

INTRODUCTION

MDD Series are constructed with metalized polyester film dielectric, copperplated lead and epoxy resin powder coating. They are suitable for blocking, coupling, decoupling, filtering, bypass timing circuit and ideal for use in telecommunication equipment, data processing equipment, industrial instrument, automatic control systems and other general electronic equipment.

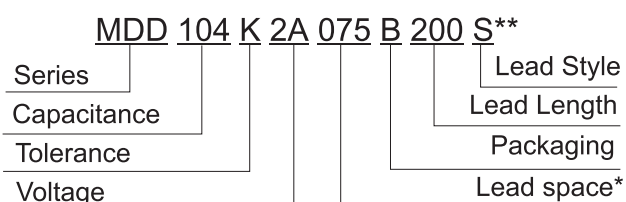
FEATURES

- High moisture resistance
- Good solderability
- Non-inductive construction
- Self-healing property
- On average is smaller than MDF

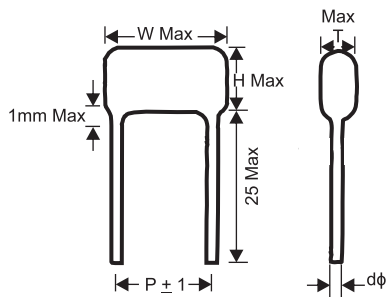
SPECIFICATIONS

Item	Performance
Operating Temp. Range	-40°C ~ 125°C (V_R Derates 1.25% per °C over 105°C)
Capacitance Range	0.01μF ~ 10μF
Capacitance Tolerance	± 5% (J), 10% (K), +20% (M)
Rated Voltage V_R 85°C	100Vdc, 250Vdc, 400Vdc, 630Vdc, 1000Vdc
Dissipation Factor	1.0%(0.01)max @ 1KHz, 25°C
Insulation Resistance	≥ 9000MΩ ($C \leq 0.33\mu F$) ≥ 3000MΩ × μF ($C > 0.33\mu F$)

PART NUMBER EXAMPLE



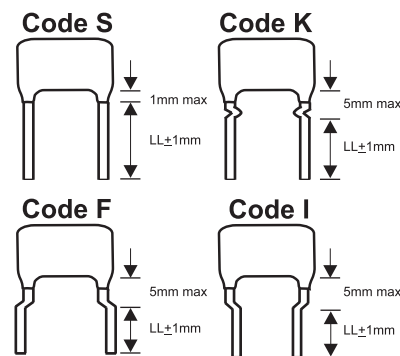
* Lead space is straight lead non-formed original lead space.



TOLERANCE

Code	Tolerance
J	± 5%
K	± 10%
M	± 20%

LEAD STYLE EXAMPLES



Typical length (LL) is 20mm for straight lead bulk pack

CAPACITANCE CODE

μF	0.01	0.047	0.1	0.47	1.0	4.7	10
pF	10000	47000	100000	470000	-	-	-
Code	103	473	104	474	105	475	106

RATED VOLTAGE

WV	100	250	400	630	1000
Code	2A	2E	2G	2J	3A

PACKAGING

Method	Bulk	Ammo	Reel
Code	B	A	R

TAPE CODE (Lead spacing on tape, if taped)

Spacing	5.0mm	7.5mm	10mm	15mm
Packing	A or R	A or R	A	A
Code	RT1	RT2	RT3	RT4

RADIAL LEAD SPACING

* Lead space is straight lead non-formed original lead space.

mm	5.0	7.5	10	15	22.5	27.5
Code	050	075	100	150	225	275

LEAD STYLE

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

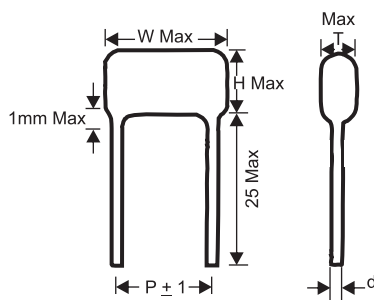
** For Bulk packaging with formed leads, add an additional 3 digit lead spacing code at end of part number.

LEAD LENGTH FROM SEATING PLANE

(Bulk Pack and is ± 1mm when < 10mm, otherwise is nominal)

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

■ DIMENSIONS (mm)

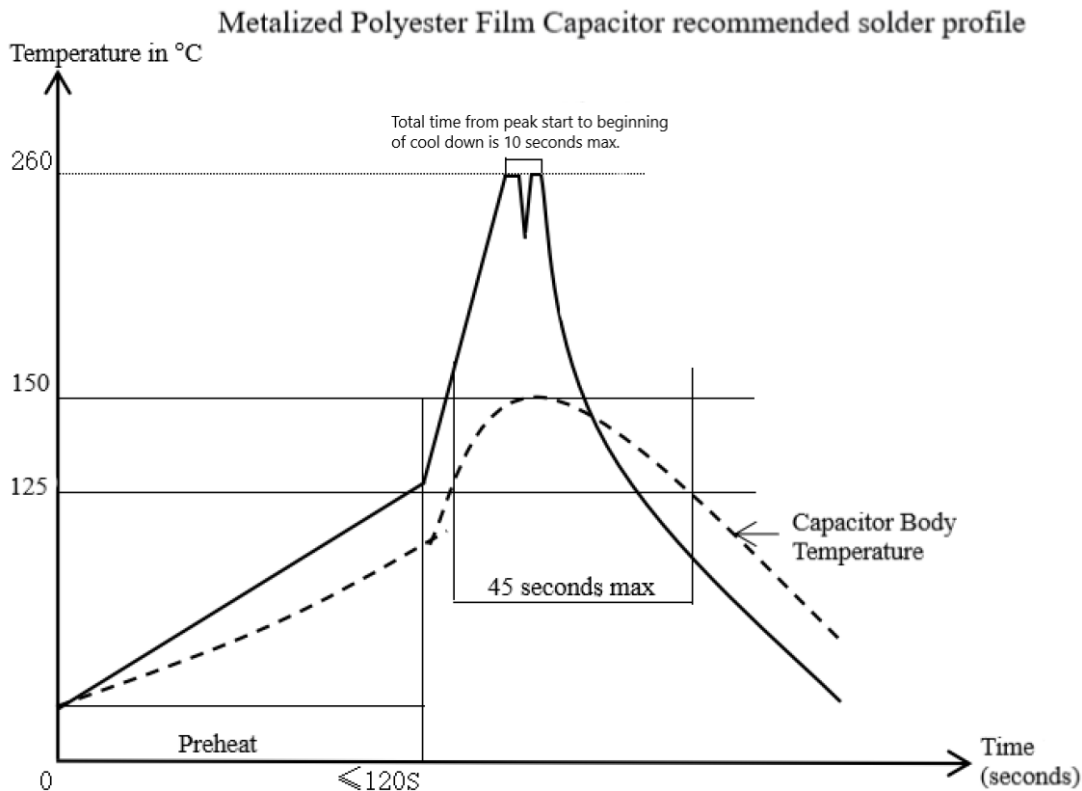


W. V. μF Code	100VDC (2A)					250VDC (2E)					400VDC (2G) / 450VDC (2W)					630VDC (2J)					1000VDC (3A)				
	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d
0.01 103																13.0	8.0	5.0	10.0	0.6	13.0	9.0	4.0	10.0	0.6
0.012 123																13.0	8.5	5.0	10.0	0.6					
0.015 153											10.5	8.0	4.5	7.5	0.6	13.0	9.5	5.5	10.0	0.6	13.0	11.0	5.0	10.0	0.0
0.018 183											10.5	8.5	5.0	7.5	0.6	13.0	11.0	5.5	10.0	0.6					
0.022 223											10.5	8.5	5.0	7.5	0.6	13.0	11.5	6.0	10.0	0.6	13.0	11.0	5.0	10.0	0.6
0.027 273											10.5	9.0	5.5	7.5	0.6	13.0	12.0	6.5	10.0	0.6					
0.033 333											10.5	9.5	6.0	7.5	0.6	13.0	12.5	7.0	10.0	0.6	18.0	12.0	6.0	15.0	0.8
0.039 393						10.5	8.0	4.0	7.5	0.6	13.0	8.5	4.5	10.0	0.6	13.0	14.0	7.0	10.0	0.6					
0.047 473						10.5	8.0	4.5	7.5	0.6	9.5	7.5	4.0	7.5	0.6	13.0	9.0	5.5	10.0	0.6	18.0	12.0	6.0	15.0	0.8
											13.0	9.0	5.0	10.0	0.6										
0.056 563						10.5	8.5	5.0	7.5	0.6	13.0	9.5	5.5	10.0	0.6	18.5	11.0	5.5	15.0	0.8	18.0	13.5	7.5	15.0	0.8
0.068 683						10.5	8.5	5.0	7.5	0.6	13.0	11.0	5.5	10.0	0.6	18.5	11.5	6.0	15.0	0.8	18.0	14.0	8.0	15.0	0.8
0.082 823						10.5	9.5	5.5	7.5	0.6	13.0	11.5	5.5	10.0	0.6	18.5	12.0	6.5	15.0	0.8	18.0	14.5	8.5	15.0	0.8
0.1 104	10.5	7.5	4.0	7.5	0.6	10.5	10.0	6.0	7.5	0.6	12.0	9.0	5.0	10.0	0.6	18.5	12.0	6.0	15.0	0.8					
0.12 124	10.5	7.5	4.0	7.5	0.6	10.5	10.5	6.5	7.5	0.6	18.5	10.5	5.0	15.0	0.8	18.5	14.5	7.0	15.0	0.8	26.5	16.0	7.0	22.5	0.8
0.15 154	10.5	8.0	4.5	7.5	0.6	10.5	11.0	7.0	7.5	0.6	18.5	11.5	5.5	15.0	0.8	18.5	15.5	8.0	15.0	0.8	26.5	16.5	8.0	22.5	0.8
0.18 184	10.5	8.5	5.0	7.5	0.6	13.0	9.0	4.5	10.0	0.6	18.5	12.0	6.0	15.0	0.8	18.5	16.0	8.5	15.0	0.8	26.5	17.0	8.5	22.5	0.8
0.22 224	10.5	8.5	5.0	7.5	0.6	10.3	11.0	6.1	7.5	0.6	11.3	4.3	7.0	10.0	0.8	11.3	11.3	7.0	10.0	0.6					
						13.0	11.0	5.0	10.0	0.6	18.5	13.5	6.0	15.0	0.8	18.5	16.5	9.0	15.0	0.8	26.5	20.0	11.0	22.5	0.8
0.27 274	10.5	9.5	5.5	7.5	0.6	13.0	11.5	6.0	10.0	0.6	18.5	14.0	7.0	15.0	0.8	26.5	16.5	7.5	22.5	0.8					
						12.0	12.0	6.5	7.5	0.6	12.0	12.0	7.5	10.0	0.6	12.5	13.5	7.0	10.0	0.6					
0.33 334	10.5	10.0	6.0	7.5	0.6											18.5	18	10	15.0	0.8	32.0	28.0	11.0	27.5	0.8
						13.0	12.0	6.5	10.0	0.6	18.5	15.0	7.5	15.0	0.8	26.5	17	8.5	22.5	0.8					
0.39 394	10.5	10.5	6.0	7.5	0.6	18.0	9.0	5.0	15.0	0.6	18.5	15.5	8.5	15.0	0.8	26.5	17.0	9.0	22.5	0.8	32.0	28.0	14.0	27.5	0.8
0.47 474	10.5	12.0	6.0	7.5	0.6	18.5	13.0	5.0	15.0	0.8	18.5	17.5	8.5	15.0	0.8	26.5	18.0	10.0	22.5	0.8	32.0	29.0	15.0	27.5	0.8
0.56 564	13.0	11.0	5.5	10.0	0.6	18.5	13.0	6.0	15.0	0.8	26.0	16.0	7.5	22.5	0.8	26.5	18.0	11.0	22.5	0.8	32.0	30.0	16.0	27.5	0.8
0.68 684	13.0	11.5	6.0	10.0	0.6	18.5	13.5	6.0	15.0	0.8	26.0	17.0	8.0	22.5	0.8	26.0	21.5	12.5	22.5	0.8					
0.82 824	13.0	13.0	6.0	10.0	0.6	18.5	14.0	7.0	15.0	0.8	26.0	17.5	9.0	22.5	0.8	31.0	21.0	12.0	27.5	0.8					
1 105	13.0	14.0	6.5	10.0	0.6	18.5	15.0	8.5	15.0	0.8	26.0	18.5	10.0	22.5	0.8	31.0	22.0	13.5	27.5	0.8					
						26.0	20.0	12.0	22.5	0.8															
1.2 125	18.5	12.5	5.5	15.0	0.8	18.5	15.5	8.5	15.0	0.8	26.0	20.0	11.0	22.5	0.8	31.0	23.5	15.0	27.5	0.8					
1.5 155	18.5	13.5	6.0	15.0	0.8	18.5	16.5	9.5	15.0	0.8	31.0	19.5	11.0	27.5	0.8	31.0	26.5	16.0	27.5	0.8					
1.8 185	18.5	14.0	6.5	15.0	0.8	26.0	16.0	7.5	22.5	0.8	31.0	21.0	12.0	27.5	0.8	31.0	28.0	18.0	27.5	0.8					
2.2 225	18.5	15.0	7.0	15.0	0.8	26.0	17.0	8.5	22.5	0.8	31.0	23.5	13.0	27.5	0.8	31.0	30.5	20.0	27.5	0.8					
2.7 275	18.5	16.0	7.5	15.0	0.8	26.0	18.0	9.5	22.5	0.8															
3.3 335	18.5	16.5	8.5	15.0	0.8	26.0	19.0	10.5	22.5	0.8															
3.9 395	26.0	16.0	7.0	22.5	0.8	26.0	21.5	10.5	22.5	0.8															
4.7 475	26.0	17.0	7.5	22.5	0.8	26.0	22.0	12.0	22.5	0.8															
5.6 565	26.0	17.5	8.0	22.5	0.8	31.0	22.0	12.0	27.5	0.8															
6.8 685	26.0	18.5	9.0	22.5	0.8	31.0	23.5	13.0	27.5	0.8															
8.2 825	26.0	20.0	10.0	22.5	0.8	31.0	25.0	14.5	27.5	0.8															
10 106	26.0	21.0	11.5	22.5	0.8	31.0	26.5	16.5	27.5	0.8															

■ PERFORMANCE

Item	Metalized Polyester
Capacitance Drift	Cycled through the operating temperature range 2%.
Humidity Test	Will withstand the test of R.H. 95% at 40°C for 1000hrs. $C \leq 5\%$ $DF < 1.2\%$ $IR > 10000M\Omega$
Load Test	Will withstand a testing voltage at 140% of W.V. for 1000hrs. at 85°C. $C \leq 5\%$ $DF < 1.2\%$ $IR > 5000M\Omega$
Lead Pull Test	Will withstand a pull of 1.5Kg applied axially for 10 seconds.
Lead Bend Test	Will sustain two cycles without breaking when attaching a load of 0.5Kg to the end of the lead and then rotating the capacitor 90° from the direction of lead egress. Then 180° in opposite direction. Then back to the starting point.
Solderability	Immersed in molten solder (230±0.5 sec. After testing, the wound lead and gap in the wound lead will be covered and filled by solder. Will be difficult to unwind by finger
Dielectric Strength	Shall withstand 200% or 160% of rated voltage at 25°C for 1 minute with current limiting resistance of 1Ω / V

■ SOLDERING



■ RADIAL TAPING CODE DIAGRAM

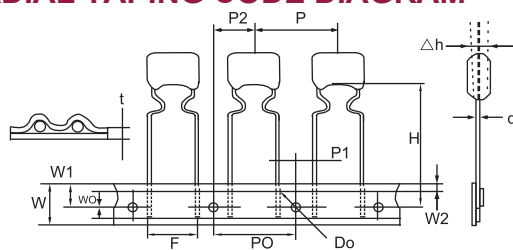


Fig. 1
F=7.5mm
(RT2)

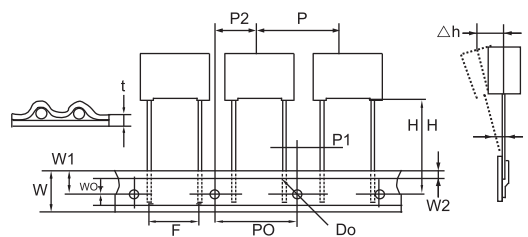


Fig. 2
F=7.5mm
(RT2)

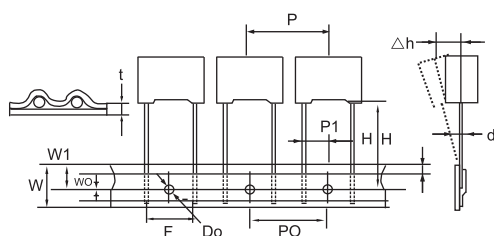


Fig. 3 Box
F=7.5mm
Ammo Only
(RT2)

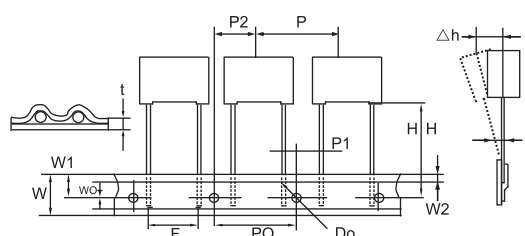


Fig. 4 Box or Epoxy Coated
F=10 = Ammo Only
F=15 Every other space skipped because
of Larger body - Ammo Only
(RT3 or RT4)

■ TAPE SPECIFICATIONS

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

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%.