

# 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.

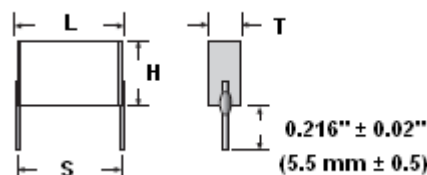
## Highlights

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

## Specifications

Capacitance Range (at 1 kHz)	0.1 to 10 $\mu$ 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 $\Omega$ x $\mu$ F - Need not exceed 1,000 M $\Omega$ 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. <b>Bold P.N.: 1.3 x rated VDC for 2 seconds max.</b>
Self Inductance (typical)	2 to 6 nH
Temperature Range	-55° to +125°C at Rated DC Voltage <b>Bold P.N.: -55° to +125°C</b> (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	
<b>100 Vdc / 80 Vac</b>												
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
<b>RA3225K100-FA</b>	2.2	0.350	0.250	0.350	0.295	0.025	8.9	6.3	8.9	7.5	0.6	25
<b>RA4225K100-FA</b>	2.2	0.450	0.205	0.285	0.394	0.025	11.4	5.2	7.2	10	0.6	25
<b>RA4335K100-FA</b>	3.3	0.450	0.250	0.350	0.394	0.025	11.4	6.3	8.9	10	0.6	25
<b>RA4405K100-FA</b>	4.0	0.450	0.200	0.380	0.394	0.032	11.4	5.1	9.7	10	0.8	20
<b>RA4505K100-FA</b>	5.0	0.450	0.220	0.480	0.394	0.032	11.4	5.6	12.2	10	0.8	20
<b>RA6106K100-FA</b>	10.0	0.650	0.260	0.460	0.591	0.032	16.5	6.6	11.7	15	0.8	13
<b>250 Vdc / 160 Vac</b>												
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
<b>RA4474K250-FA</b>	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
<b>RA6105K250-FA</b>	1.0	0.650	0.240	0.340	0.591	0.032	16.5	6.1	8.6	15	0.8	35
<b>400 Vdc / 250 Vac</b>												
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
<b>500 Vdc / 250 Vac</b>												
RA6504K500-FA	0.5	0.650	0.280	0.540	0.591	0.032	16.5	7.1	13.7	15	0.8	120

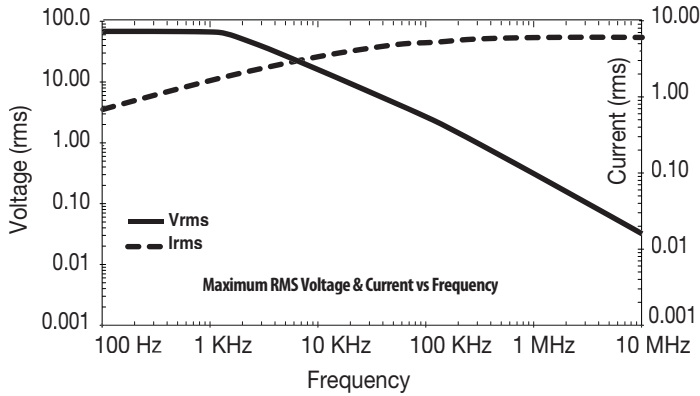
## Part Numbering System

<b>RA</b>	<b>3</b>	<b>224</b>	<b>K</b>	<b>100</b>	<b>-FA</b>
<b>Type</b>	<b>Case Size</b>	<b>Capacitance</b>	<b>Tolerance</b>	<b>Voltage</b>	<b>RoHS</b>
	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				

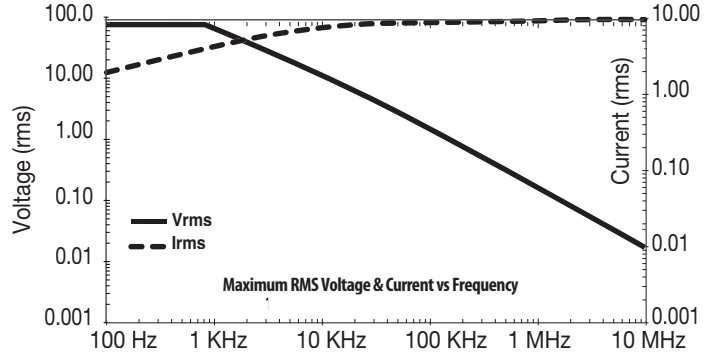
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## Typical Performance Curves

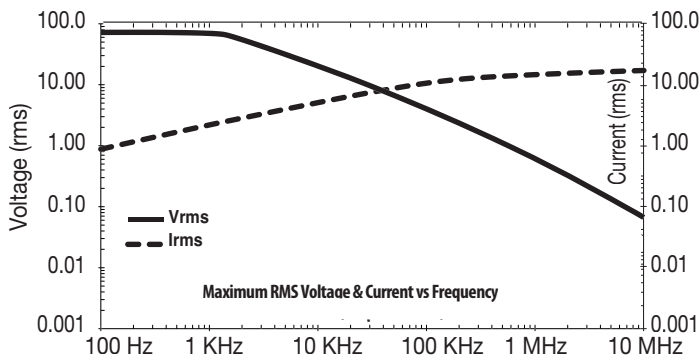
### 3.3 $\mu\text{F}$ 100 VDC RA4



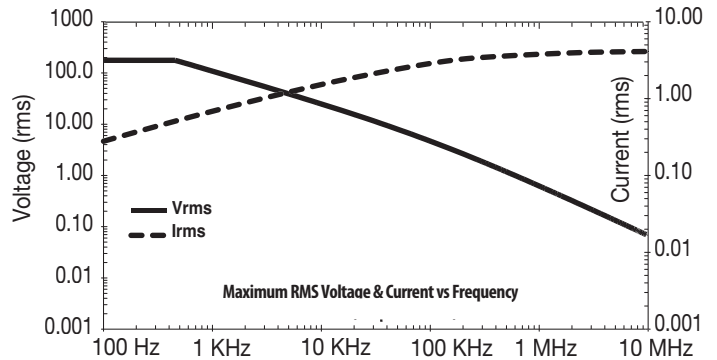
### 10.0 $\mu\text{F}$ 100 VDC RA6



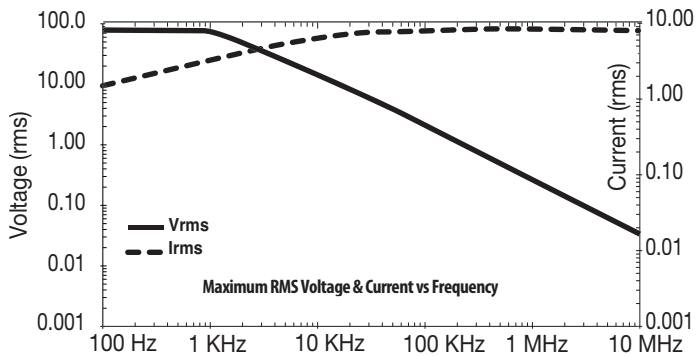
### 4.0 $\mu\text{F}$ 100 VDC RA4



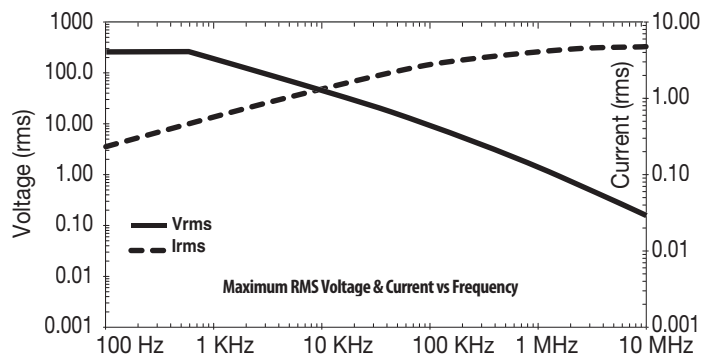
### 1.0 $\mu\text{F}$ 250 VDC RA6



### 5.0 $\mu\text{F}$ 100 VDC RA4

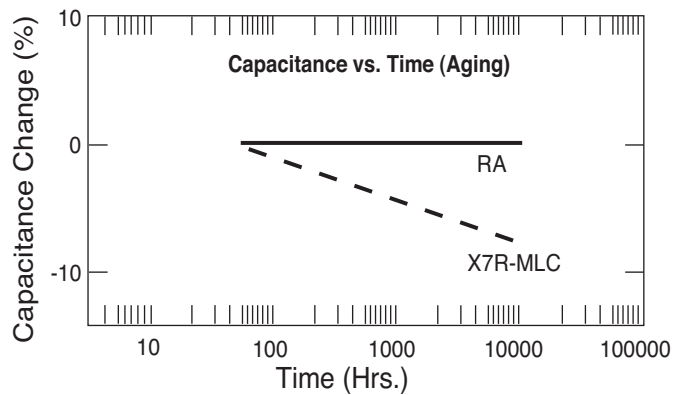
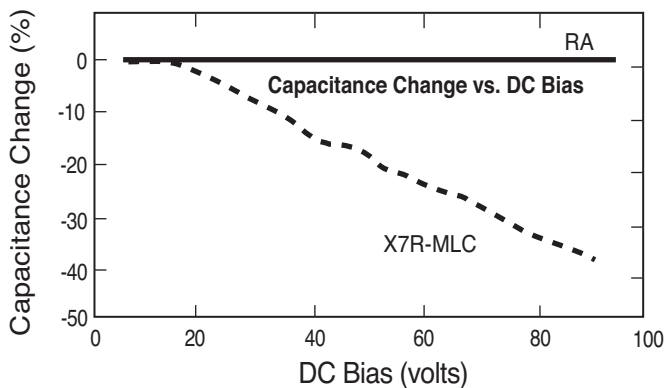
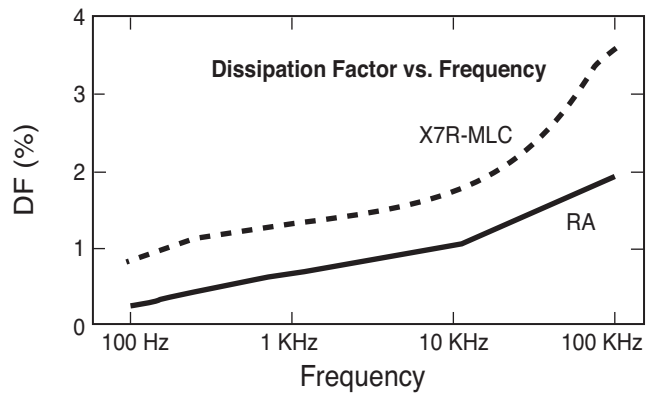
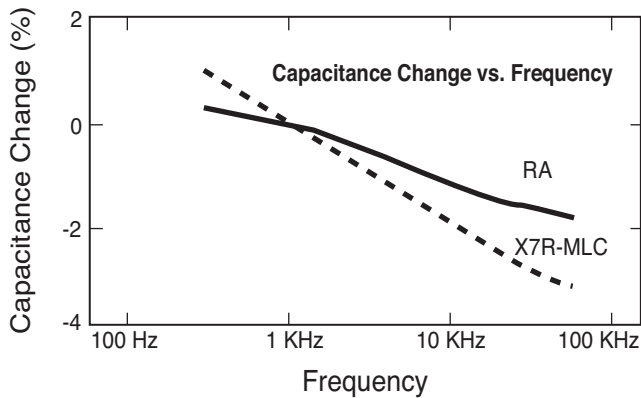
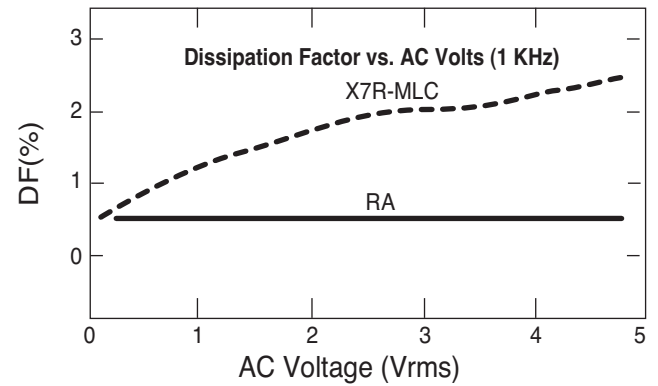
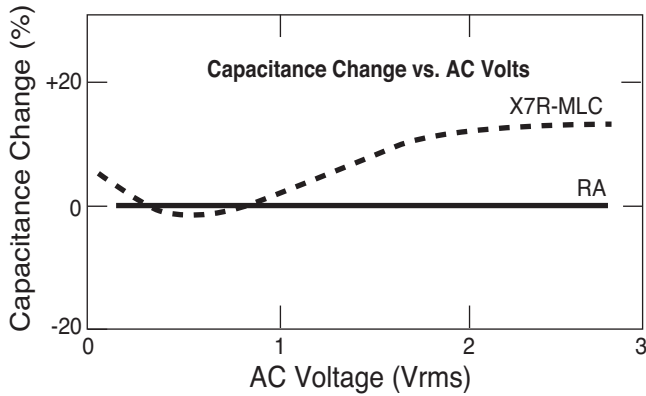
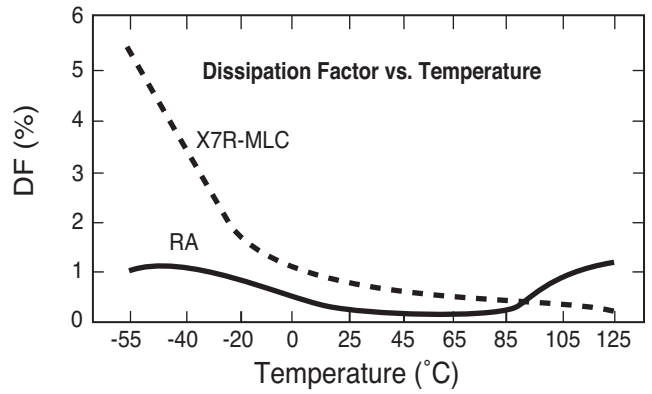
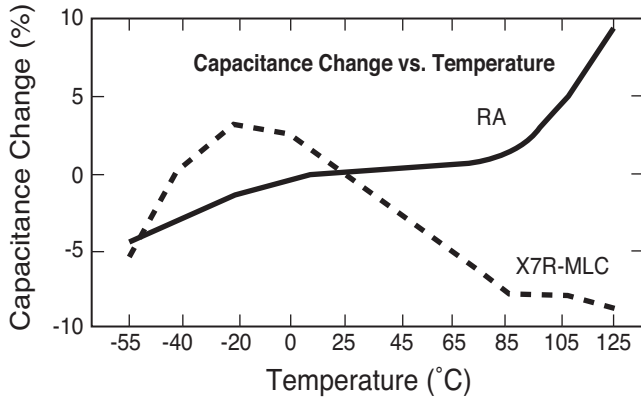


### 0.47 $\mu\text{F}$ 400 VDC RA6



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## Typical Performance Curves



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