

FFR

+125° Noninductive Polyester Film/Foil Epoxy Dipped Radial Lead Capacitors

For all general purpose film capacitor applications

FEATURES

- Noninductive construction
- Capacitance Range 0.001 μF to .22 μF

SPECIFICATIONS

| | | | |
|-------------------------------------|------|--|--|
| Capacitance Tolerance | | $\pm 10\%$ at 1kHz, 25°C | |
| Operating Temperature Range | | -55°C to 125°C | |
| Voltage Range | WVDC | 100 | |
| | VAC | 63 | |
| Dissipation Factor | | 1.0% at 1 kHz, 25°C | |
| Insulation Resistance | | Capacitance | Insulation Resistance |
| | | $\leq 0.1 \mu\text{F}$ | 20,000 M Ω |
| | | $> 0.1 \mu\text{F}$ | 2,000 M Ω x μF |
| Load Life | | 2,000 hours, +85°C with 125% rated DC voltage | |
| | | Capacitance Change | $\leq 5\%$ maximum |
| | | Dissipation Factor Change | $< 200\%$ maximum specification |
| | | Insulation Resistance | $\geq 10,000$ M Ω minimum |
| Humidity Test | | 250 hours, 95% RH, 25°C and no applied voltage | |
| | | Capacitance Change | $\Delta < 3\%$ of initial readings @ +25°C, 1kHz |
| | | Dissipation Factor Change | $\leq 200\%$ of initial +25°C 1kHz |
| | | Insulation Resistance | 4000M Ω x μF (need not exceed 5000M Ω) |
| Self-inductance | | ≤ 1 nH/mm along the capacitor pitch | |
| Capacitance Drift Factor | | (after 2 years) $\leq 2.0\%$ up to 40°C | |
| Capacitance Temperature Coefficient | | +400 ppm/°C, ± 200 ppm/°C | |

CONSTRUCTION

| | |
|------------|---|
| Type | Film/Foil noninductive |
| Dielectric | Polyester film |
| Electrodes | Aluminum foils |
| Leads | Tinned copper wire (minimum lead content 5%) |
| Coating | Flame retardant epoxy sealed resin (UL 94V-0) |

PERFORMANCE RATINGS/TESTS

RATED WVDC TEMPERATURE DERATING

| Operating Temperature | WVDC Rating |
|-----------------------|-------------|
| +25°C | 100% |
| +85°C | 100% |
| +105°C | 70% |
| +125°C | 50% |

RATED AC VOLTAGE (VAC)

The AC working voltage must be derated when used at frequencies other than 60Hz due to dielectric effects.

NOTE: The peak value of the AC voltage super-imposed upon the DC voltage should not exceed the rated DC voltage.

DIELECTRIC STRENGTH

200% Rated DC for 1 minute at +25°C.

INSULATION RESISTANCE (IR)

@+25°C (< 70%RH) for 1 minute

| Capacitance | Insulation Resistance |
|-----------------------|---|
| $\leq .1 \mu\text{F}$ | $\geq 20,000$ M Ω |
| $> .1 \mu\text{F}$ | $\geq 2,000$ M Ω x μF |

| Rated WVDC | Test Voltage |
|------------|--------------|
| ≤ 100 | 100WVDC |



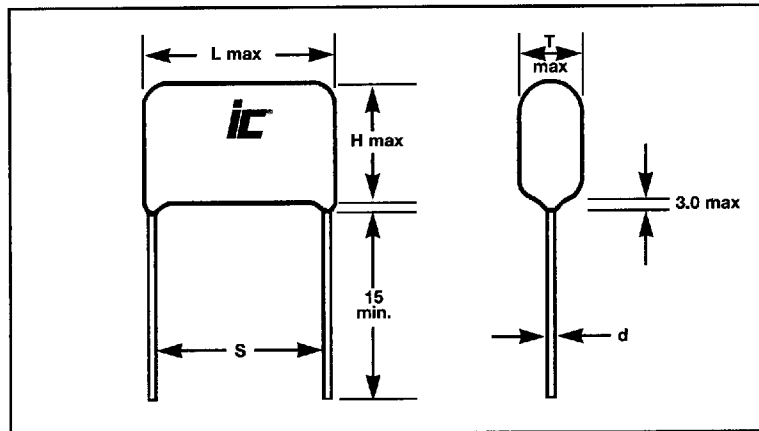
Extended foil design

+125°C Noninductive
Polyester Film/Foil
Epoxy-Dipped Radial
Lead Capacitors

STANDARD PART LISTING

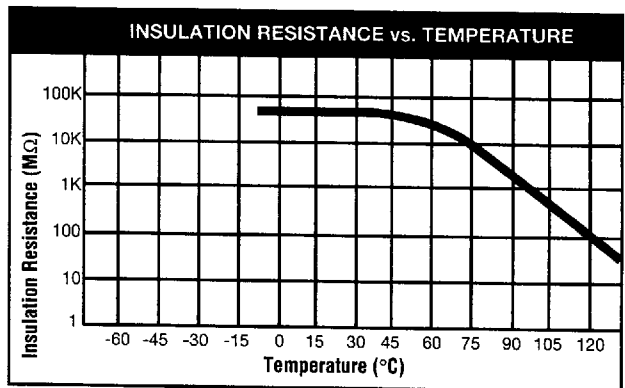
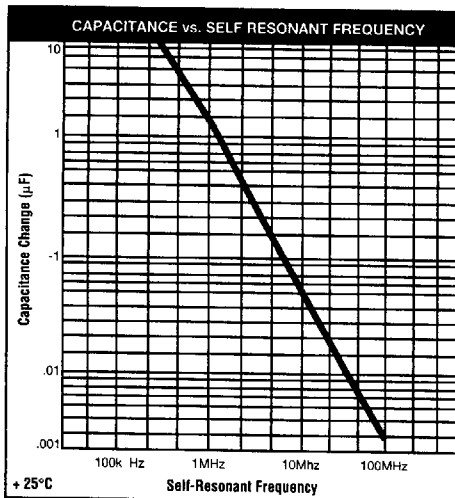
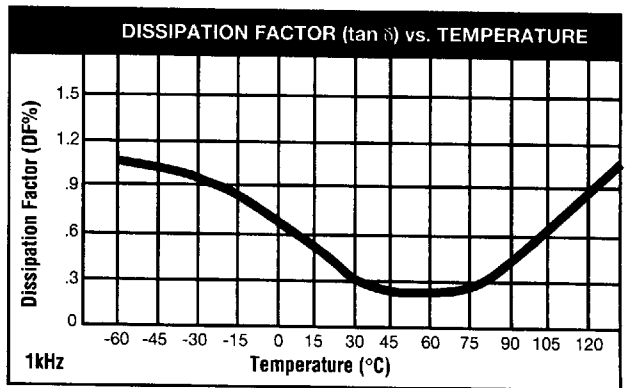
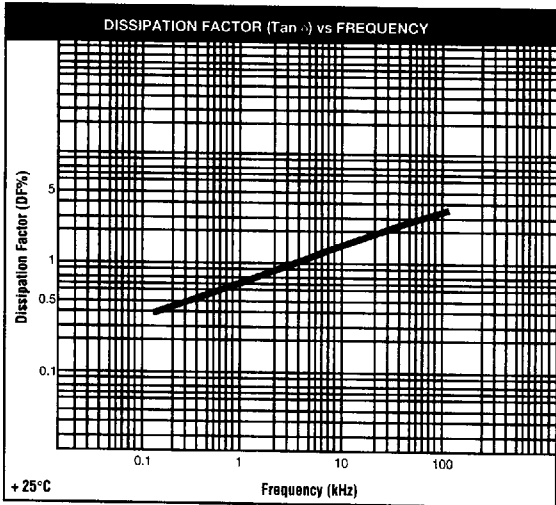
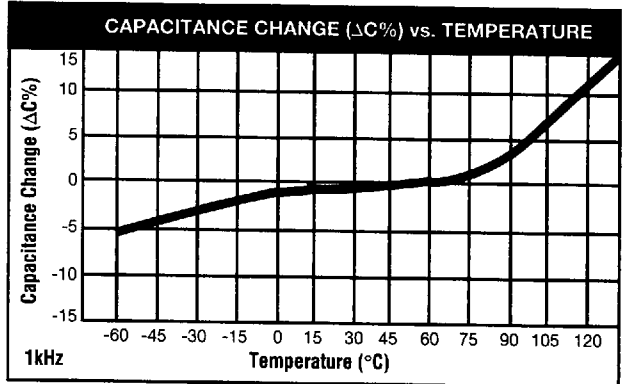
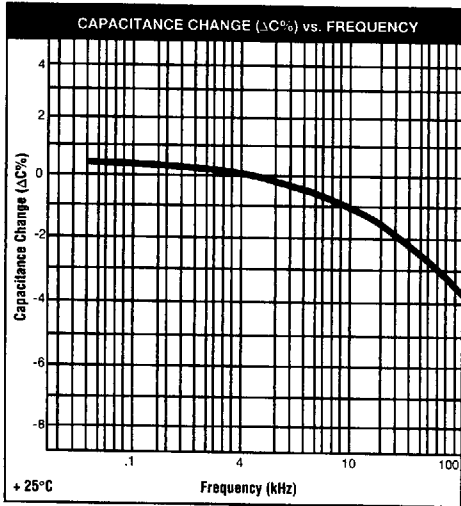
| Capacitance μF | WVDC | IC PART NUMBER | dv/dt (v/ $\mu\text{sec.}$) | L Max. | H Max. | T Max. | S Lead Spacing | d Lead Wire Diameter |
|------------------------------|------|-------------------|---------------------------------|--------|--------|--------|----------------------|-------------------------------|
| .001 | 100 | 102FFR100K | 10 | 10.5 | 9.5 | 5.5 | 7.0 | 0.6 |
| .0015 | 100 | 152FFR100K | 10 | 10.5 | 9.5 | 5.5 | 7.0 | 0.6 |
| .0022 | 100 | 222FFR100K | 10 | 10.5 | 9.5 | 5.5 | 7.0 | 0.6 |
| .0033 | 100 | 332FFR100K | 10 | 10.5 | 9.5 | 5.5 | 7.0 | 0.6 |
| .0047 | 100 | 472FFR100K | 10 | 10.5 | 9.5 | 5.5 | 7.0 | 0.6 |
| .0056 | 100 | 562FFR100K | 10 | 10.5 | 9.5 | 5.5 | 7.0 | 0.6 |
| .0066 | 100 | 662FFR100K | 10 | 10.5 | 9.5 | 5.5 | 7.0 | 0.6 |
| .0082 | 100 | 822FFR100K | 10 | 10.5 | 9.5 | 5.5 | 7.0 | 0.6 |
| .01 | 100 | 103FFR100K | 10 | 10.5 | 9.5 | 6.0 | 7.0 | 0.6 |
| .015 | 100 | 153FFR100K | 10 | 10.5 | 9.5 | 6.0 | 7.0 | 0.6 |
| .022 | 100 | 223FFR100K | 10 | 10.5 | 9.5 | 6.0 | 7.0 | 0.6 |
| .033 | 100 | 333FFR100K | 10 | 13.5 | 10.0 | 6.0 | 10.0 | 0.6 |
| .047 | 100 | 473FFR100K | 10 | 13.5 | 10.5 | 7.5 | 10.0 | 0.6 |
| .056 | 100 | 563FFR100K | 10 | 13.5 | 11.0 | 7.0 | 10.0 | 0.6 |
| .066 | 100 | 663FFR100K | 10 | 13.5 | 12.5 | 7.0 | 10.0 | 0.6 |
| .082 | 100 | 823FFR100K | 10 | 13.0 | 13.0 | 8.0 | 10.0 | 0.6 |
| .1 | 100 | 104FFR100K | 10 | 14.0 | 13.0 | 8.0 | 10.0 | 0.6 |
| .15 | 100 | 154FFR100K | 10 | 19.0 | 14.0 | 7.5 | 15.0 | 0.8 |
| .22 | 100 | 224FFR100K | 10 | 20.0 | 15.0 | 8.5 | 15.0 | 0.8 |

NOTE: WVDC IS RATED DC WORKING VOLTAGE AT +125°C.



| | | | |
|------------|---|-------|-------|
| Lead Space | S | <15.0 | ≥15.0 |
| Tolerance | S | ±1.5 | ±1.5 |
| Wire Dia. | d | 0.6 | 0.8 |

FFR
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ENVIRONMENTAL/ENDURANCE DATA



NOTE: These graphs reflect typical measurements.

Film Capacitors