

### 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.

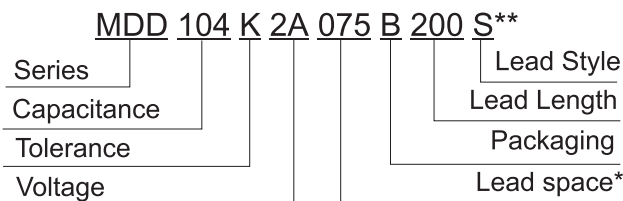
### FEATURES

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

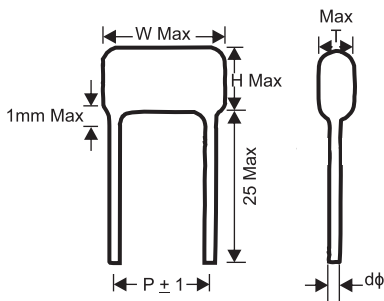
### SPECIFICATIONS

Item	Performance
Operating Temp. Range	-40°C ~ 115°C (V <sub>R</sub> Derates 1.25% per °C over 105°C)
Capacitance Range	0.01µF ~ 10µF
Capacitance Tolerance	± 5%(J), 10%(K), +20%(M)
Rated Voltage V <sub>R</sub> 85°C	100Vdc, 250Vdc, 400Vdc, 630Vdc, 1000Vdc
Dissipation Factor	1.0%(0.01)max @ 1KHz, 25°C
Insulation Resistance	≥ 9000MΩ (C ≤ 0.33µF) ≥ 3000MΩ x µF (C > 0.33µF)

### PART NUMBER EXAMPLE



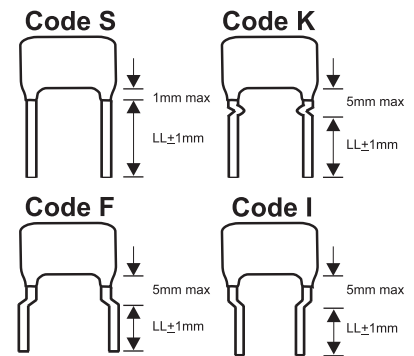
\* Lead space is straight lead non-formed original lead space.



### 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
Code	2A	2E	2G	2J

### 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

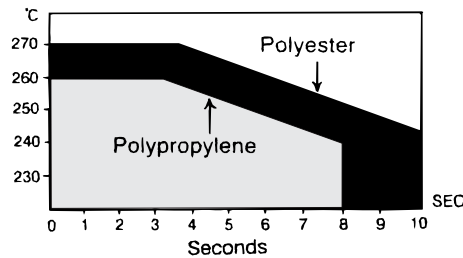
### ■ MAXIMUM DIMENSIONS (mm)

(μF)	W.V. Code	100VDC(2A)					250VDC(2E)					400VDC(2G)/450VDC(2W)					1000VDC(3A)					
		W	H	T	P	d	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d	
0.010	103																12.5	9.0	4.5	10.0	0.6	
0.012	123																					
0.015	153											10.5	8.0	4.5	7.5	0.6	12.5	4.0	5.0	10.0	0.0	
0.018	183											10.5	8.5	5.0	7.5	0.6						
0.022	223											10.5	8.5	5.0	7.5	0.6	12.5	9.0	5.5	10.0	0.6	
0.027	273											10.5	9.0	5.5	7.5	0.6						
0.033	333											10.5	9.5	6.0	7.5	0.6	17.5	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						
0.047	473						10.5	8.0	4.5	7.5	0.6	9.5	7.5	4.0	7.5	0.6	17.5	12.0	6.5	15.0	0.8	
0.056	563						10.5	8.5	5.0	7.5	0.6	13.0	9.5	5.5	10.0	0.6	17.5	12.0	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						
0.082	823						10.5	9.5	5.5	7.5	0.6	13.0	11.5	5.5	10.0	0.6	17.5	13.5	8.5	15.0	0.8	
0.100	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						
0.120	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	26.0	16.0	7.0	22.5	0.8	
0.150	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						
0.180	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	26.0	17.0	8.5	22.5	0.8	
0.220	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						
							13.0	11.0	5.0	10.0	0.6	18.5	13.5	6.0	15.0	0.8	26.0	20.0	11.0	22.5	0.8	
0.270	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						
0.330	334	10.5	10.0	6.0	7.5	0.6	12.0	12.0	6.5	7.5	0.6	12.0	12.0	7.5	10.0	0.6	31.0	20.0	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						
0.390	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	31.0	28.0	14.0	27.5	0.8	
0.470	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						
0.560	564	13.3	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	31.0	30.0	16.0	27.5	0.8	
0.680	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						
0.820	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						
1.000	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						
							26.0	20.0	12.0	22.5	0.8											
1.200	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						
1.500	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						
1.800	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						
2.200	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						
2.700	275	18.5	16.0	7.5	15.0	0.8	26.0	18.0	9.5	22.5	0.8											
3.300	335	18.5	16.5	8.5	15.0	0.8	26.0	19.0	10.5	22.5	0.8											
3.900	395	26.0	16.0	7.0	22.5	0.8	26.0	21.5	10.5	22.5	0.8											
4.700	475	26.0	17.0	7.5	22.5	0.8	26.0	22.0	12.0	22.5	0.8											
5.600	565	26.0	17.5	8.0	22.5	0.8	31.0	22.0	12.0	27.5	0.8											
6.800	685	26.0	18.5	9.0	22.5	0.8	31.0	23.5	13.0	27.5	0.8											
8.200	825	26.0	20.0	10.0	22.5	0.8	31.0	25.0	14.5	27.5	0.8											
10.000	125	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**



The area under the curve is the recommended soldering time & temp. for the materials shown.

■ **RADIAL TAPING CODE DIAGRAM**

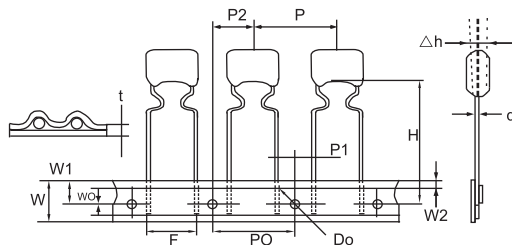


Fig. 1  
F=7.5mm  
(RT2)

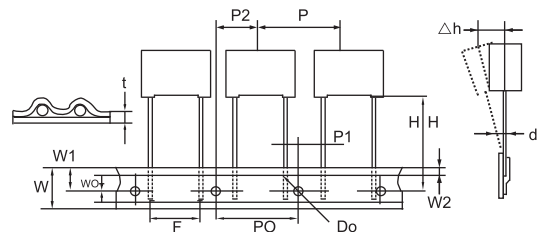


Fig. 2  
F=7.5mm  
(RT2)

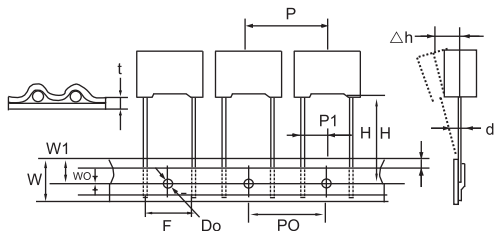


Fig. 3 Box  
F=7.5mm  
Ammo Only  
(RT2)

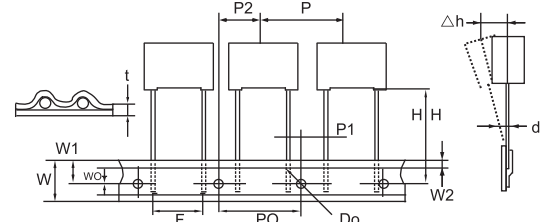


Fig. 4 Box or Epoxy Coated  
F=10 = Ammo Only  
F=15 Every other space skipped because of Larger body - Ammo Only  
(RT3 or RT4)

### ■ 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%.