

Type RA Radial PET Film Capacitors



The RA style capacitor is constructed in an efficient rugged self-encased size. The non-inductive multilayer metallized polyester film capacitor features a small size, high dv/dt capability, very low ESR at high frequency and a self-healing capability. RA type capacitors are ideal for use in high frequency switching power supplies, noise suppression, EMI reduction and long-life applications.

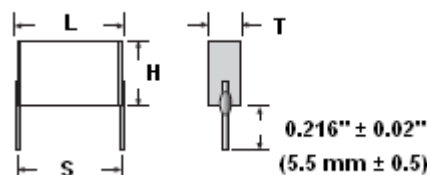
Highlights

- Efficient size
- Self healing
- Low ESR/ESL
- High dv/dt
- Wave solderable

Specifications

| | |
|-------------------------------------|--|
| Capacitance Range (at 1 kHz) | 0.1 to 10 μ F |
| Capacitance Tolerance | Standard Tolerance \pm 10% (K), Optional \pm 5% (J) or \pm 20% (M) |
| Rated Voltage | 100, 250, 400, 500 Vdc |
| Operating Temperature Range | -55 °C to 125 °C |
| Dissipation Factor (at 1 kHz/25 °C) | \leq 1.0% |
| Insulation Resistance | \geq 1,000 M Ω x μ F - Need not exceed 1,000 M Ω Test Voltage for 100 Vdc rating: 10 Vdc Test Voltage for >100 Vdc rating : 100 Vdc |
| Dielectric Strength | 1.6 x rated VDC for 2 seconds max. Bold P.N.: 1.3 x rated VDC for 2 seconds max. |
| Self Inductance (typical) | 2 to 6 nH |
| Temperature Range | -55° to +125°C at Rated DC Voltage Bold P.N.: -55° to +125°C (derate voltage 1.25% / °C above +85°C) |
| Life Test: | Apply 1.25 x the rated DC voltage for 1000 hours at +85°C. After the test, the capacitance, DF, and IR should meet the following: Capacitance change: \leq 5.0% DF will meet the initial specification Insulation Resistance will meet the initial specification |
| Moisture Test: | Subject the capacitor to +85°C / 85% RH for 21 days without voltage. After the test, the capacitance, DF, and IR should meet the following: Capacitance change: \leq 7.0% DF will meet the initial specification Insulation Resistance \geq 30% of the initial limit |
| Long Term Stability : | After 2 years of storage in a standard environment. Capacitance change: \leq 2.0% |
| Vibration | Mil Std 202 Method 204D |
| Solder Resistance | 260°C, 5 sec. Capacitance change: \leq 2.0% |

Outline Drawing



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Ratings

| Catalog Part Number | Capacitance (uF) | Dimensions (in.) | | | | | Dimensions (mm) | | | | | Max. dv/dt (V/us) |
|--------------------------|------------------|------------------|--------|--------|----------|-------|-----------------|--------|--------|---------|-----|-------------------|
| | | L Max. | T Max. | H Max. | S ± 0.02 | d | L Max. | T Max. | H Max. | S ± 0.5 | d | |
| 100 Vdc / 80 Vac | | | | | | | | | | | | |
| RA3224K100-FA | 0.22 | 0.350 | 0.155 | 0.280 | 0.295 | 0.025 | 8.9 | 3.9 | 7.1 | 7.5 | 0.6 | 75 |
| RA3474K100-FA | 0.47 | 0.350 | 0.180 | 0.305 | 0.295 | 0.025 | 8.9 | 4.6 | 7.7 | 7.5 | 0.6 | 65 |
| RA4105K100-FA | 1.0 | 0.450 | 0.175 | 0.285 | 0.394 | 0.025 | 11.4 | 4.4 | 7.2 | 10 | 0.6 | 35 |
| RA3225K100-FA | 2.2 | 0.350 | 0.250 | 0.350 | 0.295 | 0.025 | 8.9 | 6.3 | 8.9 | 7.5 | 0.6 | 25 |
| RA4225K100-FA | 2.2 | 0.450 | 0.205 | 0.285 | 0.394 | 0.025 | 11.4 | 5.2 | 7.2 | 10 | 0.6 | 25 |
| RA4335K100-FA | 3.3 | 0.450 | 0.250 | 0.350 | 0.394 | 0.025 | 11.4 | 6.3 | 8.9 | 10 | 0.6 | 25 |
| RA4405K100-FA | 4.0 | 0.450 | 0.200 | 0.380 | 0.394 | 0.032 | 11.4 | 5.1 | 9.7 | 10 | 0.8 | 20 |
| RA4505K100-FA | 5.0 | 0.450 | 0.220 | 0.480 | 0.394 | 0.032 | 11.4 | 5.6 | 12.2 | 10 | 0.8 | 20 |
| RA6106K100-FA | 10.0 | 0.650 | 0.260 | 0.460 | 0.591 | 0.032 | 16.5 | 6.6 | 11.7 | 15 | 0.8 | 13 |
| 250 Vdc / 160 Vac | | | | | | | | | | | | |
| RA4104K250-FA | 0.10 | 0.450 | 0.160 | 0.255 | 0.394 | 0.025 | 11.4 | 4.1 | 6.5 | 10 | 0.6 | 100 |
| RA4224K250-FA | 0.22 | 0.450 | 0.190 | 0.305 | 0.394 | 0.025 | 11.4 | 4.8 | 7.7 | 10 | 0.6 | 75 |
| RA4334K250-FA | 0.33 | 0.450 | 0.250 | 0.330 | 0.394 | 0.025 | 11.4 | 6.3 | 8.4 | 10 | 0.6 | 75 |
| RA4474K250-FA | 0.47 | 0.450 | 0.210 | 0.305 | 0.394 | 0.025 | 11.4 | 5.3 | 7.7 | 10 | 0.6 | 55 |
| RA6474K250-FA | 0.47 | 0.650 | 0.230 | 0.340 | 0.591 | 0.032 | 16.5 | 5.8 | 8.6 | 15 | 0.8 | 50 |
| RA6105K250-FA | 1.0 | 0.650 | 0.240 | 0.340 | 0.591 | 0.032 | 16.5 | 6.1 | 8.6 | 15 | 0.8 | 35 |
| 400 Vdc / 250 Vac | | | | | | | | | | | | |
| RA6224K400-FA | 0.22 | 0.650 | 0.230 | 0.340 | 0.591 | 0.032 | 16.5 | 5.8 | 8.6 | 15 | 0.8 | 65 |
| RA6474K400-FA | 0.47 | 0.650 | 0.290 | 0.440 | 0.591 | 0.032 | 16.5 | 7.4 | 11.1 | 15 | 0.8 | 120 |
| 500 Vdc / 250 Vac | | | | | | | | | | | | |
| RA6504K500-FA | 0.5 | 0.650 | 0.280 | 0.540 | 0.591 | 0.032 | 16.5 | 7.1 | 13.7 | 15 | 0.8 | 120 |

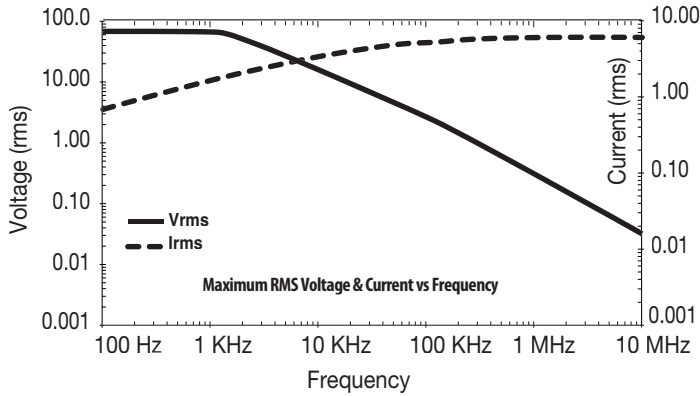
Part Numbering System

| | | | | | |
|-------------|------------------|--------------------|------------------|----------------|--|
| RA | 3 | 224 | K | 100 | -FA |
| | | | | | |
| Type | Case Size | Capacitance | Tolerance | Voltage | RoHS |
| | 3 = 0.3"=7.5 mm | 224 = 0.22 µF | K = ±10% | 100 = 100Vdc | -FA = 6/6 Compliant w Sn plated wire leads |
| | 4 = 0.4"=10 mm | | | | (Blank = 5/6 compliant w SnPb wire lead finish) |
| | 6 = 0.6"=15 mm | | | | |

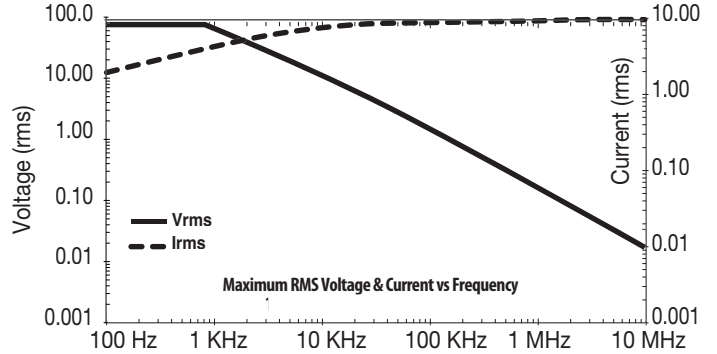
Type RA Radial PET Film Capacitors

Typical Performance Curves

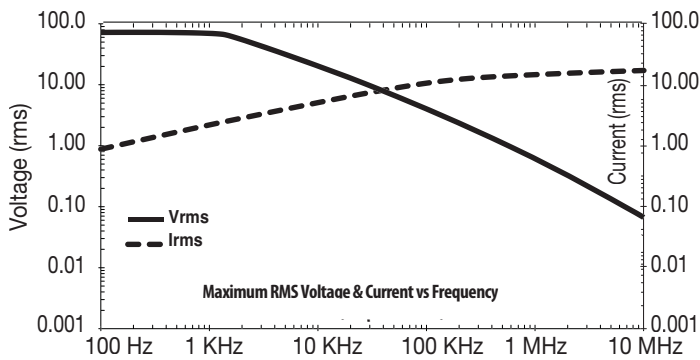
3.3 μF 100 VDC RA4



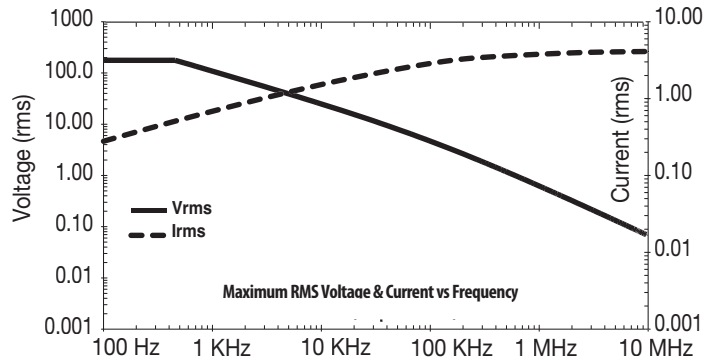
10.0 μF 100 VDC RA6



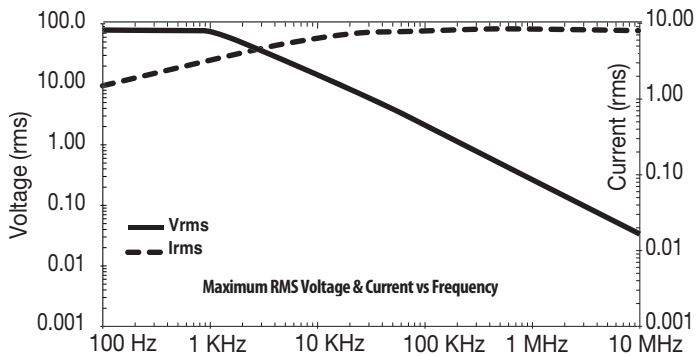
4.0 μF 100 VDC RA4



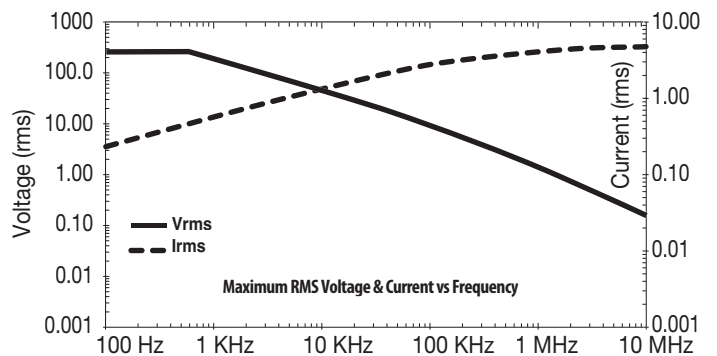
1.0 μF 250 VDC RA6



5.0 μF 100 VDC RA4

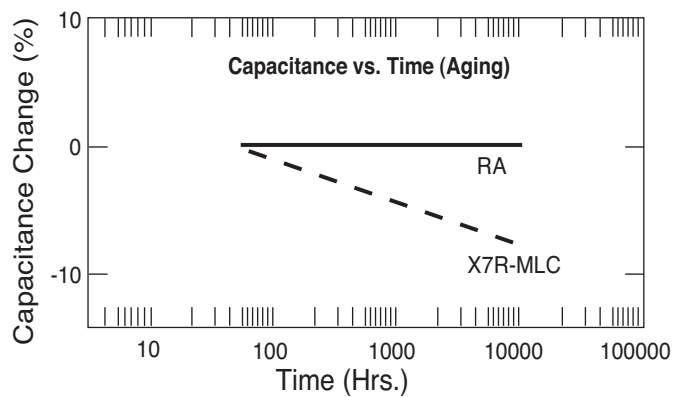
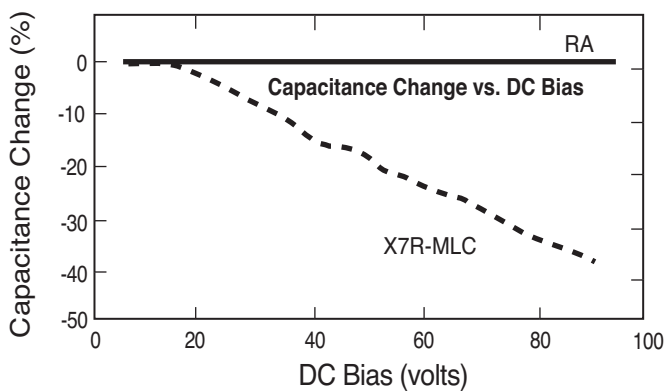
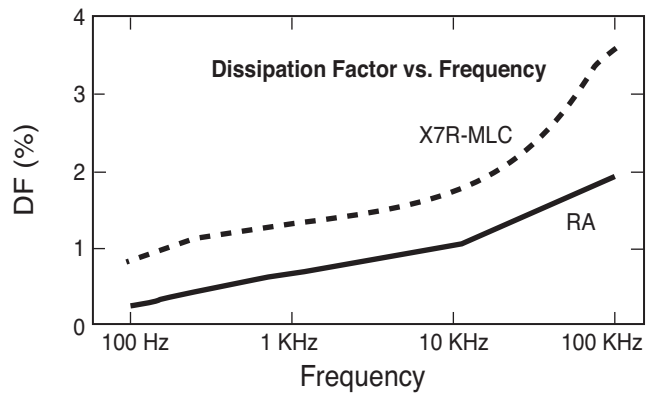
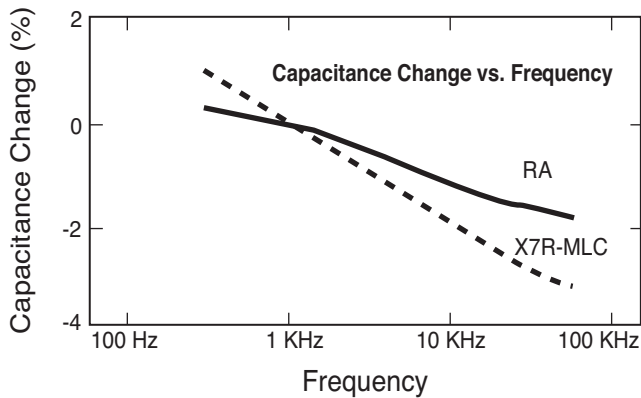
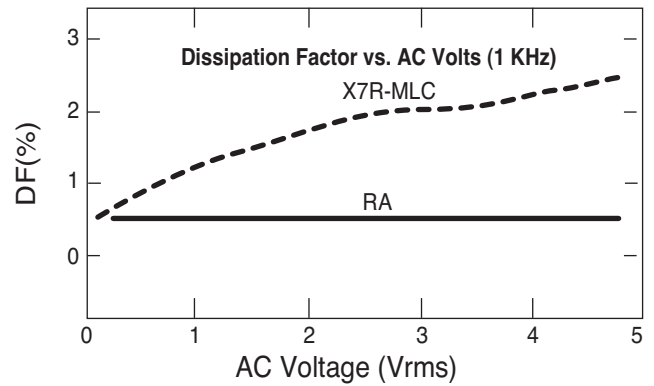
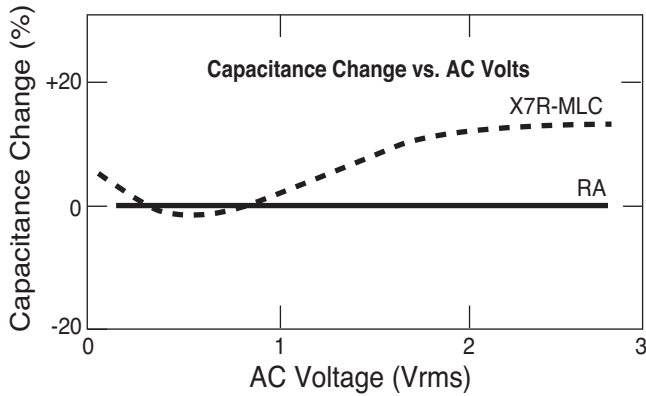
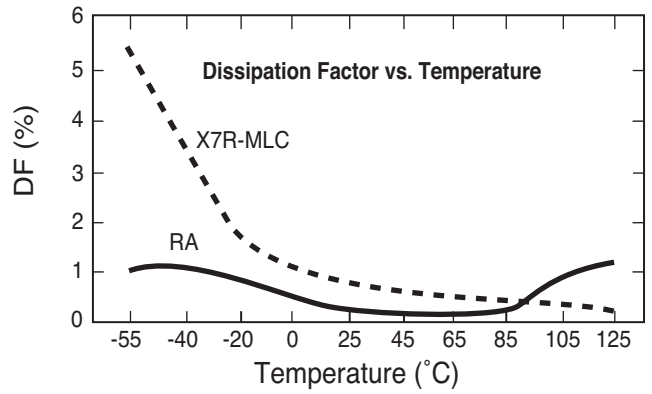
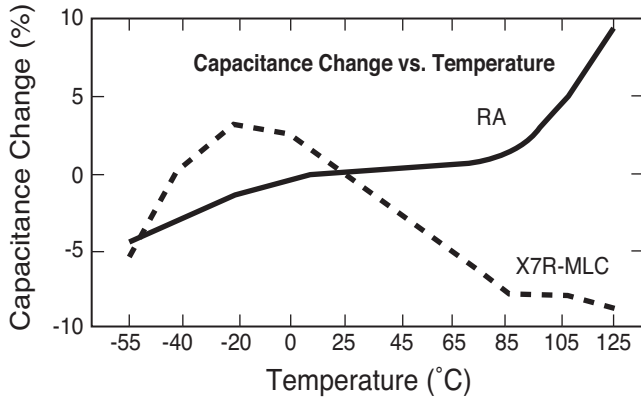


0.47 μF 400 VDC RA6



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Typical Performance Curves



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