

MPPX Metallized Polypropylene Axial Leaded Film Capacitors

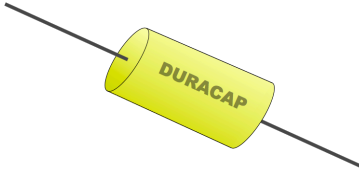
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MPPX – Metallized Polypropylene / Axial Leads



- Axial Leads
- Lead Material Tinned Copper Wire
- Minimum Lead Content 5%
- Non Inductively Wound
- Non-Polar
- Flame Retardant Polyester Wrap Meets UL510
- Epoxy Encapsulant Meets UL94V-0

General Specifications

Operating Temperature:
-55°C to +105°C with voltage derating above 85°C

Voltage Range:
160 VDC (90 VAC) to 630 VDC (250 VAC)

Capacitance Range:
0.001 µF to 4.7 µF

Capacitance Tolerance:
J±5%, K±10%, M±20%

Total Self Inductance (L):

1nH maximum per 1mm lead and capacitor length

Dielectric Withstand Voltage:

1.6 Rated Voltage for 2 sec at +25°C ±5°C

Dissipation Factor (DF):

$\text{tg}\delta \times 10^{-4}$ at +25°C ±5°C

kHz	C < 0.1µF	0.1µF ≤ C ≤ 1µF	C > 1µF
1	≤6	≤6	≤6
10	≤10	≤20	
100	≤30		

Excellent choice for applications requiring low dielectric losses, high voltage capability, and stable characteristics.

Maximum Pulse Rise Time (dv/dt)

Vn	Lmax				
	11	16.5	20.5	28	33
160	5	5	3	2	1
250	11	10	7	4	2.5
400	-	13.5	10	6.5	4
630	-	20	15	10	6

If the working voltage (V) is less than the nominal voltage (Vn), the capacitor can work at higher dv/dt. In this case, the maximum value allowed is obtained by multiplying the above value (see table dv/dt) with the ratio Vn/V.

L Max (Body Length)		Lead Spacing		Distance Between Reel Flanges		Class
Inches	mm	Inches	mm	Inches	mm	
≤.433	≤11	2.06	52.4	3	75	1
.551 - .808	14 - 20.5	2.5	63.6	3.4	86	2
≥1.03	≥26	2.87	73	3.7	95	3

Diameter		Quantity per Reel
Inches	mm	
0.197	5	3,000
.236 thru .256	6.0 thru 6.5	1,200
0.276	7	1,100
.315 thru .346	8 thru 8.5	800
.354 thru .413	9 thru 10.5	500
.433 thru .512	11 thru 13	300
.551 thru .571	14 thru 14.5	200
>. 571	>14.5	Not available

Test Method and Performance

Insulation Performance

Test Conditions	
Temperature	25 °C ±5 °C
Voltage Charge Time	1 minute
Voltage Charge	100 Vdc
Performance	
For C < 0.33µF	≥1 x 10 ⁵ MΩ
For C ≥ 0.33µF	≥30,000 MΩ x µF

Damp Heat Test

Test Conditions	
Temperature	+40°C
Relative Humidity	95%
Test Duration	21 days
Performance	
Capacitance Change ΔC/C	≤ ±2%
DF Change Δtgδ	≤ 10 x 10 ⁻⁴ at 1 kHz
Insulation Resistance	≥ 50% of limit value

Life Test

Test Conditions	
Temperature	+85 °C
Test Duration	1000 hrs
Voltage Applied	1.25 x Vn
Performance	
Capacitance Change ΔC/C	≤ ±3%
DF Change Δtgδ	≤10 x 10 ⁻⁴ at 1 kHz for C >1.0 µF
Insulation Resistance	≤10 x 10 ⁻⁴ at 10 kHz for C ≤1.0 µF
	≥ 50% of limit value

Soldering

Test Conditions	
Soldering Temperature	260 °C ±5 °C
Duration	10 sec ±1 sec
Performance	
Capacitance Change ΔC/C	≤ ±1%
DF Change Δtgδ	≤10 x 10 ⁻⁴ at 1 kHz for C >1.0 µF
Insulation Resistance	≤10 x 10 ⁻⁴ at 10 kHz for C ≤1.0 µF
	≥ 50% of limit value

Long Term Stability (after two years)

Storage Performance	
Capacitance Change ΔC/C	≤ ±0.5%

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Capacitance (μ F)	Diameter (mm)	Length (mm)	\varnothing d (mm)	Description
400 VDC; 220 VAC				
0.015	6.0	16.5	0.6	MPPX153*400BB
0.018	6.5	16.5	0.6	MPPX183*400CB
0.022	6.5	16.5	0.6	MPPX223*400CB
0.027	7.0	16.5	0.6	MPPX273*400DB
0.033	7.0	16.5	0.6	MPPX333*400DB
0.039	8.0	16.5	0.8	MPPX393*400EB
0.047	8.0	16.5	0.8	MPPX473*400EB
0.056	8.0	20.5	0.8	MPPX563*400EC
0.068	8.0	20.5	0.8	MPPX683*400EC
0.082	9.0	20.5	0.8	MPPX823*400GC
0.1	9.0	20.5	0.8	MPPX104*400GC
0.12	8.5	28.0	0.8	MPPX124*400FE
0.15	8.5	28.0	0.8	MPPX154*400FE
0.18	10.0	28.0	0.8	MPPX184*400IE
0.22	10.0	28.0	0.8	MPPX224*400IE
0.27	11.5	28.0	0.8	MPPX274*400LE
0.33	11.5	28.0	0.8	MPPX334*400LE
0.39	13.0	28.0	0.8	MPPX394*400NE
0.47	13.0	28.0	0.8	MPPX474*400NE
0.56	14.5	33.0	0.8	MPPX564*400QF
0.68	14.5	33.0	0.8	MPPX684*400QF
0.82	17.0	33.0	1.0	MPPX824*400VF
1	17.0	33.0	1.0	MPPX105*400VF
1.5	20.5	33.0	1.0	MPPX155*400YF

630 VDC; 250 VAC				
0.001	6.0	16.5	0.6	MPPX102*630BB
0.0012	6.0	16.5	0.6	MPPX122*630BB
0.0015	6.0	16.5	0.6	MPPX152*630BB
0.0018	6.0	16.5	0.6	MPPX182*630BB
0.0022	6.0	16.5	0.6	MPPX222*630BB
0.0027	6.0	16.5	0.6	MPPX272*630BB
0.0033	6.0	16.5	0.6	MPPX332*630BB
0.0039	6.0	16.5	0.6	MPPX392*630BB
0.0047	6.0	16.5	0.6	MPPX472*630BB

Capacitance (µF)	Diameter (mm)	Length (mm)	Ød (mm)	Description
0.0056	6.0	16.5	0.6	MPPX562*630BB
0.0068	6.5	16.5	0.6	MPPX682*630CB
0.0082	6.5	16.5	0.6	MPPX822*630CB
0.01	6.5	16.5	0.6	MPPX103*630CB
0.012	8.0	16.5	0.8	MPPX123*630EB
0.015	8.0	16.5	0.8	MPPX153*630EB
0.018	8.5	16.5	0.8	MPPX183*630FB
0.022	8.5	16.5	0.8	MPPX223*630FB
0.027	8.0	20.5	0.8	MPPX273*630FC
0.033	8.0	20.5	0.8	MPPX333*630FC
0.039	9.5	20.5	0.8	MPPX393*630HC
0.047	9.5	20.5	0.8	MPPX473*630HC
0.056	9.0	28.0	0.8	MPPX563*630GE
0.068	9.0	28.0	0.8	MPPX683*630GE
0.082	10.0	28.0	0.8	MPPX823*630IE
0.1	10.0	28.0	0.8	MPPX104*630IE
0.12	12.0	28.0	0.8	MPPX124*630ME
0.15	12.0	28.0	0.8	MPPX154*630ME
0.18	13.0	33.0	0.8	MPPX184*630NF
0.22	13.0	33.0	0.8	MPPX224*630NF
0.27	15.5	33.0	0.8	MPPX274*630TF
0.33	15.5	33.0	0.8	MPPX334*630TF
0.39	18.0	33.0	1.0	MPPX394*630XF
0.47	18.0	33.0	1.0	MPPX474*630XF
0.56	21.0	33.0	1.0	MPPX564*630ZF
0.68	21.0	33.0	1.0	MPPX684*630ZF