

MWR

125°C Metallized Polyester Wrap and Filled Axial Lead Capacitors



For all general purpose film capacitor applications

FEATURES

- Self healing
- Capacitance range: 0.001 μF to 22 μF
- Voltage range: 50 WVDC to 1000 WVDC

SPECIFICATIONS

Capacitance Tolerance		$\pm 10\%$ at 1kHz, 25°C					
Operating Temperature Range		-55°C to +125°C					
Voltage Range	WVDC	100	250	400	630	1000	
	VAC	63	160	200	220	250	
Dissipation Factor		1.0% at 1 kHz, 25°C					
Insulation Resistance		Capacitance		Insulation Resistance			
		$\leq 0.33 \mu\text{F}$		30,000 M Ω			
		$> 0.33 \mu\text{F}$		10,000 M $\Omega \times \mu\text{F}$			
Load Life		1,000 hours, +85°C with 125% rated DC voltage					
		Capacitance Change		$\leq 5\%$ maximum			
		Dissipation Factor Change		125% maximum specification			
		Insulation Resistance		$\geq 50\%$ of minimum initial limits			
Humidity Test		250 hours, 95% RH, 25°C and no applied voltage					
		Capacitance Change		$< 5\%$ of initial readings @ +25°C, 1kHz			
		Dissipation Factor Change		$\leq 200\%$ of initial +25°C 1kHz			
		Insulation Resistance		$\geq 3000 \text{ M}\Omega \times \mu\text{F}$ (need not exceed 5000M Ω)			
Self-inductance		$\leq 1 \text{ nH/mm}$ along the capacitor body and leads					
Capacitance Drift Factor		(after 2 years) $\leq 2.0\%$ up to 40°C					
Capacitance Temperature Coefficient		+400 ppm/°C, ± 200 ppm/°C					

CONSTRUCTION

Type	Extended metallized film
Dielectric	Polyester film
Electrodes	Vacuum deposited aluminum layers
Leads	Tinned copper wire (minimum lead content 5%)
Coating	Flame retardant epoxy sealed resin (UL 94V-O) with polyester tape wrap (UL510)

PERFORMANCE RATINGS/TESTS

VOLTAGE TEMPERATURE DERATING

Operating Temperature	Voltage Rating
+25°C	100%
+85°C	100%
+105°C	75%
+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 superimposed upon the DC voltage should not exceed the rated DC voltage.

DIELECTRIC STRENGTH

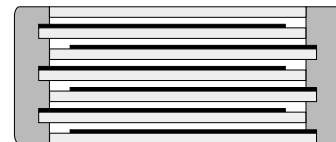
160% Rated DC for 1 minute at +25°C.

INSULATION RESISTANCE (IR)

@+25°C (< 70%RH) for 1 minute

Capacitance	Insulation Resistance
$\leq 0.33 \mu\text{F}$	$\geq 30,000 \text{ M}\Omega$
$> 0.33 \mu\text{F}$	$\geq 10,000 \text{ M}\Omega \times \mu\text{F}$

Rated WVDC	Test Voltage
< 100	50 WVDC
≤ 630	100WVDC
> 630	500WVDC



Extended metallized film design

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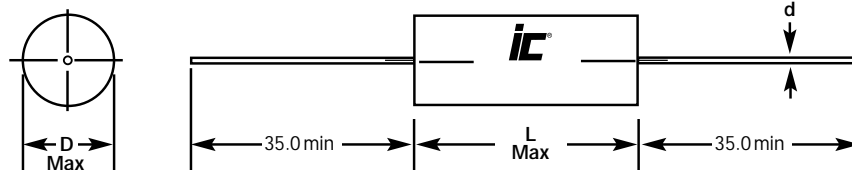
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PHYSICAL DIMENSIONS

WVDC (VAC) μF	50 (30)	63 (40)	100 (63)	250 (160)	400 (200)	630 (220)	1000 (250)
0.001						5.5x11.5	
0.0015						5.5x11.5	
0.0022						5.5x11.5	
0.0033						5.5x11.5	
0.0039						5.5x11.5	
0.0047						5.5x11.5	
0.0068						5.5x11.5	
0.01					5x11.5	6x14	7x14.5
0.015					5.5x14.5	6.5x14	8x14.5
0.022				5x11.5	5.5x14	8x14	9.5x20.5
0.033				6x11.5	6x14	7.5x20.5	10.5x20.5
0.039				6x11.5	7x15.5	8x20.5	
0.047				5.5x14	7x14	7.5x19	11x29
0.068			5.5x11.5	6.5x14.5	7.5x20.5	9x20.5	12.5x29
0.10			6x11.5	6x14	7.5x19	9x27	12x29
0.15		5.5x14	6x14	7x14	8.5x19	10.5x29	13x34
0.22	6x11.5		6.5x14	7x19	8.5x27	12.5x27	14.5x34
0.33	6x11.5		7.5x14	8x19	10x27	13.5x34	17x34
0.47	6x11.5		7x15.5	9.5x19	12.5x27	15.5x34	19.5x34
0.68	6x11.5	6.5x19	8x19	9.5x27	12.5x34	18.5x34	
1.0	7.5x11.5	8x20.5	9.5x19	10.5x27	14.5x34	22x34	
1.5	8x14.5	9.5x20.5	9x27	12.5x27	17.5x34	26.5x34	
2.2	9x14.5	10.5x29	12x29	13.5x34	20.5x34		
3.3	9.5x20.5	11x29	13x29	15.5x34	22.5x47		
4.7	10.5x20.5	12.5x29	12.5x34	19.5x34			
6.8	11.5x20.5		14.5x34	23x34			
10.0	13.5x20.5	14x34	18x34	24.5x47			
15.0			22x34				
22.0			22x46				

Convert to inches, divide by 25.4

DxL(mm)



Lead Diameter	
D	d
< 9.0	0.6
9 ≤ D < 20	0.8
≥ 20	0.9

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STANDARD PART LISTING

Capacitance (µF)	WVDC	IC [®] PART NUMBER	dv/dt (v/µ sec.)	Dimension D X L (mm)
0.001	630	102MWR630K	60	5.5x11.5
0.0015	630	152MWR630K	60	5.5x11.5
0.0022	630	222MWR630K	60	5.5x11.5
0.0033	630	332MWR630K	60	5.5x11.5
0.0039	630	392MWR630K	60	5.5x11.5
0.0047	630	472MWR630K	60	5.5x11.5
0.0068	630	682MWR630K	60	5.5x11.5
0.01	400	103MWR400K	32	5x11.5
0.01	630	103MWR630K	60	6x14
0.01	1000	103MWR102K	80	7x14.5
0.015	400	153MWR400K	32	5.5x14.5
0.015	630	153MWR630K	60	6.5x14.5
0.015	1000	153MWR102K	80	8x14.5
0.022	250	223MWR250K	16	5x11
0.022	400	223MWR400K	32	5.5x14
0.022	630	223MWR630K	60	8x14
0.022	1000	223MWR102K	40	9.5x20.5
0.033	250	333MWR250K	16	6x11.5
0.033	400	333MWR400K	32	6x14
0.033	630	333MWR630K	32	7.5x20.5
0.033	1000	333MWR102K	40	10.5x20.5
0.039	250	393MWR250K	16	6x11.5
0.039	400	393MWR400K	32	7x15.5
0.039	630	393MWR630K	32	8x20.5
0.047	250	473MWR250K	16	5.5x14
0.047	400	473MWR400K	32	7x14
0.047	630	473MWR630K	32	7.5x19
0.047	1000	473MWR102K	33	11x29
0.068	100	683MWR100K	12	5.5x11.5
0.068	250	683MWR250K	16	6.5x14.5
0.068	400	683MWR400K	18	7.5x20.5
0.068	630	683MWR630K	32	9x20.5
0.068	1000	683MWR102K	33	12.5x29
0.1	100	104MWR100K	12	6x11.5
0.1	250	104MWR250K	16	6x14
0.1	400	104MWR400K	18	7.5x19
0.1	630	104MWR630K	20	9x27
0.1	1000	104MWR102K	33	12x29

Capacitance (µF)	WVDC	IC [®] PART NUMBER	dv/dt (v/µ sec.)	Dimension D X L (mm)
0.15	63	154MWR063K	11	5.5x14
0.15	100	154MWR100K	12	6x14
0.15	250	154MWR250K	16	7x14
0.15	400	154MWR400K	18	8.5x19
0.15	630	154MWR630K	20	10.5x29
0.15	1000	154MWR102K	20	13x34
0.22	50	224MWR050K	9	6x11.5
0.22	100	224MWR100K	12	6.5x14
0.22	250	224MWR250K	13	7x19
0.22	400	224MWR400K	14	8.5x27
0.22	630	224MWR630K	20	12.5x27
0.22	1000	224MWR102K	20	14.5x34
0.33	50	334MWR050K	9	6x11.5
0.33	100	334MWR100K	12	7.5x14
0.33	250	334MWR250K	13	8x19
0.33	400	334MWR400K	14	10x27
0.33	630	334MWR630K	14	13.5x34
0.33	1000	334MWR102K	20	17x34
0.47	50	474MWR050K	9	6x11.5
0.47	100	474MWR100K	12	7x15.5
0.47	250	474MWR250K	13	9.5x19
0.47	400	474MWR400K	14	12.5x27
0.47	630	474MWR630K	20	15.5x34
0.47	1000	474MWR102K	20	19.5x34
0.68	50	684MWR050K	9	6x11.5
0.68	63	684MWR063K	7	6.5x19
0.68	100	684MWR100K	7	8x19
0.68	250	684MWR250K	9	9.5x27
0.68	400	684MWR400K	10	12.5x34
0.68	630	684MWR630K	14	18.5x34
1	50	105MWR050K	9	7.5x11.5
1	63	105MWR063K	7	8x20.5
1	100	105MWR100K	7	9.5x19
1	250	105MWR250K	9	10.5x27
1	400	105MWR400K	10	14.5x34
1	630	105MWR630K	14	20.5x34
1.5	50	155MWR050K	9	8x14.5
1.5	63	155MWR063K	7	9.5x20.5

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STANDARD PART LISTING

Capacitance (μF)	WVDC	IC [®] PART NUMBER	dv/dt (v/μ sec.)	Dimension D X L (mm)
1.5	100	155MWR100K	5	9x27
1.5	250	155MWR250K	9	12.5x27
1.5	400	155MWR400K	10	17.5x34
1.5	630	155MWR630K	14	26.5x34
2.2	50	225MWR050K	9	9x14.5
2.2	63	225MWR063K	5	10.5x29
2.2	100	225MWR100K	5	12x29
2.2	250	225MWR250K	5	13.5x34
2.2	400	225MWR400K	10	20.5x34
3.3	50	335MWR050K	6	9.5x20.5
3.3	63	335MWR063K	5	11x29
3.3	100	335MWR100K	5	13x29
3.3	250	335MWR250K	5	16x34
3.3	400	335MWR400K	10	22.5x47

Capacitance (μF)	WVDC	IC [®] PART NUMBER	dv/dt (v/μ sec.)	Dimension D X L (mm)
4.7	50	475MWR050K	6	10.5x20.5
4.7	63	475MWR063K	5	12.5x29
4.7	100	475MWR100K	4	12.5x34
4.7	250	475MWR250K	5	19.5x34
6.8	50	685MWR050K	6	11.5x20.5
6.8	100	685MWR100K	4	14.5x34
6.8	250	685MWR250K	5	23x34
10	50	106MWR050K	6	13.5x20.5
10	63	106MWR063K	4	14x34
10	100	106MWR100K	4	18x34
10	250	106MWR250K	5	24.5x47
15	100	156MWR100K	4	22x34
22	100	226MWR100K	4	22x46.5

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