

# MSR

## Epoxy Dipped Radial Lead Metallized Polyester Film Capacitors



- Bypass
- Coupling
- Filtering
- Blocking

<b>Operating Temperature Range</b>		<b>-55°C to +125°C</b>				
<b>Capacitance Tolerance</b>		<b>±10% at 1kHz, 20°C</b>				
<b>Rated Voltage</b>	<b>VDC</b>	<b>100</b>	<b>250</b>	<b>400</b>	<b>630</b>	<b>1000</b>
	<b>VAC</b>	63	150	200	220	250
For T > +85°C the applied voltage must be decreased by 1.25% per °C						
<b>Dissipation Factor (max) at 20°C</b>	<b>Freq. (kHz)</b>					
	1	1.0%				
	10	1.5%				
<b>Insulation Resistance @20°C (&lt;70% RH) for 1 minute at 100VDC</b>	<b>WVDC</b>	<b>Capacitance</b>		<b>Insulation Resistance</b>		
	≤100	≤0.33 μF		15,000 MΩ		
	≥100	>0.33 μF		30,000 MΩ		
	≤100	≤0.33 μF		5000 MΩ x μF		
	>100	>0.33 μF		10,000 MΩ x μF		
<b>Load Life Test</b>	<b>2,000 hours at 125% of rated VDC and at 85°C</b>					
	<b>Capacitance Change</b>	≤5% change from initial value.				
	<b>Dissipation Factor</b>	≤0.005 at 1kHz and 25°C				
	<b>Insulation Resistance</b>	≥50% of minimum specification				
<b>Damp Heat Test</b>	<b>1000 hours at +40°C±2°C with 93% ±2% relative humidity</b>					
	<b>Capacitance Change</b>	≤5% change from initial value.				
	<b>Dissipation Factor</b>	≤0.005 at 1kHz and 25°C				
	<b>Insulation Resistance</b>	≥50% of minimum specification				
<b>Self-inductance</b>	≤1 nH/mm along the capacitor pitch and lead wire length.					
<b>Capacitance Drift Factor</b>	≤1.0% up to 40°C after 2 years					
<b>Temperature Coefficient</b>	+400 ppm/°C, ± 200ppm/°C					
<b>Dielectric</b>	Polyester					
<b>Electrodes</b>	Vacuum deposited metal layers					
<b>Construction</b>	Extended metallized carrier film					
<b>Leads</b>	Tinned copper wire					
<b>Coating</b>	Flame retardant epoxy sealed resin (UL 94V-0)					

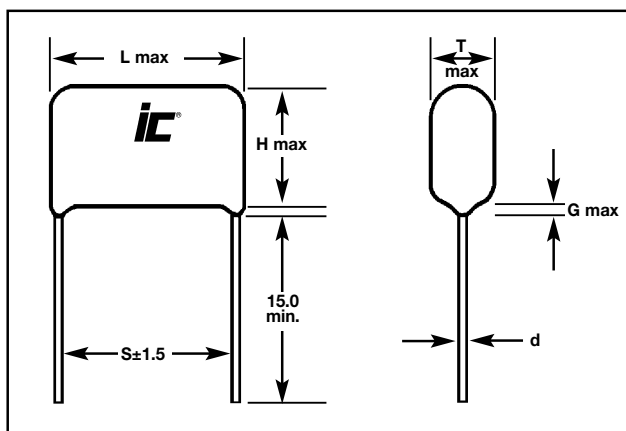
Film Capacitors

## PHYSICAL DIMENSIONS

WVDC (VAC) μF	100 (63)	250 (160)	400 (200)	630 (220)	1000 (250)
0.01			10x9x5	12.5x10x5	14x11.5x8
0.015		10x9x5	10x9.5x5.5	12.5x10.5x6	14x11.5x8
0.022		10x9x5	12.5x9x5	12.5x12x7	19x12.5x8.5
0.033		10x9.5x5.5	12.5x10.5x5.5	17.5x11.5x6.5	19.5x14x9.5
0.047	10x8.5x5	12.5x9x5	12.5x11x6.5	17.5x12.5x7.5	27x14x9
0.068	10x8x4.5	12.5x10x5	17.5x10x5.5	17.5x14x8	27x15x10
0.10	12.5x8.5x5.5	12.5x11x6	17.5x11.5x6.5	17.5x15.5x10	27x16.5x11.5
0.15	12.5x9x5	13x13x7	17.5x12.5x7.5	22.5x16.5x9	
0.22	12.5x10x5.5	17.5x11x6.5	22.5x14.5x7.5	22.5x19x11	32.5x22.5x14.5
0.33	17.5x10x5.5	17.5x12.5x7	22.5x16x9	30x18.5x11	32.5x25.5x16
0.47	17.5x11x6.5	22.5x12.5x7.5	22.5x19.5x10	30x22x12.5	32.5x26.5x18.5
0.68	17.5x12.5x7.5	22.5x14.5x8.5	30x18x10	33x24.5x14	
1.0	18x14x8	22.5x17x9.5	30x20.5x12		
1.5	22.5x14.5x8.5	30x18x9.5			
2.2	22.5x16.5x10.5	30x21.5x11.5			
3.3	22.5x21x11.5				
4.7	30x20.5x11				
6.8	30x22.5x12.5				
10.0	32x28x17				

Convert to inches, divide by 25.4

LxHxT (mm)



L	≤10	10 < L ≤ 14	14 < L ≤ 17.5	17.5 < L ≤ 19	19 < L ≤ 22.5	22.5 < L < 30	L ≥ 30
S	7.5	10	15	15	20	22.5	27.5
d	0.6	0.6	0.6	0.8	0.8	0.8	0.8
G	1.0	1.0	1.0	1.0	2.0	2.0	2.0



## STANDARD PART LISTING

Capacitance (µF)	WVDC	ic <sup>®</sup> PART NUMBER	dv/dt (v/µ sec.)	Dimensions L x H x T (mm)
0.01	400	103MSR400K	160	10x9x5
0.01	630	103MSR630K	200	12.5x10x5
0.01	1000	103MSR102K	80	14x11.5x7
0.015	250	153MSR250K	110	10x9x5
0.015	400	153MSR400K	160	10x9.5x5.5
0.015	630	153MSR630K	200	12.5x10.5x6
0.015	1000	153MSR102K	80	14x11.5x8
0.022	250	223MSR250K	110	10x9x5
0.022	400	223MSR400K	160	12.5x9x5
0.022	630	223MSR630K	200	12.5x12x7
0.022	1000	223MSR102K	40	19x12.5x8.5
0.033	250	333MSR250K	110	10x9.5x5.5
0.033	400	333MSR400K	160	12.5x10.5x5.5
0.033	630	333MSR630K	90	17.5x11.5x6.5
0.033	1000	333MSR102K	40	19.5x14x9.5
0.047	100	473MSR100K	35	10x8.5x5
0.047	250	473MSR250K	110	12.5x9x5
0.047	400	473MSR400K	160	12.5x11x6.5
0.047	630	473MSR630K	90	17.5x12.5x7.5
0.047	1000	473MSR102K	33	27x14x9
0.068	100	683MSR100K	35	10x8x4.5
0.068	250	683MSR250K	110	12.5x10x5
0.068	400	683MSR400K	160	17.5x10x5.5
0.068	630	683MSR630K	90	17.5x14x8
0.068	1000	683MSR102K	33	27x15x10
0.10	100	104MSR100K	30	12.5x8.5x5.5
0.10	250	104MSR250K	110	12.5x11x6
0.10	400	104MSR400K	65	17.5x11.5x6.5
0.10	630	104MSR630K	90	17.5x15.5x10
0.10	1000	104MSR102K	33	27x16.5x11.5
0.15	100	154MSR100K	30	12.5x9x5
0.15	250	154MSR250K	110	13x13x7

Capacitance (µF)	WVDC	ic <sup>®</sup> PART NUMBER	dv/dt (v/µ sec.)	Dimensions L x H x T (mm)
0.15	400	154MSR400K	65	17.5x12.5x7.5
0.15	630	154MSR630K	35	22.5x16.5x9
0.22	100	224MSR100K	30	12.5x10x5.5
0.22	250	224MSR250K	45	17.5x11x6.5
0.22	400	224MSR400K	30	22.5x14.5x7.5
0.22	630	224MSR630K	35	22.5x19x11
0.22	1000	224MSR102K	20	32.5x22.5x14.5
0.33	100	334MSR100K	20	17.5x10x5.5
0.33	250	334MSR250K	45	17.5x12.5x7
0.33	400	334MSR400K	30	22.5x16x9
0.33	630	334MSR630K	30	30x18.5x11
0.33	1000	334MSR102K	20	32.5x25.5x16
0.47	100	474MSR100K	20	17.5x11x6.5
0.47	250	474MSR250K	20	22.5x12.5x7.5
0.47	400	474MSR400K	30	22.5x19.5x10
0.47	630	474MSR630K	30	30x22x12.5
0.47	1000	474MSR102K	20	32.5x26.5x18.5
0.68	100	684MSR100K	20	17.5x12.5x7.5
0.68	250	684MSR250K	20	22.5x14.5x8.5
0.68	400	684MSR400K	25	30x18x10
0.68	630	684MSR630K	30	33x24.5x14
1.0	100	105MSR100K	20	18x14x8
1.0	250	105MSR250K	20	22.5x17x9.5
1.0	400	105MSR400K	25	30x20.5x12
1.5	100	155MSR100K	10	22.5x14.5x8.5
1.5	250	155MSR250K	15	30x18x9.5
2.2	100	225MSR100K	10	22.5x16.5x10.5
2.2	250	225MSR250K	15	30x21.5x11.5
3.3	100	335MSR100K	10	22.5x21x11.5
4.7	100	475MSR100K	5	30x20.5x11
6.8	100	685MSR100K	5	30x22.5x12.5
10.0	100	106MSR100K	5	32x28x17

NOTE: WVDC: = MAXIMUM RATED WORKING VOLTAGE @ +85°C.