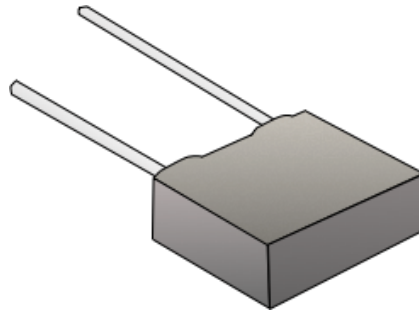


Metallized Polypropylene Radial Leaded Film Capacitors

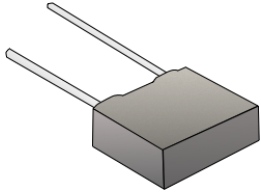
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MPPR – Metallized Polypropylene / Radial Leads



- Low Leakage
- Radial Leaded (7.5mm to 27.5mm)
- Non Inductively Wound
- Non Polar
- Flame Retardant Case Meets UL94V-0
- Epoxy Encapsulant Meets UL94V-0
- Lead Material Tinned Copper Wire Minimum Lead Content 5%

General Specifications

Operating Temperature:
-55°C to +105°C with voltage derating above 85°C

Voltage Range:
160 VDC (90 VAC) to 400 VDC (250 VAC)

Capacitance Range:
0.0022 µF to 3.3 µF

Capacitance Tolerance:
J=±5%, K=±10%, M=±20%

Total Self Inductance
(2mm lead length)

| | | | | | |
|------------|-----|----|----|------|------|
| Pitch (mm) | 7.5 | 10 | 15 | 22.5 | 27.5 |
| L (nH) | 8 | 9 | 10 | 18 | 18 |
| ≈ | | | | | |

Dielectric Withstand Voltage:
1.6 x Rated Voltage for 2 sec at +25°C ±5°C

Dissipation Factor (DF):
tgδ x 10⁻⁴ at +25°C ±5°C

| KHz | C≤0.1µF | C 0.1µF to 1µF | C>0.1 µF |
|-----|---------|----------------|----------|
| 1 | ≤6 | ≤6 | ≤6 |
| 10 | ≤10 | ≤20 | |
| 100 | ≤30 | | |

Excellent choice for applications requiring low dielectric losses, high insulation resistance, high voltage capability, and stable characteristics.

Maximum Pulse Rise Time (dv/dt)

| Vn | Pitch (mm) | | | | |
|-----|------------|----|----|------|------|
| | 7.5 | 10 | 15 | 22.5 | 27.5 |
| 160 | 5 | 4 | 2 | 1.5 | 1 |
| 250 | 1 | 1 | 7 | 4 | 3 |
| 400 | 3 | 2 | 10 | 5.5 | 5 |
| 630 | 5 | 4 | 15 | 8 | 7 |

If the working voltage (V) is less than the nominal voltage (Vn), the capacitor can work at higher dv/dt. In this case, the maximum value allowed is obtained by multiplying the above value (see table dv/dt) with the ratio Vn/V.

Test Method and Performance

| Insulation Performance | |
|--|--|
| Test Conditions Temperature Voltage Charge Time Voltage Charge | 25 °C ±5 °C 1 minute 50 Vdc for Vn < 100 Vdc 100 Vdc for Vn ≥ 100 Vdc |
| Performance For C ≤ 0.33 µF For C < 0.33 µF | ≥100,000 MΩ ≥30,000 MΩ x µF |
| Damp Heat Test | |
| Test Conditions Temperature Relative Humidity Test Duration | +40°C 93% ± 2% 56 days |
| Performance Capacitance Change ΔC/C DF Change Δtgδ Insulation Resistance | ≤ ±2% ≤ 10 x 10 ⁻⁴ at 1 kHz ≥ 50% of limit value |
| Life Test | |
| Test Conditions Temperature Test Duration Voltage Applied | +85 °C 1000 hrs 1.25 x Vn |
| Performance Capacitance Change ΔC/C DF Change Δtgδ Insulation Resistance | ≤ ±5% ≤30 x 10 ⁻⁴ at 10 kHz ≥ 50% of limit value |
| Soldering | |
| Test Conditions Soldering Temperature Soldering Duration | 260°C ±5°C 10 sec ±1 sec |
| Performance Capacitance Change ΔC/C DF Change Δtgδ | ≤ ±1% ≤10 x 10 ⁻⁴ for C > 1µF at 1 kHz ≤10 x 10 ⁻⁴ for C ≤ 1µF at 10 kHz |
| Long Term Stability (after two years) | |
| Storage Performance Capacitance Change ΔC/C | ≤ ±3% |

| Cap (µF) | Size (mm) | | | | | Part Description |
|------------------------|---------------|-------------|----------------|--------------|-----|------------------|
| | D Diameter | L Length | T Thickness | S Spacing | ød | |
| 160 VDC; 90 VAC | | | | | | |
| 0.033 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP333*160B-F |
| 0.047 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP473*160B-F |
| 0.047 | 13.0 | 4.0 | 9.5 | 10.0 | 0.6 | MPP473*160C-F |
| 0.068 | 10.5 | 5.0 | 11.0 | 7.5 | 0.6 | MPP683*160C7-F |
| 0.068 | 13.0 | 5.0 | 11.0 | 10.0 | 0.6 | MPP683*160D-F |
| 0.1 | 10.5 | 5.0 | 11.0 | 7.5 | 0.6 | MPP104*160C7-F |
| 0.1 | 13.0 | 6.0 | 12.0 | 10.0 | 0.6 | MPP104*160E-F |
| 0.15 | 10.5 | 6.0 | 12.0 | 7.5 | 0.6 | MPP154*160D7-F |
| 0.15 | 13.0 | 6.0 | 12.0 | 10.0 | 0.6 | MPP154*160E-F |
| 0.22 | 18.0 | 5.0 | 11.0 | 15.0 | 0.8 | MPP224*160F-F |
| 0.33 | 18.0 | 6.0 | 12.0 | 15.0 | 0.8 | MPP334*160G-F |
| 0.47 | 18.0 | 7.5 | 13.5 | 15.0 | 0.8 | MPP474*160H-F |
| 1 | 26.5 | 8.5 | 17.0 | 22.5 | 0.8 | MPP105*160N-F |
| 1.5 | 26.5 | 10.0 | 19.0 | 22.5 | 0.8 | MPP155*160O-F |
| 2.2 | 32.0 | 11.0 | 20.0 | 27.5 | 0.8 | MPP225*160P-F |
| 3.3 | 32.0 | 13.0 | 22.5 | 27.5 | 0.8 | MPP335*160Q-F |

| 250 VDC; 200 VAC | | | | | | |
|-------------------------|------|------|------|------|-----|---------------|
| 0.015 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP153*250B-F |
| 0.022 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP223*250B-F |
| 0.022 | 13.0 | 4.0 | 9.5 | 10.0 | 0.6 | MPP223*250C-F |
| 0.033 | 13.0 | 4.0 | 9.5 | 10.0 | 0.6 | MPP333*250C-F |
| 0.047 | 13.0 | 5.0 | 11.0 | 10.0 | 0.6 | MPP473*250D-F |
| 0.068 | 13.0 | 6.0 | 12.0 | 10.0 | 0.6 | MPP683*250E-F |
| 0.1 | 18.0 | 5.0 | 11.0 | 15.0 | 0.8 | MPP104*250F-F |
| 0.15 | 18.0 | 6.0 | 12.0 | 15.0 | 0.8 | MPP154*250G-F |
| 0.22 | 18.0 | 7.5 | 13.5 | 15.0 | 0.8 | MPP224*250H-F |
| 0.33 | 26.5 | 6.0 | 15.0 | 22.5 | 0.8 | MPP334*250L-F |
| 0.47 | 26.5 | 7.0 | 16.5 | 22.5 | 0.8 | MPP474*250M-F |
| 0.68 | 32.0 | 13.0 | 22.5 | 27.5 | 0.8 | MPP684*250Q-F |
| 1 | 32.0 | 11.0 | 20.0 | 27.5 | 0.8 | MPP105*250P-F |
| 1.5 | 32.0 | 13.0 | 22.5 | 27.5 | 0.8 | MPP155*250Q-F |

* Indicate capacitance tolerance: J=±5%, K=±10%, M=±20%

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| Cap (μ F) | Size (mm) | | | | | Part Description |
|-------------------------|---------------|-------------|----------------|--------------|----------|------------------|
| | D Diameter | L Length | T Thickness | S Spacing | ϕ d | |
| 400 VDC; 220 VAC | | | | | | |
| 0.0068 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP682*400B-F |
| 0.01 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP103*400B-F |
| 0.01 | 13.0 | 4.0 | 9.5 | 10.0 | 0.6 | MPP103*400C-F |
| 0.015 | 13.0 | 5.0 | 11.0 | 10.0 | 0.6 | MPP153*400D-F |
| 0.022 | 13.0 | 5.0 | 11.0 | 10.0 | 0.6 | MPP223*400D-F |
| 0.033 | 13.0 | 6.0 | 12.0 | 10.0 | 0.6 | MPP333*400E-F |
| 0.047 | 18.0 | 5.0 | 11.0 | 15.0 | 0.8 | MPP473*400F-F |
| 0.068 | 18.0 | 6.0 | 12.0 | 15.0 | 0.8 | MPP683*400G-F |
| 0.1 | 18.0 | 7.5 | 13.5 | 15.0 | 0.8 | MPP104*400H-F |
| 0.15 | 18.0 | 8.5 | 14.5 | 15.0 | 0.8 | MPP154*400I-F |
| 0.22 | 26.5 | 8.5 | 17.0 | 22.5 | 0.8 | MPP224*400N-F |
| 0.33 | 26.5 | 10.0 | 19.0 | 22.5 | 0.8 | MPP334*400O-F |
| 0.47 | 32.0 | 11.0 | 20.0 | 27.5 | 0.8 | MPP474*400P-F |
| 0.68 | 32.0 | 13.0 | 22.5 | 27.5 | 0.8 | MPP684*400Q-F |
| 0.0068 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP682*400B-F |
| 0.01 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP103*400B-F |
| 0.01 | 13.0 | 4.0 | 9.5 | 10.0 | 0.6 | MPP103*400C-F |
| 0.015 | 13.0 | 5.0 | 11.0 | 10.0 | 0.6 | MPP153*400D-F |
| 0.022 | 13.0 | 5.0 | 11.0 | 10.0 | 0.6 | MPP223*400D-F |
| 0.033 | 13.0 | 6.0 | 12.0 | 10.0 | 0.6 | MPP333*400E-F |
| 0.047 | 18.0 | 5.0 | 11.0 | 15.0 | 0.8 | MPP473*400F-F |
| 0.068 | 18.0 | 6.0 | 12.0 | 15.0 | 0.8 | MPP683*400G-F |
| 0.1 | 18.0 | 7.5 | 13.5 | 15.0 | 0.8 | MPP104*400H-F |
| 0.15 | 18.0 | 8.5 | 14.5 | 15.0 | 0.8 | MPP154*400I-F |
| 0.22 | 26.5 | 8.5 | 17.0 | 22.5 | 0.8 | MPP224*400N-F |
| 0.33 | 26.5 | 10.0 | 19.0 | 22.5 | 0.8 | MPP334*400O-F |
| 0.47 | 32.0 | 11.0 | 20.0 | 27.5 | 0.8 | MPP474*400P-F |
| 0.68 | 32.0 | 13.0 | 22.5 | 27.5 | 0.8 | MPP684*400Q-F |

| 630 VDC; 250 VAC | | | | | | |
|-------------------------|------|-----|-----|------|-----|---------------|
| 0.0022 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP222*630B-F |
| 0.0022 | 13.0 | 4.0 | 9.5 | 10.0 | 0.6 | MPP222*630C-F |
| 0.0033 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP332*630B-F |
| 0.0033 | 13.0 | 4.0 | 9.5 | 10.0 | 0.6 | MPP332*630C-F |
| 0.0047 | 10.5 | 4.0 | 9.5 | 7.5 | 0.6 | MPP472*630B-F |

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| Cap (μ F) | Size (mm) | | | | | Part Description |
|----------------|---------------|-------------|----------------|--------------|----------|------------------|
| | D Diameter | L Length | T Thickness | S Spacing | ϕ d | |
| 0.0047 | 13.0 | 4.0 | 9.5 | 10.0 | 0.6 | MPP472*630C-F |
| 0.0068 | 13.0 | 5.0 | 11.0 | 10.0 | 0.6 | MPP682*630D-F |
| 0.01 | 13.0 | 5.0 | 11.0 | 10.0 | 0.6 | MPP103*630D-F |
| 0.015 | 13.0 | 6.0 | 12.0 | 10.0 | 0.6 | MPP153*630E-F |
| 0.022 | 18.0 | 5.0 | 11.0 | 15.0 | 0.8 | MPP223*630F-F |
| 0.033 | 18.0 | 6.0 | 12.0 | 15.0 | 0.8 | MPP333*630G-F |
| 0.047 | 18.0 | 7.5 | 13.5 | 15.0 | 0.8 | MPP473*630H-F |
| 0.068 | 18.0 | 8.5 | 14.5 | 15.0 | 0.8 | MPP683*630I-F |
| 0.1 | 26.5 | 8.5 | 17.0 | 22.5 | 0.8 | MPP104*630N-F |
| 0.15 | 26.5 | 10.0 | 19.0 | 22.5 | 0.8 | MPP154*630O-F |
| 0.22 | 32.0 | 11.0 | 20.0 | 27.5 | 0.8 | MPP224*630P-F |
| 0.33 | 32.0 | 13.0 | 22.5 | 27.5 | 0.8 | MPP334*630Q-F |