 0.15 μF</td>
</tr>
</tbody>
</table>

Ordering Information
C 1210 C 332 J C G A C AUTO

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One world. One KEMET
**Automotive Grade (cont.)**

**High Voltage with Flexible Termination System (HV FT-CAP), C0G Dielectric, 500 – 3,000 VDC**

Capacitance Range: 1 pF to 0.039 μF • Temperature Range: -55°C to +125°C

www.kemet.com/FTCAP-X7R-HV-Auto

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>500</td>
</tr>
<tr>
<td>0805</td>
<td>10 pF – 0.022 μF</td>
</tr>
<tr>
<td>1206</td>
<td>10 pF – 0.068 μF</td>
</tr>
<tr>
<td>1210</td>
<td>10 pF – 0.15 μF</td>
</tr>
<tr>
<td>1808</td>
<td>10 pF – 0.15 μF</td>
</tr>
<tr>
<td>1812</td>
<td>51 pF – 0.33 μF</td>
</tr>
<tr>
<td>1825</td>
<td>470 pF – 0.39 μF</td>
</tr>
<tr>
<td>2220</td>
<td>470 pF – 0.47 μF</td>
</tr>
<tr>
<td>2225</td>
<td>680 pF – 0.56 μF</td>
</tr>
</tbody>
</table>

**Overview**

KEMET's Automotive Grade High Voltage with Flexible Termination (HV FT-CAP) surface mount MLCCs in C0G dielectric address the primary failure mode of MLCCs—flex cracks, which are typically the result of excessive tensile and shear stresses produced during board flexure and thermal cycling. Featuring several of the highest CV (capacitance/voltage) values available in the industry, these devices utilize a pliable and conductive silver epoxy between the base metal and nickel barrier layers of the termination system. The addition of this epoxy layer inhibits the transfer of board stress to the rigid ceramic body, therefore mitigating flex cracks which can result in low IR or short circuit failures.

Although flexi3ble termination technology does not eliminate the potential for mechanical damage that may propagate during extreme environmental and handling conditions, it does provide superior flex performance over standard termination systems.

KEMET's high voltage surface mount MLCCs in C0G dielectric feature a 125°C maximum operating temperature and offers the most stable voltage and temperature performance of all ceramic dielectric materials. C0G (NP0) dielectric capacitors exhibit no change in capacitance with respect to time and voltage and boasts a negligible change in capacitance with reference to ambient temperature. Capacitance change is limited to ±30ppm/ºC from −55°C to +125°C.

These devices exhibit low ESR at high frequencies and find conventional use as snubbers or filters in applications such as switching power supplies and lighting ballasts. Their exceptional performance at high frequencies has made high voltage MLCC’s the preferred dielectric choice of design engineers worldwide. In addition to their use in power supplies, these capacitors are widely used in industries related to automotive (hybrid), telecommunications, medical, military, aerospace, semiconductors and test/diagnostic equipment.

Whether under-hood or in-cabin, these capacitors are designed to provide reliable performance in mission and safety critical automotive circuits. Stricter testing protocol and inspection criteria have been established for automotive grade products in recognition of potentially harsh environmental conditions. KEMET automotive grade series capacitors meet the demanding Automotive Electronics Council’s AEC-Q200 qualification requirements.
### Automotive Grade (cont.)

**High Voltage X7R Dielectric, 500 – 3,000 VDC**

Capacitance Range: 10 pF to 0.56 μF • Temperature Range: −55°C to +125°C

See "Packaging C-Spec Ordering Options Table" below

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>500</td>
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<tr>
<td>0603</td>
<td>1 nF − 3.9 nF</td>
</tr>
<tr>
<td>0805</td>
<td>10 pF − 0.022 μF</td>
</tr>
<tr>
<td>1206</td>
<td>10 pF − 0.068 μF</td>
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<tr>
<td>1210</td>
<td>10 pF − 0.15 μF</td>
</tr>
<tr>
<td>1808</td>
<td>10 pF − 0.15 μF</td>
</tr>
<tr>
<td>1812</td>
<td>10 pF − 0.33 μF</td>
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<td>1825</td>
<td>100 pF − 0.39 μF</td>
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<tr>
<td>2220</td>
<td>100 pF − 0.47 μF</td>
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<tr>
<td>2225</td>
<td>100 pF − 0.56 μF</td>
</tr>
</tbody>
</table>

### High Voltage with Flexible Termination System (HV FT-CAP) X7R Dielectric, 500 – 3,000 VDC

Capacitance Range: 10 pF to 0.56 μF • Temperature Range: −55°C to +125°C

See "Packaging C-Spec Ordering Options Table" below

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
</tr>
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<tbody>
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<tr>
<td>0603</td>
<td>1 nF − 3.9 nF</td>
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<tr>
<td>0805</td>
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<td>1808</td>
<td>10 pF − 0.15 μF</td>
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<tr>
<td>1812</td>
<td>10 pF − 0.33 μF</td>
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<tr>
<td>1825</td>
<td>100 pF − 0.39 μF</td>
</tr>
<tr>
<td>2220</td>
<td>100 pF − 0.47 μF</td>
</tr>
<tr>
<td>2225</td>
<td>100 pF − 0.56 μF</td>
</tr>
</tbody>
</table>
KPS High Voltage, X7R Dielectric, 500 and 630 VDC
Capacitance Range: 0.047 μF to 1 μF • Temperature Range: −55°C to +125°C

<table>
<thead>
<tr>
<th>C</th>
<th>2220</th>
<th>C</th>
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<td>Ceramic Case Size (L&quot; x W&quot;)</td>
<td>Specification/ Series</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
<td>Dielectric</td>
</tr>
<tr>
<td>2220</td>
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<td>K = ±10%</td>
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Case Size

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<td>500</td>
<td>1 nF – 3.9 nF</td>
<td>1 nF – 1.5 nF</td>
</tr>
<tr>
<td>630</td>
<td>2.2 nF – 0.022 μF</td>
<td>2.2 nF – 0.012 μF</td>
</tr>
<tr>
<td>1,000</td>
<td>0.012 μF – 0.33 μF</td>
<td>0.012 μF – 0.033 μF</td>
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<tr>
<td>2220-1</td>
<td>0.022 μF – 0.15 μF</td>
<td>0.022 μF – 0.1 μF</td>
</tr>
<tr>
<td>2220-2</td>
<td>0.027 μF – 0.33 μF</td>
<td>0.027 μF – 0.15 μF</td>
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</table>

www.kemet.com/KPS-HV-X7R
Ceramic Capacitors

Surface Mount

Industrial and Military Grade
High Voltage Military Equivalent, C0G Dielectric, 1515 – 6560 Case Sizes, 500 – 5,000 VDC
Capacitance Range: 12 pF to 0.1 µF • Temperature Range: −55°C to +125°C

www.kemet.com/MIL-EQV-C0G

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Overview
Surface Mount Ceramic Capacitors
High Voltage MIL Equivalent, C0G Dielectric, 500 – 5,000 VDC (1515 – 6560 Case Sizes)

Ordering Information

6560 N 683 J 501 P M
Case Size (L" x W") Dielectric Capacitance Code (pF) Capacitance Tolerance Voltage Termination Screening

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<th>Case Size (L&quot; x W&quot;)</th>
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<th>683</th>
<th>J</th>
<th>501</th>
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<th>M</th>
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<tr>
<td>1515</td>
<td>N = C0G</td>
<td>First two digits are significant. Last digit is number or zeros. i.e., 472 = 4,700pF</td>
<td>J = ±5%</td>
<td>K = ±10%</td>
<td>M = ±20%</td>
<td>P = 0/+/100%</td>
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<td>1825</td>
<td>2020</td>
<td>2225</td>
<td>2520</td>
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Case Size

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Ceramic Capacitors
Surface Mount

Industrial and Military Grade (cont.)
High Voltage Military Equivalent, X7R Dielectric, 1515 – 6560 Case Sizes, 500 – 5,000 VDC
Capacitance Range: 330 pF to 2.9 µF • Temperature Range: -55°C to +125°C
www.kemet.com/MIL-EQV-X7R

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<th>B</th>
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<td>Capacitance Tolerance</td>
<td>Voltage</td>
<td>Termination</td>
<td>Screening</td>
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<td>B = X7R R = X7R</td>
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<td>K = ±10% M = ±20% P = 0/+100% Z = −20%/+80%</td>
<td>First two digits are significant. Last digit is number or zeros. i.e., 202 = 2000V</td>
<td>P = PbAg S = Ag E = Ag/Ni/SnPb C = Ag/Ni/Sn</td>
<td>Blank = No additional screening M = Group A screening per MIL–PRF–49470 (Subgroup 1 excluding Corona)</td>
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<table>
<thead>
<tr>
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<tbody>
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<td>5550</td>
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</tbody>
</table>
Ceramic Capacitors
Surface Mount

Industrial and Military Grade (cont.)

HV-HT High Voltage, High Temperature 200°C, C0G Dielectric, 500 – 2,000 VDC
Capacitance Range: 1 pF to 0.15 μF • Temperature Range: −55°C to +200°C

www.kemet.com/HV-HT-C0G

One world. One KEMET

Ordering Information

<table>
<thead>
<tr>
<th>Ceramic Case Size</th>
<th>Specification/Series</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Dielectric Failure Rate/Design</th>
<th>Termination Finish</th>
<th>Packaging/Grade (C-Spec)</th>
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<td>H = High Temperature (200°C)</td>
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</tbody>
</table>

1 Additional capacitance tolerance offerings may be available. Contact KEMET for details.

2 Gold(Au) termination finish options are not available on 2824, 3040, 3640 and 4540 case sizes.

Overview
KEMET's High Voltage-High Temperature (HV-HT) series surface mount C0G Multilayer Ceramic Capacitors (MLCCs) are constructed of a robust and proprietary base metal electrode (BME) dielectric system that offers industry-leading performance at extreme temperatures. These surface mountable devices feature a 200ºC maximum operating temperature and are specifically designed to withstand the demands of harsh industrial environments such as oil exploration and automotive/avionics engine compartment circuitry. They also offer higher and more uniform breakdown voltage performance than competitive products, resulting in increased yields in customer field applications. When dealing with expensive high temperature circuitry and systems, higher yields can quickly result in significant cost savings.

KEMET's HV-HT series MLCCs are temperature compensating and are suited for resonant circuit applications or those where Q and stability of capacitance characteristics are required. They exhibit no change in capacitance with respect to time and voltage and boast a negligible change in capacitance with reference to ambient temperature. Capacitance change is limited to ±30ppm/ºC from −55°C to +200°C. In addition, these capacitors exhibit high insulation resistance with low dissipation factor at elevated temperatures up to 200°C. They also exhibit low ESR at high frequencies and offer superior volumetric efficiency over competitive high temperature precious metal electrode (PME) and base metal electrode (BME) dielectric system devices.

These devices are Lead (Pb)-free, RoHS and REACH compliant without the need of any exemptions.

Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)
HV-HT Series, High Voltage, High Temperature 200°C, C0G Dielectric, 500 – 2,000 VDC (Industrial Grade)

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<th>Voltage</th>
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<td>500</td>
</tr>
<tr>
<td>0805</td>
<td>1 pF – 820 pF</td>
</tr>
<tr>
<td>1206</td>
<td>10 pF – 2.7 nF</td>
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<td>1210</td>
<td>10 pF – 8.2 nF</td>
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<td>1808</td>
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<td>10 pF – 0.015 μF</td>
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<tr>
<td>1825</td>
<td>10 pF – 0.033 μF</td>
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<tr>
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<td>10 pF – 0.033 μF</td>
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<tr>
<td>2225</td>
<td>10 pF – 0.039 μF</td>
</tr>
<tr>
<td>2824</td>
<td>2.2 nF – 0.056 μF</td>
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<tr>
<td>3040</td>
<td>3.3 nF – 0.1 μF</td>
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<tr>
<td>3640</td>
<td>3.9 nF – 0.12 μF</td>
</tr>
<tr>
<td>4540</td>
<td>4.7 nF – 0.15 μF</td>
</tr>
</tbody>
</table>
Industrial and Military Grade (cont.)

KPS HV, Large Case, SM Series, C0G Dielectric, 500 – 10,000 VDC

Capacitance Range: 10 pF to 0.39 μF • Temperature Range: −55°C to +125°C

Overview

KPS HV (KEMET Power Solutions, High Voltage), Large Case (≥ 1515), SM Series capacitors in C0G dielectric are designed to meet robust performance standards required in higher reliability industrial applications. Utilizing lead-frame technology, SM Series devices isolate the multilayer ceramic chip component from the printed circuit board providing advanced mechanical and thermal stress performance. Isolation of the chip component also addresses concerns for audible, microphonic noise that may occur when a bias voltage is applied. Although this technology does not eliminate the potential for mechanical damage that may propagate during extreme environmental and handling conditions, it does demonstrate superior performance over non-isolating systems. Available in both formed “L” and “J” lead configurations, SM Series devices offer up to 10 mm of board flex capability and exhibit lower ESR, ESL and higher current discharge capability when compared to other dielectric solutions. Combined with the stability of a C0G dielectric, KEMET's High Voltage SM Series devices exhibit no change in capacitance with respect to time and voltage and boasts a negligible change in capacitance with reference to ambient temperature. Capacitance change is limited to ±30 ppm/ºC from −55°C to +125°C.

Benefits

• −55°C to +125°C operating temperature range
• Large Case Sizes (≥ 1515)
• Formed "L" or "J" leadframe configurations.
• Group A and B screening per MIL–PRF–49467 available
• Reliable and robust leadframe termination system
• DC voltage ratings of 500 V, 1 KV, 2 KV, 3 KV, 4 KV, 5 KV, 7.5 KV, and 10 KV
• Capacitance offerings ranging from 10 pF up to 0.39 μF

Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

KPS HV, Large Case, SM Series, C0G Dielectric, 500 – 10,000 VDC (Industrial Grade)

Ordering Information

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<tr>
<td>SM21</td>
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<td>SM22</td>
<td>33 pF – 0.018 μF</td>
</tr>
<tr>
<td>SM23</td>
<td>82 pF – 0.033 μF</td>
</tr>
<tr>
<td>SM24</td>
<td>56 pF – 0.068 μF</td>
</tr>
<tr>
<td>SM25</td>
<td>270 pF – 0.047 μF</td>
</tr>
<tr>
<td>SM26</td>
<td>180 pF – 0.068 μF</td>
</tr>
<tr>
<td>SM30</td>
<td>22 pF – 5.6 nF</td>
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<tr>
<td>SM31</td>
<td>27 pF – 0.033 μF</td>
</tr>
<tr>
<td>SM33</td>
<td>82 pF – 0.1 μF</td>
</tr>
<tr>
<td>SM34</td>
<td>68 pF – 0.15 μF</td>
</tr>
<tr>
<td>SM35</td>
<td>150 pF – 0.27 μF</td>
</tr>
<tr>
<td>SM36</td>
<td>150 pF – 0.39 μF</td>
</tr>
</tbody>
</table>
Industrial and Military Grade (cont.)

KPS HV, Large Case, SM Series, X7R Dielectric, 500 – 10,000 VDC

Capacitance Range: 150 pF to 5.6 μF • Temperature Range: −55°C to +125°C

www.kemet.com/SM-HV-X7R

Overview

KPS HV (KEMET Power Solutions, High Voltage), Large Case (≥ 1515), SM Series capacitors in X7R dielectric are designed to meet robust performance standards required in higher reliability industrial applications. Utilizing lead-frame technology, SM Series devices isolate the multilayer ceramic chip component from the printed circuit board providing advanced mechanical and thermal stress performance. Isolation of the chip component also addresses concerns for audible, microphonic noise that may occur when a bias voltage is applied. Although this technology does not eliminate the potential for mechanical damage that may propagate during extreme environmental and handling conditions, it does demonstrate superior performance over non-isolating systems. Available in both formed “L” and “J” lead configurations, SM Series devices offer up to 10 mm of board flex capability and exhibit lower ESR, ESL and higher current discharge capability when compared to other dielectric solutions.

Combined with the stability of an X7R dielectric, KEMET’s High Voltage SM Series devices exhibit a predictable change in capacitance with respect to time and voltage and boast a minimal change in capacitance with reference to ambient temperature. Capacitance change is limited to ±15% from −55°C to +125°C.

KEMET’s Industrial grade products offer additional screening options for higher reliability applications. Both Group A and Group B testing/inspection options per MIL–PRF–49467 are available for the SM Series.

Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

KPS HV, Large Case, SM Series, X7R Dielectric, 500 – 10,000 VDC (Industrial Grade)

Ordering Information

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<thead>
<tr>
<th>Case Size</th>
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<tr>
<td></td>
<td>500</td>
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<tr>
<td>SM20</td>
<td>330 pF – 0.1 μF</td>
</tr>
<tr>
<td>SM21</td>
<td>820 pF – 0.18 μF</td>
</tr>
<tr>
<td>SM22</td>
<td>680 pF – 0.27 μF</td>
</tr>
<tr>
<td>SM23</td>
<td>1 nF – 0.56 μF</td>
</tr>
<tr>
<td>SM24</td>
<td>1 nF – 1.2 μF</td>
</tr>
<tr>
<td>SM25</td>
<td>2.2 nF – 1.8 μF</td>
</tr>
<tr>
<td>SM26</td>
<td>2.2 nF – 2.9 μF</td>
</tr>
<tr>
<td>SM30</td>
<td>150 pF – 0.18 μF</td>
</tr>
<tr>
<td>SM31</td>
<td>680 pF – 0.39 μF</td>
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<td>SM33</td>
<td>820 pF – 1.5 μF</td>
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<tr>
<td>SM34</td>
<td>1 nF – 2.2 μF</td>
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<tr>
<td>SM35</td>
<td>3.3 nF – 3.9 μF</td>
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<tr>
<td>SM36</td>
<td>4.7 nF – 5.6 μF</td>
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</table>
KPS MIL SMPS Stacked Capacitors, 50 – 1,000 VDC (Commercial, Military, and Space Grades)
Capacitance Range: 0.047 μF to 75 μF • Temperature Range: −55°C to +125°C

<table>
<thead>
<tr>
<th>L1=L1</th>
<th>R</th>
<th>N</th>
<th>30</th>
<th>C</th>
<th>106</th>
<th>K</th>
<th>S</th>
<th>12</th>
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<tbody>
<tr>
<td>Product Family¹</td>
<td>Dielectric Classification/ Characteristic²</td>
<td>Lead Configuration³</td>
<td>Case Size/ Case Code (CC)</td>
<td>Rated Voltage (VDC)</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Testing Option¹</td>
<td>Maximum Height Dimension (in.)¹</td>
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<td>L1 = Unencapsulated</td>
<td>L2 = Encapsulated</td>
<td>Q = BQ</td>
<td>R = BR</td>
<td>X = BX</td>
<td>W = X7R</td>
<td>N = Straight</td>
<td>L = Formed “L”</td>
<td>M = Formed “L”</td>
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<td></td>
<td></td>
<td>30 = CC 3</td>
<td>40 = CC 4</td>
<td>50 = CC 5</td>
<td>3 = 25</td>
<td>5 = 50</td>
<td>1 = 100</td>
<td>2 = 200</td>
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MIL–PRF–49470, DSCC 87106

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<tr>
<td>M49470 = B level</td>
<td>T49470 = T level</td>
<td>A “T” prefix is used in place of the “M” for T level product.</td>
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<td>R = BR</td>
<td>X = BX</td>
<td>01 = Unencapsulated</td>
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<td></td>
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<td>B = 100</td>
<td>C = 200</td>
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BQ

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<td>500</td>
</tr>
<tr>
<td>3</td>
<td>2.4 μF – 27 μF</td>
</tr>
<tr>
<td>4</td>
<td>0.82 μF – 10 μF</td>
</tr>
<tr>
<td>5</td>
<td>0.33 μF – 3.3 μF</td>
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</table>

BX

<table>
<thead>
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<td>3</td>
<td>6.8 μF – 75 μF</td>
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<tr>
<td>4</td>
<td>2.2 μF – 24 μF</td>
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<tr>
<td>5</td>
<td>0.82 μF – 7.5 μF</td>
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BR

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<td>5.6 μF – 50 μF</td>
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<td>1.5 μF – 18 μF</td>
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<td>5</td>
<td>0.56 μF – 6 μF</td>
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X7R

<table>
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<tr>
<td>3</td>
<td>1 μF – 12 μF</td>
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<td>4</td>
<td>0.39 μF – 3.9 μF</td>
</tr>
<tr>
<td>5</td>
<td>0.12 μF – 1.5 μF</td>
</tr>
</tbody>
</table>
## Commercial Grade

### Goldmax 300, Radial, Conformal Coated, COG Dielectric, 500 – 3,000 VDC

Capacitance Range: 1 pF to 0.039 μF • Temperature Range: −55°C to +125°C  
[www.kemet.com/C300-COG](http://www.kemet.com/C300-COG)

<table>
<thead>
<tr>
<th>C</th>
<th>320</th>
<th>C</th>
<th>322</th>
<th>J</th>
<th>C</th>
<th>G</th>
<th>5</th>
<th>T</th>
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<th>7301</th>
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<tbody>
<tr>
<td>Ceramic</td>
<td>Style/Size</td>
<td>Specification/ Series</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance1</td>
<td>Rated Voltage (VDC)</td>
<td>Dielectric</td>
<td>Design</td>
<td>Lead Finish2</td>
<td>Failure Rate</td>
<td>Packaging (C-Spec)</td>
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<td>315</td>
<td>324</td>
<td>335</td>
<td>C = Standard</td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td>B = ±0.1 pF</td>
<td>C = ±0.25 pF</td>
<td>D = ±0.5 pF</td>
<td>F = ±1%</td>
<td>G = ±2%</td>
<td>J = ±5%</td>
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<td>336</td>
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<td>320</td>
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</tbody>
</table>

### Goldmax 600, Radial, Conformal Coated, COG Dielectric, 500 – 3,000 VDC

Capacitance Range: 12 pF to 0.1 μF • Temperature Range: −55°C to +125°C  
[www.kemet.com/C600-COG](http://www.kemet.com/C600-COG)

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
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<tbody>
<tr>
<td>500</td>
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<tr>
<td>C31x</td>
<td>1 pF – 820 pF</td>
</tr>
<tr>
<td>C32x</td>
<td>1 pF – 8.2 nF</td>
</tr>
<tr>
<td>C33x</td>
<td>10 pF – 0.033 μF</td>
</tr>
<tr>
<td>C34x</td>
<td>10 pF – 0.033 μF</td>
</tr>
<tr>
<td>C35x</td>
<td>10 pF – 0.039 μF</td>
</tr>
</tbody>
</table>

### Case Size

| Voltage |
|---|---|---|---|---|---|---|---|
| 500 | 630 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 |
| C62x | 22 pF – 0.018 μF | 22 pF – 6.8 nF | 22 pF – 3.3 nF | 22 pF – 3.3 nF | 22 pF – 1.2 nF |
| C63x | 15 pF – 0.033 μF | 15 pF – 0.015 μF | 82 pF – 5.6 nF | 15 pF – 5.6 nF | 15 pF – 2.2 nF | 15 pF – 2.2 nF |
| C64x | 56 pF – 0.047 μF | 56 pF – 0.047 μF | 56 pF – 0.01 μF | 56 pF – 0.01 μF | 56 pF – 4.7 nF |
| C65x | 180 pF – 0.047 μF | 180 pF – 0.047 μF | 180 pF – 0.012 μF | 180 pF – 0.012 μF | 180 pF – 5.6 nF |
| C66x | 180 pF – 0.01 μF | 180 pF – 0.068 μF | 180 pF – 0.022 μF | 180 pF – 0.022 μF | 180 pF – 8.2 nF |
Ceramic Capacitors

**Commercial Grade (cont.)**

**Goldmax 300, Radial, Conformal Coated, X7R Dielectric, 500 – 3,000 VDC**

Capacitance Range: 10 pF to 0.56 μF • Temperature Range: −55°C to +125°C

[Image 35x286 to 136x368]

[Image 35x561 to 136x655]

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
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<tbody>
<tr>
<td></td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>10 pF - 0.012 μF</td>
</tr>
<tr>
<td>C31x</td>
<td>10 pF - 0.15 μF</td>
</tr>
<tr>
<td>C32x</td>
<td>10 pF - 0.47 μF</td>
</tr>
<tr>
<td>C33x</td>
<td>10 pF - 0.47 μF</td>
</tr>
<tr>
<td>C34x</td>
<td>100 pF - 0.56 μF</td>
</tr>
<tr>
<td>C35x</td>
<td>100 pF - 0.56 μF</td>
</tr>
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</table>

**Goldmax 600, Radial, Conformal Coated, X7R Dielectric, 500 – 3,000 VDC**

Capacitance Range: 150 pF to 2.9 μF • Temperature Range: −55°C to +125°C

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>500</td>
</tr>
<tr>
<td>C61x</td>
<td>12 pF - 4.7 nF</td>
</tr>
<tr>
<td>C62x</td>
<td>22 pF - 0.018 μF</td>
</tr>
<tr>
<td>C63x</td>
<td>15 pF - 0.033 μF</td>
</tr>
<tr>
<td>C64x</td>
<td>56 pF - 0.047 μF</td>
</tr>
<tr>
<td>C65x</td>
<td>180 pF - 0.047 μF</td>
</tr>
<tr>
<td>C66x</td>
<td>180 pF - 0.1 μF</td>
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</tbody>
</table>
Ceramic Capacitors

**Indoor and Military Grade**

**HV Radial, Conformal Coated, C0G and X7R Dielectric, 500 – 10,000 VDC**

**Capacitance Range:** 12 pF to 5.6 μF • **Temperature Range:** -55°C to +125°C

www.kemet.com/HV-Radial

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### Ordering Information

<table>
<thead>
<tr>
<th>Rated Voltage (VDC)</th>
<th>Style/Size</th>
<th>Dielectric Code</th>
<th>Capacitance (pF)</th>
<th>Capacitance Tolerance</th>
<th>Lead Finish</th>
<th>Group A Screening</th>
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<td>05 = 500</td>
<td>HV20 – HV36</td>
<td>N = C0G (NP0)</td>
<td>12 pF to 5.6 μF</td>
<td>J = ±5%</td>
<td>N = Nickel</td>
<td>MIL-PRF-49467 (Subgroup 1) except Corona</td>
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<tr>
<td>10 = 1,000</td>
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<td>B = X7R</td>
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<td>K = ±10%</td>
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### COG

#### Case Size

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<th>2,000</th>
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<tr>
<td>HV20 (6.35 x 5.59 x 5.08)</td>
<td>27 pF – 4.7 nF</td>
<td>27 pF – 1.5 nF</td>
<td>12 pF – 680 pF</td>
<td>12 pF – 470 pF</td>
</tr>
<tr>
<td>HV21 (8.13 x 7.11 x 6.35)</td>
<td>39 pF – 0.01 μF</td>
<td>39 pF – 0.01 μF</td>
<td>22 pF – 1 nF</td>
<td>22 pF – 560 pF</td>
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<tr>
<td>HV22 (9.4 x 7.62 x 6.35)</td>
<td>47 pF – 0.01 μF</td>
<td>47 pF – 3.9 nF</td>
<td>27 pF – 1 nF</td>
<td>27 pF – 680 pF</td>
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<tr>
<td>HV23 (11.94 x 10.16 x 6.86)</td>
<td>120 pF – 0.022 μF</td>
<td>120 pF – 0.018 μF</td>
<td>47 pF – 3.3 nF</td>
<td>47 pF – 1 nF</td>
</tr>
<tr>
<td>HV24 (14.48 x 12.7 x 6.86)</td>
<td>220 pF – 0.056 μF</td>
<td>220 pF – 0.033 μF</td>
<td>100 pF – 6.8 nF</td>
<td>100 pF – 3.9 nF</td>
</tr>
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<td>HV25 (17.02 x 15.24 x 6.86)</td>
<td>330 pF – 0.082 μF</td>
<td>220 pF – 0.047 μF</td>
<td>150 pF – 0.01 μF</td>
<td>150 pF – 6.8 nF</td>
</tr>
<tr>
<td>HV26 (19.56 x 18.29 x 6.86)</td>
<td>470 pF – 0.1 μF</td>
<td>220 pF – 0.068 μF</td>
<td>220 pF – 0.022 μF</td>
<td>220 pF – 8.2 nF</td>
</tr>
<tr>
<td>HV30 (11.43 x 5.59 x 5.08)</td>
<td>68 pF – 0.015 μF</td>
<td>68 pF – 4.7 nF</td>
<td>15 pF – 1 nF</td>
<td>15 pF – 390 pF</td>
</tr>
<tr>
<td>HV31 (13.97 x 7.11 x 6.35)</td>
<td>82 pF – 0.027 μF</td>
<td>82 pF – 0.012 μF</td>
<td>27 pF – 2.2 nF</td>
<td>27 pF – 1.2 nF</td>
</tr>
<tr>
<td>HV33 (21.59 x 10.16 x 6.86)</td>
<td>330 pF – 0.12 μF</td>
<td>220 pF – 0.068 μF</td>
<td>68 pF – 0.015 μF</td>
<td>68 pF – 4.7 nF</td>
</tr>
<tr>
<td>HV34 (26.67 x 12.7 x 6.86)</td>
<td>470 pF – 0.15 μF</td>
<td>220 pF – 0.056 μF</td>
<td>120 pF – 0.015 μF</td>
<td>120 pF – 5.6 nF</td>
</tr>
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<td>HV35 (31.75 x 15.24 x 6.86)</td>
<td>680 pF – 0.22 μF</td>
<td>220 pF – 0.1 μF</td>
<td>220 pF – 0.022 μF</td>
<td>220 pF – 0.015 μF</td>
</tr>
<tr>
<td>HV36 (36.83 x 18.29 x 6.86)</td>
<td>1 nF – 0.33 μF</td>
<td>1 nF – 0.15 μF</td>
<td>270 pF – 0.039 μF</td>
<td>270 pF – 0.018 μF</td>
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### COG (cont.)

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<th>10,000</th>
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</thead>
<tbody>
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<td>27 pF – 680 pF</td>
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</tr>
<tr>
<td>HV24 (14.48 x 12.7 x 6.86)</td>
<td>18 pF – 1.5 nF</td>
<td>18 pF – 1 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HV25 (17.02 x 15.24 x 6.86)</td>
<td>27 pF – 2.7 nF</td>
<td>27 pF – 2.7 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HV26 (19.56 x 18.29 x 6.86)</td>
<td>47 pF – 3.9 nF</td>
<td>47 pF – 3.9 nF</td>
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</tr>
<tr>
<td>HV30 (11.43 x 5.59 x 5.08)</td>
<td>10 pF – 220 pF</td>
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<tr>
<td>HV31 (13.97 x 7.11 x 6.35)</td>
<td>10 pF – 560 pF</td>
<td>10 pF – 390 pF</td>
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</tr>
<tr>
<td>HV33 (21.59 x 10.16 x 6.86)</td>
<td>27 pF – 1.5 nF</td>
<td>27 pF – 1.2 nF</td>
<td>12 pF – 470 pF</td>
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<tr>
<td>HV34 (26.67 x 12.7 x 6.86)</td>
<td>47 pF – 3.3 nF</td>
<td>47 pF – 2.2 nF</td>
<td>18 pF – 1 nF</td>
<td>18 pF – 820 pF</td>
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<tr>
<td>HV35 (31.75 x 15.24 x 6.86)</td>
<td>82 pF – 5.6 nF</td>
<td>82 pF – 3.9 nF</td>
<td>33 pF – 1.8 nF</td>
<td>33 pF – 1.2 nF</td>
</tr>
<tr>
<td>HV36 (36.83 x 18.29 x 6.86)</td>
<td>120 pF – 5.6 nF</td>
<td>120 pF – 5.6 nF</td>
<td>56 pF – 2.7 nF</td>
<td>56 pF – 2.2 nF</td>
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### Ceramic Capacitors

**Leaded**

**Industrial and Military Grade (cont.)**

**HV Radial, Conformal Coated, C0G and X7R Dielectric, 500 – 10,000 VDC (cont.)**

**Capacitance Range:** 12 pF to 5.6 μF  
**Temperature Range:** −55°C to +125°C

**www.kemet.com/HV-Radial**

---

#### Capacitance Range:

- 0.01 pF to 5.6 μF

#### Temperature Range:

- −55°C to +125°C

---

**Ordering Information**

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<th>30 = 3,000</th>
<th>40 = 4,000</th>
<th>50 = 5,000</th>
<th>75 = 7,500</th>
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<tr>
<td><strong>HV20</strong></td>
<td><strong>HV36</strong></td>
<td><strong>N = C0G (NP0)</strong></td>
<td><strong>B = X7R</strong></td>
<td>Two significant digits and number of zeros</td>
<td>J = ±5%</td>
<td>K = ±10%</td>
<td>M = ±20%</td>
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</table>

**www.kemet.com/HV-Radial**

---

**X7R**

<table>
<thead>
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</tr>
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<tbody>
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<tr>
<td>HV20 (6.35 x 5.59 x 5.08)</td>
<td>680 pF – 0.082 μF</td>
</tr>
<tr>
<td>HV21 (8.13 x 7.11 x 6.35)</td>
<td>100 pF – 0.18 μF</td>
</tr>
<tr>
<td>HV22 (9.4 x 7.62 x 6.35)</td>
<td>0.22 μF</td>
</tr>
<tr>
<td>HV23 (11.94 x 10.16 x 6.86)</td>
<td>3.3 nF – 0.033 μF</td>
</tr>
<tr>
<td>HV24 (14.48 x 12.7 x 6.86)</td>
<td>6.8 nF – 1.2 μF</td>
</tr>
<tr>
<td>HV25 (17.02 x 15.24 x 6.86)</td>
<td>0.01 μF – 1.8 μF</td>
</tr>
<tr>
<td>HV26 (19.56 x 18.29 x 6.86)</td>
<td>0.015 μF – 2.2 μF</td>
</tr>
<tr>
<td>HV30 (11.43 x 5.59 x 5.08)</td>
<td>1.8 nF – 0.22 μF</td>
</tr>
<tr>
<td>HV31 (13.97 x 7.11 x 6.35)</td>
<td>2.7 nF – 0.39 μF</td>
</tr>
<tr>
<td>HV33 (21.59 x 10.16 x 6.86)</td>
<td>0.01 μF – 1.5 μF</td>
</tr>
<tr>
<td>HV34 (26.67 x 12.7 x 6.86)</td>
<td>0.012 μF – 2.2 μF</td>
</tr>
<tr>
<td>HV35 (31.75 x 15.24 x 6.86)</td>
<td>0.018 μF – 3.9 μF</td>
</tr>
<tr>
<td>HV36 (36.83 x 18.29 x 6.86)</td>
<td>0.027 μF – 5.6 μF</td>
</tr>
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**X7R (cont.)**

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<td><strong>4,000</strong></td>
</tr>
<tr>
<td>HV23 (11.94 x 10.16 x 6.86)</td>
<td>1 nF – 0.015 μF</td>
</tr>
<tr>
<td>HV24 (14.48 x 12.7 x 6.86)</td>
<td>2.7 nF – 0.033 μF</td>
</tr>
<tr>
<td>HV25 (17.02 x 15.24 x 6.86)</td>
<td>3.9 nF – 0.039 μF</td>
</tr>
<tr>
<td>HV26 (19.56 x 18.29 x 6.86)</td>
<td>6.8 nF – 0.082 μF</td>
</tr>
<tr>
<td>HV30 (11.43 x 5.59 x 5.08)</td>
<td>390 pF – 2.2 nF</td>
</tr>
<tr>
<td>HV31 (13.97 x 7.11 x 6.35)</td>
<td>680 pF – 8.2 nF</td>
</tr>
<tr>
<td>HV33 (21.59 x 10.16 x 6.86)</td>
<td>1.8 nF – 0.027 μF</td>
</tr>
<tr>
<td>HV34 (26.67 x 12.7 x 6.86)</td>
<td>3.3 nF – 0.056 μF</td>
</tr>
<tr>
<td>HV35 (31.75 x 15.24 x 6.86)</td>
<td>5.6 nF – 0.082 μF</td>
</tr>
<tr>
<td>HV36 (36.83 x 18.29 x 6.86)</td>
<td>8.2 nF – 0.15 μF</td>
</tr>
</tbody>
</table>
Industrial and Military Grade (cont.)

HV MIL–PRF–49467 Equivalent, Radial, BP BR and BZ, 500 – 5,000 VDC

Capacitance Range: 15 pF to 1.0 µF • Temperature Range: −55°C to +125°C

<table>
<thead>
<tr>
<th>10</th>
<th>HV60</th>
<th>R</th>
<th>102</th>
<th>K</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage (VDC)</td>
<td>Style/Size</td>
<td>Dielectric</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Grade/Test Level</td>
</tr>
<tr>
<td>05 = 500</td>
<td>06 = 600</td>
<td>10 = 1,000</td>
<td>20 = 2,000</td>
<td>30 = 3,000</td>
<td>40 = 4,000</td>
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<tr>
<td>HV60 – HV69</td>
<td>P = BP C0G (NP0)</td>
<td>R = BR (X7R)</td>
<td>Z = BZ (X7R)</td>
<td>Two significant digits and number of zeros</td>
<td>J = ±5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>K = ±10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M = ±20%</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>C = CSAM</td>
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</table>

BP

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>600</td>
</tr>
<tr>
<td>HV60 (6.35 x 5.588 x 5.08)</td>
<td>27 pF – 5.6 nF</td>
</tr>
<tr>
<td>HV61 (8.128 x 7.112 x 6.35)</td>
<td>39 pF – 0.012 µF</td>
</tr>
<tr>
<td>HV62 (9.398 x 7.62 x 6.35)</td>
<td>47 pF – 0.018 µF</td>
</tr>
<tr>
<td>HV63 (11.938 x 10.16 x 6.858)</td>
<td>120 pF – 0.039 µF</td>
</tr>
<tr>
<td>HV64 (14.478 x 12.7 x 6.858)</td>
<td>220 pF – 0.068 µF</td>
</tr>
<tr>
<td>HV65 (17.018 x 15.24 x 6.858)</td>
<td>330 pF – 0.018 µF</td>
</tr>
<tr>
<td>HV66 (19.558 x 18.288 x 6.858)</td>
<td>470 pF – 0.027 µF</td>
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</tbody>
</table>

BR and BZ

<table>
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<tr>
<th>Case Size</th>
<th>Voltage</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>500</td>
</tr>
<tr>
<td>HV60 (6.35 x 5.588 x 5.08)</td>
<td>680 pF – 0.027 µF</td>
</tr>
<tr>
<td>HV61 (8.128 x 7.112 x 6.35)</td>
<td>1.2 nF – 0.082 µF</td>
</tr>
<tr>
<td>HV62 (9.398 x 7.62 x 6.35)</td>
<td>1.2 nF – 0.1 µF</td>
</tr>
<tr>
<td>HV63 (11.938 x 10.16 x 6.858)</td>
<td>3.3 nF – 0.33 µF</td>
</tr>
<tr>
<td>HV64 (14.478 x 12.7 x 6.858)</td>
<td>6.8 nF – 0.47 µF</td>
</tr>
<tr>
<td>HV65 (17.018 x 15.24 x 6.858)</td>
<td>0.01 µF – 0.22 µF</td>
</tr>
<tr>
<td>HV66 (19.558 x 18.288 x 6.858)</td>
<td>0.01 µF – 0.47 µF</td>
</tr>
<tr>
<td>HV68 (33.02 x 15.24 x 6.858)</td>
<td>5.6 nF – 0.068 µF</td>
</tr>
<tr>
<td>HV69 (38.1 x 18.288 x 6.858)</td>
<td>8.2 nF – 0.1 µF</td>
</tr>
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</table>
Ceramic Capacitors
Leaded

Industrial and Military Grade (cont.)

HS High Voltage Space Quality, Radial, C0G and X7R, Radial, 500 – 10,000 VDC
Capacitance Range: 12 pF to 5.6 µF • Temperature Range: −55°C to +125°C

<table>
<thead>
<tr>
<th>10</th>
<th>HS24</th>
<th>B</th>
<th>103</th>
<th>K</th>
<th>C</th>
<th>F</th>
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<tbody>
<tr>
<td>Rated Voltage (VDC)</td>
<td>Style/Size</td>
<td>Dielectric</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Grade/ Test Level</td>
<td>Lead Finish</td>
</tr>
<tr>
<td>05 = 500</td>
<td>10 = 1,000</td>
<td>20 = 2,000</td>
<td>30 = 3,000</td>
<td>40 = 4,000</td>
<td>50 = 5,000</td>
<td>75 = 7,500</td>
</tr>
<tr>
<td>HS20 – HS36</td>
<td>B = X7R</td>
<td>Two significant digits and number of zeros</td>
<td>J = ±5%</td>
<td>K = ±10%</td>
<td>M = ±20%</td>
<td>P = 0/+100%</td>
</tr>
<tr>
<td>C = CSAM</td>
<td>L</td>
<td>N = BP</td>
<td>O (NP0)</td>
<td>P</td>
<td>Q</td>
<td>R</td>
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**COG**

<table>
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<tbody>
<tr>
<td>500</td>
<td>1,000</td>
</tr>
<tr>
<td>HS20 (6.35 x 5.59 x 5.08)</td>
<td>27 pF – 4.7 nF</td>
</tr>
<tr>
<td>HS21 (8.13 x 7.11 x 6.35)</td>
<td>39 pF – 8.2 nF</td>
</tr>
<tr>
<td>HS22 (9.4 x 7.62 x 6.35)</td>
<td>47 pF – 0.012 µF</td>
</tr>
<tr>
<td>HS23 (11.94 x 10.16 x 6.89)</td>
<td>120 pF – 0.033 µF</td>
</tr>
<tr>
<td>HS24 (14.48 x 12.7 x 6.89)</td>
<td>220 pF – 0.056 µF</td>
</tr>
<tr>
<td>HS25 (17.02 x 15.24 x 6.89)</td>
<td>390 pF – 0.1 µF</td>
</tr>
<tr>
<td>HS26 (19.56 x 18.29 x 6.89)</td>
<td>470 pF – 0.15 µF</td>
</tr>
<tr>
<td>HS30 (11.43 x 5.59 x 5.08)</td>
<td>68 pF – 0.012 µF</td>
</tr>
<tr>
<td>HS31 (13.97 x 7.11 x 6.35)</td>
<td>82 pF – 0.022 µF</td>
</tr>
<tr>
<td>HS33 (21.59 x 10.16 x 6.89)</td>
<td>330 pF – 0.082 µF</td>
</tr>
<tr>
<td>HS34 (26.67 x 12.7 x 6.89)</td>
<td>470 pF – 0.15 µF</td>
</tr>
<tr>
<td>HS35 (31.75 x 15.24 x 6.89)</td>
<td>680 pF – 0.12 µF</td>
</tr>
<tr>
<td>HS36 (36.83 x 18.29 x 6.89)</td>
<td>1 nF – 0.18 µF</td>
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**COG (cont.)**

<table>
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<th>Voltage</th>
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<td>4,000</td>
<td>5,000</td>
</tr>
<tr>
<td>HS24 (14.48 x 12.7 x 6.89)</td>
<td>15 pF – 1 nF</td>
</tr>
<tr>
<td>HS25 (17.02 x 15.24 x 6.89)</td>
<td>27 pF – 1.8 nF</td>
</tr>
<tr>
<td>HS26 (19.56 x 18.29 x 6.89)</td>
<td>47 pF – 2.7 nF</td>
</tr>
<tr>
<td>HS33 (21.59 x 10.16 x 6.89)</td>
<td>27 pF – 1.5 nF</td>
</tr>
<tr>
<td>HS34 (26.67 x 12.7 x 6.89)</td>
<td>47 pF – 3.3 nF</td>
</tr>
<tr>
<td>HS35 (31.75 x 15.24 x 6.89)</td>
<td>82 pF – 4.7 nF</td>
</tr>
<tr>
<td>HS36 (36.83 x 18.29 x 6.89)</td>
<td>120 pF – 0.01 µF</td>
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</table>
Ceramic Capacitors

Leaded

Industrial and Military Grade (cont.)

HS High Voltage Space Quality, Radial, C0G and X7R, Radial, 500 – 10,000 VDC (cont.)

Capacitance Range: 12 pF to 5.6 µF • Temperature Range: -55°C to +125°C

www.kemet.com/HS

Overview

Through-Hole Ceramic Capacitors

HS Series High Voltage Space Quality, C0G & X7R, Radial

Ordering Information

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<td>Style/Size</td>
<td>Dielectric</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Grade/Test Level</td>
<td>Lead Finish</td>
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<td>30 = 3,000</td>
<td>40 = 4,000</td>
<td>50 = 5,000</td>
<td>75 = 7,500</td>
</tr>
<tr>
<td>HS20 – HS36</td>
<td>B = X7R</td>
<td>N = BP C0G (NP0)</td>
<td>Two significant digits and number of zeros</td>
<td>J = ±5%</td>
<td>K = ±10%</td>
<td>M = ±20%</td>
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X7R

Case Size

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<td>HS21 (8.13 x 7.11 x 6.35)</td>
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<tr>
<td>HS22 (9.4 x 7.62 x 6.35)</td>
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<tr>
<td>HS23 (11.94 x 10.16 x 6.89)</td>
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<tr>
<td>HS24 (14.48 x 12.7 x 6.89)</td>
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<tr>
<td>HS25 (17.02 x 15.24 x 6.89)</td>
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<tr>
<td>HS26 (19.56 x 18.29 x 6.89)</td>
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<tr>
<td>HS30 (11.43 x 5.59 x 5.08)</td>
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<tr>
<td>HS31 (13.97 x 7.11 x 6.35)</td>
</tr>
<tr>
<td>HS33 (21.59 x 10.16 x 6.89)</td>
</tr>
<tr>
<td>HS34 (26.67 x 12.7 x 6.89)</td>
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<tr>
<td>HS35 (31.75 x 15.24 x 6.89)</td>
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<tr>
<td>HS36 (36.83 x 18.29 x 6.89)</td>
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X7R (cont.)

Case Size

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<tbody>
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<td>4,000</td>
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<td>HS26 (19.56 x 18.29 x 6.89)</td>
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<tr>
<td>HS30 (11.43 x 5.59 x 5.08)</td>
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<tr>
<td>HS33 (21.59 x 10.16 x 6.89)</td>
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<tr>
<td>HS34 (26.67 x 12.7 x 6.89)</td>
</tr>
<tr>
<td>HS35 (31.75 x 15.24 x 6.89)</td>
</tr>
</tbody>
</table>
### Industrial and Military Grade (cont.)

**HV 200°C, Radial, Conformal Coated, C0G and X7R Dielectric, 500 – 4,000 VDC**

Capacitance Range: 12 pF to 0.47 μF • Temperature Range: -55°C to +200°C


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#### Overview

Through-Hole Ceramic Capacitors

**HV Series**, 200°C, C0G & X7R Dielectric, Radial Conformally Coated, 500 – 4,000 VDC

---

#### Ordering Information

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<th>Style/Size Code</th>
<th>Dielectric</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Lead Finish</th>
<th>Group A Screening</th>
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<td>10 = 1,000</td>
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<td>10 = 2,000</td>
<td></td>
<td></td>
<td>20 = 3,000</td>
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<td></td>
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<td>30 = 4,000</td>
<td></td>
<td></td>
<td>40 = 5,000</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>HV10 – HV16</td>
<td>N = C0G (NP0)</td>
<td>W = X7R</td>
<td>Two significant digits and number of zeros</td>
<td>J = ±5%</td>
<td>K = ±10%</td>
<td>M = ±20%</td>
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<tr>
<td></td>
<td>N = Nickel (Standard)</td>
<td>C = Solder Coated Clad Steel</td>
<td>MIL-PRF-49467 (Subgroup 1) except Corona</td>
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#### C0G

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<th>Voltage</th>
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</thead>
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<td>HV10 (6.35 x 5.59 x 3.81)</td>
<td>27 pF – 1.5 nF, 27 pF – 1.5 nF, 10 pF – 390 pF</td>
</tr>
<tr>
<td>HV11 (8.13 x 7.62 x 6.35)</td>
<td>39 pF – 2.2 nF, 39 pF – 1.8 nF, 22 pF – 1 nF, 22 pF – 470 pF</td>
</tr>
<tr>
<td>HV12 (10.67 x 10.16 x 6.35)</td>
<td>47 pF – 3.3 nF, 47 pF – 2.7 nF, 27 pF – 1.5 nF, 27 pF – 1 nF</td>
</tr>
<tr>
<td>HV13 (13.21 x 12.7 x 7.62)</td>
<td>120 pF – 5.6 nF, 120 pF – 4.7 nF, 120 pF – 3.3 nF, 120 pF – 2.7 nF</td>
</tr>
<tr>
<td>HV14 (15.75 x 12.7 x 7.62)</td>
<td>180 pF – 8.2 nF, 180 pF – 6.8 nF, 100 pF – 3.9 nF, 100 pF – 3.3 nF, 18 pF – 2.7 nF</td>
</tr>
<tr>
<td>HV15 (18.29 x 17.78 x 7.62)</td>
<td>390 pF – 0.01 μF, 390 pF – 0.01 μF, 150 pF – 0.047 μF, 150 pF – 0.012 μF</td>
</tr>
<tr>
<td>HV16 (20.83 x 17.78 x 8.89)</td>
<td>470 pF – 0.015 μF, 470 pF – 0.015 μF, 270 pF – 0.012 μF, 270 pF – 0.012 μF</td>
</tr>
</tbody>
</table>

---

#### X7R

<table>
<thead>
<tr>
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<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HV10 (6.35 x 5.59 x 3.81)</td>
<td>680 pF – 0.047 μF, 680 pF – 0.012 μF, 270 pF – 4.7 nF</td>
</tr>
<tr>
<td>HV11 (8.13 x 7.62 x 6.35)</td>
<td>1.2 nF – 0.15 μF, 1.2 nF – 0.047 μF, 560 pF – 2.7 nF</td>
</tr>
<tr>
<td>HV12 (10.67 x 10.16 x 6.35)</td>
<td>1.2 nF – 0.22 μF, 1.2 nF – 0.018 μF, 680 pF – 0.01 μF</td>
</tr>
<tr>
<td>HV13 (13.21 x 12.7 x 7.62)</td>
<td>3.3 nF – 0.002 μF, 3.3 nF – 0.047 μF, 1.2 nF – 0.018 μF, 1.2 nF – 0.01 μF</td>
</tr>
<tr>
<td>HV14 (15.75 x 12.7 x 7.62)</td>
<td>6.8 nF – 0.12 μF, 6.8 nF – 0.056 μF, 2.7 nF – 0.027 μF, 2.7 nF – 0.012 μF, 470 pF – 0.012 μF</td>
</tr>
<tr>
<td>HV15 (18.29 x 17.78 x 7.62)</td>
<td>0.015 μF – 0.01 μF, 0.01 μF – 0.056 μF, 3.9 nF – 0.027 μF, 3.9 nF – 0.015 μF, 680 pF – 0.01 μF</td>
</tr>
<tr>
<td>HV16 (20.83 x 17.78 x 8.89)</td>
<td>0.015 μF – 0.047 μF, 0.015 μF – 0.47 μF, 6.8 nF – 0.047 μF, 6.8 nF – 0.022 μF, 1.2 nF – 0.012 μF</td>
</tr>
</tbody>
</table>
## VCR/VRR 200°C Radial, C0G and X7R Dielectric, 500 – 5,000 VDC

**Capacitance Range:** 10 pF to 1.2 μF  •  **Temperature Range:** −55°C to +200°C  

![Ceramic Capacitors](image)

### VCR

<table>
<thead>
<tr>
<th>Case Size</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>500</td>
</tr>
<tr>
<td>07  (7.62 x 7.62 x 3.81)</td>
<td>10 pF – 3.3 nF</td>
</tr>
<tr>
<td>50  (13.2 x 12.7 x 7.62)</td>
<td>18 pF – 0.018 μF</td>
</tr>
<tr>
<td>60  (13.97 x 15.24 x 9.52)</td>
<td>22 pF – 0.027 μF</td>
</tr>
<tr>
<td>70  (16.51 x 17.78 x 9.52)</td>
<td>27 pF – 0.033 μF</td>
</tr>
<tr>
<td>80  (19.05 x 20.32 x 9.52)</td>
<td>33 pF – 0.056 μF</td>
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### VRR

<table>
<thead>
<tr>
<th>Case Size</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>500</td>
</tr>
<tr>
<td>07  (7.62 x 7.62 x 3.81)</td>
<td>390 pF – 0.056 μF</td>
</tr>
<tr>
<td>40  (8.89 x 10.16 x 6.98)</td>
<td>330 pF – 0.33 μF</td>
</tr>
<tr>
<td>50  (13.2 x 12.7 x 7.62)</td>
<td>470 pF – 0.33 μF</td>
</tr>
<tr>
<td>60  (13.97 x 15.24 x 9.52)</td>
<td>560 pF – 0.68 μF</td>
</tr>
<tr>
<td>70  (16.51 x 17.78 x 9.52)</td>
<td>820 pF – 1 μF</td>
</tr>
<tr>
<td>80  (19.05 x 20.32 x 9.52)</td>
<td>1 nF – 1.2 μF</td>
</tr>
</tbody>
</table>
Film Capacitors
Film Capacitors – DC Film

Pulse and High Frequency

Single Metallized Polyester

R71 Radial, SMPS PFC Applications, 420 – 1,000 VDC
Capacitance Range: 0.01 to 22 μF • Temperature Range: −55°C to +105°C

www.kemet.com/R71

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One world. One KEMET

Benefits
• Voltage range: 420 – 1,000 VDC
• Capacitance range: 0.01 μF – 22 μF
• Lead Spacing: 10 – 37.5 mm
• Capacitance tolerance: ±10%, ±20%, ±5% (on request)
• Climatic category: 55/105/56 IEC 60068–1
• Operating temperature range of −55°C to +105°C
• RoHS compliance and lead-free terminations
• Tape and reel packaging in accordance with IEC 60286–2
• Self-healing

Overview
The R71 Series is constructed of metallized polypropylene film with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting UL 94V–0 requirements.

Applications
Typical applications include power factor correction and pulse applications. Not suitable for across-the-line application (see Suppressor Capacitors).

Polypropylene Pulse/High Frequency Capacitors
R71 Series Single Metallized Polypropylene Film, Radial, SMPS PFC Applications

Part Number System

<table>
<thead>
<tr>
<th>R71 Series</th>
<th>Rated Voltage (VDC)</th>
<th>Lead Spacing (mm)</th>
<th>Capacitance Code (pF)</th>
<th>Packaging</th>
<th>Internal Use</th>
<th>Capacitance Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>M = 420</td>
<td>X = 450</td>
<td>V = 520</td>
<td>W = 37.5</td>
<td>F = 10.0</td>
<td>I = 15.0</td>
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</tr>
<tr>
<td>N = 22.5</td>
<td>R = 27.5</td>
<td>The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.</td>
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<tr>
<td>Q = 1,000</td>
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<td></td>
<td>See Ordering Options Table</td>
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<tr>
<td>M = 420</td>
<td>X = 450</td>
<td>V = 520</td>
<td>W = 37.5</td>
<td>F = 10.0</td>
<td>I = 15.0</td>
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<td>N = 22.5</td>
<td>R = 27.5</td>
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<td></td>
<td>20</td>
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<tr>
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<td>X = 450</td>
<td>V = 520</td>
<td>W = 37.5</td>
<td>F = 10.0</td>
<td>I = 15.0</td>
<td>30</td>
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<tr>
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<td>R = 27.5</td>
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Case Size

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<td>10 – 13 x 9 x 4</td>
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<tr>
<td>15 – 18 x 11 x 5</td>
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<tr>
<td>15 – 18 x 12 x 13</td>
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<tr>
<td>15 – 18 x 12 x 6</td>
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<tr>
<td>15 – 18 x 12.5 x 9</td>
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<tr>
<td>15 – 18 x 13.5 x 7.5</td>
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<tr>
<td>15 – 18 x 14.5 x 8.5</td>
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<tr>
<td>15 – 18 x 16 x 10</td>
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<tr>
<td>15 – 18 x 17.5 x 6</td>
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<tr>
<td>15 – 18 x 18.5 x 7.5</td>
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<tr>
<td>15 – 18 x 19 x 11</td>
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<td>22.5 – 26.5 x 15 x 6</td>
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<tr>
<td>22.5 – 26.5 x 16 x 7</td>
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<tr>
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<tr>
<td>22.5 – 26.5 x 18.5 x 10</td>
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<td>22.5 – 26.5 x 22 x 13</td>
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<tr>
<td>27.5 – 32 x 17 x 9</td>
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<td>27.5 – 32 x 20 x 11</td>
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<td>27.5 – 32 x 22 x 13</td>
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<tr>
<td>27.5 – 32 x 25 x 13</td>
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<td>27.5 – 32 x 28 x 14</td>
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<td>27.5 – 32 x 33 x 18</td>
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<td>37.5 – 41.5 x 24 x 13</td>
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<td>37.5 – 41.5 x 28.5 x 16</td>
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<td>37.5 – 41.5 x 32 x 19</td>
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<tr>
<td>37.5 – 41.5 x 40 x 20</td>
</tr>
<tr>
<td>37.5 – 41.5 x 44 x 24</td>
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<tr>
<td>37.5 – 41.5 x 45 x 30</td>
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</tbody>
</table>
**Film Capacitors – DC Film**

**Pulse and High Frequency**

**Single Metallized Polyester (cont.)**

**R74 Radial, AC Applications, Automotive Grade, 250 – 900 VAC**

**Capacitance Range:** 471 pF to 3.3 µF • **Temperature Range:** −55°C to +105°C

**www.kemet.com/R74**

**Overview**

The R74 Series is constructed of metallized polypropylene film with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements. Four different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

**Applications**

Typical applications include electronic lighting such as automotive headlamps and ballasts, as well as pulse applications with high AC voltage and high current. Not suitable for across-the-line application (see Suppressor Capacitors).

**Polypropylene Pulse/High Frequency Capacitors**

**R74 Series Single Metallized Polypropylene Film, Radial, AC Applications (Automotive Grade)**

**Part Number System**

- **Series**
- **Rated Voltage (VAC)**
- **Lead Spacing (mm)**
- **Capacitance Code (pF)**
- **Packaging Internal Use**
- **Capacitance Tolerance**

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>630/250</td>
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<tr>
<td>10 – 13 x 11 x 5</td>
<td>15 nF – 18 nF</td>
</tr>
<tr>
<td>10 – 13 x 12 x 6</td>
<td>22 nF – 27 nF</td>
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<tr>
<td>10 – 13 x 9 x 4</td>
<td>10 nF – 12 nF</td>
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<tr>
<td>15 – 18 x 11 x 5</td>
<td>15 nF – 33 nF</td>
</tr>
<tr>
<td>15 – 18 x 12 x 13</td>
<td>82 nF – 100 nF</td>
</tr>
<tr>
<td>15 – 18 x 12 x 6</td>
<td>39 nF – 47 nF</td>
</tr>
<tr>
<td>15 – 18 x 12.5 x 9</td>
<td>68 nF</td>
</tr>
<tr>
<td>15 – 18 x 13.5 x 7.5</td>
<td>56 nF – 68 nF</td>
</tr>
<tr>
<td>15 – 18 x 14.5 x 8.5</td>
<td>82 nF – 100 nF</td>
</tr>
<tr>
<td>15 – 18 x 16 x 10</td>
<td>120 nF</td>
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<tr>
<td>15 – 18 x 19 x 11</td>
<td>150 nF</td>
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<tr>
<td>15 – 18 x 10 x 4</td>
<td>120 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 15 x 6</td>
<td>39 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 16 x 7</td>
<td>47 nF – 56 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 17 x 8.5</td>
<td>68 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 18.5 x 10</td>
<td>82 nF – 100 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 20 x 11</td>
<td>120 nF</td>
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<td>330 nF – 390 nF</td>
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<td>27.5 – 32 x 28 x 14</td>
<td>470 nF – 680 nF</td>
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<td>27.5 – 32 x 33 x 18</td>
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<tr>
<td>27.5 – 32 x 37 x 22</td>
<td>820 nF – 1 μF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 22 x 11</td>
<td>470 nF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 24 x 13</td>
<td>560 nF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 28.5 x 16</td>
<td>820 nF</td>
</tr>
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<td>37.5 – 41.5 x 32 x 19</td>
<td>1.2 μF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 40 x 20</td>
<td>1.5 μF – 1.8 μF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 44 x 24</td>
<td>2.2 μF – 2.7 μF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 45 x 30</td>
<td>3.3 μF</td>
</tr>
</tbody>
</table>
Film Capacitors – DC Film
Pulse and High Frequency

Single Metallized Polypropylene

R75 Radial, DC and Pulse Applications, Automotive Grade, 160 – 2,000 VDC
Capacitance Range: 220 pF to 33 µF • Temperature Range: −55°C to +105°C

<table>
<thead>
<tr>
<th>R75</th>
<th>P</th>
<th>N</th>
<th>2820</th>
<th>AA</th>
<th>30</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Rated Voltage (VDC)</td>
<td>Lead Spacing (mm)</td>
<td>Capacitance Code (pF)</td>
<td>Packaging</td>
<td>Internal Use</td>
<td>Capacitance Tolerance</td>
</tr>
<tr>
<td>Metallized Polypropylene</td>
<td>G = 160</td>
<td>D = 7.5</td>
<td>The last three digits represent significant figures.</td>
<td>See Ordering Options Table</td>
<td>00</td>
<td>J = ±5%</td>
</tr>
<tr>
<td></td>
<td>I = 250</td>
<td>F = 10</td>
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<td></td>
<td>10</td>
<td>K = ±10%</td>
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<td></td>
<td>M = 400</td>
<td>I = 15</td>
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<td>40</td>
<td>M = ±20%</td>
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<td>N = 22.5</td>
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<td>Q = 1,000</td>
<td>R = 27.5</td>
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<td></td>
<td>60</td>
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</tr>
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<td>R = 1,250</td>
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<td>T = 1,600</td>
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Case Size

<table>
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<th>Voltage (VDC/VAC)</th>
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</thead>
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<td>7.5 – 10 x 10.5 x 5</td>
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<td>7.5 – 10 x 9 x 4</td>
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<tr>
<td>7.5 – 10.5 x 12 x 6</td>
</tr>
<tr>
<td>10 – 13 x 11 x 5</td>
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<td>10 – 13 x 12 x 6</td>
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<td>10 – 13 x 9 x 4</td>
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<td>15 – 18 x 11 x 5</td>
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<tr>
<td>15 – 18 x 12 x 6</td>
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<tr>
<td>15 – 18 x 12.5 x 9</td>
</tr>
<tr>
<td>15 – 18 x 13.5 x 7.5</td>
</tr>
</tbody>
</table>
Film Capacitors – DC Film
Pulse and High Frequency

Single Metallized Polypropylene (cont.)

R75 Radial, DC and Pulse Applications, Automotive Grade, 160 – 2,000 VDC (cont.)
Capacitance Range: 220 pF to 33 μF • Temperature Range: −55°C to +105°C

<table>
<thead>
<tr>
<th>R75</th>
<th>P</th>
<th>N</th>
<th>2820</th>
<th>AA</th>
<th>30</th>
<th>K</th>
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<tbody>
<tr>
<td>160</td>
<td>250</td>
<td>400</td>
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<td>I = 15</td>
<td>N = 22.5</td>
<td>R = 27.5</td>
<td>W = 37.5</td>
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</table>

The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.

See Ordering Options Table

Case Size Voltage (VDC/VAC)

<table>
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<th>Voltage (VDC/VAC)</th>
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<td>160/90</td>
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<td>560 nF – 680 nF</td>
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<tr>
<td>15 – 18 x 16 x 10</td>
<td>820 nF – 1 μF</td>
</tr>
<tr>
<td>15 – 18 x 19 x 11</td>
<td>1.2 μF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 15 x 6</td>
<td>390 nF – 680 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 16 x 7</td>
<td>820 nF – 1 μF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 17 x 8.5</td>
<td>1.2 μF</td>
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<tr>
<td>22.5 – 26.5 x 18.5 x 10</td>
<td>1.5 μF – 1.8 μF</td>
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<tr>
<td>22.5 – 26.5 x 20 x 11</td>
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<tr>
<td>22.5 – 26.5 x 22 x 13</td>
<td>2.7 μF – 3.3 μF</td>
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<tr>
<td>27.5 – 32 x 17 x 9</td>
<td>1.5 μF – 1.8 μF</td>
</tr>
<tr>
<td>27.5 – 32 x 20 x 11</td>
<td>1.2 μF – 2.7 μF</td>
</tr>
<tr>
<td>27.5 – 32 x 22 x 13</td>
<td>3.3 μF – 3.9 μF</td>
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<td>27.5 – 32 x 25 x 13</td>
<td>4.7 μF</td>
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<tr>
<td>27.5 – 32 x 28 x 14</td>
<td>5.6 μF</td>
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<tr>
<td>27.5 – 32 x 33 x 18</td>
<td>6.8 μF – 8.2 μF</td>
</tr>
<tr>
<td>27.5 – 32 x 37 x 22</td>
<td>10 μF – 12 μF</td>
</tr>
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<td>37.5 – 41.5 x 22 x 11</td>
<td>3.3 μF – 4.7 μF</td>
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<td>37.5 – 41.5 x 28.5 x 16</td>
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<td>22 μF</td>
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Case Size Voltage (VDC/VAC)

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<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
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<tr>
<td></td>
<td>630/250</td>
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<tr>
<td>7.5 – 10 x 10.5 x 5</td>
<td>10 nF – 12 nF</td>
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<tr>
<td>7.5 – 10 x 8 x 3</td>
<td>0.22 nF – 1 nF</td>
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<td>7.5 – 10 x 9 x 4</td>
<td>3.3 nF – 8.2 nF</td>
</tr>
<tr>
<td>7.5 – 10.5 x 12 x 6</td>
<td>15 nF – 18 nF</td>
</tr>
</tbody>
</table>
### Capacitance Code

- **Capacitance**
- **Packaging** Internal Use

### Pulse and High Frequency

- **Film Capacitors** - DC Film

#### Capacitance Range:

- **R75 Radial, DC and Pulse Applications, Automotive Grade, 160 – 2,000 VDC (cont.)**

#### Single Metallized Polypropylene (cont.)

- **Part Number System**
  - Automotive (AEC–Q200) grades available up to lead spacing 22.5 mm and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.
  - Self-healing
  - Tape and reel packaging in accordance with IEC 60286–2
  - RoHS compliance and lead-free terminations
  - Climatic category: 55/105/56 IEC 60068–1
  - Lead Spacing: 7.5 – 37.5 mm
  - Capacitance range: 220 pF – 33 µF
  - Voltage range: 160 – 2,000 VDC

### Benefits

- Applying the capacitor winding. The capacitor is encapsulated in film with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor. The capacitor is connected to a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 application (see Suppressor Capacitors).

### Applications

- Capacitor in switched mode power supply (SMPS), timing and compact lamp, power factor correction and coupling (S-correction), resonant capacitor in electronic ballast application (see Suppressor Capacitors).

### Overview

- **R75 Series Single Metallized Polypropylene Film, Radial, Automotive Grade, 160 – 2,000 VDC (cont.)**

### Options Table

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
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<tbody>
<tr>
<td></td>
<td>630/250</td>
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<td>22 nF</td>
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<tr>
<td>10 – 13 x 9 x 4</td>
<td>1 nF – 12 nF</td>
</tr>
<tr>
<td>15 – 18 x 11 x 5</td>
<td>27 nF – 56 nF</td>
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<td>150 nF – 180 nF</td>
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<td>15 – 18 x 12 x 6</td>
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<tr>
<td>15 – 18 x 12.5 x 9</td>
<td>100 nF – 120 nF</td>
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<tr>
<td>15 – 18 x 13.5 x 7.5</td>
<td>100 nF – 120 nF</td>
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<tr>
<td>15 – 18 x 14.5 x 8.5</td>
<td>150 nF</td>
</tr>
<tr>
<td>15 – 18 x 16 x 10</td>
<td>180 nF – 220 nF</td>
</tr>
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<td>15 – 18 x 19 x 11</td>
<td>270 nF – 330 nF</td>
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<td>15 – 18 x 10 x 4</td>
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</tr>
<tr>
<td>22.5 – 26.5 x 15 x 6</td>
<td>82 nF – 150 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 16 x 7</td>
<td>180 nF – 220 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 17 x 8.5</td>
<td>270 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 18.5 x 10</td>
<td>330 nF – 390 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 20 x 11</td>
<td>470 nF – 560 nF</td>
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<td>22.5 – 26.5 x 22 x 13</td>
<td>680 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 17 x 9</td>
<td>390 nF – 470 nF</td>
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<td>27.5 – 32 x 20 x 11</td>
<td>560 nF – 680 nF</td>
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<tr>
<td>27.5 – 32 x 22 x 13</td>
<td>820 nF – 1 µF</td>
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<td>27.5 – 32 x 25 x 13</td>
<td>470 nF</td>
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<tr>
<td>27.5 – 32 x 28 x 14</td>
<td>1.2 µF – 1.5 µF</td>
</tr>
<tr>
<td>27.5 – 32 x 33 x 18</td>
<td>1.8 µF – 2.2 µF</td>
</tr>
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<td>27.5 – 32 x 37 x 22</td>
<td>2.7 µF – 3.3 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 22 x 11</td>
<td>680 nF – 1 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 24 x 13</td>
<td>1.2 µF – 1.5 µF</td>
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<tr>
<td>37.5 – 41.5 x 28.5 x 16</td>
<td>1.8 µF – 2.2 µF</td>
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<tr>
<td>37.5 – 41.5 x 32 x 19</td>
<td>2.7 µF – 3.3 µF</td>
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<td>37.5 – 41.5 x 40 x 20</td>
<td>3.9 µF – 4.7 µF</td>
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<td>37.5 – 41.5 x 44 x 24</td>
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</tr>
<tr>
<td>37.5 – 41.5 x 45 x 30</td>
<td>6.8 µF – 8.2 µF</td>
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</table>
Single Metallized Polypropylene (cont.)

A70 Axial, 160 – 630 VDC
Capacitance Range: 0.001 to 4.7 µF • Temperature Range: −55°C to +105°C

<table>
<thead>
<tr>
<th>A70</th>
<th>G</th>
<th>F</th>
<th>2220</th>
<th>AA</th>
<th>00</th>
<th>J</th>
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<tr>
<td>Series</td>
<td>Rated Voltage (VDC)</td>
<td>Length (mm)</td>
<td>Capacitance Code (pF)</td>
<td>Lead and Packaging Code</td>
<td>Internal Use</td>
<td>Capacitance Tolerance</td>
</tr>
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<td>Metallized Polypropylene</td>
<td>G = 160</td>
<td>F = 11</td>
<td>The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.</td>
<td></td>
<td>00 (Standard)</td>
<td>J = ±5%</td>
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<tr>
<td></td>
<td>I = 250</td>
<td>H = 14</td>
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<td></td>
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<td>K = ±10%</td>
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<tr>
<td></td>
<td>M = 400</td>
<td>K = 20.5</td>
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<td></td>
<td></td>
<td>M = ±20%</td>
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<tr>
<td></td>
<td>P = 630</td>
<td>Q = 28</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>T = 33</td>
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Case Size | Voltage (VDC/VAC) | 160/90 | 250/200 | 400/220 | 630/250 |
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<td>5 x 11</td>
<td>22 nF – 47 nF</td>
<td>10 nF – 15 nF</td>
<td>6.8 nF</td>
<td>1 nF – 4.7 nF</td>
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<td>68 nF – 100 nF</td>
<td>22 nF – 33 nF</td>
<td>10 nF</td>
<td>6.8 nF</td>
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<tr>
<td>6 x 14</td>
<td>47 nF</td>
<td>15 nF – 22 nF</td>
<td>10 nF</td>
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</tr>
<tr>
<td>6.5 x 14</td>
<td>150 nF</td>
<td>33 nF</td>
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<td>7 x 14</td>
<td>68 nF</td>
<td>15 nF</td>
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</tr>
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<td>7 x 20.5</td>
<td>330 nF</td>
<td>68 nF</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7.5 x 14</td>
<td>220 nF</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5 x 20.5</td>
<td>150 nF</td>
<td>33 nF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 x 14</td>
<td>470 nF</td>
<td>100 nF</td>
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<tr>
<td>8 x 20.5</td>
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<td>150 nF</td>
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<tr>
<td>8.5 x 14</td>
<td>100 nF</td>
<td>22 nF</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8.5 x 20.5</td>
<td>330 nF</td>
<td>47 nF</td>
<td></td>
<td></td>
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<td>9 x 20.5</td>
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<tr>
<td>9.5 x 28</td>
<td>1 µF</td>
<td>220 nF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 x 28</td>
<td>470 nF</td>
<td>100 nF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 x 28</td>
<td>1.5 µF</td>
<td>330 nF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.5 x 28</td>
<td>680 nF</td>
<td>150 nF</td>
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<tr>
<td>12 x 33</td>
<td>2.2 µF</td>
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<tr>
<td>12.5 x 33</td>
<td>1 µF</td>
<td>220 nF – 680 nF</td>
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<td>13 x 28</td>
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<td>13.5 x 33</td>
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<tr>
<td>14.5 x 33</td>
<td>3.3 µF</td>
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<td>20 x 33</td>
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<tr>
<td>21.5 x 33</td>
<td>3.3 µF</td>
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</table>
Single Metallized Polypropylene (cont.)

F461 – 464 Halogen Free, 160 – 2,500 VDC
Capacitance Range: 0.001 to 56 μF • Temperature Range: −55°C to +105°C

Overview
The F461 – 464 Series is a metallized polypropylene film encapsulated with self-extinguishing resin in a box of material meeting the requirements of UL 94 V–0. Four different winding constructions are used depending on voltage and lead spacing. Please see Table 1 for more information.

Applications
Typical applications include pulse operation in switched mode power supply (SMPS), televisions, computer monitors, electrical ballasts and other high frequency applications demanding stable operation.

Benefits
- Rated voltage: 160 – 2,500 VDC
- Rated voltage: 90 – 900 VAC
- Capacitance range: 0.001 – 56 μF
- Lead spacing: 5 – 37.5 mm
- Capacitance tolerance: ±5%, ±10%, other tolerances on request
- Climatic category: 55/105/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Category temperature range of −55°C to +105°C
- Rated temperature +85°C

Part Number System
F 46x K E 223 J 160 C

<table>
<thead>
<tr>
<th>Capacitor Class</th>
<th>Series</th>
<th>Lead Spacing (mm)</th>
<th>Size Code</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>F = Film</td>
<td>J = 5</td>
<td>K = 7.5</td>
<td>E = 223</td>
<td>J = ±5%</td>
<td>K = ±10%</td>
<td>160 = 160</td>
<td>See Dimension Table</td>
</tr>
<tr>
<td></td>
<td>A = 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>250 = 250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B = 15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400 = 400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D = 22.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>630 = 630</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F = 27.5</td>
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<td></td>
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<td>1K0 = 1000</td>
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<tr>
<td></td>
<td>R = 37.5</td>
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<td></td>
<td>1L2 = 1250</td>
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<td>2K0 = 2000</td>
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<td>2KS = 2500</td>
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F461

<table>
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<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
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<tbody>
<tr>
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<tr>
<td>5 – 7.2 x 11 x 6</td>
<td>100 nF – 120 nF</td>
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<tr>
<td>5 – 7.2 x 13 x 7.2</td>
<td>150 nF – 220 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 6.5 x 2.5</td>
<td>10 nF – 18 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 7.5 x 3.5</td>
<td>22 nF – 39 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 9.5 x 4.5</td>
<td>47 nF – 82 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 10 x 5</td>
<td>47 nF – 56 nF</td>
</tr>
<tr>
<td>7.5 – 10 x 10.5 x 5</td>
<td>100 nF – 180 nF</td>
</tr>
<tr>
<td>7.5 – 10 x 6 x 2.5</td>
<td>15 nF – 22 nF</td>
</tr>
<tr>
<td>7.5 – 10 x 8 x 3</td>
<td>27 nF – 56 nF</td>
</tr>
<tr>
<td>7.5 – 10 x 8 x 4</td>
<td>68 nF – 82 nF</td>
</tr>
<tr>
<td>7.5 – 10.5 x 12 x 6</td>
<td>220 nF – 270 nF</td>
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<td>10 – 13 x 11 x 5</td>
<td>180 nF – 270 nF</td>
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<tr>
<td>10 – 13 x 12 x 6</td>
<td>330 nF – 470 nF</td>
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<tr>
<td>10 – 13 x 9 x 4</td>
<td>100 nF – 150 nF</td>
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<tr>
<td>15 – 18 x 10 x 4</td>
<td>150 nF – 270 nF</td>
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<tr>
<td>15 – 18 x 11 x 5</td>
<td>330 nF – 390 nF</td>
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<tr>
<td>15 – 18 x 12.5 x 5.5</td>
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<tr>
<td>15 – 18 x 13.5 x 7.5</td>
<td>680 nF – 1 μF</td>
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<tr>
<td>15 – 18 x 14.5 x 8.5</td>
<td>1.2 μF</td>
</tr>
<tr>
<td>15 – 18 x 16 x 10</td>
<td>1.5 μF</td>
</tr>
<tr>
<td>15 – 18 x 19 x 11</td>
<td>2.2 μF – 2.7 μF</td>
</tr>
<tr>
<td>15 – 18 x 12 x 6</td>
<td>330 nF</td>
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<td>15 – 18 x 17.5 x 6</td>
<td>330 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 14.5 x 6</td>
<td>1 μF – 1.2 μF</td>
</tr>
<tr>
<td>22.5 – 26 x 16 x 7</td>
<td>1.5 μF – 1.8 μF</td>
</tr>
<tr>
<td>22.5 – 26 x 17 x 8.5</td>
<td>2.2 μF</td>
</tr>
<tr>
<td>22.5 – 26 x 18.5 x 9</td>
<td>2.7 μF – 3.3 μF</td>
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<tr>
<td>22.5 – 26 x 20 x 11</td>
<td>3.9 μF</td>
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<tr>
<td>22.5 – 26 x 22 x 13</td>
<td>4.7 μF – 5.6 μF</td>
</tr>
<tr>
<td>22.5 – 26 x 24.5 x 15.5</td>
<td>6.8 μF – 8.2 μF</td>
</tr>
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Single Metallized Polypropylene (cont.)

F461 – 464 Halogen Free, 160 – 2,500 VDC (cont.)
Capacitance Range: 0.001 to 56 µF • Temperature Range: −55°C to +105°C

<table>
<thead>
<tr>
<th>Capacitor Class</th>
<th>Series</th>
<th>Lead Spacing (mm)</th>
<th>Size Code</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Packaging</th>
</tr>
</thead>
</table>
| F = Film       | Metallized Polypropylene x = sections in construction | J = 5  
A = 10  
B = 15  
D = 22.5  
F = 27.5  
R = 37.5 | See Dimension Table | First two digits represent significant figures. Third digit specifies number of zeros. | J ±5%  
K ±10%  
Other tolerances on request | 160 = 160  
250 = 250  
400 = 400  
630 = 630  
1K0 = 1000  
1L2 = 1250  
1K6 = 1600  
2K0 = 2000  
2K5 = 2500 | See Ordering Options Table |

F461 (cont.)

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
</table>
| 22.5 – 26 x 16 x 8 | 1.2 µF  
|                   | 560 nF  
|                   | 270 nF |
| 22.5 – 26 x 18.5 x 10 | 2.2 µF |
| 27.5 – 31.5 x 17 x 9 | 2.2 µF  
|                   | 3.3 µF  
|                   | 1.5 µF  
|                   | 1.8 µF  |
| 27.5 – 31.5 x 20 x 11 | 3.9 µF  
|                   | 4.7 µF  
|                   | 2.2 µF  
|                   | 3.3 µF  |
| 27.5 – 31.5 x 25 x 13 | 5.6 µF  
|                   | 8.2 µF  
|                   | 3.9 µF  
|                   | 4.7 µF  |
| 27.5 – 31.5 x 28 x 17.5 | 10 µF  
|                   | 12 µF  
|                   | 6.8 µF  
|                   | 3.3 µF  |
| 27.5 – 31.5 x 37 x 22 | 15 µF  
|                   | 22 µF  
|                   | 10 µF  
|                   | 15 µF  |
| 27.5 – 31.5 x 28 x 14 | 5.6 µF  
|                   | 2.7 µF  
|                   | 1.5 µF  |
| 27.5 – 31.5 x 29 x 19 | 8.2 µF  
|                   | 3.9 µF  
|                   | 2.2 µF  |
| 37.5 – 41 x 22 x 11 | 6.8 µF  
|                   | 8.2 µF  
|                   | 3.3 µF  
|                   | 4.7 µF  |
| 37.5 – 41 x 24 x 13 | 10 µF  
|                   | 5.6 µF  
|                   | 6.8 µF  |
| 37.5 – 41 x 26 x 15 | 12 µF  
|                   | 8.2 µF  
|                   | 3.9 µF  |
| 37.5 – 41 x 28.5 x 16 | 15 µF  
|                   | 10 µF  
|                   | 4.7 µF  |
| 37.5 – 41 x 32 x 19 | 18 µF  
|                   | 22 µF  
|                   | 12 µF  
|                   | 15 µF  |
| 37.5 – 41 x 38 x 21 | 27 µF  
|                   | 18 µF  
|                   | 8.2 µF  |
| 37.5 – 41 x 44 x 24 | 33 µF  
|                   | 39 µF  
|                   | 22 µF  
|                   | 27 µF  |
| 37.5 – 41 x 45 x 30 | 47 µF  
|                   | 56 µF  
|                   | 33 µF  
|                   | 39 µF  |

F462

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
</table>
| 10 – 13 x 11 x 5 | 8.2 nF  
|                   | 12 nF  
|                   | 6.8 nF  
|                   | 12 nF  |
| 10 – 13 x 12 x 6 | 15 nF  
|                   | 22 nF  
|                   | 15 nF  
|                   | 5.6 nF  
|                   | 6.8 nF  |
| 10 – 13 x 9 x 4 | 4.7 nF  
|                   | 6.8 nF  
|                   | 3.3 nF  
|                   | 5.6 nF  |
| 15 – 18 x 10 x 4 | 10 nF  
|                   | 15 nF  
|                   | 6.8 nF  
|                   | 10 nF  |
| 15 – 18 x 11 x 5 | 18 nF  
|                   | 22 nF  
|                   | 12 nF  
|                   | 15 nF  |
| 15 – 18 x 12.5 x 5.5 | 27 nF  
|                   | 33 nF  
|                   | 18 nF  
|                   | 22 nF  |
| 15 – 18 x 13.5 x 7.5 | 39 nF  
|                   | 56 nF  
|                   | 27 nF  
|                   | 47 nF  |
| 15 – 18 x 14.5 x 8.5 | 68 nF  
|                   | 56 nF  
|                   | 27 nF  |
**Single Metallized Polypropylene (cont.)**

**F461 – 464 Halogen Free, 160 – 2,500 VDC (cont.)**

Capacitance Range: 0.001 to 56 µF • Temperature Range: −55°C to +105°C

<table>
<thead>
<tr>
<th>Capacitor Class</th>
<th>Series</th>
<th>Lead Spacing (mm)</th>
<th>Size Code</th>
<th>Capacitance (µF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>F = Film</td>
<td>Metallized Polypropylene x = sections in construction</td>
<td>J = 5 K = 7.5 A = 10 B = 15 D = 22.5 F = 27.5 R = 37.5</td>
<td>See Dimension Table</td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td>J = ±5% K = ±10% Other tolerances on request</td>
<td>160 = 160 250 = 250 400 = 400 630 = 630 1K0 = 1000 1L2 = 1250 1K6 = 1600 2K0 = 2000 2K5 = 2500</td>
<td>See Ordering Options Table</td>
</tr>
</tbody>
</table>

**F462 (cont.)**

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,000/300</td>
</tr>
<tr>
<td>15 – 18 x 16 x 10</td>
<td>82 nF – 100 nF</td>
</tr>
<tr>
<td>15 – 18 x 19 x 11</td>
<td>120 nF – 150 nF</td>
</tr>
<tr>
<td>15 – 18 x 12 x 6</td>
<td></td>
</tr>
<tr>
<td>22.5 – 26 x 14.5 x 6</td>
<td>47 nF – 68 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 16 x 7</td>
<td>82 nF – 100 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 16 x 8</td>
<td></td>
</tr>
<tr>
<td>22.5 – 26 x 18.5 x 10</td>
<td>180 nF – 220 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 18.5 x 9</td>
<td></td>
</tr>
<tr>
<td>22.5 – 26 x 22 x 13</td>
<td>270 nF – 330 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 24.5 x 15.5</td>
<td>390 nF – 560 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 17 x 8.5</td>
<td></td>
</tr>
<tr>
<td>22.5 – 26 x 20 x 11</td>
<td></td>
</tr>
<tr>
<td>27.5 – 31.5 x 17 x 9</td>
<td>150 nF – 220 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 20 x 11</td>
<td>270 nF – 330 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 25 x 13</td>
<td>390 nF – 470 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 28 x 14</td>
<td>560 nF – 680 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 28 x 17.5</td>
<td>820 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 37 x 22</td>
<td>1 µF – 1.5 µF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 29 x 19</td>
<td></td>
</tr>
<tr>
<td>37.5 – 41 x 22 x 11</td>
<td>330 nF – 560 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 24 x 13</td>
<td>680 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 26 x 15</td>
<td>820 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 28.5 x 16</td>
<td>1 µF</td>
</tr>
<tr>
<td>37.5 – 41 x 32 x 19</td>
<td>1.2 µF – 1.5 µF</td>
</tr>
<tr>
<td>37.5 – 41 x 38 x 21</td>
<td>1.8 µF – 2.2 µF</td>
</tr>
<tr>
<td>37.5 – 41 x 44 x 24</td>
<td>2.7 µF</td>
</tr>
<tr>
<td>37.5 – 41 x 45 x 30</td>
<td>3.3 µF – 3.9 µF</td>
</tr>
</tbody>
</table>
Single Metallized Polypropylene (cont.)

F461 – 464 Halogen Free, 160 – 2,500 VDC (cont.)
Capacitance Range: 0.001 to 56 μF • Temperature Range: −55°C to +105°C

<table>
<thead>
<tr>
<th>F</th>
<th>46x</th>
<th>K</th>
<th>E</th>
<th>223</th>
<th>J</th>
<th>160</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitor Class</td>
<td>Series</td>
<td>Lead Spacing (mm)</td>
<td>Size Code</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
<td>Packaging</td>
</tr>
<tr>
<td>F = Film</td>
<td>Metallized Polypropylene x = sections in construction</td>
<td>J = 5 K = 7.5 A = 10 B = 15 D = 22.5 F = 27.5 R = 37.5</td>
<td>See Dimension Table</td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td>J = ±5% K = ±10% Other tolerances on request</td>
<td>160 = 160 250 = 250 400 = 400 630 = 630 1K0 = 1000 1L2 = 1250 1K6 = 1600 2K0 = 2000 2K5 = 2500</td>
<td>See Ordering Options Table</td>
</tr>
</tbody>
</table>

F463

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,250/500</td>
</tr>
<tr>
<td>10 – 13 x 11 x 5</td>
<td>2.7 nF – 4.7 nF</td>
</tr>
<tr>
<td>10 – 13 x 12 x 6</td>
<td>5.6 nF</td>
</tr>
<tr>
<td>10 – 13 x 9 x 4</td>
<td>1 nF – 2.2 nF</td>
</tr>
<tr>
<td>15 – 18 x 10 x 4</td>
<td>4.7 nF – 6.8 nF</td>
</tr>
<tr>
<td>15 – 18 x 11 x 5</td>
<td>8.2 nF – 10 nF</td>
</tr>
<tr>
<td>15 – 18 x 12 x 6</td>
<td>15 nF</td>
</tr>
<tr>
<td>15 – 18 x 12.5 x 5.5</td>
<td>12 nF</td>
</tr>
<tr>
<td>15 – 18 x 13.5 x 7.5</td>
<td>18 nF – 27 nF</td>
</tr>
<tr>
<td>15 – 18 x 14.5 x 8.5</td>
<td>33 nF</td>
</tr>
<tr>
<td>15 – 18 x 16 x 10</td>
<td>39 nF – 47 nF</td>
</tr>
<tr>
<td>15 – 18 x 19 x 11</td>
<td>56 nF – 68 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 14.5 x 6</td>
<td>22 nF – 39 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 16 x 7</td>
<td>47 nF – 56 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 17 x 8.5</td>
<td>68 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 18.5 x 10</td>
<td>100 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 18.5 x 9</td>
<td>82 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 20 x 11</td>
<td>120 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 22 x 13</td>
<td>150 nF – 180 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 24.5 x 15.5</td>
<td>220 nF – 270 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 16 x 8</td>
<td>22 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 17 x 9</td>
<td>68 nF – 120 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 20 x 11</td>
<td>150 nF – 180 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 25 x 13</td>
<td>220 nF – 270 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 28 x 14</td>
<td>330 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 28 x 17.5</td>
<td>390 nF – 470 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 37 x 22</td>
<td>560 nF – 820 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 29 x 19</td>
<td>330 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 22 x 11</td>
<td>220 nF – 330 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 24 x 13</td>
<td>390 nF</td>
</tr>
</tbody>
</table>
Film Capacitors – DC Film

Pulse and High Frequency

Single Metallized Polypropylene (cont.)

F461 – 464 Halogen Free, 160 – 2,500 VDC (cont.)

Capacitance Range: 0.001 to 56 μF • Temperature Range: −55°C to +105°C www.kemet.com/F461

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One world. One KEMET

General Purpose, Pulse and DC Transient Suppression

F461 – 464 Series Single Metallized Polypropylene Film

Overview

The F461 – 464 Series is a metallized polypropylene film encapsulated with self-extinguishing resin in a box of material meeting the requirements of UL 94 V–0. Four different winding constructions are used depending on voltage and lead spacing. Please see Table 1 for more information.

Applications

Typical applications include pulse operation in switched mode power supply (SMPS), televisions, computer monitors, electrical ballasts and other high frequency applications demanding stable operation.

Benefits

• Rated voltage: 160 – 2,500 VDC
• Rated voltage: 90 – 900 VAC
• Capacitance range: 0.001 – 56 µF
• Lead spacing: 5 – 37.5 mm
• Capacitance tolerance: ±5%, ±10%, other tolerances on request
• Climatic category: 55/105/56, IEC 60068–1
• Tape and reel packaging in accordance with IEC 60286–2
• RoHS Compliant and lead-free terminations
• Category temperature range of −55°C to +105°C
• Rated temperature +85°C

Part Number System

F 46x K E 223 J 160 C

Capacitor Class Series Lead Spacing (mm) Size Code Capacitance Code (pF) Capacitance Tolerance Rated Voltage (VDC) Packaging

F = Film Metallized Polypropylene x = sections in construction J = ±5% K = ±10% Other tolerances on request

See Dimension Table

F463 (cont.)

Case Size Voltage (VDC/VAC)

<table>
<thead>
<tr>
<th>Case Size</th>
<th>1,250/500</th>
<th>1,600/650</th>
<th>2,000/700</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.5 – 41 x 26 x 15</td>
<td>470 nF</td>
<td>330 nF</td>
<td>180 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 28.5 x 16</td>
<td>560 nF – 680 nF</td>
<td>390 nF</td>
<td>220 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 32 x 19</td>
<td>820 nF</td>
<td>470 nF – 560 nF</td>
<td>270 nF – 330 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 38 x 21</td>
<td>1 μF – 1.2 μF</td>
<td>680 nF – 820 nF</td>
<td>390 nF – 470 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 44 x 24</td>
<td>1.5 μF</td>
<td>1 μF – 1.2 μF</td>
<td>560 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 45 x 30</td>
<td>1.8 μF – 2.2 μF</td>
<td>1.5 μF</td>
<td>680 nF – 820 nF</td>
</tr>
</tbody>
</table>

F464

Case Size Voltage (VDC/VAC)

<table>
<thead>
<tr>
<th>Case Size</th>
<th>2,500/900</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 – 18 x 10 x 4</td>
<td>1 nF – 2.2 nF</td>
</tr>
<tr>
<td>15 – 18 x 11 x 5</td>
<td>2.7 nF – 3.3 nF</td>
</tr>
<tr>
<td>15 – 18 x 12.5 x 5.5</td>
<td>3.9 nF – 4.7 nF</td>
</tr>
<tr>
<td>15 – 18 x 13.5 x 7.5</td>
<td>5.6 nF – 8.2 nF</td>
</tr>
<tr>
<td>15 – 18 x 14.5 x 8.5</td>
<td>10 nF</td>
</tr>
<tr>
<td>15 – 18 x 16 x 10</td>
<td>12 nF – 15 nF</td>
</tr>
<tr>
<td>15 – 18 x 19 x 11</td>
<td>18 nF – 22 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 14.5 x 6</td>
<td>4.7 nF – 8.2 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 16 x 7</td>
<td>10 nF – 12 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 17 x 8.5</td>
<td>15 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 18.5 x 9</td>
<td>18 nF – 22 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 20 x 11</td>
<td>27 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 22 x 13</td>
<td>33 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 24.5 x 15.5</td>
<td>39 nF – 56 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 17 x 9</td>
<td>15 nF – 27 nF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case Size</th>
<th>2,500/900</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.5 – 31.5 x 20 x 11</td>
<td>33 nF – 39 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 25 x 13</td>
<td>47 nF – 68 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 28 x 14</td>
<td>82 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 28 x 17.5</td>
<td>100 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 29 x 19</td>
<td>120 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 37 x 22</td>
<td>150 nF – 180 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 22 x 11</td>
<td>47 nF – 68 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 24 x 13</td>
<td>82 nF – 100 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 26 x 15</td>
<td>120 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 28.5 x 16</td>
<td>150 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 32 x 19</td>
<td>180 nF – 220 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 38 x 21</td>
<td>270 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 44 x 24</td>
<td>330 nF – 390 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 45 x 30</td>
<td>470 nF – 560 nF</td>
</tr>
</tbody>
</table>
Double Metallized Polypropylene

**R76 Radial, DC and Pulse Applications, Automotive Grade, 250 – 2,000 VDC**

Capacitance Range: 100 pF to 15 μF • Temperature Range: −55°C to +105°C

**Benefits**

- Voltage range: 250 – 2,000 VDC
- Capacitance range: 100 pF – 15 μF
- Lead Spacing: 7.5 mm – 37.5 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56 IEC 60068–1
- Operating temperature range of −55°C to +105°C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available up to lead spacing 22.5 mm

**Overview**

The R76 Series is constructed of polypropylene film and double metallized polyester film as electrodes with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements. Two different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

**Applications**

Typical applications include deflection circuits in televisions (S-correction and flyback tuning) and monitors, switching spikes suppression in switched mode power supplies (SMPS), lamp capacitors for electronic ballasts and compact lamps, and snubber and silicon-controlled rectifier (SCR) commutation circuits as well as applications with high voltage and high current. Not suitable for across-the-line application (see Suppressor Capacitors).

**Polypropylene Pulse/High Frequency Capacitors**

R76 Series Double Metallized Polypropylene Film, Radial, DC and Pulse Applications (Automotive Grade)

**Part Number System**

- **Series**
- **Rated Voltage (VDC)**
- **Lead Spacing (mm)**
- **Capacitance Code (pF)**
- **Packaging Internal Use**
- **Capacitance Tolerance**

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5 – 10 x 10.5 x 5</td>
<td>27 nF – 33 nF</td>
</tr>
<tr>
<td>7.5 – 10 x 8 x 3</td>
<td>6.8 nF – 10 nF</td>
</tr>
<tr>
<td>7.5 – 10 x 9 x 4</td>
<td>12 nF – 22 nF</td>
</tr>
<tr>
<td>7.5 – 10.5 x 12 x 6</td>
<td>39 nF – 47 nF</td>
</tr>
<tr>
<td>10 – 13 x 11 x 5</td>
<td>47 nF – 56 nF</td>
</tr>
<tr>
<td>10 – 13 x 12 x 6</td>
<td>68 nF – 82 nF</td>
</tr>
<tr>
<td>10 – 13 x 9 x 4</td>
<td>27 nF – 39 nF</td>
</tr>
<tr>
<td>10 – 18 x 10 x 4</td>
<td>8.2 nF – 10 nF</td>
</tr>
<tr>
<td>15 – 18 x 11 x 5</td>
<td>68 nF – 100 nF</td>
</tr>
<tr>
<td>15 – 18 x 12 x 13</td>
<td>330 nF</td>
</tr>
<tr>
<td>15 – 18 x 12 x 6</td>
<td>120 nF – 150 nF</td>
</tr>
<tr>
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<td>180 nF – 270 nF</td>
</tr>
<tr>
<td>15 – 18 x 13.5 x 7.5</td>
<td>180 nF – 220 nF</td>
</tr>
<tr>
<td>15 – 18 x 14.5 x 8.5</td>
<td>270 nF</td>
</tr>
<tr>
<td>15 – 18 x 16 x 10</td>
<td>330 nF – 390 nF</td>
</tr>
<tr>
<td>15 – 18 x 19 x 11</td>
<td>470 nF</td>
</tr>
<tr>
<td>15 – 18 x 22 x 13</td>
<td>1.2 µF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 15 x 6</td>
<td>220 nF – 330 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 16 x 7</td>
<td>390 nF – 470 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 17 x 8.5</td>
<td>560 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 18.5 x 10</td>
<td>680 nF – 820 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 20 x 11</td>
<td>1 µF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 22 x 13</td>
<td>1.2 µF</td>
</tr>
</tbody>
</table>
Film Capacitors – DC Film
Pulse and High Frequency

Double Metallized Polypropylene (cont.)

R76 Radial, DC and Pulse Applications, Automotive Grade, 250 – 2,000 VDC (cont.)
Capacitance Range: 100 pF to 15 µF • Temperature Range: −55°C to +105°C

<table>
<thead>
<tr>
<th>R76</th>
<th>I</th>
<th>D</th>
<th>1680</th>
<th>SE</th>
<th>30</th>
<th>K</th>
</tr>
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<tbody>
<tr>
<td>Series</td>
<td>Rated Voltage (VDC)</td>
<td>Lead Spacing (mm)</td>
<td>Capacitance Code (pF)</td>
<td>Packaging</td>
<td>Internal Use</td>
<td>Capacitance Tolerance</td>
</tr>
<tr>
<td>Double Metallized Polypropylene</td>
<td>I = 250</td>
<td>D = 7.5</td>
<td>The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Benefits
- Voltage range: 250 – 2,000 VDC
- Capacitance range: 100 pF – 15 µF
- Lead Spacing: 7.5 mm – 37.5 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56 IEC 60068–1
- Operating temperature range of −55°C to +105°C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available up to lead spacing 22.5 mm

Overview
The R76 Series is constructed of polypropylene film and double metallized polyester film as electrodes with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements. Two different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

Applications
Typical applications include deflection circuits in televisions (S-correction and flyback tuning) and monitors, switching spikes suppression in switched mode power supplies (SMPS), lamp capacitors for electronic ballasts and compact lamps, and snubber and silicon-controlled rectifier (SCR) commutation circuits as well as applications with high voltage and high current. Not suitable for across-the-line application (see Suppressor Capacitors).

Polypropylene Pulse/High Frequency Capacitors
R76 Series Double Metallized Polypropylene Film, Radial, DC and Pulse Applications (Automotive Grade)

Part Number System
R76 I D 1680 SE 30 K

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>250/160</td>
</tr>
<tr>
<td>27.5 – 32 x 17 x 9</td>
<td>820 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 20 x 11</td>
<td>1 µF – 1.2 µF</td>
</tr>
<tr>
<td>27.5 – 32 x 22 x 13</td>
<td>1.5 µF</td>
</tr>
<tr>
<td>27.5 – 32 x 25 x 13</td>
<td>1.8 µF</td>
</tr>
<tr>
<td>27.5 – 32 x 28 x 14</td>
<td>2.2 µF</td>
</tr>
<tr>
<td>27.5 – 32 x 33 x 18</td>
<td>2.7 µF – 3.9 µF</td>
</tr>
<tr>
<td>27.5 – 32 x 37 x 22</td>
<td>4.7 µF – 5.6 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 22 x 11</td>
<td>1.2 µF – 1.8 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 24 x 13</td>
<td>2.2 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 28.5 x 16</td>
<td>3.3 µF – 3.9 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 32 x 19</td>
<td>4.7 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 40 x 20</td>
<td>6.8 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 44 x 24</td>
<td>10 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 45 x 30</td>
<td>12 µF</td>
</tr>
</tbody>
</table>
Overview

PHE450 Series Double Metallized Polypropylene Film

General Purpose, Pulse and DC Transient Suppression

New KEMET Part Number System

F = Film
B = Metallized Polypropylene
5180 = Capacitance (pF)
J = Capacitance Tolerance
B04 = Optional Box Code
R06 = Packaging

New KEMET Part Number System

F = Film
B = Metallized Polypropylene
5180 = Capacitance (pF)
J = Capacitance Tolerance
B04 = Optional Box Code
R06 = Packaging

Case Size

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
<th>250/180</th>
<th>400/250</th>
<th>630/300</th>
<th>630/400</th>
<th>1,000/375</th>
<th>1,000/600</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5 – 10 x 8 x 4</td>
<td>0.33 nF – 22 nF</td>
<td>0.33 nF – 12 nF</td>
<td>0.39 nF – 8.2 nF</td>
<td>0.33 nF – 2.2 nF</td>
<td>2.7 nF – 3.9 nF</td>
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</tr>
<tr>
<td>7.5 – 10 x 11 x 5</td>
<td>27 nF – 56 nF</td>
<td>15 nF – 33 nF</td>
<td>10 nF – 18 nF</td>
<td>4.7 nF – 8.2 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5 – 10.5 x 12 x 6</td>
<td>68 nF</td>
<td>39 nF – 47 nF</td>
<td>22 nF</td>
<td>10 nF – 12 nF</td>
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<td></td>
</tr>
<tr>
<td>10 – 13 x 10.5 x 4.5</td>
<td>56 nF – 68 nF</td>
<td>33 nF</td>
<td>18 nF – 22 nF</td>
<td>8.2 nF – 10 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 – 13 x 11 x 5</td>
<td>82 nF</td>
<td>39 nF</td>
<td>27 nF</td>
<td>12 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 – 13 x 12 x 6</td>
<td>100 nF – 120 nF</td>
<td>47 nF – 56 nF</td>
<td>33 nF – 39 nF</td>
<td>15 nF – 18 nF</td>
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<td></td>
</tr>
<tr>
<td>10 – 13 x 9 x 4</td>
<td>1 nF – 47 nF</td>
<td>1 nF – 27 nF</td>
<td>1 nF – 15 nF</td>
<td>1 nF – 6.8 nF</td>
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<td></td>
</tr>
<tr>
<td>15 – 18 x 10.5 x 5.5</td>
<td>47 nF – 120 nF</td>
<td>33 nF – 68 nF</td>
<td>10 nF – 33 nF</td>
<td>3.9 nF – 22 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 – 18 x 12.5 x 5.5</td>
<td>150 nF</td>
<td>82 nF</td>
<td>39 nF</td>
<td>27 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 – 18 x 12.5 x 6.5</td>
<td>180 nF</td>
<td>100 nF</td>
<td>47 nF – 56 nF</td>
<td>33 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 – 18 x 14.5 x 7.5</td>
<td>220 nF – 270 nF</td>
<td>120 nF – 150 nF</td>
<td>68 nF</td>
<td>39 nF – 47 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 – 18 x 15 x 8</td>
<td>330 nF</td>
<td>180 nF</td>
<td>82 nF</td>
<td>56 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 – 18 x 16 x 8.5</td>
<td>390 nF</td>
<td>100 nF</td>
<td>68 nF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 – 18 x 17.5 x 9.5</td>
<td>470 nF</td>
<td>220 nF – 270 nF</td>
<td>120 nF – 150 nF</td>
<td>82 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 – 18 x 19 x 11</td>
<td>100 nF – 120 nF</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>22.5 – 26 x 14.5 x 6.5</td>
<td>180 nF – 330 nF</td>
<td>120 nF – 180 nF</td>
<td>33 nF – 100 nF</td>
<td>22 nF – 82 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.5 – 26 x 16 x 8</td>
<td>120 nF</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>22.5 – 26 x 16.5 x 7</td>
<td>390 nF – 470 nF</td>
<td>220 nF – 270 nF</td>
<td>120 nF – 150 nF</td>
<td>100 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.5 – 26 x 18.5 x 9</td>
<td>560 nF – 680 nF</td>
<td>330 nF – 390 nF</td>
<td>180 nF – 220 nF</td>
<td>150 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.5 – 26 x 19 x 10.5</td>
<td>820 nF</td>
<td>470 nF</td>
<td>180 nF</td>
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</tr>
<tr>
<td>22.5 – 26 x 21.5 x 11</td>
<td>1 µF</td>
<td>560 nF</td>
<td>270 nF – 330 nF</td>
<td>220 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.5 – 26 x 23 x 13.5</td>
<td>1.2 µF – 1.5 µF</td>
<td>680 nF – 820 nF</td>
<td>390 nF – 470 nF</td>
<td>270 nF – 330 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.5 – 26 x 24.5 x 15.5</td>
<td>1.8 µF</td>
<td>1 µF</td>
<td>560 nF</td>
<td>390 nF</td>
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</table>
### Double Metallized Polypropylene (cont.)

**PHE450 Radial, 250 – 3,000 VDC (cont.)**

Capacitance Range: 0.00033 to 10 µF • Temperature Range: −55°C to +105°C

#### Legacy Part Number System

<table>
<thead>
<tr>
<th>Part Number</th>
<th>P</th>
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<th>5180</th>
<th>J</th>
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<th>R06</th>
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<td>Series</td>
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<td></td>
<td>Rated Voltage (VDC)</td>
<td>Lead Spacing (mm)</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
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<tr>
<td>Metallized Polypropylene</td>
<td>H = 250</td>
<td>K = 400</td>
<td>M = 630</td>
<td>P = 1000</td>
<td>R = 1600</td>
<td>S = 2000</td>
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<tr>
<td></td>
<td>K = 7.5</td>
<td>A = 10.0</td>
<td>B = 15.0</td>
<td>D = 22.5</td>
<td>F = 27.5</td>
<td>R = 37.5</td>
</tr>
<tr>
<td></td>
<td>The last three digits represent significant figures. First digit specifies the number of zeros to be added.</td>
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<tr>
<td></td>
<td>J = ±5% On request: F = ±1% G = ±2% H = ±2.5% K = ±10% M = ±20%</td>
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<tr>
<td></td>
<td>See Dimension Table See Ordering Options Table</td>
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#### New KEMET Part Number System

<table>
<thead>
<tr>
<th>Capacitor Class</th>
<th>F = Film</th>
<th>Metallized Polypropylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>F = Film</td>
<td>K = 7.5</td>
<td>A = 10.0</td>
</tr>
<tr>
<td></td>
<td>B = 15.0</td>
<td>D = 22.5</td>
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<td>F = 27.5</td>
<td>R = 37.5</td>
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<td></td>
<td>See Dimension Table</td>
<td></td>
</tr>
<tr>
<td></td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>J = ±5% On request: F = ±1% G = ±2% H = ±2.5% K = ±10% M = ±20%</td>
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</tr>
<tr>
<td></td>
<td>See Ordering Options Table</td>
<td></td>
</tr>
</tbody>
</table>

### Case Size

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
<th>250/180</th>
<th>400/250</th>
<th>630/400</th>
<th>1,000/600</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.5 – 26 x 14.5 x 6.5</td>
<td>180 nF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.5 – 31.5 x 12.5 x 21</td>
<td>1.2 µF</td>
<td>680 nF</td>
<td>390 nF</td>
<td>220 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 16 x 27.5</td>
<td>2.2 µF</td>
<td>1.5 µF</td>
<td>820 nF</td>
<td>470 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 19 x 31</td>
<td>3.9 µF</td>
<td>2.2 µF</td>
<td>1.2 µF</td>
<td>680 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 20.5 x 10.5</td>
<td>820 nF – 1.2 µF</td>
<td>470 nF – 680 nF</td>
<td>220 nF – 390 nF</td>
<td>150 nF – 270 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 22.5 x 11.5</td>
<td>1.5 µF</td>
<td>820 nF</td>
<td>470 nF</td>
<td>330 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 23 x 13.5</td>
<td>1.8 µF</td>
<td>1 µF</td>
<td>560 nF</td>
<td>390 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 24.5 x 14.5</td>
<td>2.2 µF</td>
<td>1.2 µF</td>
<td>680 nF</td>
<td>470 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 28 x 17.5</td>
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<td>1.5 µF</td>
<td>820 nF – 1 µF</td>
<td>560 nF – 680 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 29 x 19</td>
<td>3.3 µF</td>
<td>1.8 µF</td>
<td>820 nF</td>
<td></td>
</tr>
<tr>
<td>27.5 – 31.5 x 30 x 21</td>
<td>3.9 µF</td>
<td>2.2 µF</td>
<td>1.2 µF</td>
<td>1 µF</td>
</tr>
<tr>
<td>37.5 – 41 x 24 x 13</td>
<td>1.8 µF – 2.7 µF</td>
<td>1 µF – 1.5 µF</td>
<td>560 nF – 820 nF</td>
<td>330 nF – 560 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 26 x 15</td>
<td>3.3 µF</td>
<td>1.8 µF</td>
<td>1 µF – 1.2 µF</td>
<td>680 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 32 x 16.5</td>
<td>3.9 µF – 4.7 µF</td>
<td>2.2 µF – 2.7 µF</td>
<td>1.5 µF</td>
<td>820 nF – 1 µF</td>
</tr>
<tr>
<td>37.5 – 41 x 36 x 19</td>
<td>5.6 µF</td>
<td>3.3 µF – 3.9 µF</td>
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<td>1.2 µF – 1.5 µF</td>
</tr>
<tr>
<td>37.5 – 41 x 38 x 21</td>
<td>6.8 µF</td>
<td>4.7 µF</td>
<td>2.7 µF</td>
<td>1.8 µF</td>
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</tbody>
</table>

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Double Metallized Polypropylene (cont.)

PHE450 Radial, 250 – 3,000 VDC (cont.)
Capacitance Range: 0.00033 to 10 μF • Temperature Range: −55°C to +105°C

New KEMET Part Number System

<table>
<thead>
<tr>
<th>F = Film</th>
<th>450</th>
<th>B</th>
<th>D</th>
<th>183</th>
<th>J</th>
<th>1K0</th>
<th>C</th>
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<tr>
<td>Capacitor Class</td>
<td>Series</td>
<td>Lead Spacing (mm)</td>
<td>Size Code</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
<td>Packaging</td>
</tr>
<tr>
<td>F = Film</td>
<td>Metallized Polypropylene</td>
<td>K = 7.5</td>
<td>A = 10.0</td>
<td>B = 15.0</td>
<td>D = 22.5</td>
<td>F = 27.5</td>
<td>R = 37.5</td>
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<tr>
<td>First two digits</td>
<td>First digit</td>
<td>Second digit</td>
<td>Third digit</td>
<td>Fourth digit</td>
<td>Fifth digit</td>
<td>Sixth digit</td>
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</table>

New KEMET Part Number System

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,600/650</td>
<td>2,000/700</td>
</tr>
<tr>
<td>15 – 18 x 10.5 x 5.5</td>
<td>2.7 nF – 12 nF</td>
</tr>
<tr>
<td>15 – 18 x 12.5 x 5.5</td>
<td>15 nF</td>
</tr>
<tr>
<td>15 – 18 x 12.5 x 6.5</td>
<td>18 nF – 22 nF</td>
</tr>
<tr>
<td>15 – 18 x 14.5 x 7.5</td>
<td>27 nF</td>
</tr>
<tr>
<td>15 – 18 x 15 x 8</td>
<td>33 nF</td>
</tr>
<tr>
<td>15 – 18 x 16 x 8.5</td>
<td>39 nF</td>
</tr>
<tr>
<td>15 – 18 x 17.5 x 9.5</td>
<td>47 nF – 56 nF</td>
</tr>
<tr>
<td>15 – 18 x 19 x 11</td>
<td>47 nF – 56 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 14.5 x 6.5</td>
<td>10 nF – 39 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 16 x 8</td>
<td>39 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 16.5 x 7</td>
<td>47 nF – 56 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 18.5 x 9</td>
<td>68 nF – 82 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 19 x 10.5</td>
<td>100 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 21.5 x 11</td>
<td>120 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 23 x 13.5</td>
<td>150 nF – 180 nF</td>
</tr>
<tr>
<td>22.5 – 26 x 24.5 x 15.5</td>
<td>220 nF</td>
</tr>
</tbody>
</table>
Double Metallized Polypropylene (cont.)

PHE450 Radial, 250 – 3,000 VDC (cont.)

Capacitance Range: 0.00033 to 10 µF • Temperature Range: −55°C to +105°C

**New KEMET Part Number System**

<table>
<thead>
<tr>
<th>PHE450</th>
<th>P</th>
<th>B</th>
<th>5180</th>
<th>J</th>
<th>B04</th>
<th>R06</th>
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</thead>
<tbody>
<tr>
<td>Series</td>
<td>Rated Voltage</td>
<td>Lead Spacing</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Optional Box Code</td>
<td>Packaging</td>
</tr>
<tr>
<td>Metallized Polypropylene</td>
<td>H = 250</td>
<td>K = 7.5</td>
<td>A = 10.0</td>
<td>B = 15.0</td>
<td>D = 22.5</td>
<td>F = 27.5</td>
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**New KEMET Part Number System**

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<tr>
<th>F</th>
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<th>B</th>
<th>D</th>
<th>183</th>
<th>J</th>
<th>1K0</th>
<th>C</th>
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</thead>
<tbody>
<tr>
<td>Capacitor Class</td>
<td>Series</td>
<td>Lead Spacing (mm)</td>
<td>Size Code</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
<td>Packaging</td>
</tr>
<tr>
<td>F = Film</td>
<td>Metallized Polypropylene</td>
<td>K = 7.5</td>
<td>A = 10.0</td>
<td>B = 15.0</td>
<td>D = 22.5</td>
<td>F = 27.5</td>
<td>R = 37.5</td>
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**Case Size**

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
<th>1,600/650</th>
<th>2,000/700</th>
<th>2,500/900</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.5 – 26 x 14.5 x 6.5</td>
<td>100 nF</td>
<td>56 nF</td>
<td></td>
</tr>
<tr>
<td>27.5 – 31.5 x 12.5 x 21</td>
<td>220 nF</td>
<td>120 nF</td>
<td></td>
</tr>
<tr>
<td>27.5 – 31.5 x 19 x 31</td>
<td>330 nF</td>
<td>180 nF</td>
<td></td>
</tr>
<tr>
<td>27.5 – 31.5 x 20.5 x 10.5</td>
<td>82 nF – 120 nF</td>
<td>47 nF – 82 nF</td>
<td>27 nF – 33 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 22.5 x 11.5</td>
<td>150 nF</td>
<td>100 nF</td>
<td>39 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 23 x 13.5</td>
<td>180 nF</td>
<td>120 nF</td>
<td>47 nF – 56 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 24.5 x 14.5</td>
<td>220 nF</td>
<td>150 nF</td>
<td>68 nF</td>
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<tr>
<td>27.5 – 31.5 x 28 x 17.5</td>
<td>270 nF</td>
<td>180 nF</td>
<td>27 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 29 x 19</td>
<td>330 nF</td>
<td>220 nF</td>
<td>100 nF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 30 x 21</td>
<td>390 nF</td>
<td>270 nF</td>
<td>120 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 24 x 13</td>
<td>180 nF – 270 nF</td>
<td>100 nF – 180 nF</td>
<td>68 nF – 82 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 26 x 15</td>
<td>330 nF</td>
<td>220 nF</td>
<td>100 nF – 120 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 32 x 16.5</td>
<td>390 nF – 560 nF</td>
<td>270 nF – 330 nF</td>
<td>150 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 36 x 19</td>
<td>680 nF</td>
<td>390 nF – 470 nF</td>
<td>180 nF – 220 nF</td>
</tr>
<tr>
<td>37.5 – 41 x 38 x 21</td>
<td>820 nF</td>
<td>560 nF</td>
<td>220 nF – 270 nF</td>
</tr>
</tbody>
</table>
**Film/Foil Polypropylene**

**R73 Radial, Automotive Grade, 100 – 2,000 VDC**

*Capacitance Range: 100 pF to 2.2 µF • Temperature Range: −55°C to +105°C*

**Overview**

The R73 Series is constructed of polypropylene film and metal foil or metallized film and metal foil with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements. Two different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

**Applications**

Typical applications include deflection circuits in televisions (flyback tuning), switching spikes suppression in switched mode power supply (SMPS), snubber and silicon-controlled rectifier (SCR) commutation circuits, and switching circuits in electronic ballasts, as well as applications with high voltage and very high current. Not suitable for across-the-line application (see Suppressor Capacitors).

**Polypropylene Pulse/High Frequency Capacitors**

**R73 Series Polypropylene Film/Foil, Radial (Automotive Grade)**

**Part Number System**

<table>
<thead>
<tr>
<th>R73</th>
<th>E</th>
<th>I</th>
<th>2470</th>
<th>AA</th>
<th>00</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Rated Voltage (VDC)</td>
<td>Lead Spacing (mm)</td>
<td>Capacitance Code (pF)</td>
<td>Packaging</td>
<td>Internal Use</td>
<td>Capacitance Tolerance</td>
</tr>
<tr>
<td>Polypropylene Film/Foil</td>
<td>E = 100</td>
<td>G = 160</td>
<td>I = 250</td>
<td>M = 400</td>
<td>P = 630</td>
<td>Q = 1000</td>
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**Case Size**

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<th>160/90</th>
<th>250/125</th>
<th>400/160</th>
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<th>1,000/400</th>
<th>1,250/450</th>
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<th>2,000/500</th>
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</thead>
<tbody>
<tr>
<td>15 – 18 x 11 x 5</td>
<td>67 nF</td>
<td>33 nF</td>
<td>15 nF</td>
<td>10 nF</td>
<td>4.7 nF</td>
<td>2.2 nF</td>
<td>1 nF</td>
<td>0.1 nF</td>
<td>0.6 nF</td>
</tr>
<tr>
<td>15 – 18 x 12 x 6</td>
<td>68 nF</td>
<td>47 nF</td>
<td>22 nF</td>
<td>15 nF</td>
<td>4.7 nF</td>
<td>2.2 nF</td>
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<td>0.1 nF</td>
<td>0.6 nF</td>
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<td>33 nF</td>
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<td>4.7 nF</td>
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<td>0.1 nF</td>
<td>0.6 nF</td>
</tr>
<tr>
<td>15 – 18 x 14.5 x 8.5</td>
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<td>68 nF</td>
<td>33 nF</td>
<td>15 nF</td>
<td>4.7 nF</td>
<td>2.2 nF</td>
<td>1 nF</td>
<td>0.1 nF</td>
<td>0.6 nF</td>
</tr>
<tr>
<td>15 – 18 x 16 x 10</td>
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<td>100 nF</td>
<td>47 nF</td>
<td>47 nF</td>
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<td>18 nF</td>
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<td>4.7 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 15 x 6</td>
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<td>100 nF</td>
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<td>47 nF</td>
<td>39 nF</td>
<td>27 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
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<td>100 nF</td>
<td>47 nF</td>
<td>47 nF</td>
<td>39 nF</td>
<td>27 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 17 x 8.5</td>
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<td>100 nF</td>
<td>47 nF</td>
<td>47 nF</td>
<td>39 nF</td>
<td>27 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 18.5 x 10</td>
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<td>100 nF</td>
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<td>47 nF</td>
<td>39 nF</td>
<td>27 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 20 x 11</td>
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<td>100 nF</td>
<td>47 nF</td>
<td>47 nF</td>
<td>39 nF</td>
<td>27 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 17 x 9</td>
<td>150 nF</td>
<td>100 nF</td>
<td>47 nF</td>
<td>47 nF</td>
<td>39 nF</td>
<td>27 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 20 x 11</td>
<td>150 nF</td>
<td>100 nF</td>
<td>47 nF</td>
<td>47 nF</td>
<td>39 nF</td>
<td>27 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 22 x 13</td>
<td>180 nF</td>
<td>150 nF</td>
<td>82 nF</td>
<td>68 nF</td>
<td>47 nF</td>
<td>27 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 25 x 13</td>
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<td>270 nF</td>
<td>120 nF</td>
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<td>47 nF</td>
<td>27 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 28 x 14</td>
<td>330 nF</td>
<td>330 nF</td>
<td>270 nF</td>
<td>120 nF</td>
<td>82 nF</td>
<td>47 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
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<td>390 nF</td>
<td>330 nF</td>
<td>120 nF</td>
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<td>47 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
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<td>27.5 – 32 x 37 x 22</td>
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<td>560 nF</td>
<td>470 nF</td>
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<td>120 nF</td>
<td>82 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 22 x 11</td>
<td>220 nF</td>
<td>330 nF</td>
<td>120 nF</td>
<td>82 nF</td>
<td>33 nF</td>
<td>18 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
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<td>37.5 – 41.5 x 24 x 13</td>
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<td>390 nF</td>
<td>330 nF</td>
<td>120 nF</td>
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<td>33 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
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<td>470 nF</td>
<td>390 nF</td>
<td>120 nF</td>
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<td>33 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
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<td>390 nF</td>
<td>120 nF</td>
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<td>33 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
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<td>33 nF</td>
<td>18 nF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
<tr>
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<td>1.5 µF</td>
<td>1.5 µF</td>
<td>1.5 µF</td>
<td>1.5 µF</td>
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<td>1.5 µF</td>
<td>1.5 µF</td>
<td>6 nF</td>
<td>4.7 nF</td>
</tr>
</tbody>
</table>
Film Capacitors – DC Film
Pulse and High Frequency

Film/Foil Polypropylene (cont.)

A72 Axial, 100 – 2,000 VDC
Capacitance Range: 47 pF to 0.33 µF • Temperature Range: −55°C to +105°C

<table>
<thead>
<tr>
<th>A72 Series</th>
<th>Rated Voltage (VDC)</th>
<th>Length (mm)</th>
<th>Capacitance Code (pF)</th>
<th>Packaging</th>
<th>Internal Use</th>
<th>Capacitance Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polypropylene Film/Foil</td>
<td>E = 100 I = 250 M = 400 P = 630 Q = 1000 S = 1500 U = 2000</td>
<td>F = 11 H = 14 K = 20.5 Q = 28 T = 33</td>
<td>The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.</td>
<td>See Ordering Options Table</td>
<td>00, 02 (Standard)</td>
<td>J = ±5% K = ±10% M = ±20%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100/63</td>
</tr>
<tr>
<td>5 x 11</td>
<td>4.7 nF – 10 nF</td>
</tr>
<tr>
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<tr>
<td>6.5 x 16.5</td>
<td>2.2 nF – 3.3 nF</td>
</tr>
<tr>
<td>7 x 16.5</td>
<td>4.7 nF</td>
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<td>8 x 20.5</td>
<td>15 nF</td>
</tr>
<tr>
<td>8 x 28</td>
<td>6.8 nF</td>
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<tr>
<td>8.5 x 20.5</td>
<td>3.3 nF – 4.7 nF</td>
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<tr>
<td>8.5 x 28</td>
<td>10 nF</td>
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<tr>
<td>9 x 16.5</td>
<td>10 nF</td>
</tr>
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<td>9.5 x 20.5</td>
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</tr>
<tr>
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<td>10 nF</td>
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<td>10 x 28</td>
<td>47 nF</td>
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<td>20 x 33</td>
<td>33 nF</td>
</tr>
<tr>
<td>22.5 x 33</td>
<td>47 nF</td>
</tr>
</tbody>
</table>
Film Capacitors – DC Film

Metallized Polyester (PET)

R60 Radial, Polyester, +105°C, 10 – 37.5 mm Lead Spacing, Automotive Grade, 50 – 1,000 VDC

Capacitance Range: 0.001 to 150 µF • Temperature Range: −55°C to +105°C

www.kemet.com/R60

One world. One KEMET

Benefits

• Voltage range: 50 – 1000 VDC
• Capacitance range: 0.001 µF – 150.0 µF
• Lead spacing: 10.0 – 37.5 mm
• Capacitance tolerance: ±5%, ±10%, ±20%
• Climatic category: 55/105/56
• Operating temperature range of −55°C to +105°C
• RoHS compliance and lead-free terminations
• Tape and reel packaging in accordance with IEC 60286–2
• Self-healing
• Automotive (AEC–Q200) grades up to pitch 22.5 mm

Overview

The R60 Series is constructed of metallized polyester film (wound or stacked technology) with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated with thermosetting resin in a box material meeting the UL 94V–0 requirements.

R60 Series components (up to lead spacing 22.5mm) meet the demanding Automotive Electronics Council’s AEC–Q200 qualification requirements.

Applications

Typical applications include blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not suitable for across-the-line application (see Suppressor Capacitors).

General Purpose Metallized Polyester Film Capacitors

R60 Series, Radial, 10 – 37.5 mm Lead Spacing, 50 – 1,000 VDC (Automotive Grade)

Part Number System

R60 M F 2470 AA 60 K

Series  Rated Voltage (VDC)  Length (mm)  Capacitance Code (pF)  Packaging  Internal Use  Capacitance Tolerance

Metallized Polyester  C = 50  D = 63  E = 100  G = 160  I = 250  M = 400  P = 630  Q = 1000  F = 10  I = 15  L = 22.5  R = 27.5  W = 37.5  The last three digits represent significant figures. First digit specifies the number of zeros to be added.

See Ordering Options Table

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Overview Data

Series  M  F  2470  AA  60  K

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 – 13 x 11 x 5</td>
<td>50/30 63/40 100/63 160/90 250/160 400/200 630/220 1,000/250</td>
</tr>
<tr>
<td>10 – 13 x 12 x 6</td>
<td>3.3 µF 1.5 µF – 2.2 µF 1 µF – 1.5 µF 470 nF 220 nF – 330 nF 100 nF 22 nF – 47 nF 47 nF</td>
</tr>
<tr>
<td>10 – 13 x 9 x 4</td>
<td>4.7 µF – 5.6 µF 3.3 µF 680 nF 470 nF 150 nF 33 nF – 47 nF 6.8 nF</td>
</tr>
<tr>
<td>15 – 18 x 11 x 5</td>
<td>680 nF – 1.5 µF 330 nF – 1 µF 330 nF – 680 nF 220 nF – 330 nF 100 nF – 330 nF 22 nF – 220 nF 33 nF – 68 nF 10 nF – 15 nF</td>
</tr>
<tr>
<td>15 – 18 x 12 x 13</td>
<td>4.7 µF 3.3 µF 2.2 µF 1 µF 470 nF – 680 nF 47 nF</td>
</tr>
<tr>
<td>15 – 18 x 12 x 6</td>
<td>2.2 µF 470 nF 220 nF 68 nF – 100 nF 22 nF</td>
</tr>
<tr>
<td>15 – 18 x 12.5 x 9</td>
<td>3.3 µF 2.2 µF 1.5 µF 680 nF 330 nF – 470 nF 100 nF 33 nF</td>
</tr>
<tr>
<td>15 – 18 x 13.5 x 7.5</td>
<td>3.3 µF 1.5 µF 1 µF 680 nF 330 nF – 470 nF 100 nF – 150 nF 33 nF</td>
</tr>
<tr>
<td>15 – 18 x 16 x 10</td>
<td>6.8 µF 3.3 µF 2.2 µF 1.5 µF 680 nF 220 nF – 330 nF 47 nF</td>
</tr>
<tr>
<td>15 – 18 x 19 x 11</td>
<td>4.7 µF 3.3 µF 680 nF – 1 µF 68 nF</td>
</tr>
<tr>
<td>15 – 18 x 14.5 x 8.5</td>
<td>4.7 µF 2.2 µF 1.5 µF 1 µF 470 nF 150 nF – 220 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 15 x 6</td>
<td>6.8 µF 4.7 µF 3.3 µF 2.2 µF 1.5 µF 680 nF 220 nF – 330 nF 68 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 17 x 8.5</td>
<td>10 µF 4.7 µF 3.3 µF 1 µF 330 nF 100 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 12 x 13</td>
<td>10 µF 6.8 µF 2.2 µF 1.5 µF 680 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 14 x 11</td>
<td>15 µF 4.7 µF 3.3 µF – 10 µF 3.3 µF – 15 µF 1.5 µF – 4.7 µF 680 nF – 1.5 µF 330 nF – 470 nF 150 nF – 220 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 20 x 11</td>
<td>15 µF 4.7 µF 3.3 µF 1.5 µF 470 nF – 680 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 22 x 13</td>
<td>22 µF 22 µF 10 µF 3.3 µF 470 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 28 x 14</td>
<td>33 µF 33 µF 15 µF 4.7 µF 680 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 33 x 18</td>
<td>33 µF 47 µF 22 µF 6.8 µF 1.5 µF – 2.2 µF 1 µF</td>
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<tr>
<td>27.5 – 32 x 37 x 22</td>
<td>47 µF – 68 µF 47 µF – 68 µF 68 µF 33 µF 10 µF 3.3 µF – 4.7 µF 1.5 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 22 x 11</td>
<td>22 µF 15 µF – 22 µF 10 µF – 22 µF 4.7 µF – 10 µF 3.3 µF – 4.7 µF 1 µF – 1.5 µF 470 nF – 680 nF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 28 x 16</td>
<td>47 µF 47 µF 47 µF 22 µF 10 µF 3.3 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 32 x 19</td>
<td>68 µF 68 µF 68 µF 33 µF 4.7 µF 1.5 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 40 x 20</td>
<td>100 µF 100 µF 47 µF 6.8 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 44 x 24</td>
<td>100 µF 100 µF 68 µF 15 µF – 22 µF 10 µF 3.3 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 45 x 30</td>
<td>150 µF 150 µF 33 µF 4.7 µF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 24 x 13</td>
<td>33 µF 33 µF 33 µF 15 µF 6.8 µF 2.2 µF</td>
</tr>
</tbody>
</table>
**Metallized Polyester (PET) (cont.)**

**R66 Radial, 7.5 mm Lead Spacing, Automotive Grade, 50 – 630 VDC**

**Capacitance Range:** 0.001 to 4.7 μF  
**Temperature Range:** −55°C to +105°C

---

**Benefits**

- **Voltage range:** 50 – 630 VDC
- **Capacitance range:** 0.001 μF – 4.7 μF
- **Lead Spacing:** 7.5 mm
- **Capacitance tolerance:** ±5%, ±10%, ±20%
- **Climatic category:** 55/105/56
- **Operating temperature range:** −55˚C to +105˚C
- **RoHS compliance and lead-free terminations**
- **Tape and reel packaging in accordance with IEC 60286–2**
- **Self-healing**
- **Automotive (AEC–Q200) grades available**

---

**Overview**

The R66 Series is constructed of metallized polyester film (wound or stacked technology) with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated with thermosetting resin in a box of material meeting the UL 94V–0 requirements. Automotive grade devices are available and meet the demanding Automotive Electronics Council’s AEC–Q200 qualification requirements.

---

**Applications**

Typical applications include blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not suitable for across-the-line application (see Suppressor Capacitors).

---

**General Purpose Metallized Polyester Film Capacitors**

**R66 Series, Radial, 7.5 mm Lead Spacing, 50 – 630 VDC**

**Automotive Grade**

---

**Part Number System**

```
R66 E D 3100 AA 7A J
```

- **R66** Series
- **E** Rated Voltage (VDC)
- **D** Length (mm)
- **3100** Capacitance Code (pF)
- **AA** Packaging
- **7A** Internal Use
- **J** Capacitance Tolerance

**Metallized Polyester**

- C = 50
- D = 63
- E = 100
- I = 250
- M = 400
- P = 630

D = 7.5  

The last three digits represent significant figures. First digit specifies the number of zeros to be added.

See Ordering Options Table

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50/30</td>
</tr>
<tr>
<td>7.5 – 10 x 10.5 x 5</td>
<td>2.2 μF</td>
</tr>
<tr>
<td>7.5 – 10 x 8 x 3</td>
<td>680 nF – 1 μF</td>
</tr>
<tr>
<td>7.5 – 10 x 9 x 4</td>
<td>1.5 μF</td>
</tr>
<tr>
<td>7.5 – 10.5 x 12 x 6</td>
<td>4.7 μF</td>
</tr>
</tbody>
</table>
### Metallized Polyester (PET) (cont.)

**RSB Radial, Polyester, 125°C, 5 mm (Stacked), Automotive Grade, 50 – 630 VDC**

Capacitance Range: 0.001 to 2.2 μF • Temperature Range: −55°C to +125°C

![Image of capacitor](image)

<table>
<thead>
<tr>
<th>Capacitance Tolerance</th>
<th>30</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>±5%</td>
<td>0.001</td>
<td>0.01</td>
<td>0.10</td>
<td>1.00</td>
<td>±5%</td>
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<td>±10%</td>
<td>0.001</td>
<td>0.01</td>
<td>0.10</td>
<td>1.00</td>
<td>±10%</td>
</tr>
<tr>
<td>±20%</td>
<td>0.001</td>
<td>0.01</td>
<td>0.10</td>
<td>1.00</td>
<td>±20%</td>
</tr>
</tbody>
</table>

**Applications**

Typical applications include high performance, high temperature, blocking, coupling, decoupling for a signal from DC to high frequency, pulse, logic and timing circuit, lamp capacitor for electronic compact lamps, inverter for LCD monitors, automotive DC motor suppression. Not suitable for across-the-line application (see Suppressor Capacitors).

**Overview**

The RSB Series is constructed of metallized polyester film (stacked technology) with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated with thermosetting resin in a box of material meeting the UL 94V–0 requirements.

Automotive grade devices are available and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

**Benefit**

- Voltage range: 50 – 630 VDC
- Capacitance range: 0.001 – 4.7 μF
- Lead spacing: 5 mm
- Capacitance tolerance: ±20%, ±10% standard, ±5% on request
- Climatic category: 55/125/56
- Operating temperature range of −55˚C to +125˚C
- RoHS Compliant and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available

**Part Number System**

<table>
<thead>
<tr>
<th>Series</th>
<th>Rated Voltage (VDC)</th>
<th>Length (mm)</th>
<th>Capacitance Code (pF)</th>
<th>Packaging</th>
<th>Internal Use</th>
<th>Capacitance Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metallized Polyester</td>
<td>C = 50</td>
<td>D = 63</td>
<td>E = 100</td>
<td>I = 250</td>
<td>M = 400</td>
<td>W = 500</td>
</tr>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</table>

**Voltage (VDC/VAC)**

<table>
<thead>
<tr>
<th>Case Size</th>
<th>50/30</th>
<th>63/40</th>
<th>100/63</th>
<th>250/160</th>
<th>400/200</th>
<th>500/220</th>
<th>630/220</th>
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</thead>
<tbody>
<tr>
<td>5 – 7.2 x 10 x 5</td>
<td>1 μF</td>
<td>220 nF</td>
<td>100 nF</td>
<td>33 nF</td>
<td>10 nF</td>
<td>6.8 nF</td>
<td></td>
</tr>
<tr>
<td>5 – 7.2 x 11 x 6</td>
<td>2.2 μF</td>
<td>1.5 μF – 2.2 μF</td>
<td>330 nF – 470 nF</td>
<td>150 nF</td>
<td>47 nF</td>
<td>15 nF</td>
<td>10 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 6.5 x 2.5</td>
<td>100 nF – 220 nF</td>
<td>4.7 nF – 68 nF</td>
<td>1 nF – 15 nF</td>
<td>1 nF – 4.7 nF</td>
<td>1 nF – 1.5 nF</td>
<td>1 nF</td>
<td></td>
</tr>
<tr>
<td>5 – 7.2 x 7.5 x 3.5</td>
<td>330 nF – 470 nF</td>
<td>100 nF</td>
<td>22 nF – 33 nF</td>
<td>6.8 nF – 15 nF</td>
<td>2.2 nF – 4.7 nF</td>
<td>1.5 nF – 2.2 nF</td>
<td></td>
</tr>
<tr>
<td>5 – 7.2 x 9.5 x 4.5</td>
<td>680 nF</td>
<td>150 nF</td>
<td>47 nF – 68 nF</td>
<td>22 nF</td>
<td>6.8 nF</td>
<td>3.3 nF – 4.7 nF</td>
<td></td>
</tr>
<tr>
<td>5 – 7.2 x 13 x 7.2</td>
<td>3.3 μF – 4.7 μF</td>
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</table>
**Metallized Polyester (PET) (cont.)**

**A50 Axial Pulse DC Transient, Automotive Grade, 50 – 1,000 VDC**

Capacitance Range: 0.001 to 10 µF • Temperature Range: −55°C to +105°C

---

### A50 Series

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
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<tbody>
<tr>
<td><strong>50/30</strong></td>
<td><strong>63/40</strong></td>
</tr>
<tr>
<td>5 x 11</td>
<td>470 nF – 680 nF</td>
</tr>
<tr>
<td>5 x 14</td>
<td></td>
</tr>
<tr>
<td>5.5 x 14</td>
<td></td>
</tr>
<tr>
<td>6 x 14</td>
<td>470 nF – 680 nF</td>
</tr>
<tr>
<td>6 x 20.5</td>
<td></td>
</tr>
<tr>
<td>6.5 x 11</td>
<td>1 µF</td>
</tr>
<tr>
<td>6.5 x 14</td>
<td></td>
</tr>
<tr>
<td>6.5 x 20.5</td>
<td></td>
</tr>
<tr>
<td>7 x 14</td>
<td>1.5 µF</td>
</tr>
<tr>
<td>7 x 20.5</td>
<td></td>
</tr>
<tr>
<td>7 x 28</td>
<td></td>
</tr>
<tr>
<td>7.5 x 14</td>
<td></td>
</tr>
<tr>
<td>7.5 x 20.5</td>
<td>3.3 µF</td>
</tr>
<tr>
<td>8 x 14</td>
<td>2.2 µF</td>
</tr>
<tr>
<td>8 x 20.5</td>
<td>2.2 µF</td>
</tr>
<tr>
<td>8 x 28</td>
<td></td>
</tr>
<tr>
<td>8.5 x 20.5</td>
<td>4.7 µF</td>
</tr>
<tr>
<td>8.5 x 28</td>
<td></td>
</tr>
<tr>
<td>9 x 20.5</td>
<td></td>
</tr>
<tr>
<td>9 x 28</td>
<td></td>
</tr>
<tr>
<td>9.5 x 20.5</td>
<td>3.3 µF</td>
</tr>
<tr>
<td>9.5 x 28</td>
<td>4.7 µF</td>
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<td>10 x 20.5</td>
<td>6.8 µF</td>
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<tr>
<td>10.5 x 28</td>
<td></td>
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<tr>
<td>10.5 x 33</td>
<td></td>
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<tr>
<td>11 x 28</td>
<td>6.8 µF</td>
</tr>
<tr>
<td>11 x 33</td>
<td></td>
</tr>
<tr>
<td>11.5 x 33</td>
<td>10 µF</td>
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</table>
Film Capacitors – DC Film
General Purpose – Through-Hole

Metallized Polyester (PET) (cont.)

A50 Axial Pulse DC Transient, Automotive Grade, 50 – 1,000 VDC (cont.)
Capacitance Range: 0.001 to 10 µF • Temperature Range: −55°C to +105°C

<table>
<thead>
<tr>
<th>A50</th>
<th>C</th>
<th>F</th>
<th>3470</th>
<th>AA</th>
<th>00</th>
<th>J</th>
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<tbody>
<tr>
<td>Series</td>
<td>Rated Voltage (VDC)</td>
<td>Length (mm)</td>
<td>Capacitance Code (pF)</td>
<td>Packaging</td>
<td>Internal Use</td>
<td>Capacitance Tolerance</td>
</tr>
<tr>
<td>Metallized Polyester</td>
<td>C = 50 D = 63 E = 100 I = 250 M = 400 P = 630 Q = 1000</td>
<td>F = 11 H = 14 K = 20.5 Q = 28 T = 33</td>
<td>The last three digits represent significant figures. First digit specifies the number of zeros to be added.</td>
<td>See Ordering Options Table</td>
<td>00, 60 (Standard)</td>
<td>J = ±5% K = ±10% M = ±20%</td>
</tr>
</tbody>
</table>

Benefits
• Voltage range: 50 – 1,000 VDC
• Capacitance range: 0.001 – 10 µF
• Diameter: 5 – 22 mm
• Length 11 – 33 mm
• Capacitance tolerance: ±5%, ±10%, ±20%
• Climatic category: 55/105/56
• Operating temperature range of −55°C to +105°C
• RoHS Compliant and lead-free terminations
• Tape and reel packaging in accordance with IEC 60286–1
• Self-Healing
• Automotive (AEC–Q200) grades available

Overview
The A50 Series is constructed of metallized polyester film (wound technology) with axial leads of tinned wire. Axial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated in polyester tape wrapping with thermosetting resin end filled.

Automotive grade devices are available and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

Applications
Typical applications include blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not suitable for across-the-line application (see Suppressor Capacitors).

General Purpose, Pulse and DC Transient Suppression
A50 Series Metallized Polyester Film, Axial, 50 – 1,000 VDC, (Automotive Grade)

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
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<tr>
<td>22 x 33</td>
<td></td>
</tr>
</tbody>
</table>
Metallized Polyester (PET) (cont.)

F611 and F612, 5 – 37.5 mm Lead Spacing, 50 – 1,000 VDC
Capacitance Range: 0.001 to 180 µF • Temperature Range: −55°C to +105°C

The F611 and F612 Series is constructed of metallized wound or stacked polyester film capacitor with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing material meeting the requirements of UL 94 V–0.

Applications
Typical applications include blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not for use with the mains.

Part Number System

| F | 611 | J | F | Capacitor Class Series Lead Spacing (mm) Size Code Capacitance Code (pF) Capacitance Tolerance Rated Voltage (VDC) Packaging |
|---|-----|---|---|-------------------------------|-------------------------------|---------------------|---------------------|
| F | Film | Metallized Polyester 611 = Wound 612 = Stacked | J = 5 K = 7.5 A = 10.0 B = 15.0 D = 22.5 F = 27.5 R = 37.5 | See Dimension Table | First two digits represent significant figures. Third digit specifies number of zeros. | J = ±5% K = ±10% M = ±20% | 050 = 50 063 = 63 100 = 100 160 = 160 250 = 250 400 = 400 630 = 630 1K0 = 1,000 | See Ordering Options Table |

F611

Case Size | Voltage (VDC/VAC) | 50/30 | 63/40 | 100/63 | 160/90 | 250/160 | 400/200 | 630/220 | 1,000/250 |
<table>
<thead>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5 – 7.2 x 10 x 5</td>
<td>1.8 µF – 2.2 µF</td>
<td>22 nF</td>
<td>6.8 nF</td>
<td>27 nF – 33 nF</td>
<td>8.2 nF – 12 nF</td>
<td>39 nF – 47 nF</td>
<td>12 nF – 18 nF</td>
<td>3 nF – 5 nF</td>
<td>9 nF – 12 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 11 x 6</td>
<td>2.7 µF – 3.3 µF</td>
<td>1.2 µF – 1.5 µF</td>
<td>560 nF – 1 µF</td>
<td>330 nF – 390 nF</td>
<td>180 nF – 270 nF</td>
<td>56 nF – 150 nF</td>
<td>12 nF – 27 nF</td>
<td>3 nF – 8 nF</td>
<td>8 nF – 12 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 13 x 7.2</td>
<td>3.9 µF – 6 µF</td>
<td>1.2 µF – 1.5 µF</td>
<td>270 nF – 470 nF</td>
<td>1.2 nF – 3.9 nF</td>
<td>1 nF</td>
<td>12 nF – 27 nF</td>
<td>1 nF – 1.5 nF</td>
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<td>5 – 7.2 x 6.5 x 2.5</td>
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<td>270 nF – 470 nF</td>
<td>1.2 µF – 1.5 µF</td>
<td>15 nF – 22 nF</td>
<td>5 nF – 10 nF</td>
<td>1.5 nF – 2.2 nF</td>
<td>3 nF – 8 nF</td>
<td>8 nF – 12 nF</td>
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<td>270 nF – 470 nF</td>
<td>1.2 µF – 1.5 µF</td>
<td>15 nF – 22 nF</td>
<td>5 nF – 10 nF</td>
<td>1.5 nF – 2.2 nF</td>
<td>3 nF – 8 nF</td>
<td>8 nF – 12 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 9.5 x 4.5</td>
<td>1.2 µF – 1.5 µF</td>
<td>1.2 µF – 1.5 µF</td>
<td>270 nF – 470 nF</td>
<td>1.2 µF – 1.5 µF</td>
<td>15 nF – 22 nF</td>
<td>5 nF – 10 nF</td>
<td>1.5 nF – 2.2 nF</td>
<td>3 nF – 8 nF</td>
<td>8 nF – 12 nF</td>
</tr>
</tbody>
</table>

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**Metallized Polyester (PET) (cont.)**

**F611 and F612, 5 – 37.5 mm Lead Spacing, 50 – 1,000 VDC (cont.)**

Capacitance Range: 0.001 to 180 μF • Temperature Range: −55°C to +105°C

---

**Overview**

The F611 and F612 Series is constructed of metallized wound or stacked polyester film capacitor with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing material meeting the requirements of UL 94 V–0.

**Applications**

Typical applications include blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not for use with the mains.

**Benefits**

- Voltage range: 50 – 1,000 VDC
- Capacitance range: 0.001 – 180 µF
- Lead spacing: 5 – 37.5 mm
- Capacitance tolerance: ±10%, ±20%, ±5% on request
- Climatic category: 55/105/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Operating temperature range of −55°C to +105°C

**Part Number System**

F 611 J F 104 M 050 C

<table>
<thead>
<tr>
<th>Capacitor Class</th>
<th>Series</th>
<th>Lead Spacing (mm)</th>
<th>Size Code</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>F = Film</td>
<td>611</td>
<td>F 104</td>
<td>M 050</td>
<td>C</td>
<td>J = ±5%</td>
<td>050 = 50</td>
<td>063 = 63</td>
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</table>

**F611 (cont.)**

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.5 – 31.5 x 9</td>
<td>15 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 11</td>
<td>18 μF – 22 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 13</td>
<td>27 μF – 33 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 14</td>
<td>39 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 17.5</td>
<td>47 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 19</td>
<td>56 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 21</td>
<td>68 μF – 100 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 23</td>
<td>68 μF – 100 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 25</td>
<td>68 μF – 100 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 27</td>
<td>82 μF – 100 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 29</td>
<td>82 μF – 100 μF</td>
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<td>27.5 – 31.5 x 30</td>
<td>82 μF – 100 μF</td>
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<tr>
<td>37.5 – 41 x 22</td>
<td>22 μF – 27 μF</td>
</tr>
<tr>
<td>37.5 – 41 x 24</td>
<td>33 μF</td>
</tr>
<tr>
<td>37.5 – 41 x 26</td>
<td>39 μF – 47 μF</td>
</tr>
<tr>
<td>37.5 – 41 x 28</td>
<td>56 μF</td>
</tr>
<tr>
<td>37.5 – 41 x 30</td>
<td>68 μF</td>
</tr>
<tr>
<td>37.5 – 41 x 32</td>
<td>68 μF</td>
</tr>
<tr>
<td>37.5 – 41 x 34</td>
<td>82 μF – 100 μF</td>
</tr>
<tr>
<td>37.5 – 41 x 36</td>
<td>82 μF – 100 μF</td>
</tr>
</tbody>
</table>

---

**www.kemet.com/F611**

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One world. One KEMET

82
Film Capacitors – DC Film
General Purpose – Through-Hole

Metallized Polyester (PET) (cont.)

F611 and F612, 5 – 37.5 mm Lead Spacing, 50 – 1,000 VDC (cont.)

Capacitance Range: 0.001 to 180 μF • Temperature Range: −55°C to +105°C

www.kemet.com/F611

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One world. One KEMET

Benefits

• Voltage range: 50 – 1,000 VDC
• Capacitance range: 0.001 – 180 μF
• Lead spacing: 5 – 37.5 mm
• Capacitance tolerance: ±10%, ±20%, ±5% on request
• Climatic category: 55/105/56, IEC 60068–1
• Tape and reel packaging in accordance with IEC 60286–2
• RoHS Compliant and lead-free terminations
• Operating temperature range of −55°C to +105°C

Overview

The F611 and F612 Series is constructed of metallized wound or stacked polyester film capacitor with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing material meeting the requirements of UL 94 V–0.

Applications

Typical applications include blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not for use with the mains.

General Purpose, Pulse and DC Transient Suppression

F611 & F612 Series Metallized Polyester Film, 5 – 37.5 mm Lead Spacing, 50 – 1,000 VDC

Part Number System

<table>
<thead>
<tr>
<th>F 611 J F 104 M 050 C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitor Class</td>
</tr>
<tr>
<td>F = Film</td>
</tr>
</tbody>
</table>

F612

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>63/40</td>
</tr>
<tr>
<td>5 – 7.2 x 10 x 5</td>
<td>1 μF</td>
</tr>
<tr>
<td>5 – 7.2 x 11 x 6</td>
<td>1.2 μF – 1.5 μF</td>
</tr>
<tr>
<td>5 – 7.2 x 6.5 x 2.5</td>
<td>100 nF – 220 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 7.5 x 3.5</td>
<td>270 nF – 470 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 9.5 x 4.5</td>
<td>560 nF – 820 nF</td>
</tr>
<tr>
<td>7.5 – 10 x 10.5 x 5</td>
<td>1.2 μF – 1.5 μF</td>
</tr>
<tr>
<td>7.5 – 10 x 8 x 3</td>
<td>330 nF – 470 nF</td>
</tr>
<tr>
<td>7.5 – 10 x 9 x 4</td>
<td>560 nF – 1 μF</td>
</tr>
<tr>
<td>7.5 – 10.5 x 12 x 6</td>
<td>1.8 μF – 3.3 μF</td>
</tr>
<tr>
<td>10 – 13 x 11 x 5</td>
<td>1.5 μF – 2.7 μF</td>
</tr>
<tr>
<td>10 – 13 x 12 x 6</td>
<td>3.3 μF – 3.9 μF</td>
</tr>
<tr>
<td>10 – 13 x 9 x 4</td>
<td>1 μF – 1.2 μF</td>
</tr>
</tbody>
</table>
### Metallized Polyester (PET) (cont.)

**F622 125°C, Halogen Free, 5 mm (Stacked), 50 – 630 VDC**

Capacitance Range: 0.001 to 2.2 μF • Temperature Range: -55°C to +125°C

<table>
<thead>
<tr>
<th>Capacitor Class</th>
<th>Series</th>
<th>Lead Spacing (mm)</th>
<th>Size Code</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>F = Film</td>
<td>Metallized Polyester</td>
<td>J = 5</td>
<td>See Dimension Table</td>
<td>First two digits represent significant figures. Third digit specifies number of zeros.</td>
<td>J = ±5%</td>
<td>050 = 50 63 = 63 100 = 100 250 = 250 400 = 400 500 = 500 630 = 630</td>
<td>See Ordering Options Table</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case Size</th>
<th>50/30</th>
<th>63/40</th>
<th>100/63</th>
<th>250/160</th>
<th>400/200</th>
<th>500/220</th>
<th>630/220</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 – 7.2 x 10 x 5</td>
<td>1 μF</td>
<td>220 nF</td>
<td>100 nF</td>
<td>33 nF – 39 nF</td>
<td>10 nF</td>
<td>6.8 nF</td>
<td></td>
</tr>
<tr>
<td>5 – 7.2 x 11 x 6</td>
<td>2.2 μF</td>
<td>1.2 μF – 1.5 μF</td>
<td>270 nF – 470 nF</td>
<td>120 nF – 150 nF</td>
<td>47 nF – 56 nF</td>
<td>12 nF – 15 nF</td>
<td>8.2 nF – 10 nF</td>
</tr>
<tr>
<td>5 – 7.2 x 6.5 x 2.5</td>
<td>100 nF – 220 nF</td>
<td>4.7 nF – 68 nF</td>
<td>1 nF – 82 nF</td>
<td>1 nF – 4.7 nF</td>
<td>1 nF – 1.8 nF</td>
<td>1 nF – 1.2 nF</td>
<td></td>
</tr>
<tr>
<td>5 – 7.2 x 7.5 x 3.5</td>
<td>270 nF – 470 nF</td>
<td>82 nF – 100 nF</td>
<td>22 nF – 39 nF</td>
<td>5.6 nF – 15 nF</td>
<td>2.2 nF – 4.7 nF</td>
<td>1.5 nF – 2.7 nF</td>
<td></td>
</tr>
<tr>
<td>5 – 7.2 x 9.5 x 4.5</td>
<td>560 nF – 820 nF</td>
<td>120 nF – 180 nF</td>
<td>47 nF – 82 nF</td>
<td>18 nF – 27 nF</td>
<td>5.6 nF – 8.2 nF</td>
<td>3.3 nF – 5.6 nF</td>
<td></td>
</tr>
</tbody>
</table>
### Metallized Paper

**PME261 Impregnated Paper, 10.2 – 25.4 mm Lead Spacing, 400 – 1,000 VDC**

Capacitance Range: 0.001 to 1 µF  
Temperature Range: −40°C to +70°C (AC Applications) and −40°C to +100°C (DC Applications)  

#### Legacy Part Number System

<table>
<thead>
<tr>
<th>Series</th>
<th>Rated Voltage (VAC)</th>
<th>Lead Spacing (mm)</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Packaging</th>
</tr>
</thead>
</table>
| Metallized Paper | K = 220            |                   | A = 10.2              | The last three digits represent significant figures. First digit specifies the total number of digits in the capacitance value. | J = ±5%  
K = ±10%  
M = ±20% | See Ordering Options Table |
|              | E = 300             |                   | B = 15.2              |                        |           |
|              | J = 500             |                   | C = 20.3              |                        |           |
|              |                     |                   | E = 25.4              |                        |           |

#### New KEMET Part Number System

<table>
<thead>
<tr>
<th>P</th>
<th>561</th>
<th>H</th>
<th>E</th>
<th>103</th>
<th>K</th>
<th>220</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitor Class</td>
<td>Series</td>
<td>Lead Spacing (mm)</td>
<td>Size Code</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VAC)</td>
<td>Packaging</td>
</tr>
</tbody>
</table>
| P = Paper | Metallized Paper | General Purpose | H = 10.2 | See Dimension Table | First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeroes. | J = ±5%  
K = ±10%  
M = ±20% | 220 = 220  
300 = 300  
500 = 500 | See Ordering Options Table |
|              | E = 25.4 |                   | Q = 15.2 | C = 20.3 | E = 25.4 |                   |                   |                   |

#### Case Size

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
<th>400/220</th>
<th>630/300</th>
<th>1,000/500</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.2 – 13.5 x 10.5 x 5.1</td>
<td>15 nF – 22 nF</td>
<td>10 nF – 15 nF</td>
<td>4.7 nF – 6.8 nF</td>
</tr>
<tr>
<td>10.2 – 13.5 x 7.5 x 3.9</td>
<td>8.2 nF – 10 nF</td>
<td>1 nF – 6.8 nF</td>
<td>1 nF – 3.3 nF</td>
</tr>
<tr>
<td>15.2 – 18.5 x 10.5 x 5.2</td>
<td>33 nF – 47 nF</td>
<td>22 nF – 33 nF</td>
<td>10 nF – 15 nF</td>
</tr>
<tr>
<td>15.2 – 18.5 x 13 x 7.3</td>
<td>68 nF – 100 nF</td>
<td>47 nF – 68 nF</td>
<td>22 nF</td>
</tr>
<tr>
<td>15.2 – 18.5 x 13.5 x 7.8</td>
<td></td>
<td>33 nF</td>
<td></td>
</tr>
<tr>
<td>20.3 – 24 x 14 x 7.6</td>
<td>150 nF</td>
<td>100 nF</td>
<td>47 nF</td>
</tr>
<tr>
<td>20.3 – 24 x 15 x 9</td>
<td></td>
<td>150 nF</td>
<td>68 nF</td>
</tr>
<tr>
<td>20.3 – 24 x 16.5 x 11.3</td>
<td>330 nF</td>
<td>100 nF</td>
<td></td>
</tr>
<tr>
<td>20.3 – 24 x 14 x 8.4</td>
<td>220 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.4 – 30.5 x 17.3 x 10.6</td>
<td>470 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.4 – 30.5 x 22 x 15.3</td>
<td>680 nF – 1 µF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Polyester (PET)**

**F161 Encapsulated Stacked, Size 2220 – 6560, Automotive Grade, 50 – 630 VDC**

Capacitance Range: 0.01 to 2.2 µF • Temperature Range: -55°C to +125°C

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F = Film</td>
<td>P</td>
<td>P</td>
<td>103</td>
<td>K</td>
<td>050</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Metallized</td>
<td></td>
<td></td>
<td></td>
<td>First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros. J = ±5 K = ±10% M = ±20% Other tolerances on request.</td>
<td>050 = 50 063 = 63 100 = 180 250 = 250 400 = 470 630 = 630</td>
<td>See Ordering Options Table</td>
<td></td>
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<td>Polyester</td>
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<tr>
<td>Stacked</td>
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<tr>
<td>Technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P = 2220</td>
<td>S = 2824</td>
<td>W = 4036</td>
<td>Y = 5045</td>
<td>Z = 6560</td>
<td>See Dimension Table</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Case Size**

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50/30</td>
</tr>
<tr>
<td>63/40</td>
</tr>
<tr>
<td>100/63</td>
</tr>
<tr>
<td>250/160</td>
</tr>
<tr>
<td>400/200</td>
</tr>
<tr>
<td>630/250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2220</td>
<td>10 nF – 220 nF</td>
</tr>
<tr>
<td>2824</td>
<td>10 nF – 1 µF</td>
</tr>
<tr>
<td>4036</td>
<td>22 nF – 2.2 µF</td>
</tr>
<tr>
<td>5045</td>
<td>2.7 µF – 4.7 µF</td>
</tr>
<tr>
<td>6560</td>
<td>5.6 µF – 12 µF</td>
</tr>
</tbody>
</table>

**Polyethylene Naphthalate (PEN)**

**LDE Series Unencapsulated Stacked Chip, Size 1206 – 6054, Automotive Grade, 50 – 1,000 VDC**

Capacitance Range: 0.001 to 4.7 µF • Temperature Range: -55°C to +125°C

<table>
<thead>
<tr>
<th>LDE Series</th>
<th>C</th>
<th>C</th>
<th>2560</th>
<th>M</th>
<th>A</th>
<th>S</th>
<th>N</th>
<th>00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metallized</td>
<td>PEN</td>
<td>C = 50</td>
<td>D = 63</td>
<td>E = 100</td>
<td>I = 250</td>
<td>M = 400</td>
<td>P = 630</td>
<td>Q = 1,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See Dimension Table</td>
<td>Digits two – four indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added. K = ±10% M = ±20% J = ±5% on request</td>
<td>A = PEN</td>
<td>S = Standard</td>
<td>D = Miniature</td>
<td>See Ordering Options Table</td>
<td>00 (Standard)</td>
</tr>
</tbody>
</table>

**Case Size**

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50/40</td>
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<tr>
<td>63/40</td>
</tr>
<tr>
<td>100/63</td>
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<tr>
<td>250/120</td>
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<tr>
<td>400/160</td>
</tr>
<tr>
<td>630/200</td>
</tr>
<tr>
<td>1,000/250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1206</td>
<td>1 nF – 33 nF</td>
</tr>
<tr>
<td>1210</td>
<td>33 nF – 100 nF</td>
</tr>
<tr>
<td>1812</td>
<td>1.5 nF – 220 nF</td>
</tr>
<tr>
<td>2220</td>
<td>270 nF – 1 µF</td>
</tr>
<tr>
<td>2824</td>
<td>820 nF – 1.8 µF</td>
</tr>
<tr>
<td>4030</td>
<td>2.2 µF – 3.9 µF</td>
</tr>
<tr>
<td>5040</td>
<td>1.5 µF – 4.7 µF</td>
</tr>
<tr>
<td>6054</td>
<td>3.3 µF – 4.7 µF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 nF – 33 nF</td>
</tr>
<tr>
<td>33 nF – 100 nF</td>
</tr>
<tr>
<td>1.5 nF – 220 nF</td>
</tr>
<tr>
<td>270 nF – 1 µF</td>
</tr>
<tr>
<td>820 nF – 1.8 µF</td>
</tr>
<tr>
<td>2.2 µF – 3.9 µF</td>
</tr>
<tr>
<td>1.5 µF – 4.7 µF</td>
</tr>
<tr>
<td>3.3 µF – 4.7 µF</td>
</tr>
</tbody>
</table>

**Benefits**

- Metallized Polyethylene Naphthalate (PEN) film capacitor for surface mounting which meets the demanding Automotive Electronics Council’s AEC–Q200 qualification requirements.
- General Purpose – Surface Mount Polyethylene Naphthalate (PEN) Film Capacitor
- Applications include filtering, timing, bypassing and across-the-line application (see suppressor capacitors).
- Typical applications include coupling. LDE is a general purpose series designed for the highest reliability.
- F161 is a general purpose series designed for the highest reliability.
- Applications include bypassing and signal coupling.
- Polyester (PET) Film Capacitors – DC Film
- Applications include filtering, timing, bypassing and coupling.
- Polyester (PET) Film Capacitors – DC Film
### Polyethylene Naphthalate (PEN) (cont.)

GMC Encapsulated Stacked, Size 2220 – 6560, 50 – 630 VDC
Capacitance Range: 0.001 to 5.6 μF • Temperature Range: −55°C to +125°C

**Legacy Part Number System**

<table>
<thead>
<tr>
<th>GMC</th>
<th>5.7</th>
<th>102</th>
<th>K</th>
<th>50</th>
<th>J33</th>
<th>TR12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Chip Length (mm)</td>
<td>Capacitance Code (pf)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
<td>Size Code</td>
<td>Packaging</td>
</tr>
<tr>
<td>Metallized PEN</td>
<td>5.7</td>
<td>102</td>
<td>K</td>
<td>50</td>
<td>J33</td>
<td>TR12</td>
</tr>
<tr>
<td>7.3</td>
<td>10.2</td>
<td>12.7</td>
<td>16.5</td>
<td>First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.</td>
<td>J = ±5%</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**New KEMET Part Number System**

<table>
<thead>
<tr>
<th>F</th>
<th>115</th>
<th>P</th>
<th>P</th>
<th>102</th>
<th>K</th>
<th>050</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitor Class</td>
<td>Series</td>
<td>Chip Size</td>
<td>Size Code</td>
<td>Capacitance Code (pf)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
<td>Packaging</td>
</tr>
<tr>
<td>F = Film</td>
<td>Metallized PEN</td>
<td>P = 2220</td>
<td>S = 2824</td>
<td>W = 4036</td>
<td>Y = 5045</td>
<td>Z = 6560</td>
<td>First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.</td>
</tr>
</tbody>
</table>

### Case Size

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50/30</td>
</tr>
<tr>
<td>2220</td>
</tr>
<tr>
<td>2824</td>
</tr>
<tr>
<td>4036</td>
</tr>
<tr>
<td>5045</td>
</tr>
<tr>
<td>6560</td>
</tr>
</tbody>
</table>

**Applications**

GMC is a general purpose series designed for the highest reliability and high temperature service. Not suitable for ac across-the-line application (see suppressor capacitors).

Typical applications include bypassing and signal coupling.
## New KEMET Part Number System

<table>
<thead>
<tr>
<th>F</th>
<th>117</th>
<th>S</th>
<th>L</th>
<th>471</th>
<th>K</th>
<th>063</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cap</td>
<td>9-11</td>
<td>2-6</td>
<td>3-5</td>
<td></td>
<td></td>
<td>063</td>
</tr>
<tr>
<td></td>
<td>Class</td>
<td>Series</td>
<td>Chip Size</td>
<td>Size Code</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
</tr>
<tr>
<td>F = Film</td>
<td>Double Metallized PEN</td>
<td>S = 2824</td>
<td>W = 4036</td>
<td>Z = 6560</td>
<td>See Dimension Table</td>
<td>First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.</td>
<td>K = ±10% M = ±20% Other tolerances on request.</td>
</tr>
</tbody>
</table>

## Legacy Part Number System

<table>
<thead>
<tr>
<th>GPC</th>
<th>7.3</th>
<th>471</th>
<th>K</th>
<th>63</th>
<th>K33</th>
<th>TR12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Chip Length (mm)</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
<td>Size Code</td>
<td>Packaging</td>
</tr>
<tr>
<td>Double Metallized PEN</td>
<td>8.8</td>
<td>10.2</td>
<td>12.7</td>
<td>16.5</td>
<td>First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.</td>
<td>K = ±10% M = ±20% Other tolerances on request.</td>
</tr>
</tbody>
</table>

### Case Size

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>63/40</td>
</tr>
<tr>
<td>2824</td>
</tr>
<tr>
<td>4036</td>
</tr>
<tr>
<td>5045</td>
</tr>
<tr>
<td>6560</td>
</tr>
</tbody>
</table>
Film Capacitors – DC Film
General Purpose – Surface Mount

Metallized Polyphenylene Sulfide (PPS)
SPC Encapsulated Double Metallized, Size 2824 – 6560, 100 – 630 VDC
Capacitance Range: 470 pF to 0.68 μF • Temperature Range: −55°C to +125°C

Legacy Part Number System

<table>
<thead>
<tr>
<th>SPC</th>
<th>7.3</th>
<th>471</th>
<th>K</th>
<th>100</th>
<th>K33</th>
<th>TR12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Chip Length (mm)</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
<td>Size Code</td>
<td>Packaging</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double Metallized PPS</td>
<td>7.3</td>
<td>10.2</td>
<td>12.7</td>
<td>16.5</td>
<td>First two digits represent significant figures. The third digit specifies number of zeros.</td>
<td>G = ±2%</td>
</tr>
</tbody>
</table>

New KEMET Part Number System

<table>
<thead>
<tr>
<th>F</th>
<th>127</th>
<th>S</th>
<th>L</th>
<th>471</th>
<th>K</th>
<th>100</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitor Class</td>
<td>Series</td>
<td>Chip Size</td>
<td>Size Code</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
<td>Packaging</td>
</tr>
<tr>
<td>F = Film Double Metallized PPS</td>
<td>S = 2824</td>
<td>W = 4036</td>
<td>Y = 5045</td>
<td>Z = 6560</td>
<td>See Dimension Table</td>
<td>First two digits represent significant figures. The third digit specifies number of zeros.</td>
<td>G = ±2%</td>
</tr>
</tbody>
</table>

Case Size

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100/63</td>
</tr>
<tr>
<td>2824</td>
</tr>
<tr>
<td>4036</td>
</tr>
<tr>
<td>5045</td>
</tr>
<tr>
<td>6560</td>
</tr>
</tbody>
</table>
### F43 Integrated Resistor Metallized Polypropylene

**Capacitance Range:** 0.01 to 1.0 μF • **Temperature Range:** −55°C to +100°C

<table>
<thead>
<tr>
<th>F</th>
<th>43</th>
<th>K</th>
<th>N</th>
<th>3100</th>
<th>XX</th>
<th>01</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitor Class</td>
<td>Series</td>
<td>Rated Voltage (VAC)</td>
<td>Lead Spacing (mm)</td>
<td>Capacitance Code (pF)</td>
<td>Packaging</td>
<td>Internal Use</td>
<td>Capacitance Tolerance</td>
</tr>
<tr>
<td>Legacy PN: F</td>
<td>RC Snubber, Metallized Polypropylene</td>
<td>I = 160</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New KEMET PN:</td>
<td></td>
<td>M = 200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>P = 220</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>K = 275 (X2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- The last three digits represent significant figures.
- The first digit specifies number of zeros to be added.

Contact KEMET for packaging availability and details.

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 – 18 x 14.5 x 8.5</td>
<td>250/160 225 nF</td>
</tr>
<tr>
<td>15 – 18 x 14.5 x 7.5</td>
<td>250/160 22 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 15 x 6</td>
<td>330 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 17 x 8.5</td>
<td>470 nF – 500 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 18.5 x 10</td>
<td>1 μF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 16 x 7</td>
<td>250 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 20 x 11</td>
<td>250 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 22 x 13</td>
<td>1 μF</td>
</tr>
</tbody>
</table>

(X2)

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 – 18 x 14.5 x 7.5</td>
<td>800/275 10 nF – 47 nF</td>
</tr>
<tr>
<td>15 – 18 x 16 x 10</td>
<td>68 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 8.5</td>
<td>100 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 10 x 10</td>
<td>150 nF</td>
</tr>
<tr>
<td>22.5 – 26.5 x 20 x 11</td>
<td>320 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 20 x 11</td>
<td>250 nF – 330 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 22 x 13</td>
<td>470 nF – 500 nF</td>
</tr>
<tr>
<td>27.5 – 32 x 33 x 18</td>
<td>680 nF – 1 μF</td>
</tr>
</tbody>
</table>
## Legacy Part Number System

<table>
<thead>
<tr>
<th>MDK</th>
<th>10</th>
<th>333</th>
<th>K</th>
<th>50</th>
<th>A52</th>
<th>P3</th>
<th>TUBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual In-Line, Metallized Polyester</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.
- J = ±5
- K = ±10%
- Other tolerances on request
- See Dimension Table
- P3 = 3 leads
- P4 = 4 leads
- P5 = 5 leads
- P7 = 7 leads
- P8 = 8 leads
- See Ordering Options Table

---

## New KEMET Part Number System

### Capacitor Class
- F = Film
- Dual In-Line, Metallized Polyester
- 3 = 3 leads
- 4 = 4 leads
- 5 = 5 leads
- 6 = 6 leads
- 7 = 7 leads
- 8 = 8 leads
- A = 10
- B = 15

### Options Table
- First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.
- J = ±5
- K = ±10%
- Other tolerances on request
- See Dimension Table
- P3 = 3 leads
- P4 = 4 leads
- P5 = 5 leads
- P7 = 7 leads
- P8 = 8 leads
- See Ordering Options Table

---

### Voltage (VDC/VAC)

<table>
<thead>
<tr>
<th>Case Size</th>
<th>50/30</th>
<th>100/35</th>
<th>100/63</th>
<th>250/160</th>
<th>400/200</th>
<th>630/220</th>
</tr>
</thead>
<tbody>
<tr>
<td>A52</td>
<td>33 nF</td>
<td>33 nF</td>
<td>33 nF</td>
<td>33 nF</td>
<td>33 nF</td>
<td>33 nF</td>
</tr>
<tr>
<td>A53</td>
<td>4.7 µF</td>
<td>4.7 µF</td>
<td>560 nF</td>
<td>68 nF</td>
<td>680 nF</td>
<td>330 nF</td>
</tr>
<tr>
<td>A54</td>
<td>6.8 µF</td>
<td>6.8 µF</td>
<td>820 nF</td>
<td>820 nF</td>
<td>820 nF</td>
<td>330 nF</td>
</tr>
<tr>
<td>A55</td>
<td>8.2 µF</td>
<td>8.2 µF</td>
<td>6.8 µF</td>
<td>6.8 µF</td>
<td>820 nF</td>
<td>820 nF</td>
</tr>
<tr>
<td>A57</td>
<td>12 µF</td>
<td>12 µF</td>
<td>8.2 µF</td>
<td>8.2 µF</td>
<td>820 nF</td>
<td>820 nF</td>
</tr>
<tr>
<td>A58</td>
<td>23 nF</td>
<td>23 nF</td>
<td>23 nF</td>
<td>23 nF</td>
<td>23 nF</td>
<td>23 nF</td>
</tr>
<tr>
<td>B53</td>
<td>5.6 µF</td>
<td>5.6 µF</td>
<td>5.6 µF</td>
<td>5.6 µF</td>
<td>5.6 µF</td>
<td>5.6 µF</td>
</tr>
<tr>
<td>B55</td>
<td>6.8 µF</td>
<td>6.8 µF</td>
<td>6.8 µF</td>
<td>6.8 µF</td>
<td>6.8 µF</td>
<td>6.8 µF</td>
</tr>
</tbody>
</table>

---

**Dual In-Line Polyester – Through-Hole**

**MDK High Current, 50 – 630 VDC**

**Capacitance Range:** 0.033 to 15 µF • **Temperature Range:** -55°C to +125°C

**Overview**

- Low ESR/ESL, 50 – 630 VDC
- MDK Series Metallized Polyester Film, Dual In-Line, General Purpose, Pulse and DC Transient Suppression Capacitor
- Dual in-line (DIL) metallized polyester (PET) film capacitor.
## Dual In-Line Polyester – Surface Mount

**MDC High Current, 50 – 630 VDC**  
**Capacitance Range:** 0.033 to 15 μF  
**Temperature Range:** −55°C to +125°C

### Legacy Part Number System

<table>
<thead>
<tr>
<th>MDC</th>
<th>Lead Spacing (mm)</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Size Code</th>
<th>Number of Leads per Side</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual In-Line, Metallized Polyester</td>
<td>10</td>
<td>First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.</td>
<td>J = ±5 K = ±10% Other tolerances on request.</td>
<td>50 100 250 400 630</td>
<td>P3 = 3 leads P4 = 4 leads P5 = 5 leads P7 = 7 leads P8 = 8 leads</td>
<td>See Dimension Table</td>
<td></td>
</tr>
</tbody>
</table>

### New KEMET Part Number System

<table>
<thead>
<tr>
<th>F</th>
<th>15</th>
<th>3</th>
<th>A</th>
<th>A</th>
<th>333</th>
<th>K</th>
<th>050</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitor Class Series Number of Leads per Side Lead Spacing (mm) Size Code Capacitance Code (pF) Capacitance Tolerance Rated Voltage (VDC) Packaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F = Film Dual In-Line, Metallized Polyester 3 = 3 leads 4 = 4 leads 5 = 5 leads 7 = 7 leads 8 = 8 leads</td>
<td>A = 10 B = 15 A = Standard box size</td>
<td>First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.</td>
<td>J = ±5 K = ±10% Other tolerances on request</td>
<td>050 = 50 100 = 100 250 = 250 400 = 400 630 = 630</td>
<td>See Ordering Options Table</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Case Size and Voltage (VDC/VAC)

<table>
<thead>
<tr>
<th>Case Size Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50/30</td>
</tr>
<tr>
<td>A52</td>
</tr>
<tr>
<td>A53</td>
</tr>
<tr>
<td>A54</td>
</tr>
<tr>
<td>A55</td>
</tr>
<tr>
<td>A57</td>
</tr>
<tr>
<td>A58</td>
</tr>
<tr>
<td>B53</td>
</tr>
<tr>
<td>B55</td>
</tr>
</tbody>
</table>
Dual In-Line Polyester – Surface Mount (cont.)

MDS Low Profile, High Current, 50 – 630 VDC
Capacitance Range: 0.033 to 6.8 µF • Temperature Range: −55°C to +125°C

Legacy Part Number System

<table>
<thead>
<tr>
<th>MDS</th>
<th>Series</th>
<th>Lead Spacing (mm)</th>
<th>Capacitance Code (pF)</th>
<th>Capacitance Tolerance</th>
<th>Rated Voltage (VDC)</th>
<th>Size Code</th>
<th>Number of Leads per Side</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDS 10 333 K 50 A52 P3 TUBE</td>
<td>Dual In-Line, Metallized Polyester</td>
<td>10 15</td>
<td>J = ±5 K = ±10% Other tolerances on request.</td>
<td>050 = 50 100 = 100 250 = 250 400 = 400 630 = 630</td>
<td>See Dimension Table</td>
<td>P3 = 3 leads P4 = 4 leads P5 = 5 leads</td>
<td>See Ordering Options Table</td>
<td></td>
</tr>
</tbody>
</table>

New KEMET Part Number System

<table>
<thead>
<tr>
<th>F</th>
<th>17</th>
<th>3</th>
<th>A</th>
<th>A</th>
<th>333</th>
<th>K</th>
<th>050</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitor Class</td>
<td>Series</td>
<td>Number of Leads per Side</td>
<td>Lead Spacing (mm)</td>
<td>Size Code</td>
<td>Capacitance Code (pF)</td>
<td>Capacitance Tolerance</td>
<td>Rated Voltage (VDC)</td>
<td>Packaging</td>
</tr>
<tr>
<td>F = Film</td>
<td>Dual In-Line, Metallized Polyester</td>
<td>3 = 3 leads</td>
<td>A = 10 B = 15</td>
<td>A = Standard box size</td>
<td>First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.</td>
<td>J = ±5 K = ±10% Other tolerances on request.</td>
<td>050 = 50 100 = 100 250 = 250 400 = 400 630 = 630</td>
<td>See Ordering Options Table</td>
</tr>
</tbody>
</table>

Case Size

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
<th>50/30</th>
<th>100/63</th>
<th>250/160</th>
<th>400/200</th>
<th>630/220</th>
</tr>
</thead>
<tbody>
<tr>
<td>A52</td>
<td>33 nF – 4.7 µF</td>
<td>33 nF – 3.9 µF</td>
<td>33 nF – 470 nF</td>
<td>33 nF – 180 nF</td>
<td>33 nF – 56 nF</td>
</tr>
<tr>
<td>A54</td>
<td>5.6 µF</td>
<td>4.7 µF</td>
<td>560 nF</td>
<td></td>
<td>68 nF</td>
</tr>
<tr>
<td>A55</td>
<td>6.8 µF</td>
<td>5.6 µF</td>
<td>680 nF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B53</td>
<td>33 nF – 6.8 µF</td>
<td>33 nF – 4.7 µF</td>
<td>33 nF – 680 nF</td>
<td>33 nF – 270 nF</td>
<td>33 nF – 100 nF</td>
</tr>
<tr>
<td>B55</td>
<td>5.6 µF</td>
<td></td>
<td></td>
<td>330 nF</td>
<td></td>
</tr>
</tbody>
</table>

Applications

Typical applications include high frequency switched-mode power supplies, DC/DC converters and input/output filtering.
Axial

C4G Axial Round, 250 – 850 VDC/160 – 450 VAC
Capacitance Range: 0.15 to 40 μF • Temperature Range: −40°C to +85°C

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>250/160</td>
<td>400/250</td>
</tr>
<tr>
<td>9.5 x 28</td>
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<tr>
<td>10 x 33</td>
<td>680 nF</td>
</tr>
<tr>
<td>11 x 20.5</td>
<td>1 μF</td>
</tr>
<tr>
<td>11 x 33</td>
<td>470 nF</td>
</tr>
<tr>
<td>11.5 x 33</td>
<td>2.2 μF</td>
</tr>
<tr>
<td>12 x 33</td>
<td>2.5 μF</td>
</tr>
<tr>
<td>13 x 33</td>
<td>680 nF</td>
</tr>
<tr>
<td>13.5 x 33</td>
<td>3 μF</td>
</tr>
<tr>
<td>14 x 33</td>
<td>3.3 μF</td>
</tr>
<tr>
<td>14.5 x 33</td>
<td>1.5 μF</td>
</tr>
<tr>
<td>15.5 x 33</td>
<td>4 μF</td>
</tr>
<tr>
<td>16.5 x 33</td>
<td>2 μF</td>
</tr>
<tr>
<td>17 x 33</td>
<td>5 μF</td>
</tr>
<tr>
<td>17.5 x 33</td>
<td>2.2 μF</td>
</tr>
<tr>
<td>18 x 44</td>
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<tr>
<td>18.5 x 33</td>
<td>2.5 μF</td>
</tr>
<tr>
<td>18.5 x 44</td>
<td>2 μF</td>
</tr>
<tr>
<td>19.5 x 33</td>
<td>6.8 μF</td>
</tr>
<tr>
<td>19.5 x 44</td>
<td>4 μF</td>
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<tr>
<td>20 x 33</td>
<td>3 μF</td>
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<tr>
<td>20 x 44</td>
<td>10 μF</td>
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<td>20.5 x 44</td>
<td>1.5 μF</td>
</tr>
<tr>
<td>21 x 44</td>
<td>4.7 μF</td>
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<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>250/160</td>
<td>400/250</td>
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<tr>
<td>21.5 x 44</td>
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<tr>
<td>22.5 x 44</td>
<td>3 μF</td>
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<tr>
<td>23.5 x 44</td>
<td>3.3 μF</td>
</tr>
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<td>24.5 x 44</td>
<td>15 μF</td>
</tr>
<tr>
<td>25 x 44</td>
<td>6.8 μF</td>
</tr>
<tr>
<td>25.5 x 44</td>
<td>4 μF</td>
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<td>28 x 44</td>
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<tr>
<td>28.5 x 58</td>
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<tr>
<td>29 x 58</td>
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<tr>
<td>29.5 x 44</td>
<td>2.2 μF</td>
</tr>
<tr>
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<tr>
<td>30 x 44</td>
<td>10 μF</td>
</tr>
<tr>
<td>30.5 x 58</td>
<td>5 μF</td>
</tr>
<tr>
<td>31 x 44</td>
<td>25 μF</td>
</tr>
<tr>
<td>31.5 x 44</td>
<td>2.5 μF</td>
</tr>
<tr>
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<td>4 μF</td>
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<td>34.5 x 58</td>
<td>10 μF</td>
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<tr>
<td>35 x 58</td>
<td>20 μF</td>
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</table>
Axial (cont.)

C4C Axial Round, 850 – 3,000 VDC/450 – 750 VAC
Capacitance Range: 0.0068 to 2.5 μF • Temperature Range: -40°C to +85°C

**Part Number System**

<table>
<thead>
<tr>
<th>C4</th>
<th>C</th>
<th>A</th>
<th>M</th>
<th>U</th>
<th>B</th>
<th>3100</th>
<th>AA</th>
<th>0</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>C4 = MKP Capacitors</td>
<td>C = Round body, snubber application</td>
<td>A = No fire retardant</td>
<td>M = 850</td>
<td>U = Polyester tape and resin protection</td>
<td>B = 0.8</td>
<td>3100</td>
<td>AA = Bulk (Bag)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>S = Fire retardant (on request)</td>
<td>P = 1,200</td>
<td>0 = Uninsulated (on request)</td>
<td>C = 1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y = 3,000</td>
<td>W = 2,000</td>
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<td>D = 1.2</td>
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**Case Size**

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<tr>
<td>14 x 33</td>
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<td>14.5 x 33</td>
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<tr>
<td>15 x 33</td>
<td>220 nF</td>
</tr>
<tr>
<td>15.5 x 33</td>
<td>22 nF</td>
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<td>16 x 33</td>
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<td></td>
</tr>
<tr>
<td>18 x 33</td>
<td></td>
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<tr>
<td>18.5 x 33</td>
<td></td>
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<tr>
<td>19 x 44</td>
<td>680 nF</td>
</tr>
<tr>
<td>19.5 x 44</td>
<td></td>
</tr>
<tr>
<td>20 x 44</td>
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<tr>
<td>20.5 x 33</td>
<td>220 nF</td>
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<td>21 x 44</td>
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<td>21.5 x 33</td>
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</tr>
<tr>
<td>23 x 44</td>
<td></td>
</tr>
<tr>
<td>23.5 x 44</td>
<td></td>
</tr>
<tr>
<td>25 x 44</td>
<td>1 μF</td>
</tr>
<tr>
<td>27 x 44</td>
<td></td>
</tr>
<tr>
<td>27.5 x 44</td>
<td>680 nF</td>
</tr>
<tr>
<td>28 x 44</td>
<td></td>
</tr>
<tr>
<td>28.5 x 44</td>
<td>2 μF</td>
</tr>
<tr>
<td>29 x 44</td>
<td>1.2 μF</td>
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<td>2.2 μF</td>
</tr>
<tr>
<td>30 x 44</td>
<td>1.5 μF</td>
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<tr>
<td>31 x 44</td>
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<tr>
<td>31.5 x 44</td>
<td>2.5 μF</td>
</tr>
<tr>
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<td>1.5 μF</td>
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<tr>
<td>33 x 44</td>
<td></td>
</tr>
<tr>
<td>33.5 x 44</td>
<td>470 nF</td>
</tr>
</tbody>
</table>
**Radial Box**

**C4AE, 2 or 4 Leads, for DC Link, 450 – 1,100 VDC**

*Capacitance Range: 1 to 100 μF • Temperature Range: −40°C to +105°C*

**Benefits**
- Self-healing
- Low losses
- High ripple current
- High capacitance density
- High contact reliability
- Suitable for high frequency applications

**Overview**
The C4AE Series is a polypropylene metallized film with rectangular plastic box type filled with resin (white and grey color) and 2 or 4 tinned copper wires.

**Applications**
Typical applications include DC filtering and energy storage.

**Printed Circuit Board Mount Power Film Capacitors**
C4AE Series, Radial, 2 or 4 Leads, 450 – 1,100 VDC, for DC Link

**Part Number System**

<table>
<thead>
<tr>
<th>C4</th>
<th>A</th>
<th>E</th>
<th>Q</th>
<th>B</th>
<th>W</th>
<th>5270</th>
<th>A</th>
<th>3</th>
<th>N</th>
<th>J</th>
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</thead>
<tbody>
<tr>
<td>Series Type Application Rated Voltage (VDC) Case Terminals Code Capacitance Code (pF) C-Spec Lead Diameter (mm) Size Code: B x H x L (mm) Tolerance</td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C4 = MKP Power Capacitors A = Box, Wire Terminals E = DC Link G = 450 H = 600 J = 700 O = 900 Q = 1,100 B = Box, Plastic Case U = 2 pins W = 4 pins Digits two – four indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added. A = Standard Grade 1 = 0.8 2 = 1.0 3 = 1.2 W = 11 x 20 x 31.5 X = 13 x 25 x 31.5 Y = 14 x 28 x 31.5 1 = 19 x 29 x 31.5 2 = 22 x 37 x 31.5 F = 20 x 40 x 42 J = 28 x 37 x 42 L = 30 x 45 x 42 M = 30 x 45 x 57.5 N = 35 x 50 x 57.5</td>
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**Case Size**

<table>
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<tr>
<th>Voltage</th>
<th>450 VDC</th>
<th>600 VDC</th>
<th>700 VDC</th>
<th>900 VDC</th>
<th>1,100 VDC</th>
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<tbody>
<tr>
<td>27.5 – 31.5 x 20 x 11</td>
<td>4.5 μF</td>
<td>3.3 μF</td>
<td>2.7 μF</td>
<td>1.5 μF</td>
<td>1 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 25 x 13</td>
<td>6.8 μF</td>
<td>5.6 μF</td>
<td>4 μF</td>
<td>2.7 μF</td>
<td>1.8 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 28 x 14</td>
<td>10 μF</td>
<td>7 μF</td>
<td>5 μF</td>
<td>3.3 μF</td>
<td>2.2 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 29 x 19</td>
<td>12.5 μF</td>
<td>10 μF</td>
<td>8 μF</td>
<td>5 μF</td>
<td>3.3 μF</td>
</tr>
<tr>
<td>27.5 – 31.5 x 37 x 22</td>
<td>20 μF</td>
<td>15 μF</td>
<td>12.5 μF</td>
<td>8 μF</td>
<td>5 μF</td>
</tr>
<tr>
<td>37.5 – 42 x 37 x 28</td>
<td>35 μF – 50 μF</td>
<td>30 μF</td>
<td>20 μF</td>
<td>14 μF</td>
<td>10 μF</td>
</tr>
<tr>
<td>37.5 – 42 x 40 x 20</td>
<td>30 μF – 40 μF</td>
<td>20 μF</td>
<td>15 μF</td>
<td>12 μF</td>
<td>8 μF</td>
</tr>
<tr>
<td>37.5 – 42 x 45 x 30</td>
<td>50 μF</td>
<td>40 μF</td>
<td>30 μF</td>
<td>20 μF</td>
<td>12 μF</td>
</tr>
<tr>
<td>37.5 – 42 x 44 x 24</td>
<td>40 μF – 55 μF</td>
<td>22 μF</td>
<td>16 μF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52.5 – 57.5 x 45 x 30</td>
<td>75 μF</td>
<td>55 μF</td>
<td>45 μF</td>
<td>30 μF</td>
<td>20 μF</td>
</tr>
<tr>
<td>52.5 – 57.5 x 50 x 35</td>
<td>100 μF</td>
<td>75 μF</td>
<td>55 μF – 60 μF</td>
<td>40 μF</td>
<td>25 μF – 27 μF</td>
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</table>
**Film Capacitors – Power AC**  
Polypropylene – Through-Hole

## Radial Box (cont.)

**C4AS, 2 or 4 Leads, 850 – 3,000 VDC/500 – 750 VAC**  
Capacitance Range: 0.022 to 5 μF • Temperature Range: −40°C to +85°C  
www.kemet.com/C4AS

### Part Number System

<table>
<thead>
<tr>
<th>C4</th>
<th>AS</th>
<th>M</th>
<th>B</th>
<th>U</th>
<th>3150</th>
<th>A3</th>
<th>A</th>
<th>J</th>
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<tbody>
<tr>
<td>Series</td>
<td>Type</td>
<td>Rated Voltage (VDC)</td>
<td>Case</td>
<td>Number of Leads</td>
<td>Capacitance Code (μF)</td>
<td>Lead Diameter (mm)</td>
<td>Size Code</td>
<td>Tolerance</td>
</tr>
<tr>
<td>C4 = MKP Capacitors</td>
<td>AS = Radial box, snubber application</td>
<td>M = 850 N = 1,000 P = 1,200 W = 2,000 Y = 3,000</td>
<td>B = Plastic box with epoxy resin sealing</td>
<td>U = 2 lead W = 4 lead</td>
<td></td>
<td></td>
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</tr>
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### Case Size

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>850/500</td>
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<tr>
<td>27.5 – 32 x 20 x 10</td>
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<tr>
<td>27.5 – 32 x 22 x 13</td>
<td>220 nF</td>
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<tr>
<td>27.5 – 32 x 28 x 14</td>
<td>330 nF</td>
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<tr>
<td>27.5 – 32 x 33 x 18</td>
<td>470 nF</td>
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<tr>
<td>27.5 – 32 x 37 x 22</td>
<td>680 nF</td>
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<tr>
<td>37.5 – 41.5 x 40 x 20</td>
<td>1 μF</td>
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<tr>
<td>37.5 – 41.5 x 44 x 24</td>
<td>2 μF</td>
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<tr>
<td>37.5 – 42 x 45 x 30</td>
<td>2 μF – 2.2 μF</td>
</tr>
<tr>
<td>37.5 – 42.5 x 37 x 28</td>
<td>1.5 μF</td>
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<td>52.5 – 57.5 x 5 x 30</td>
<td>3 μF – 4 μF</td>
</tr>
<tr>
<td>52.5 – 57.5 x 50 x 35</td>
<td>5 μF</td>
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</table>
**Radial Box (cont.)**

**C4AT, 2 or 4 Leads, 250 – 850 VDC/160 – 450 VAC**

**Capacitance Range:** 0.22 to 60 μF  •  **Temperature Range:** −40°C to +85°C

[Image]

**Part Number System**

<table>
<thead>
<tr>
<th>C4</th>
<th>AT</th>
<th>D</th>
<th>B</th>
<th>U</th>
<th>4100</th>
<th>A3</th>
<th>O</th>
<th>J</th>
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</thead>
<tbody>
<tr>
<td>C4 = MKP Capacitors</td>
<td>AT = Radial box, switching application</td>
<td>D = 250</td>
<td>F = 400</td>
<td>G = 450</td>
<td>H = 600</td>
<td>J = 700</td>
<td>M = 850</td>
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**Case Size**

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<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
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<tbody>
<tr>
<td>250/160</td>
<td>400/250</td>
</tr>
<tr>
<td>27.5 – 32 x 20 x 10</td>
<td>1 μF – 2.2 μF</td>
</tr>
<tr>
<td>27.5 – 32 x 22 x 13</td>
<td>3.3 μF</td>
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<tr>
<td>27.5 – 32 x 28 x 14</td>
<td>5 μF</td>
</tr>
<tr>
<td>27.5 – 32 x 33 x 18</td>
<td>10 μF</td>
</tr>
<tr>
<td>27.5 – 32 x 37 x 22</td>
<td>6.8 μF</td>
</tr>
<tr>
<td>27.5 – 32 x 24.5 x 15</td>
<td>1 μF</td>
</tr>
<tr>
<td>37.5 – 41.5 x 40 x 20</td>
<td>10 μF</td>
</tr>
<tr>
<td>37.5 – 42 x 45 x 30</td>
<td>20 μF</td>
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<tr>
<td>37.5 – 42 x 37 x 28</td>
<td>6.8 μF</td>
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<td>20 μF</td>
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<td>37.5 – 42.5 x 45 x 30</td>
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<td>40 μF</td>
</tr>
<tr>
<td>52.5 – 57.5 x 50 x 35</td>
<td>50 μF</td>
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</table>
Film Capacitors – Power AC
Polypropylene – Through-Hole

Radial Box (cont.)

C4BS IGBT Box, 850 – 3,000 VDC/550 – 750 VAC
Capacitance Range: 0.047 to 5 μF • Temperature Range: −40°C to +85°C

<table>
<thead>
<tr>
<th>C4</th>
<th>BS</th>
<th>M</th>
<th>B</th>
<th>X</th>
<th>3470</th>
<th>Z</th>
<th>E</th>
<th>E</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Type</td>
<td>Rated Voltage (VDC)</td>
<td>Case</td>
<td>Number of Leads</td>
<td>Capacitance Code (pF)</td>
<td>Internal Code</td>
<td>Termination Style</td>
<td>Size Code</td>
<td>Tolerance</td>
</tr>
<tr>
<td>C4 = MKP Capacitors for Power Applications</td>
<td>BS = Radial box with tab terminals, IGBT application</td>
<td>M = 850 N = 1,000 P = 1,200 W = 2,000 Y = 3,000</td>
<td>B = Plastic box with epoxy resin sealing</td>
<td>X = Digits two – four indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.</td>
<td>Z = Standard</td>
<td>See Dimension Table</td>
<td>J = 5% K = 10%</td>
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### Case Size

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
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<tbody>
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<td>850/550</td>
</tr>
<tr>
<td>32 x 33 x 18</td>
</tr>
<tr>
<td>41.5 x 40 x 20</td>
</tr>
<tr>
<td>41.5 x 44 x 24</td>
</tr>
<tr>
<td>42 x 45 x 30</td>
</tr>
<tr>
<td>42.5 x 37 x 28</td>
</tr>
<tr>
<td>57.5 x 45 x 30</td>
</tr>
<tr>
<td>57.5 x 50 x 35</td>
</tr>
</tbody>
</table>
## Plastic Canister

### C4DE Low Inductance, DC Link Applications, 400 – 1,000 VDC

**Capacitance Range:** 47 to 380 μF • **Temperature Range:** −40°C to +85°C

![C4DE Capacitor](image)

**Part Number System:**
- **Series:** C4DE = MKP, DC Link Application
- **Rated Voltage (VDC):** F = 400, H = 600, I = 800, N = 1,000
- **Case & Fixing:** P = Cylindrical plastic case with fixing feet
- **Terminal Style:** Q = M8 threaded inserts
- **Capacitance Code (pF):** Digits two – four indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.
- **Internal Code:** AA0 = Standard
- **Tolerance:** K = 10%

### Case Size

<table>
<thead>
<tr>
<th>Voltage</th>
<th>400 VDC</th>
<th>600 VDC</th>
<th>800 VDC</th>
<th>1,000 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>84 x 40</td>
<td>175 μF</td>
<td>100 μF</td>
<td>68 μF</td>
<td>47 μF</td>
</tr>
<tr>
<td>84 x 51</td>
<td>260 μF</td>
<td>150 μF</td>
<td>100 μF</td>
<td>68 μF</td>
</tr>
<tr>
<td>84 x 64</td>
<td>380 μF</td>
<td>220 μF</td>
<td>140 μF</td>
<td>100 μF</td>
</tr>
</tbody>
</table>

## C4DC, GTO Snubbing Applications, 850 – 1,400 VDC/500 – 700 VAC

**Capacitance Range:** 0.5 to 6 μF • **Temperature Range:** −40°C to +85°C

![C4DC Capacitor](image)

**Part Number System:**
- **Series:** C4DC = MKP, GTO Application
- **Rated Voltage (VDC):** M = 850, R = 1400
- **Case:** A = Axial plastic case
- **Terminal Style:** Q = M8 Threaded Inserts
- **Capacitance Code (pF):** Digits two – four indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.
- **Internal Code:** AA0 = Standard
- **Tolerance:** J = 5%

### Case Size

<table>
<thead>
<tr>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>850/500</td>
</tr>
<tr>
<td>60 x 51</td>
</tr>
<tr>
<td>60 x 64</td>
</tr>
<tr>
<td>72 x 51</td>
</tr>
<tr>
<td>72 x 64</td>
</tr>
<tr>
<td>80 x 51</td>
</tr>
<tr>
<td>80 x 64</td>
</tr>
<tr>
<td>90 x 51</td>
</tr>
<tr>
<td>90 x 64</td>
</tr>
</tbody>
</table>
Plastic Canister (cont.)

C4DR, GTO Clamping Applications, 400 – 3,000 VDC/160 – 1,000 VAC

Capacitance Range: 1 to 220 μF • Temperature Range: −40°C to +85°C

www.kemet.com/C4DR

<table>
<thead>
<tr>
<th>C4DR</th>
<th>F</th>
<th>A</th>
<th>Q</th>
<th>S250</th>
<th>AA0</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Rated Voltage (VDC)</td>
<td>Case</td>
<td>Terminal Style</td>
<td>Capacitance Code (μF)</td>
<td>Internal Code</td>
<td>Tolerance</td>
</tr>
<tr>
<td>C4DR = MKP, Clamping Application</td>
<td>F = 400</td>
<td>H = 600</td>
<td>J = 700</td>
<td>M = 850</td>
<td>P = 1,200</td>
<td>S = 1,500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>400/160</td>
</tr>
<tr>
<td>60 x 49</td>
<td></td>
</tr>
<tr>
<td>60 x 51</td>
<td>25 μF</td>
</tr>
<tr>
<td>72 x 51</td>
<td>30 μF</td>
</tr>
<tr>
<td>80 x 49</td>
<td></td>
</tr>
<tr>
<td>80 x 51</td>
<td>50 μF</td>
</tr>
<tr>
<td>80 x 61</td>
<td></td>
</tr>
<tr>
<td>80 x 99</td>
<td></td>
</tr>
<tr>
<td>90 x 49</td>
<td></td>
</tr>
<tr>
<td>90 x 51</td>
<td>75 μF</td>
</tr>
<tr>
<td>90 x 59</td>
<td></td>
</tr>
<tr>
<td>90 x 61</td>
<td></td>
</tr>
<tr>
<td>90 x 99</td>
<td></td>
</tr>
</tbody>
</table>
Aluminum Canister

C44U Screw Terminal, DC Link Applications, 700 – 1,300 VDC
Capacitance Range: 50 to 600 μF • Temperature Range: -40°C to +85°C

www.kemet.com/C44U

Benefits
• Controlled self-healing
• Low losses
• High ripple current
• High capacitance density
• Long lifetime

Overview
The C44U Series is a polypropylene segmented metallized film with cylindrical aluminium can type filled with resin, screw terminals and plastic deck.

Applications
Typical applications include DC filtering and energy storage.

Aluminum Can Power Film Capacitors
C44U Series, 600 – 1,300 VDC, for DC Link

Part Number System
C4 4 U Q G T 6 5 0 0 F 8 S K
Series DC Voltage Case and Fixing Terminals Code Capacitance Code (pF) Variants Case Diameter Film Type Tolerance
C4 = MKP Capacitors for Power Applications 4 = Cylindrical types U = DC link H = 600 V J = 700 V O = 900 V Q = 1,100 V U = 1,300 V G = Cylindrical case with threaded bolt M12 E = Cylindrical case without threaded bolt T = M6 female terminals Q = M8 male terminals Y = M8 female terminals Digits nine, ten and eleven indicate the first three digits of capacitance value. Digit eight indicates the number of zeros to be added. A = 85°C Hot Spot temperature series F/G = 70°C Hot Spot temperature series 7 = 76 mm 8 = 85 mm T = Standard film S = Segmented film J = 5% K = 10%

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>600 VDC</td>
</tr>
<tr>
<td>76 x 55</td>
<td>120 μF</td>
</tr>
<tr>
<td>76 x 70</td>
<td>175 μF</td>
</tr>
<tr>
<td>76 x 95</td>
<td>350 μF</td>
</tr>
<tr>
<td>76 x 120</td>
<td>425 μF</td>
</tr>
<tr>
<td>76 x 140</td>
<td>370 μF</td>
</tr>
<tr>
<td>85 x 55</td>
<td>160 μF</td>
</tr>
<tr>
<td>85 x 70</td>
<td>225 μF</td>
</tr>
<tr>
<td>85 x 95</td>
<td>370 μF</td>
</tr>
<tr>
<td>85 x 120</td>
<td>450 μF</td>
</tr>
<tr>
<td>85 x 124.5</td>
<td>600 μF</td>
</tr>
<tr>
<td>85 x 140</td>
<td>550 μF</td>
</tr>
<tr>
<td>85 x 155</td>
<td></td>
</tr>
<tr>
<td>85 x 174</td>
<td></td>
</tr>
<tr>
<td>85 x 264</td>
<td></td>
</tr>
</tbody>
</table>
Aluminum Canister (cont.)

C44P/C20A for PFC and AC Filter, 250 – 1,000 VAC/400 – 1,400 VDC
Capacitance Range: 68 to 600 μF • Temperature Range: −40°C to +85°C

<table>
<thead>
<tr>
<th>C</th>
<th>44</th>
<th>P</th>
<th>L</th>
<th>G</th>
<th>R</th>
<th>6</th>
<th>1</th>
<th>0</th>
<th>0</th>
<th>A</th>
<th>A</th>
<th>S</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Application</td>
<td>Rated Voltage (VAC)</td>
<td>Case Type</td>
<td>Terminal Style</td>
<td>Capacitance Code (pF)</td>
<td>Internal Code</td>
<td>Internal Codes</td>
<td>Tolerance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKP Capacitors for Power Applications</td>
<td>44 = 330 – 440 VAC 20 = 550 – 1,000 VAC</td>
<td>AC Filter P = C44 A = C20</td>
<td>For C44P: L = 330 K = 440</td>
<td>For C20A: K = 550 L = 640 Q = 780 Z = 1000</td>
<td>G = M12 bolt</td>
<td>R = Male M10</td>
<td>Digits 9 – 11 indicate the first three digits of capacitance value. Digit 8 indicates the number of zeros that must be added to obtain rated capacitance in pF.</td>
<td>A = Standard Z = Special</td>
<td>J = 5% K = 10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Case Size

|电压 (VDC/VAC) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700/330 | 1,000/440 |
| 65 x 115 | 100 μF |
| 65 x 145 | 200 μF |
| 65 x 197 | 120 μF |
| 65 x 247 | 300 μF – 400 μF |
| 75 x 147 | 100 μF |
| 75 x 247 | 500 μF – 200 μF |
| 85 x 247 | 600 μF – 250 μF |
| 85 x 270 | 600 μF |
| 95 x 247 | 400 μF |
## Aluminum Canister (cont.)

### C44H for PFC and AC Filter, 330 – 440 VAC/700 – 1,000 VDC

**Capacitance Range:** 250 to 600 μF  •  **Temperature Range:** −40°C to +85°C

**www.kemet.com/C44H**

### Benefits
- Overpressure safety device
- High peak current capability
- Long lifetime
- Self-healing

### Overview
The C44H Series are a polypropylene metallized film with cylindrical aluminum can type filled with liquid resin, screw terminals, plastic deck and overpressure safety device.

### Applications
Typical applications include commutation, power factor correction and AC harmonic filtering.

### Aluminum Can Power Film Capacitors
- **C44H Series**, 330 – 440 VAC, 700 – 1,000 VDC, for PFC and AC Filter

### Part Number System

<table>
<thead>
<tr>
<th>C44H</th>
<th>L</th>
<th>G</th>
<th>P</th>
<th>6100</th>
<th>A</th>
<th>A</th>
<th>S</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>C44H = MKP Capacitors for AC filtering</td>
<td>L = 330 Vrms</td>
<td>G = Cylindrical aluminum case with M12 bolt</td>
<td>P = M6 Threaded Posts</td>
<td>6100</td>
<td>A</td>
<td>A</td>
<td>S</td>
<td>J</td>
</tr>
</tbody>
</table>

### Capacitance and Voltage Specifications

<table>
<thead>
<tr>
<th>Case Size</th>
<th>Voltage (VDC/VAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>700/330</td>
<td>1,000/440</td>
</tr>
<tr>
<td>65 x 98</td>
<td>100 μF</td>
</tr>
<tr>
<td>75 x 117</td>
<td>200 μF</td>
</tr>
<tr>
<td>75 x 142</td>
<td>100 μF</td>
</tr>
<tr>
<td>75 x 194</td>
<td>300 μF – 133 μF</td>
</tr>
<tr>
<td>75 x 242</td>
<td>400 μF – 500 μF</td>
</tr>
<tr>
<td>85 x 142</td>
<td>133 μF</td>
</tr>
<tr>
<td>85 x 242</td>
<td>600 μF – 250 μF</td>
</tr>
</tbody>
</table>

It is not possible to manufacture every part number which could be created from coding description. Please refer to the table of standard part numbers and ask KEMET for other possibilities.

### Case Size and Voltage

- **Case Size**: Voltage (VDC/VAC)
  - 65 x 98: 100 μF
  - 75 x 117: 200 μF
  - 75 x 142: 100 μF
  - 75 x 194: 300 μF – 133 μF
  - 75 x 242: 400 μF – 500 μF
  - 85 x 142: 133 μF
  - 85 x 242: 600 μF – 250 μF
Countries and Areas listed below represent KEMET operations throughout the world.

Bulgaria  
China  
Finland  
Germany  
Hong Kong

India  
Indonesia  
Italy  
Japan  
Macedonia

Malaysia  
Mexico  
Portugal  
Singapore  
South Korea

Sweden  
Taiwan  
United Kingdom  
USA