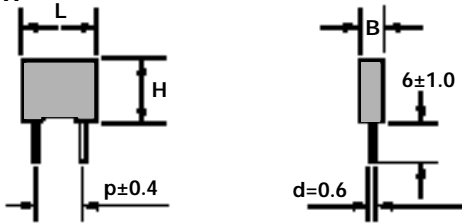


# Metalized Polyester Box Film Capacitors



## MMY

MMY 168  
p=5mm



All dimensions are in mm.

### Electrical Data

Nominal Voltage (Vn)	63VDC/100VDC
Temperature Range	Up to +85°C
Derating	1.25% of Vn/°C above +85°C
Capacitance Range	1000 pF to 1µF
Capacitance Tolerance	J=5%, K=10%, M=20%
Total Self Inductance	(approx.)7nH
Dielectric Strength	25 ± 5°C
	160% of Vn for 2 secs.

Dissipation Factor  
(D.F.) 25 ± 5°C

KHz	C < .1µF	C > .1µF
1	< 1%	< 1%
10	< 1.5%	< 1.5%
100	< 3%	

Insulation Resistance (I.R.) 25 ± 5°C  
Charge Voltage 50Vdc for Vn < 100Vdc  
100Vdc for Vn 100Vdc

Charge Time secs. 60  
Resistance >10,000 Megohm for C < .1µF  
> 1,000 Megohm for C > .1µF

Max. Pulse Rise Time (dV/dT)

Vn	50	63	100		
C(pf)			≤3300	>3300-6800	>6800
V/us	4	8	10	15	30

### Mechanical Data

Dielectric: Polyester film  
Plates: Vacuum deposited aluminum  
Winding: Non-inductive type  
Leads: Tinned (Min, lead content 5%)  
Case: Molded flame retardant box, epoxy filled  
Box material is solvent resistant.  
Marking: Capacitance, tolerance & rated DC voltage

### Test Data

**Life Test Conditions**  
Voltage +85°C  
Duration 125% of Vn  
1000 hrs.

**Change after test**  
Capacitance < ±5%  
D.F. < 0.5% @ 10KHz  
I.R. < 50% of limit value

**Humidity Test Conditions**  
Humidity +40 °C  
93 ± 2% RH  
Duration 21 days

**Change after test**  
Capacitance < ± 5%  
D.F. < 0.5% @ 1KHz  
I.R. < 50% of limit Value

**Soldering Test Conditions**  
Solder temperature +260 ± 5°C  
Soldering duration 5 ± 1 sec.

**Change after test**  
Capacitance < ± 2%  
D.F. < 0.3% @ 10KHz  
I.R. < limit Value

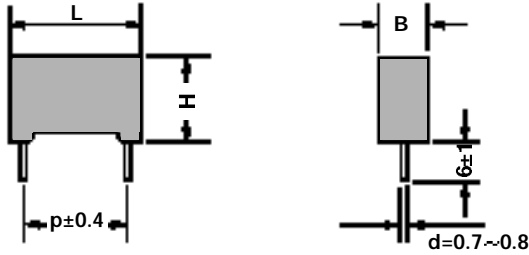
CAP Code	Rated Capacitance	63VDC/40VAC			100VDC/63VAC		
		B	H	L	B	H	L
102	1000pF	2.5	6.5	7.2	2.5	6.5	7.2
152	1500pF	2.5	6.5	7.2	2.5	6.5	7.2
222	2200pF	2.5	6.5	7.2	2.5	6.5	7.2
332	3300pF	2.5	6.5	7.2	2.5	6.5	7.2
472	4700pF	2.5	6.5	7.2	2.5	6.5	7.2
682	6800pF	2.5	6.5	7.2	2.5	6.5	7.2
103	.010µF	2.5	6.5	7.2	2.5	6.5	7.2
153	.015µF	2.5	6.5	7.2	2.5	6.5	7.2
223	.022µF	2.5	6.5	7.2	2.5	6.5	7.2
333	.033µF	2.5	6.5	7.2	2.5	6.5	7.2
473	.047µF	2.5	6.5	7.2	2.5	6.5	7.2
683	.068µF	2.5	6.5	7.2	2.5	6.5	7.2
104	.10µF	2.5	6.5	7.2	3.5	7.5	7.2
154	.15µF	3.5	7.5	7.2	3.5	7.5	7.2
224	.22µF	3.5	7.5	7.2	4.5	9.5	7.2
334	.33µF	4.5	9.5	7.2	5	10	7.2
474	.47µF	4.5	9.5	7.2	6	11	7.2
684	.68µF	6	11	7.2			
105	1.0µF	6	11	7.2			



# Metallized Polyester Box Film Capacitors

## MMY & MMYS

### MMY/MMYS 160



All dimensions are in mm.

#### Soldering:

Test conditions  
 Soldering temperature: +260°C ± 5°C  
 Soldering duration: 10 sec. ± 1 sec.  
 Performance  
 Capacitance change:  $\Delta C/C: < \pm 2\%$   
 DF change  $\Delta tg\delta: < 30.10^{-4}$  at 10KHz for  $C < 1\mu F$   
 $< 20.10^{-4}$  at 1KHz for  $C < 1\mu F$   
 Insulation resistance:  $< \text{limit value}$

#### Damp Heat Test:

Test conditions  
 Temperature: +40°C  
 Relative humidity: 93% ± 2%  
 Test duration: 56 Days  
 Performance  
 Capacitance change:  $\Delta C/C: < \pm 5\%$   
 DF change  $\Delta tg\delta: < 50.10^{-4}$  at 1KHz  
 Insulation Resistance:  $> 50\%$  of limit value

#### Life Test:

Test conditions  
 Temperature: +85°C  
 Test duration: 1000h  
 Voltage applied: 1.25 X Vn  
 Performance  
 Capacitance change:  $\Delta C/C: < \pm 5\%$   
 DF change  $\Delta tg\delta: < 30.10^{-4}$  at 10KHz for  $C < \mu F$   
 $< 20.10^{-4}$  at 1KHz for  $C < \mu F$   
 Insulation Resistance:  $> 50\%$  of limit value

#### Long Term Stability (after two years)

Storage Standard environmental conditions.

#### Performance

Capacitance change:  $\Delta C/C: < \pm 3\%$  for  $C < 0.1\mu F$   
 $< \pm 3\%$  for  $C < 0.1\mu F$

#### Tolerance

J=5%, K=10%, M=20%

### MMY Dimensions:

CAP Code	Rated Cap. $\mu F$	63VDC/40VAC~				100VDC/63VAC~				160VDC/90VAC~				250VDC/160VAC~				400VDC/200VAC~				630VDC/220VAC~				1000VDC/250VAC~			
		B	H	L	p	B	H	L	p	B	H	L	p	B	H	L	p	B	H	L	p	B	H	L	p	B	H	L	p
102	.001	4	9	13	10	4	9	13	10	4	9	13	10	4	9	13	10	4	9	13	10	4	9	13	10	4	9	13	10
152	.0015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
222	.0022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
332	.0033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
472	.0047	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	11	13	10
682	.0068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	12	13	10
103	.010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	11	18	15
153	.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	11	13	10	-
223	.022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	12	13	10	7.5
333	.033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	11	18	15	6
473	.047	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	11	18	15	6
683	.068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.5	13.5	18	15	7
104	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	12	18	15	6
154	.15	-	-	-	-	-	-	-	-	5	11	13	10	-	-	-	-	7.5	13.5	18	15	7	16	26.5	22.5	11	20	32	27.5
224	.22	-	-	-	-	5	11	18	15	-	-	-	-	-	-	-	-	6	15	26.5	22.5	8.5	17	26.5	22.5	13	22	32	27.5
334	.33	-	-	-	-	-	-	-	-	5	11	18	15	6	12	18	15	7	16	26.5	22.5	10	18.5	26.5	22.5	-	-	-	-
474	.47	5	11	13	10	-	-	-	-	6	12	18	15	6	15	26.5	22.5	10	18.5	26.5	22.5	11	20	32	27.5	-	-	-	-
684	.68	5	11	18	15	6	12	18	15	7.5	13.5	18	15	-	-	-	-	-	-	-	-	-	-	-	13	22	32	27.5	-
105	1.0	-	-	-	-	-	-	-	-	8.5	14.5	18	15	7	16	26.5	22.5	11	20	32	27.5	-	-	-	-	-	-	-	-
155	1.5	6	12	18	15	7	16	26.5	22.5	8.5	17	26.5	22.5	10	18.5	26.5	22.5	13	22	32	27.5	-	-	-	-	-	-	-	-
225	2.2	8.5	14.5	18	15	8.5	17	26.5	22.5	10	18.5	26.5	22.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
335	3.3	7	16	26.5	22.5	10	18.5	26.5	22.5	11	20	32	27.5	13	22	32	27.5	-	-	-	-	-	-	-	-	-	-	-	-
475	4.7	8.5	17	26.5	22.5	11	20	32	27.5	13	22	32	27.5	15	30	32	27.5	-	-	-	-	-	-	-	-	-	-	-	-
685	6.8	10	18.5	26.5	22.5	13	22	32	27.5	15	30	32	27.5	18	33	32	27.5	-	-	-	-	-	-	-	-	-	-	-	-
106	10	11	20	32	27.5	15	30	32	27.5	18	33	32	27.5	22	37	32	27.5	-	-	-	-	-	-	-	-	-	-	-	-

### MMYS

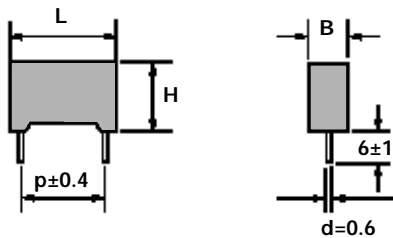
104	.1	-	-	-	-	-	-	-	-	-	-	-	-	5	11	13	10	5	11	18	15	6	12	18	15	-	-	-	-
154	.15	-	-	-	-	-	-	-	-	4	9	13	10	-	-	-	-	6	12	18	15	8.5	14.5	18	15	-	-	-	-
224	.22	-	-	-	-	4	9	13	10	-	-	-	-	-	-	-	-	8.5	14.5	18	15	-	-	-	-	-	-	-	-
334	.33	-	-	-	-	5	11	13	10	5	11	13	10	5	11	18	15	-	-	-	-	-	-	-	-	-	-	-	-
474	.47	4	9	13	10	-	-	-	-	6	12	13	10	6	12	18	15	-	-	-	-	-	-	-	-	-	-	-	-
684	.68	5	11	13	10	6	12	13	10	5	11	18	15	7.5	13.5	18	15	-	-	-	-	-	-	-	-	-	-	-	-
105	1.0	6	12	13	10	-	-	-	-	6	12	18	15	8.5	14.5	18	15	-	-	-	-	-	-	-	-	-	-	-	-
155	1.5	6	12	18	15	7.5	13.5	18	15	7.5	13.5	18	15	8.5	17	26.5	22.5	-	-	-	-	-	-	-	-	-	-	-	-
225	2.2	7.5	13.5	18	15	8.5	14.5	18	15	7	16	26.5	22.5	10	18.5	26.5	22.5	-	-	-	-	-	-	-	-	-	-	-	-
335	3.3	6	15	26.5	22.5	7	16	26.5	22.5	8.5	17	26.5	22.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
475	4.7	7	16	26.5	22.5	8.5	17	26.5	22.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

# Metalized Polyester Box Film Capacitors



MMY

MMY 167  
p=7.5mm



All dimensions are in mm.

## Electrical Data

Nominal Voltage (Vn) 63VDC/100VDC/250VDC/400VDC/630VDC  
 Temperature Range Up to +85°C  
 Derating 1.25% of Vn/C above +85°C  
 Capacitance Range 1000 pF to 1µF  
 Capacitance Tolerance J=5%, K=10%, M=20%  
 Total Self Inductance (approx.)8nH  
 Dielectric Strength 25 ± 5°C  
 160% of Vn for 2 secs.

Dissipation Factor (D.F.) 25 ± 5°C

KHz	tgδx10 <sup>-4</sup>
1	<100
10	<150

Insulation Resistance (I.R.) 25 ± 5°C  
 Charge Voltage 50Vdc for Vn < 100Vdc  
 100Vdc for Vn 100Vdc  
 Charge Time 60 secs.

Max. Pulse Rise Time (dV/dT)

Vn	V/µsec.
63	5
100	6
250	15
400	30
630	40

## Mechanical Data

Dielectric: Polyester film  
 Plates: Vacuum deposited aluminum  
 Winding: Non-inductive type  
 Leads: Tinned (Min, lead content 5%)  
 Case: Molded flame retardant box, epoxy filled  
 Box material is solvent resistant.

Marking:

Capacitance, tolerance & rated DC voltage

## Test Data

### Life Test Conditions

+85°C  
 Voltage 125% of Vn  
 Duration 1000 hrs.

### Change after test

Capacitance < ± 5%  
 D.F. < 0.5% @ 10KHz  
 I.R. < 50% of limit value

### Humidity Test Conditions

+40 °C  
 Humidity 93 ± 2% RH  
 Duration 21 days

### Change after test

Capacitance < ± 5%  
 D.F. < 0.5% @ 1KHz  
 I.R. < 50% of limit Value

### Soldering Test Conditions

Solder temperature + 260 ± 5°C  
 Soldering duration 5 ± 1 sec.

### Change after test

Capacitance < ± 2%  
 D.F. < 0.3% @ 10KHz  
 I.R. < limit Value

CAP Code	Rated Capacitance	63VDC/40VAC			100VDC/63VAC			250VDC/160VAC			400VDC/200VAC			630VDC/220VAC		
		B	H	L	B	H	L	B	H	L	B	H	L	B	H	L
102	1000pF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5
152	1500pF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5
222	2200pF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5
332	3300pF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5
472	4700pF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	4	9	10.5
682	6800pF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	4	9	10.5
103	.010µF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	4	9	10.5	5	11	10.5
153	.015µF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	4	9	10.5	6	12	10.5
223	.022µF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	5	11	10.5	6	12	10.5
333	.033µF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	6	12	10.5			
473	.047µF	3.5	6.5	10.5	3.5	6.5	10.5	3.5	6.5	10.5	6	12	10.5			
683	.068µF	3.5	6.5	10.5	4	9	10.5	4	9	10.5						
104	.10µF	3.5	6.5	10.5	4	9	10.5	5	11	10.5						
154	.15µF	3.5	6.5	10.5	4	9	10.5	6	12	10.5						
224	.22µF	4	9	10.5	4	9	10.5	6	12	10.5						
334	.33µF	4	9	10.5	5	11	10.5									
474	.47µF	5	11	10.5	6	12	10.5									
684	.68µF	5	11	10.5	6	12	10.5									
105	1.0µF	6	12	10.5												