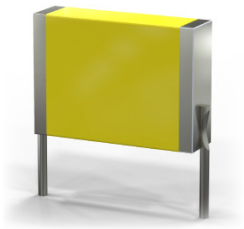
Type RA Radial PET Film Capacitors



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.

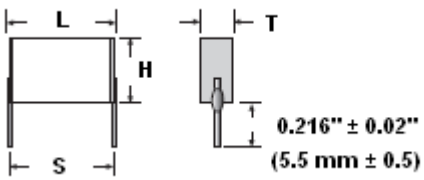
Highlights

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

Specifications

Capacitance Range (at 1 kHz)	0.1 to 10 µF
Capacitance Tolerance	Standard Tolerance ±10% (K), Optional ±5% (J) or ±20% (M)
Rated Voltage	100, 250, 400, 500 Vdc
Operating Temperature Range	–55 ºC to 125 ºC
Dissipation Factor (at 1 kHZ/25 ºC)	≤1.0%
Insulation Resistance	≥1,000 MΩ x µF - Need not exceed 1,000 MΩ 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: ≤ 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: ≤ 7.0% DF will meet the initial specification Insulation Resistance ≥ 30% of the initial limit
Long Term Stability :	After 2 years of storage in a standard environment. Capacitance change: ≤2.0%
Vibration	Mil Std 202 Method 204D
Solder Resistance	260°C, 5 sec. Capacitance change: ≤ 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 4 = 0.4″=10 mm 6 = 0.6″=15 mm	224 = 0.22 µF	K = ±10%	100 = 100 Vdc	-FA = 6/6 Compliant w Sn plated wire leads (Blank = 5/6 compliant w SnPb wire lead finish)

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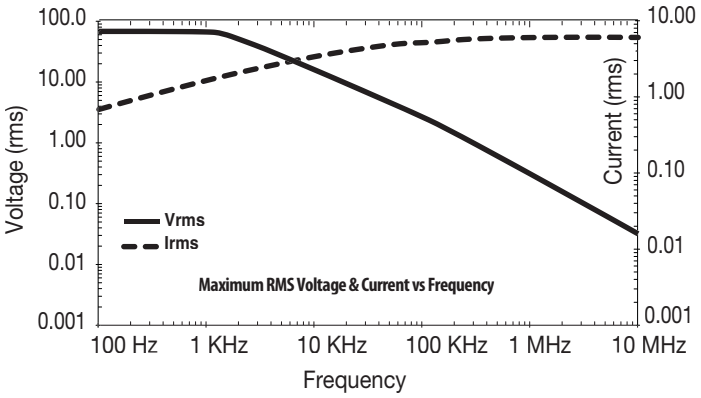
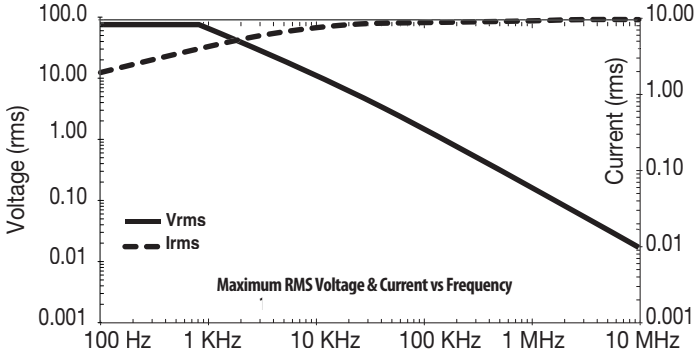
Typical Performance Curves

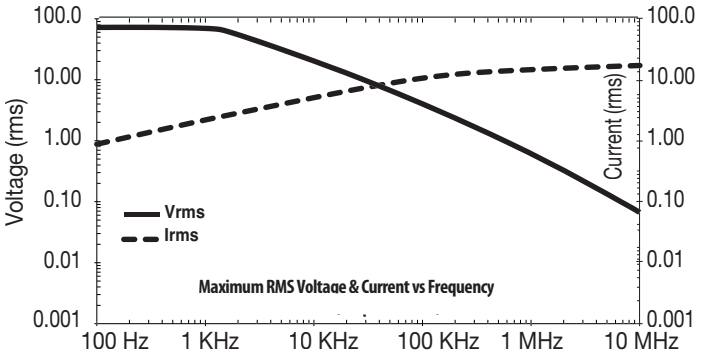
3.3 µF 100 VDC RA4



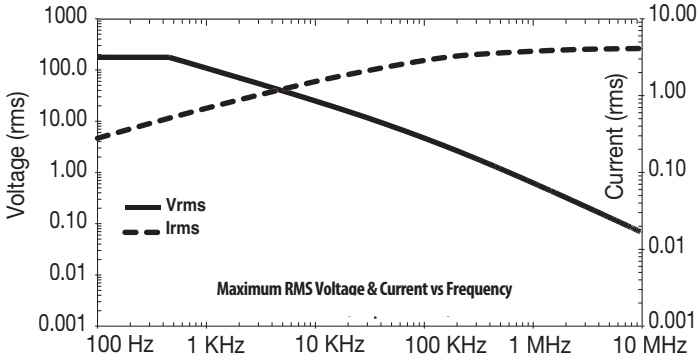
10.0 µF 100 VDC RA6



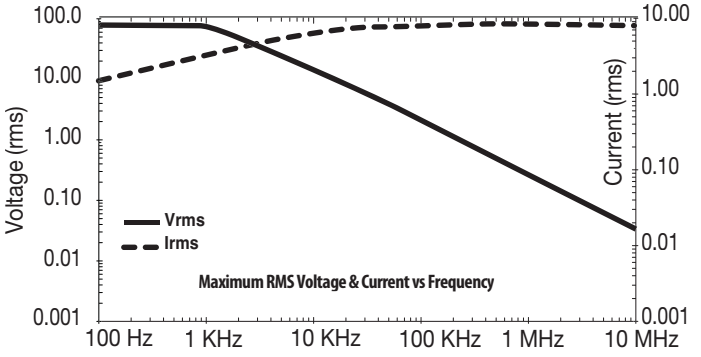
4.0 µF 100 VDC RA4



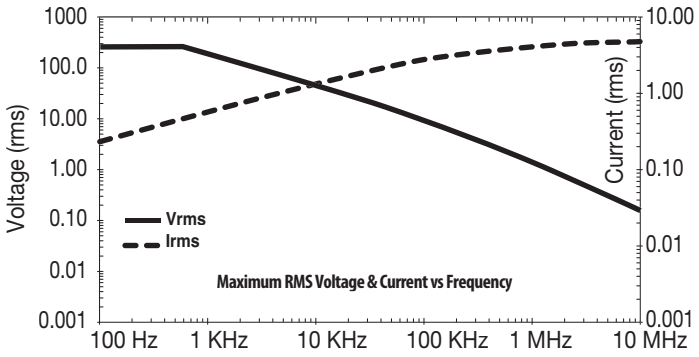
1.0 µF 250 VDC RA6



5.0 µF 100 VDC RA4



0.47 µF 400 VDC RA6



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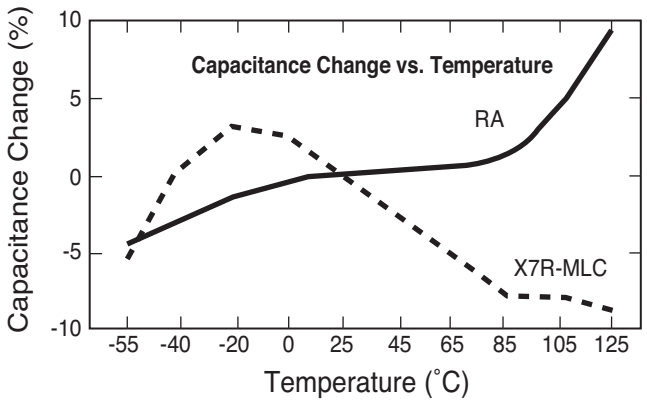
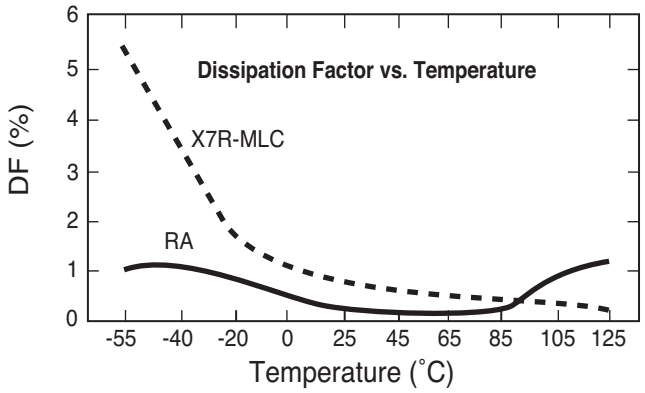
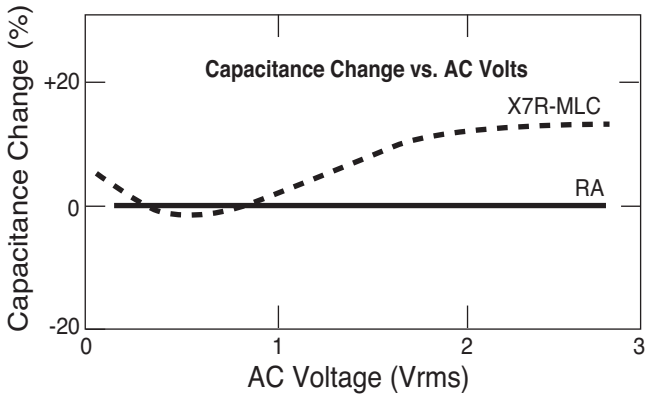
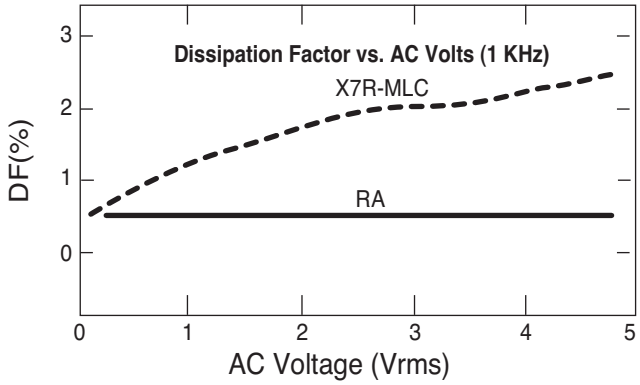
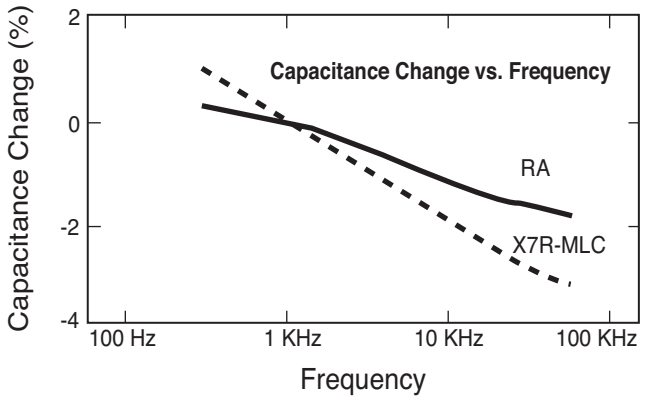
Typical Performance Curves

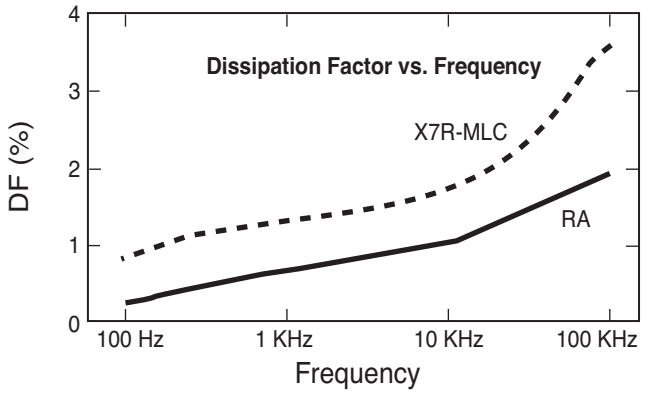


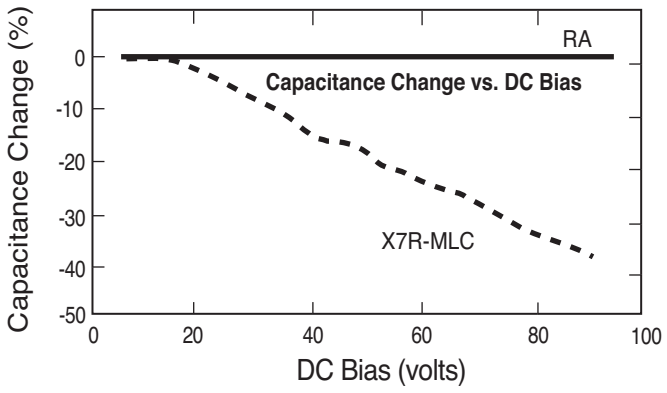


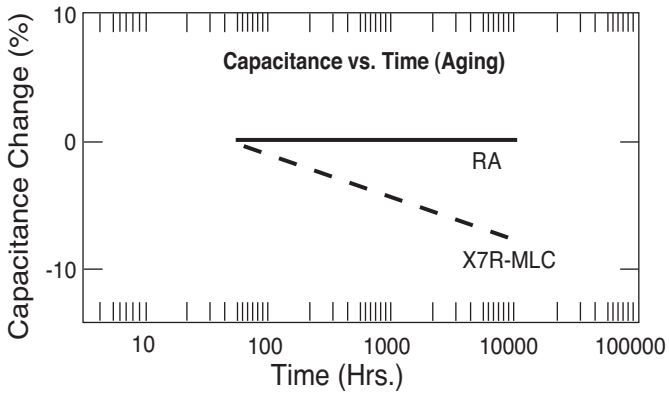












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