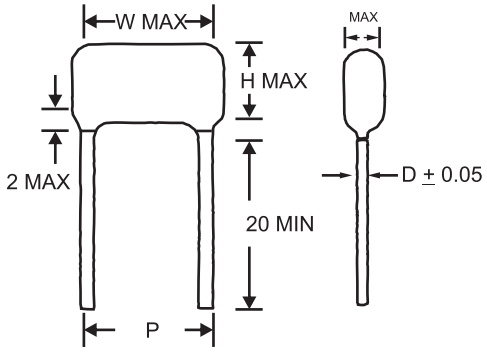
Metalized Polypropylene Film Capacitors
MPP Series: Radial Dipped

INTRODUCTION

MPP series are constructed with metalized polypropylene film dielectric, copperply lead and flame retardant epoxy resin coating. The MPP series is smaller then the PMD series. Suitable blocking, by-pass, coupling, decoupling, filtering, timing, tuning, temperature compensation and ideal for use in ballasts, switching power supplies, telecommunication equipment, industrial instruments, automatic control systems and other general electronic equipment.



(Can be box encapsulated. See MPB series.)

FEATURES

- Low dissipation factor at high frequency
- High capacitance and dissipation factor stability
- Non-inductive construction
- Self-healing
- Flame retardant epoxy resin coating (compliant to UL 94V-0)

SPECIFICATIONS

Items	Performance						
Operating Voltage Range	100Vdc, 250Vdc, 400Vdc, 630Vdc						
Rated Temperature	-40 ˚C ~ +85ºC						
Usable Upper Category Temperature	+105ºC (Derating ratio of rated voltage over +85˚C ~ +110ºC: 1.5% per ºC of Rated Voltage)						
Capacitance Range	0.01 µF ~ 10 µF						
Capacitance Tolerance	±3% (H), ±5% (J), ±10% (K)						
Dissipation Factor	KHz	C ≤ 0.1 µF	0.1 < C ≤ 1.0 µF	1.0 < C ≤ 3.0 µF	3.0 < C ≤ 5.0 µF	5.0 < C ≤ 10 µF	
	1	≤ 0.10%					
	100	≤ 0.40%	≤ 0.70%	≤ 1.20%	≤ 1.80%	≤ 2.80%	
Insulation Resistance Terminal to Terminal	Voltage Charge: 100Vdc x 1min (at 20˚C ± 5˚C) ≥ 30,000MΩ for C ≤ 0.33µF ≥ 10,000MΩ x µF for C > 0.33µF						
Withstand Voltage	Terminal to Terminal: (at 20˚C ± 5˚C)						
Rated Voltage Pulse Slope dV/dt (V/µs)	Pitch / V_R	7.5mm	10mm	15mm	22.5mm	27.5mm	
	100Vdc	130	110	100	70	50	
	250Vdc	240	220	200	130	100	
	400Vdc	--	350	300	200	150	
	630Vdc	--	420	400	250	180	

RELIABILITY TEST

Item	Test Methods	Requirements
Resistance to Soldering Heat IEC 60068-2-20	Solder Bath: 260ºC ± 5ºC Immersion Time: 10sec ± 1sec	Capacitance Change IΔ C/C : ≤1% DF Change Δ tan δ : 0.1% at 1KHz IR: ≥ limit value
Resistance to Vibration IEC 60068-2-6	Frequency Range: 10Hz to 55Hz Amplitude: 1.5mm Duration: 6 hours	There shall be no Visible Damage, No Intermittent Contact, No Open or Short Circuit
Damp Heat, Steady State IEC 60068-2-3	Temperature: 40ºC ± 2ºC Relative Humidity: 90% to 95% Duration: 1,000 hours	Capacitance Change IΔC/C I< : 3% DF Change Δ tan δ: 0.1% at 1KHz IR: ≥ 50% limit value
Electrical Endurance IEC 60384-17	Temperature: 85ºC + 2ºC Voltage Applied: 1.25 x Vr(DC) Duration: 2,000 hours	Capacitance Change IΔC/CI< : 3% DF Change Δ tan δ : 0.1% at 1KHz IR: ≥ 50% limit value

MAXIMUM DIMENSIONS

(µF)	W.V.	100VDC (2A)					250VDC (2E)					400VDC (2G)/450VDC (2W)					630VDC (2J)				
	Code	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d
0.010	103											10.5	7.5	4.0	7.5	0.6	10.5	9.0	5.5	7.5	0.6
0.012	123											10.5	8.5	4.0	7.5	0.6	10.5	9.5	6.0	7.5	0.6
0.015	153											10.5	9.0	4.5	7.5	0.6	10.5	10.5	6.0	7.5	0.6
0.018	183											10.5	9.5	4.5	7.5	0.6	10.5	11.0	6.5	7.5	0.6
0.022	223						10.5	7.5	4.0	7.5	0.6	10.5	10.0	5.0	7.5	0.6	13.0	10.0	6.0	10.0	0.6
0.027	273						10.5	8.0	4.0	7.5	0.6	10.5	10.5	5.5	7.5	0.6	13.0	11.0	6.5	10.0	0.6
0.033	333						10.5	8.5	4.5	7.5	0.6	10.5	11.0	6.0	7.5	0.6	13.0	11.5	7.0	10.0	0.6
0.039	393						10.5	9.0	4.5	7.5	0.6	13.0	11.0	5.5	10.0	0.6	13.0	12.0	8.0	10.0	0.6
0.047	473	10.5	7.5	4.0	7.5	0.6	10.5	10.0	4.5	7.5	0.6	13.0	11.0	5.5	10.0	0.6	13.0	13.0	8.0	10.0	0.6
0.056	563	10.5	8.0	4.0	7.5	0.6	10.5	10.5	5.0	7.5	0.6	13.0	11.5	6.0	10.0	0.6	13.0	14.0	9.0	10.0	0.6
0.068	683	10.5	9.0	4.5	7.5	0.6	10.5	11.0	5.5	7.5	0.6	13.0	12.5	6.5	10.0	0.6	18.0	12.5	7.0	15.0	0.8
0.082	823	10.5	9.5	4.5	7.5	0.6	10.5	11.5	6.0	7.5	0.6	13.0	13.0	7.0	10.0	0.6	18.0	13.0	7.5	15.0	0.8
0.10	104	10.5	10.0	5.0	7.5	0.6	10.5	12.0	6.5	7.5	0.6	13.0	13.5	8.0	10.0	0.6	18.0	14.0	8.0	15.0	0.8
0.12	124	10.5	10.0	5.5	7.5	0.6	13.0	11.5	6.0	10.0	0.6	18.0	12.0	6.0	15.0	0.8	18.0	15.5	8.0	15.0	0.8
0.15	154	10.5	11.0	6.0	7.5	0.6	13.0	12.0	6.5	10.0	0.6	18.0	12.5	7.0	15.0	0.8	18.0	16.5	9.0	15.0	0.8
0.18	184	10.5	11.5	6.5	7.5	0.6	13.0	12.5	7.0	10.0	0.6	18.0	13.5	8.5	15.0	0.8	18.0	17.5	10.0	15.0	0.8
0.22	224	13.0	11.5	6.0	10.0	0.6	13.0	13.0	7.5	10.0	0.6	18.0	15.0	8.0	15.0	0.8	18.0	18.5	11.5	15.0	0.8
0.27	274	13.0	12.0	6.5	10.0	0.6	18.0	13.0	6.0	15.0	0.8	18.0	16.0	8.5	15.0	0.8	25.5	18.0	9.0	22.5	0.8
0.33	334	13.0	13.0	7.0	10.0	0.6	18.0	14.0	6.5	15.0	0.8	18.0	17.0	9.5	15.0	0.8	25.5	19.0	10.0	22.5	0.8
0.39	394	13.0	13.5	7.5	10.0	0.6	18.0	14.5	7.0	15.0	0.8	18.0	18.0	10.5	15.0	0.8	25.5	20.0	11.0	22.5	0.8
0.47	474	13.0	14.0	8.5	10.0	0.6	18.0	15.0	8.0	15.0	0.8	25.5	16.0	9.0	22.5	0.8	20.5	20.5	12.0	17.5	0.8
																	25.5	21.0	12.0	22.5	0.8
0.56	564	18.0	14.0	7.0	15.0	0.8	18.0	16.0	8.5	15.0	0.8	25.5	17.0	10.0	22.5	0.8	25.5	22.5	13.5	22.5	0.8
0.68	684	18.0	15.0	7.5	15.0	0.8	18.0	17.0	9.5	15.0	0.8	25.5	18.0	11.0	22.5	0.8	25.5	24.0	15.0	22.5	0.8
0.82	824	18.0	15.5	8.0	15.0	0.8	18.0	18.5	10.0	15.0	0.8	25.5	20.0	11.0	22.5	0.8	25.5	25.5	16.5	22.5	0.8
1.00	105	18.0	16.5	9.0	15.0	0.8	18.0	20.0	11.0	15.0	0.8	25.5	21.5	12.5	22.5	0.8	26.0	16.5	12.0	22.5	0.8
																	31.5	25.0	16.0	27.5	0.8
1.20	125	18.0	17.5	10.0	15.0	0.8	25.5	18.0	9.0	22.5	0.8	25.5	23.0	14.0	22.5	0.8	31.5	27.0	18.0	27.5	0.8
1.50	155	18.0	18.5	11.5	15.0	0.8	25.5	19.5	10.5	22.5	0.8	25.5	24.5	15.5	22.5	0.8					
1.80	185	25.5	18.0	9.0	22.5	0.8	25.5	20.5	11.5	22.5	0.8										
2.20	225	25.5	19.0	10.0	22.5	0.8	25.5	22.0	13.0	22.5	0.8										
2.70	275	25.5	20.0	11.5	22.5	0.8	25.5	23.5	14.5	22.5	0.8										
3.30	335	25.5	24.5	15.5	22.5	0.8	25.5	25.5	16.0	22.5	0.8										

PART NUMBER EXAMPLE - BULK

MPP 103 M 2G 075 B 100 S

- Series
- Capacitance
- Tolerance
- Voltage Code
- Lead Spacing Code*
- Packaging
- Lead Length
- Lead Style

PART NUMBER EXAMPLE - RADIAL TAPED

MPP 103 K 2G 075 A RT2 K

- Series
- Capacitance
- Tolerance
- Voltage Code
- Lead Spacing Code*
- Packaging
- Tape Code (Tape)
- Lead Style

* Leadspace is straight lead non-formed original leadspace.

CAPACITANCE

µF	0.01	0.047	0.1	0.47	1.0	3.3
pF	10,000	47,000	100,000	470,000	–	–
Code	103	473	104	474	105	335

TOLERANCE CODE

Code	Tolerance
J	± 5%
K	± 10%
M	± 20%

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RATED VOLTAGE

W.V.	100	250	400	630
Code	2A	2E	2G	2J

RADIAL LEAD SPACING

* Leadspace is straight lead non-form original leadspace.

mm	7.5	10	15	22.5	27.5
Code	075	100	150	225	275

PACKAGING

Method	Bulk	Ammo	Reel
Code	B	A	R

TAPE CODE (See Diagrams)

Spacing	7.5mm	10mm	15mm
Packing	A or R	A	A
Code	RT2	RT3	RT4

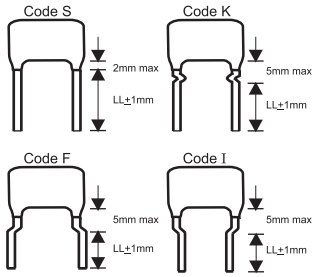
LEAD LENGTH FROM SEATING PLANE

mm	5	10	15	20	25
Code	050	100	150	200	250

LEAD STYLE

Code	Style
S	Straight
K	Kink-In (Stand Off)
F	Form Out
I	Form In

LEAD STYLE EXAMPLES



(For LL over 20mm spec is minimum)

RADIAL TAPING CODE DIAGRAM

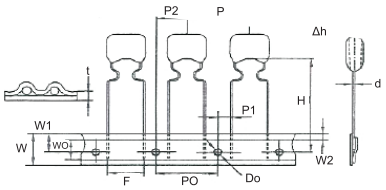


Fig. 1
F=7.5mm
(RT2)

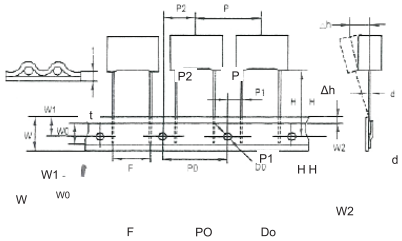


Fig. 2
F=7.5mm
(RT2)

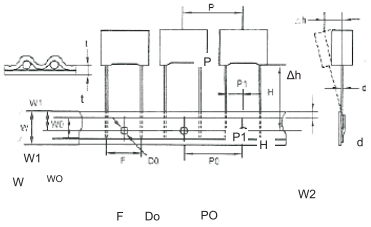


Fig. 3 Box
Fitch=7.5mm
Ammo Only
(RT2)

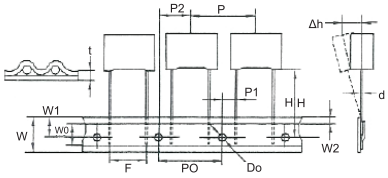


Fig. 4 Box or Epoxy Coated
F=10 - Ammo Only
F=15 Every other space skipped because of Larger body - Ammo Only
(RT3 or RT4)

SPECIFICATIONS

Description	Letter	Dimension (mm)					Description	Letter	Dimension (mm)				
		RT1	RT2	RT3	RT4	Tol.			RT1	RT2	RT3	RT4	Tol.
Lead Wire Diameter	d	0.5 / 0.6	0.5 / 0.6	0.6	0.6 / 0.8	± 0.05	Carrier Tape Width	W	18	18	18	18	± 1; -0.5
Tape Pitch	P	12.7	12.7	12.7	25.4	± 1	Hold Down Tape Width	WO	6	6	9	10	Min
Feed Hole Pitch	PO	12.7	12.87	12.7	12.7	± 0.2	Hole Position	W1	9	9	9	9	± 0.5
Centering of the Lead Wire	P1	3.85	2.6 / 3.75	7.7	5.2	± 0.7	Hold Down Tape Position	W2	3	3	3	3	Max
Centering of the Body	P2	6.35	6.35	12.7	12.7	± 1.3	Feed Hole Diameter	Do	4	4	4	4	± 0.2
Lead Spacing (Pitch)	F	5	7.5	10	15	± 0.6; -0.1	Tape Thickness	t	0.7	0.7	0.7	0.07	± 0.2
Component Alignment	Δh	0	0	0	0	± 2	Figure	fig	1 or 2	1.2 or 3	4	4	
Height of Componenet from Tape Center	H	18.5	18.5	18.5	18.5	± 0.5							

Remark: *Allowance of accumulated pitch less than 1mm at the sum of 20 pitches.
*Continuous empty component less than 3 consecutive pieces.
*Total empty on one reel less than 1%.