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Aluminum Electrolytic Capacitor

HOW TO ORDER PARTS NUMBER SYSTEM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
G	M	R	2	2	1	M	1	C	F	B					

SERIES

CAPACITANCE
(μ F)

CAP
(TOL.)

VOLTAGE
(W V)

CASE
(\varnothing mm)

LEAD
TYPE

SPECIAL REQUIREMENTS

Series
GMR
GMA
GHR
GHA
SMR
NPR
NPA

Cap (μ F)	Code
0.1	OR1
0.22	R22
0.33	R33
0.47	R47
1	010
2.2	2R2
3.3	3R3
4.7	4R7
10	100
22	220
33	330
47	470
100	101
220	221
330	331
470	471
1000	102
2200	222
3300	332
4700	472
10000	103
22000	223

Tolerance (%)	Code
+10	K
-10	
+15	L
-15	
+20	M
-20	
+100	
-0	P
+30	
-10	Q
+20	
-0	R
+50	
-10	T
+75	
-10	U
+20	
-10	V
+20	
-5	H
+30	
-0	F

Voltage (WV)	Code
6.3	0J
10	1A
16	1C
20	1D
25	1E
35	1V
40	1G
50	1H
63	1J
80	1K
100	2A
125	2B
160	2C
200	2D
250	2E
315	2F
330	2U
350	2V
400	2G
450	2W

Diameter (\varnothing)	Code
3.8	S
4	C
5	D
6	W
6.3	E
7	Y
8	F
10	G
12	H
12.5	I
13	J
15	U
16	K
18	L
20	M
22	N
25	O
30	P
35	Q
40	R
51	V

Type	Code	Description
Radial	B	Bulk
	P	Taping (Ammo Pack)
	C	Lead Cut
	F	Lead Forming Cut
Axial	A	Bulk
	H	Taping(W=52m/m)
	J	Taping(W=63m/m)
	T	Taping(W=73m/m)
	M	Lead Forming Cut



Aluminum Electrolytic Capacitor

GMR Series

FOR GENERAL USE 85 °C 標準品



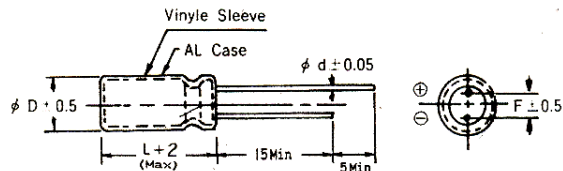
- The GMR series is designed for miniaturization.
- Suitable for consumer electronic products.
- 適用於一般民生用電子設備

SPECIFICATION 電氣特性

ITEM	CHARACTERISTICS	
容量容許差 (120Hz 25 °C) Capacitance Tolerance	± 20%(M) ± 10%(K)	
額定電壓 Rated Working Voltage	6.3~100VDC	160~450VDC
使用溫度範圍 Operation Temperature Range	-40~+85 °C	-25~+85 °C
漏洩電流 (25 °C) Leakage Current	$I \leq 0.02CV+3$ (μA)	$I \leq 0.03CV+20 \mu A$ max
散逸因素 (120Hz 25 °C) Dissipation Factor ($\tan \delta$)	Whichever is greater after 3 minutes I:Leakage Current (μA):C:Rated Capacitance (μF):V:Working Voltage (v)	
	Add 0.02 per 1000 μF for more than 1000 μF	
	W.V.	6.3 10 16 25 35 50 63 80 100 160~250 315~450
	$\tan \delta$	0.24 0.20 0.17 0.15 0.12 0.10 0.10 0.10 0.10 0.20 0.25
低溫特性 Low Temperature Stability	Impedance ratio at 120Hz	
	rated Voltage (V)	6.3 10 16 25 35~100 160~250 315~450
	-25 °C / +25 °C	4 3 2 2 2 2 8 20
	-40 °C / +25 °C	10 8 6 4 3
高溫負荷特性 Load Life	After 1000 hours application of W.V. at +85 °C the capacitor shall meet the following limits.	
	Capacitance Change	$\leq \pm 20\%$ of initial value
	Dissipation Factor	$\leq 150\%$ of initial specified value
	Leakage Current	\leq initial specified value

CASE SIZE OF RADIAL TYPE

D	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0		7.5	
d	0.5		0.6			0.8	



CASE SIZE & MAX RIPPLE CURRENT

Case size : DxL (mm)
Max ripple current : mA (rms)
(R.C.) : 85 °C 120Hz

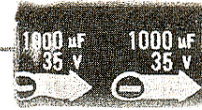
μF	WV	6.3		10		16		25		35		50		63		100		160		200		250		350		400		450						
		ITEM	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.				
0.47												5x11	13			5x11	15	6.3x11	12	6.3x11	13	6.3x11	14	8x11	14	8x11	15	8x11	12					
1												5x11	19			5x11	22	6.3x11	18	6.3x11	19	6.3x11	21	8x11	21	8x11	21	8x11	18					
2.2		註：空格部份標售所標示的電壓以 右方一格表示																																
3.3		All blank voltage on sleeve marking is the same voltage as "point to."																																
4.7												5x11	35			5x11	39	6.3x11	33	6.3x11	35	8x11	44	10x13	41	10x13	42	10x18	38					
10												5x11	42			5x11	47	6.3x11	39	8x11	48	8x11	50	10x13	49	10x16	55	10x16	48					
22												5x11	60	5x11	60	6.3x11	80	8x11	65	10x13	75	10x16	90	10x21	85	13x21	90	13x21	75					
33												5x11	90	5x11	100	6.3x11	130	6.3x11	130	10x13	180	10x21	160	13x21	170	13x21	190	13x26	180	16x25	190	16x32	170	
47												5x11	110	6.3x11	140	6.3x11	150	8x11	170	10x16	230	13x21	190	13x21	210	13x26	250	16x25	220	16x32	250	18x35	210	
100		5x11	130	5x11	140	6.3x11	170	6.3x11	180	8x11	230	8x11	250	10x13	270	13x21	380	13x26	310	16x25	340	16x32	410	18x35	360									
220		6.3x11	210	6.3x11	230	8x11	290	8x11	310	10x13	370	10x16	440	10x21	500	16x25	640	16x35	540	18x42	620													
330		6.3x11	260	8x11	330	8x11	350	10x13	410	10x16	500	10x21	610	13x21	620	16x25	780	18x42	710															
470		8x11	350	8x11	390	10x13	460	10x16	530	10x21	670	13x21	740	13x26	820	16x32	1040																	
1000		10x13	560	10x16	670	10x21	820	13x21	880	13x21	990	16x25	1220	16x32	1360																			
2200		10x21	980	13x21	1080	13x21	1160	13x26	1350	16x32	1700	18x35	1890																					
3300		13x21	1180	13x21	1270	13x26	1490	16x32	1790	18x35	2000	18x42	2320																					
4700		13x26	1460	16x25	1610	16x32	1900	18x35	2040	18x42	2380																							
6800		16x25	1700	16x32	2010	18x35	2170	18x42	2440																									
10000		16x32	2100	18x35	2260	18x42	2560																											



Aluminum Electrolytic Capacitor

GMA Series

FOR GENERAL USE 85 °C 標準品



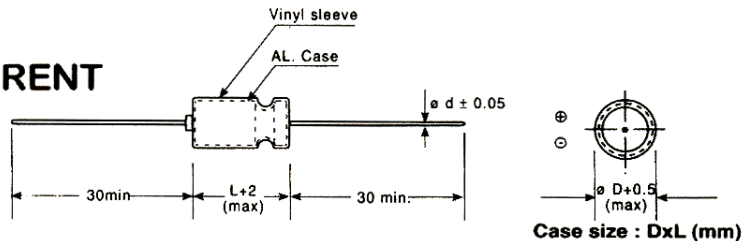
- The GMA series is designed for miniaturization.
- Suitable for consumer electronic products.
- 適用於一般民生用電子設備

SPECIFICATION 電氣特性

ITEM	CHARACTERISTICS	
容量容許差 (120Hz 25 °C) Capacitance Tolerance	± 20%(M) ± 10%(K)	
額定電壓 Rated Working Voltage	6.3~100VDC	160~450VDC
使用溫度範圍 Operation Temperature Range	-40~+85 °C	-25~+85 °C
漏洩電流 (25 °C) Leakage Current	$I \leq 0.02CV+3 (\mu A)$	$I \leq 0.03CV+20 \mu A \text{ max}$
散逸因素 (120Hz 25 °C) Dissipation Factor ($\tan \delta$)	Whichever is greater after 3 minutes I:Leakage Current(μA):C:Rated Capacitance (μF) V:Working Voltage (v)	
	Add 0.02 per 1000 μF for more than 1000 μF	
	W.V.	6.3 10 16 25 35 50 63 80 100 160~250 315~450
低溫特性 Low Temperature Stability	Impedance ratio at 120Hz	
	rated Voltage (V)	6.3 10 16 25 35~100 160~250 315~450
	-25 °C / +25 °C	4 3 2 2 2 8 20
	-40 °C / +25 °C	10 8 6 4 3
高溫負荷特性 Load Life	After 1000 hours application of W.V. at +85 °C the capacitor shall meet the following limits.	
	Capacitance Change	$\leq \pm 20\%$ of initial value
	Dissipation Factor	$\leq 150\%$ of initial specified value
	Leakage Current	\leq initial specified value

CASE SIZE & MAX RIPPLE CURRENT

D	6.3	8	10	13	16	18
d	0.6					0.8



µF	WV													
	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
0.47					→	6.3x13	→	6.3x13	6.3x13	6.3x13	6.3x13	6.3x16	6.3x16	
1					→	6.3x13	→	6.3x13	6.3x13	6.3x13	6.3x16	8x16	8x16	8x16
2.2	註：空格部份膠管所標示的				→	6.3x13	→	6.3x13	6.3x16	6.3x16	8x16	8x21	8x21	8x21
3.3	電壓以 → 右方一格表示				→	6.3x13	→	6.3x13	8x16	8x16	8x16	10x22	10x22	10x22
4.7	All blank voltage on sleeve marking				→	6.3x13	→	6.3x13	8x16	8x16	10x27	10x27	10x27	10x27
10	is the same voltage as " → " point to.				→	6.3x13	6.3x13	6.3x16	10x22	10x22	10x27	13x27	13x27	13x27
22				→	6.3x13	6.3x16	6.3x16	8x16	10x27	13x27	13x27	13x32	16x33	16x43
33			→	6.3x13	6.3x16	6.3x16	6.3x16	8x21	13x27	13x32	13x32	16x33	16x43	18x43
47	→	6.3x13	6.3x13	6.3x16	6.3x16	6.3x16	8x16	8x21	13x32	13x32	13x35	18x43		
100	6.3x13	6.3x16	6.3x16	6.3x16	8x16	8x16	8x21	10x27	16x33	16x43	16x43			
220	6.3x16	6.3x16	8x16	8x16	8x21	10x22	10x27	13x32	18x43					
330	8x16	8x16	8x16	8x21	10x22	10x27	13x27	13x35						
470	8x16	8x16	8x21	10x22	10x27	13x27	13x32	16x43						
1000	10x22	10x22	10x27	13x27	13x32	13x35	16x33							
2200	13x27	13x27	13x32	13x35	16x33	18x43								
3300	13x27	13x32	13x35	16x33	16x43									
4700	13x32	13x35	16x33	18x43										
6800	16x33	16x33	16x43											
10000	16x43	18x43												



Aluminum Electrolytic Capacitor

GHR Series

HIGH TEMPERATURE 105 °C
FOR GENERAL USE 高温度標準品

- The GHR series is fit for those consumer product which require high tmeperature and high reliability.
- 本系列適合一般高温度及信賴性較高之消費性產品。

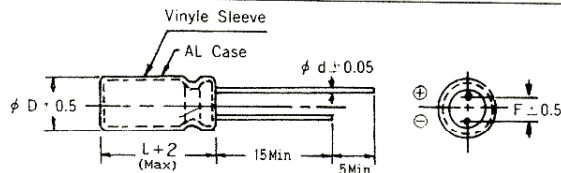


SPECIFICATION 電氣特性

ITEM	CHARACTERISTICS	
容量容許差 (120Hz 25 °C) Capacitance Tolerance	± 20%(M) ± 10%(K)	
額定電壓 Rated Working Voltage	6.3~100VDC	160~400VDC
使用溫度範圍 Operation Temperature Range	-40~+105 °C	-25~+105 °C
漏洩電流 (25 °C) Leakage Current	I ≤ 0.01CV + 4 (µ A) I ≤ 0.03CV + 20 µ A max Whichever is greater after 3 minutes I:Leakage Current (µ A):C:Rated Capacitance (µ F) V:Working Voltage (v)	
散逸因素 (120Hz 25 °C) Dissipation Factor (tan δ)	Add 0.02 per 1000 µ F for more than 1000 µ F	
	W.V.	6.3 10 16 25 35 50 63 80 100 160~250 315~450
低溫特性 Low Temperature Stability	Impedance ratio at 120Hz	
	rated Voltage (V)	6.3 10 16 25 35~100 160~250 315~450
	-25 °C / +25 °C	4 3 2 2 2 2 8 20
高溫負荷特性 Load Life	After 1000 hours application of W.V. at +105 °C the capacitor shall meet the following limits.	
	Capacitance Change	± 25% of initial value
	Dissipation Factor	≤ 200% of initial specified value
	Leakage Current	≤ initial specified value
放置特性 Shelf Life	After 1000 hours application of W.V. at +105 °C the capacitor shall meet the following limits.	
	Capacitance Change	± 20% of initial value
	Dissipation Factor	≤ 200% of initial specified value
	Leakage Current	≤ 200% of initial specified value

CASE SIZE OF RADIAL TYPE

D	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0		7.5	
d	0.5		0.6			0.8	



CASE SIZE & MAX RIPPLE CURRENT

µF	WV	6.3		10		16		25		35		50		63		100		160		200		250		350		400			
		ITEM	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	
0.47												5x11	8			5x11	9	6.3x11	7	6.3x11	8	6.3x11	9	8x11	8	8x11	9		
2.2												5x11	12			5x11	13	6.3x11	11	6.3x11	12	6.3x11	13	8x11	12	8x11	13		
3.3												5x11	17			5x11	19	6.3x11	16	6.3x11	17	6.3x11	19	8x11	18	10x13	20		
4.7												5x11	21			5x11	24	6.3x11	20	6.3x11	21	8x11	26	10x13	24	10x13	25		
10								5x11	30			5x11	37	5x11	37	6.3x11	47	8x11	39	10x13	46	10x16	55	10x21	50	13x21	55		
22								5x11	44			5x11	55	6.3x11	60	8x11	80	10x16	70	10x21	85	13x21	90	13x26	85	13x26	90		
33								5x11	55	5x11	60	6.3x11	75	6.3x11	75	10x13	110	10x21	95	13x21	110	13x21	110	16x25	110	16x32	130		
47								5x11	60	5x11	65	6.3x11	80	6.3x11	90	8x11	100	10x16	140	13x21	120	13x21	120	13x26	150	16x35	150	18x35	150
100	5x11	75	5x11	80	6.3x11	100	6.3x11	110	8x11	140	8x11	150	10x13	160	13x21	230	13x26	180	16x25	200	16x32	250	18x42	230					
220	6.3x11	130	6.3x11	140	8x11	170	8x11	180	10x13	220	10x16	270	10x21	300	16x25	380	16x35	320	18x42	420									
330	6.3x11	160	8x11	190	8x11	210	10x13	240	10x16	300	10x21	370	13x21	370	16x25	470	18x42	420											
470	8x11	210	8x11	230	10x13	270	10x16	320	10x21	400	13x21	440	13x26	490	16x32	620													
1000	10x13	340	10x16	400	10x21	490	13x21	530	13x21	590	16x25	730	16x32	810															
2200	10x21	590	13x21	650	13x21	700	13x26	810	16x32	1020	18x35	1130																	
3300	13x21	700	13x21	760	13x26	890	16x32	1070	18x35	1200	18x42	1390																	
4700	13x26	880	16x25	960	16x32	1140	18x35	1220	18x42	1420																			
6800	16x25	1020	16x32	1210	18x35	1300	18x42	1460																					
10000	16x32	1260	18x35	1350	18x42	1530																							



Aluminum Electrolytic Capacitor

GHA Series

HIGH TEMPERATURE FOR GENERAL USE 105 °C 高溫度標準品

- The GHA series is fit for those consumer product which require high tmeperature and high reliability.
- 本系列適合一般高溫度及信賴性較高之消費性產品。

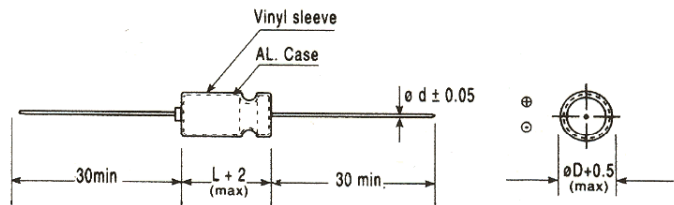


SPECIFICATION 電氣特性

ITEM	CHARACTERISTICS	
容量容許差 (120Hz 25 °C) Capacitance Tolerance	± 20%(M) ± 10%(K)	
額定電壓 Rated Working Voltage	6.3~100VDC	160~400VDC
使用溫度範圍 Operation Temperature Range	-40~+105 °C	-25~+105 °C
漏洩電流 (25 °C) Leakage Current	$I \leq 0.01CV + 4$ (μA)	
散逸因素 (120Hz 25 °C) Dissipation Factor ($\tan \delta$)	Whichever is greater after 3 minutes I:Leakage Current(μA):C:Rated Capacitance (μF) V:Working Voltage (v)	
	Add 0.02 per 1000 μF for more than 1000 μF	
	W.V.	6.3 10 16 25 35 50 63 80 100 160~250 315~450
低溫特性 Low Temperature Stability	Impedance ratio at 120Hz	
	rated Voltage (V)	6.3 10 16 25 35~100 160~250 315~450
	-25 °C / +25 °C	4 3 2 2 2 2 2 2 2 8 20
	-40 °C / +25 °C	10 8 6 4 3
高溫負荷特性 Load Life	After 1000 hours application of W.V. at +105 °C the capacitor shall meet the following limits.	
	Capacitance Change	$\leq \pm 25\%$ of initial value
	Dissipation Factor	$\leq 200\%$ of initial specified value
	Leakage Current	\leq initial specified value
放置特性 Shelf Life	After 1000 hours application of W.V. at +105 °C the capacitor shall meet the following limits.	
	Capacitance Change	$\leq \pm 20\%$ of initial value
	Dissipation Factor	$\leq 200\%$ of initial specified value
	Leakage Current	$\leq 200\%$ of initial specified value

CASE SIZE OF AXIAL TYPE

D	6.3	8	10	13	16	18
d	0.6				0.8	



Case size : DxL (mm)

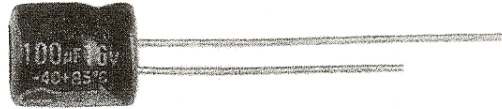
μF \ WV	6.3	10	16	25	35	50	63	100	160	200	250	350	400
0.47					→	6.3x13	→	6.3x13	6.3x13	6.3x13	6.3x13	6.3x16	6.3x16
1					→	6.3x13	→	6.3x13	6.3x13	6.3x13	6.3x16	8x16	8x16
2.2					→	6.3x13	→	6.3x13	6.3x16	6.3x16	8x16	8x21	8x21
3.3					→	6.3x13	→	6.3x13	8x16	8x16	8x16	10x22	10x22
4.7					→	6.3x13	→	6.3x13	8x16	8x16	10x22	10x27	10x27
10					→	6.3x13	6.3x13	6.3x16	10x22	10x22	10x27	13x27	13x27
22				→	6.3x13	6.3x16	6.3x16	8x16	10x27	13x27	13x27	13x32	16x33
33				→	6.3x13	6.3x16	6.3x16	8x21	13x27	13x32	13x32	16x33	16x43
47	→	6.3x13	6.3x13	6.3x16	6.3x16	6.3x16	8x16	8x21	13x32	13x32	13x35	18x43	
100	6.3x13	6.3x16	6.3x16	6.3x16	8x16	8x16	8x21	10x27	16x33	16x43	16x43		
220	6.3x16	6.3x16	8x16	8x16	8x21	10x22	10x27	13x32	18x43				
330	8x16	8x16	8x16	8x21	10x22	10x27	13x27	13x35					
470	8x16	8x16	8x21	10x22	10x27	13x27	13x32	16x43					
1000	10x22	10x22	10x27	13x27	13x32	13x35	16x33						
2200	13x27	13x27	13x32	13x35	16x33	18x43							
3300	13x27	13x32	13x35	16x33	16x43								
4700	13x32	13x35	16x33	18x43									
6800	16x33	16x33	16x43										
10000	16x43	18x43											



Aluminum Electrolytic Capacitor

SMR Series

SUPER MINATURE SIZE 小形品



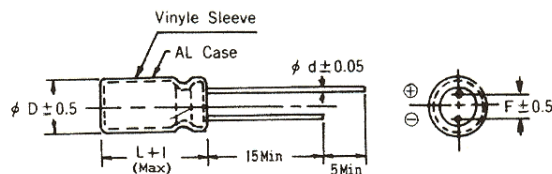
Super miniature aluminum electrolytic capacitors suitable for high-density electronic equipment
適用於輕薄短小高密度之電子設備

SPECIFICATION 電氣特性

ITEM	CHARACTERISTICS							
使用溫度範圍 Operation Temperature Range	-40°C ~ +85 °C							
額定電壓 Rated Working Voltage	6.3~63VDC							
靜電容量容許差 (120Hz 25 °C) Capacitance Tolerance	± 20%(M)							
漏洩電流 (25 °C) Leakage Current	I ≤ 0.01CV or 3 (µ A) Whichever is greater after 3 minutes						I: Leakage Current (µ A) C: Rated Capacitance (µ F) V: Working Voltage (V)	
散逸因素 (120Hz 25 °C) Dissipation Factor (tan δ)	W.V.	6.3	10	16	25	35	50	63
	tan δ	0.24	0.20	0.17	0.15	0.12	0.10	0.10
高溫負荷特性 Load Life	After 1000 hours application of W.V. at +85 °C the capacitor shall meet the following limits.							
	Capacitance Change				± 20% of initial value			
	Dissipation Factor				± 200% of initial specified value			
	Leakage Current				± initial specified value			

CASE SIZE OF RADIAL TYPE

D	4	5	6	8
F	1.5	2.0	2.5	3.5
d	0.45		0.5	



CASE SIZE & MAX RIPPLE CURRENT

Case size : DxL (mm)
Max ripple current : mA (rms)
(R.C.) : 85°C 120Hz

µF	WV	6.3		10		16		25		35		50		63	
	ITEM	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.
0.1												4x7	3	4x7	3
0.22												4x7	5	4x7	5
0.33												4x7	6	4x7	6
0.47												4x7	7	4x7	7
1.0												4x7	11	4x7	11
2.2												4x7	16	4x7	16
3.3												4x7	20	5x7	22
4.7												4x7	27	6.3x7	31
10						4x7	26	4x7	28	5x7	36	6.3x7	45		
22		4x7	33	4x7	36	4x7	39	5x7	47	6.3x7	60				
33		4x7	40	4x7	44	5x7	55	6.3x7	65						
47		5x7	55	5x7	60	6.3x7	75								
100		6.3x7	90	6.3x7	100	6.3x7	110								



Aluminum Electrolytic Capacitor

NPR Series

NON POLARITY 無極性

- Suitable for using in polarity reversal circuits, such as signal coupling circuits, speakers, and etc.
- 適用於極性反轉回路及須急遽印加逆向電壓之回路，例如：信號交連或喇叭等回路。

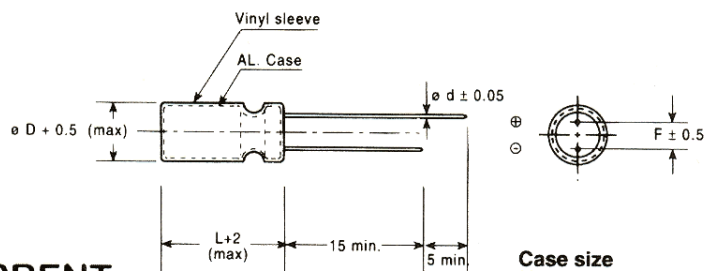


SPECIFICATION 電氣特性

ITEM	CHARACTERISTICS									
使用溫度範圍 Operation Temperature Range	- 40 ~ + 85°C									
額定電壓 Rated Working Voltage	6.3 ~ 100 VDC									
靜電容量容許差 (120Hz 25°C) Capacitance Tolerance	± 20% (M) + 30% (Q) - 10% (Q)									
漏洩電流 (25°C) Leakage Current	$I \leq 0.04 CV + 4 (\mu A)$ After 5 minutes I : Leakage Current (μA) C: Rated Capacitance (μF) V: Working Voltage (V)									
湧浪電壓 (25°C) Surge Voltage	W V	6.3	10	16	25	35	50	63	100	
	S V	8	13	20	32	44	63	79	125	
散逸因素 (120Hz 25°C) Dissipation Factor (tan δ)	Add 0.02 per 1000 μF for more than 1000μF									
	W V	6.3	10	16	25	35	50	63	100	
	tan δ	0.24	0.20	0.17	0.15	0.12	0.10	0.10	0.10	
低溫特性 Low Temperature Stability	Impedance ratio at 120Hz									
	Rated Voltage (V)									
	- 25°C + 25°C	6.3	10	16	25	35	50	63	100	
	- 40°C + 25°C	4	3	2	2	2	2	2	2	
		10	8	6	4	4	3			
高溫負荷特性 Load Life	After 1000hours application of W V at + 85°C the capacitor shall meet the following limits. The polarity needs to exchange every 250 hours.									
	Capacitance Change	≤ ± 20% of initial value								
	Dissipation Factor	≤ 150% of initial specified value								
	Leakage Current	≤ initial specified value								

CASE SIZE OF RADIAL TYPE

D	5	6.3	8	10	13	16
F	2.0	2.5	3.5	5.0	7.5	
d	0.5		0.6		0.8	



CASE SIZE & MAX RIPPLE CURRENT

Case size : DxL (mm)
Max ripple current : mA (rms)
(R.C.) : 85°C 120Hz

μF	WV	6.3		10		16	
	ITEM	DxL	R.C.	DxL	R.C.	DxL	R.C.
10						5x11	47
22				5x11	65	6.3x11	80
33		5x11	70	6.3x11	90	8x11	110
47		6.3x11	100	6.3x11	110	8x11	130
100		8x11	160	8x11	180	10x16	230
220		10x13	260	10x16	310	10x21	380
330		10x16	350	10x21	430	13x21	480
470		10x21	470	13x21	530	13x26	630
1000		13x26	770	16x32	960	16x32	1040
2200		16x32	1250	16x35	1410		



Aluminum Electrolytic Capacitor

NPA Series

NON POLARITY 無極性

- Suitable for using in polarity reversal circuits, such as signal coupling circuits, speakers, and etc.
- 適用於極性反轉回路及須急遽印加逆向電壓之回路，例如：信號交連或喇叭等回路。

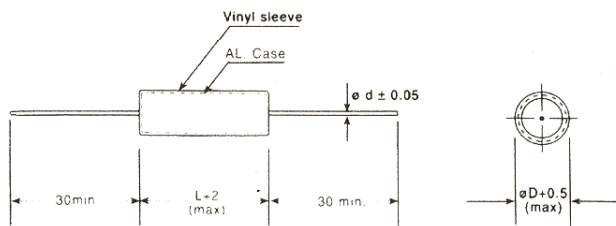


SPECIFICATION 電氣特性

ITEM	CHARACTERISTICS									
使用溫度範圍 Operation Temperature Range	- 40 ~ + 85°C									
額定電壓 Rated Working Voltage	6.3 - 100 VDC									
靜電容量容許差 Capacitance Tolerance (120Hz 25°C)	± 20% (M) + 30% (Q) - 10% (Q)									
漏洩電流 Leakage Current (25°C)	$I \leq 0.04 CV + 4 (\mu A)$ After 5 minutes I : Leakage Current (μA) C: Rated Capacitance (μF) V: Working Voltage (V)									
湧浪電壓 Surge Voltage (25°C)	W V	6.3	10	16	25	35	50	63	100	
	S V	8	13	20	32	44	63	79	125	
散逸因素 Dissipation Factor (120Hz 25°C) (tan δ)	Add 0.02 per 1000 μF for more than 1000μF									
	W V	6.3	10	16	25	35	50	63	100	
	tan δ	0.24	0.20	0.17	0.15	0.12	0.10	0.10	0.10	
低溫特性 Low Temperature Stability	Impedance ratio at 120Hz									
	Rated Voltage (V)		6.3	10	16	25	35	50	63	100
	- 25°C + 25°C		4	3	2	2	2	2	2	2
	- 40°C + 25°C		10	8	6	4	4	4	4	3
高溫負荷特性 Load Life	After 1000hours application of W V at + 85°C the capacitor shall meet the following limits. The polarity needs to exchange every 250 hours.									
	Capacitance Change		≤ ± 20% of initial value							
	Dissipation Factor		≤ 150% of initial specified value							
	Leakage Current		≤ initial specified value							

CASE SIZE OF AXIAL TYPE

D	6.3	8	10	13
d	0.6			



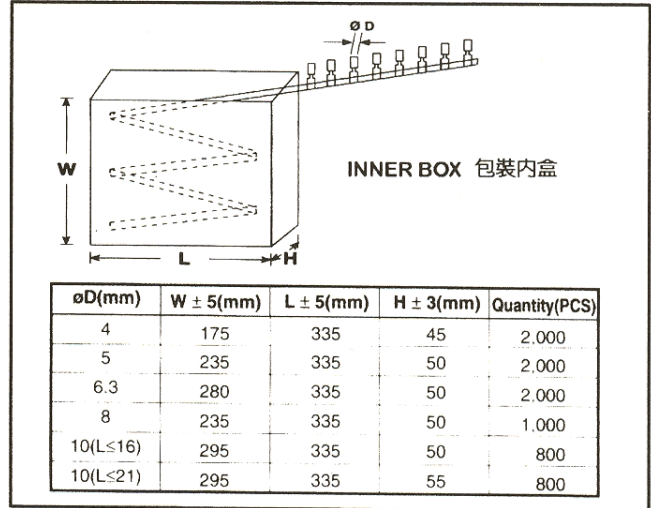
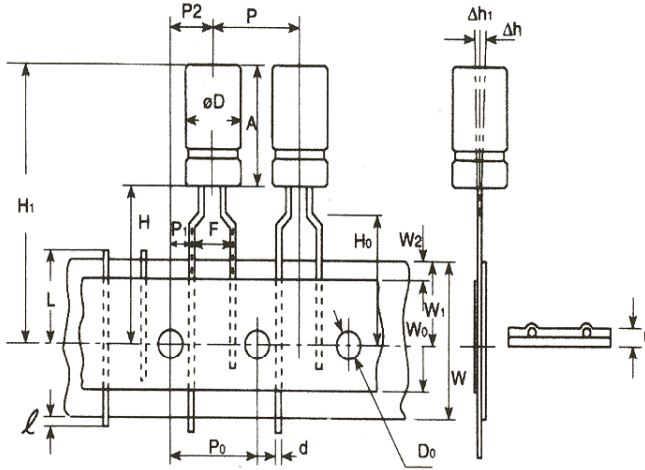
Case size : D x L (mm)

μF	WV	6.3	10	16	25	35	50	63	100
	ITEM	8	13	20	32	44	63	79	125
0.47							6.3x16		6.3x16
1							6.3x16		6.3x16
2.2							6.3x16		6.3x16
3.3							6.3x16	6.3x16	8x16
4.7					6.3x16	6.3x16	6.3x16	6.3x16	8x16
10			6.3x16	6.3x16	6.3x16	6.3x16	8x16	8x16	10x26
22		6.3x16	6.3x16	8x16	8x16	10x21	10x21	10x21	13x27
33	6.3x16	6.3x16	8x16	8x16	10x21	10x26	10x26	10x26	13x32
47	6.3x16	6.3x16	8x16	10x21	10x26	13x27	13x27	13x27	
100	8x16	8x16	10x21	10x26	13x27				
220	10x21	10x21	10x26	13x27	13x32				
330	10x21	10x26	13x27						
470	10x26	13x27	13x32						
1000	13x32								



Aluminum Electrolytic Capacitor

THE SIZE OF RADIAL AMMO PACK



DIMENSIONS

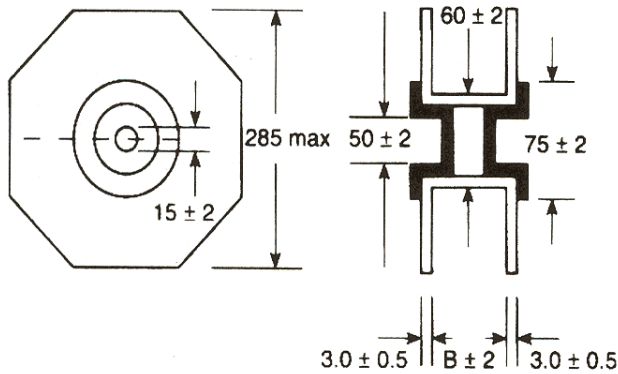
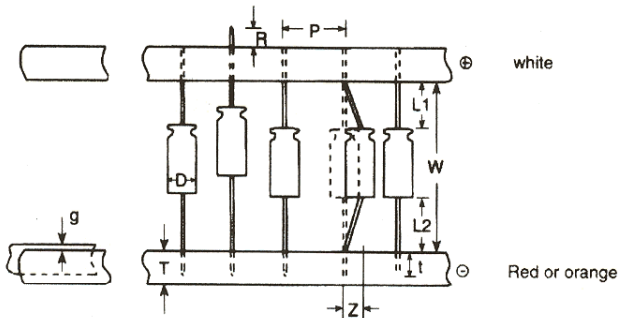
(mm)

Item	Symbol	Case Size										Tolerance
		4x7	5x7	6.3x7	5x11	6.3x11	8x11	10x13	10x16	10x18	10x21	
導線直徑 Lead wire diameter	d	0.45			0.5	0.6	0.6				±0.05	
本體高度 Body height	A	8.5			12.5			14.5	17.5	19.5	22.5	max
本體間隔 Intervals of bodies	P	12.7										±1.0
打孔間隔 Intervals of punched holes	P ₀	12.7										±0.2
打孔與導線距離 Distance between holes and lead wire	P ₁	3.85										±0.7
打孔與本體距離 Distance between holes and bodies	P ₂	6.35										±1.0
導線距離 Distance between lead and lead	F	5.0										+0.8 -0.2
台紙寬度 Base tape width	W	18.0										±0.5
粘貼紙寬度 Adhesive tape width	W ₀	12.5										min
打孔與台紙偏差 Deviation between holes and base tape	W ₁	9.0										±0.5
粘貼紙與台紙偏差 Deviation between adhesive and base tape	W ₂	1.5										max
本體下端與台紙中心的距離 Distance between body bottom and tape center	H	17.5			18.5	20.0	18.5				±0.75	
		17.5			18.5	18.5						
導線成形高度 Lead wire clinched height	H ₀	16.0										±0.5
本體上端與台紙中心的距離 Distance between body top and tape center	H ₁	27.5			32.5			33.0	36.0	38.0	41.0	max
打孔孔徑 Punched hole diameter	D ₀	4.0										±0.3
導線突出長度 Lead wire protrusion	ℓ	1.0										max
不良品裁切後之長度 Length of not good lead slit	L	11.0										max
台紙與粘貼紙厚度 Base and adhesive tape thickness	t	0.7										±0.3
本體上下偏差 Deviation of body alignment	Δh	0										±2.0
本體左右傾斜偏差 Deviation of body alignment	Δh ₁	0										±1.0



Aluminum Electrolytic Capacitor

THE SIZE OF AXIAL TAPING REEL PACK



包裝內盒 INNER BOX					
Code	W±2 (mm)	L±2 (mm)	H±2 (mm)	ø D (mm)	Quantity (PCS)
H	294	294	82	5	1200
				6.3	800
				8	600
				10	300
J	294	294	94	5	1200
				6.3	800
				8	600
T	294	294	104	5	1200
				6.3	800
				8	600
				10	300

DIMENSIONS

ITEM	SYMBOL	CASE SIZE(D)		TOLERANCE	REMARKS																								
		ø5 - ø10																											
台紙內側寬度 Inside tape spacing	W	52, 63, 73		± 2.0	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>W</td> <td>H</td> <td>J</td> <td>T</td> </tr> <tr> <td></td> <td>52</td> <td>63</td> <td>73</td> </tr> <tr> <td>B</td> <td>70</td> <td>82</td> <td>92</td> </tr> </table> <p>Part Number System</p> <p>GMA 100 M 1E E13 H</p> <p>series cap (μF) cap (tol) W V case size (ø DxL) Lead type (forming)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th>CODE</th> <th>FORMING</th> <th>INSIDE TAPE SPACING W</th> </tr> <tr> <td>H</td> <td>Axial taping</td> <td>52</td> </tr> <tr> <td>J</td> <td>-</td> <td>63</td> </tr> <tr> <td>T</td> <td>-</td> <td>73</td> </tr> </table>	W	H	J	T		52	63	73	B	70	82	92	CODE	FORMING	INSIDE TAPE SPACING W	H	Axial taping	52	J	-	63	T	-	73
W	H	J	T																										
	52	63	73																										
B	70	82	92																										
CODE	FORMING	INSIDE TAPE SPACING W																											
H	Axial taping	52																											
J	-	63																											
T	-	73																											
導線突出長度 Lead wire protrusion	R	0.5		max																									
本體間隔 Intervals of bodies	P	5-8 10	10 15	± 0.5																									
導線彎曲 Lead bending	Z	1.2		max																									
本體偏差 Body deviation	L1-L2	1.5		max																									
導線黏貼長度 Adhesive length for lead wire	t	3.2		min																									
黏貼紙寬度 Adhesive tape width	T	6		± 1.0																									
黏貼紙偏差 Adhesive tape border	g	0.8		max																									

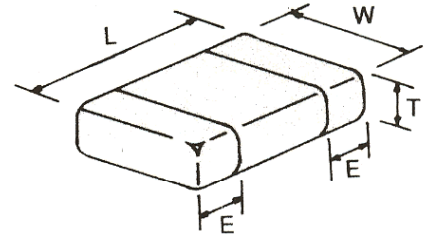


Multilayer Ceramic Chip Capacitors

INTRODUCTION

Multilayer ceramic capacitors are manufactured by suspending the ceramic powder in an organic solvent system and casting it by one technique or another into thin layers typically ranging from 2 mils in thickness to 1 mil or thinner.

Metal electrodes are deposited onto the green ceramic layers which are then stacked to form a laminated structure. The metal electrodes are arranged so that their terminations alternate from one edge of the capacitor to another. Upon sintering at high temperature the part becomes a monolithic block which can provide extremely high capacitance values in small mechanical volumes. Finally, the terminations are plated with a barrier layer followed by tin-lead alloy to permit them to be soldered directly onto substrate.



DIMENSIONS & CAPACITANCE

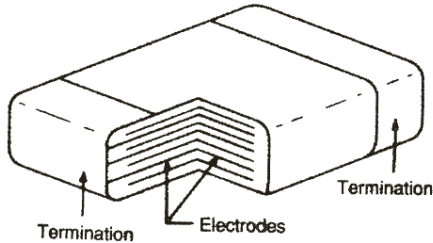
TYPE		0603	0805	1206	1210	1812	
DIMENSIONS	(L) Length	mm (in)	1.6 ± 0.15 (.063 ± .004)	2.0 ± 0.2 (.080 ± .008)	3.2 ± 0.2 (.126 ± .008)	3.2 ± 0.3 (.126 ± .012)	4.5 ± 0.3 (.177 ± .012)
	(W) Width	mm (in)	0.8 ± 0.1 (.033 ± .004)	1.2 ± 0.2 (.050 ± .008)	1.6 ± 0.2 (.063 ± .008)	2.5 ± 0.3 (.10 ± .012)	3.2 ± 0.3 (.126 ± .012)
	(T) Thickness	mm (in)	1.0 (.039) max.	1.0 (.039) max.	1.25 (.049) max.	1.3 (.051) max.	1.3 (.051) max.
	(E) Termination	mm (in)	0.5 ± 0.2 (.020 ± .008)	0.5 ± 0.2 (.020 ± .008)	0.5 ± 0.2 (.020 ± .008)	0.5 ± 0.2 (.020 ± .008)	0.64 ± 0.38 (.025 ± .008)
NP0 (COG) CAPACITANCE RANGE AT EACH WVDC		25V	560pF ~ 1000pF	-----	-----	-----	-----
		50V	0.5pF ~ 470pF	0.5pF ~ 1500pF	0.5pF ~ 3300pF	4700pF ~ 8200pF	0.01uF ~ 0.015uF
		100V	0.5pF ~ 220pF	0.5pF ~ 1000pF	0.5pF ~ 1000pF	3300pF ~ 5600pF	6800pF ~ 0.01uF
		200V	-----	-----	-----	2700pF ~ 3900pF	4700pF ~ 6800pF
X7R CAPACITANCE RANGE AT EACH WVDC		16V	39000pF ~ 0.1uF	-----	-----	-----	-----
		25V	18000pF ~ 33000pF	68000pF ~ 0.1uF	56000pF ~ 0.22uF	-----	-----
		50V	150pF ~ 33000pF	180pF ~ 56000pF	220pF ~ 47000pF	0.12uF ~ 0.22uF	0.27uF ~ 0.47uF
		100V	150pF ~ 3900pF	180pF ~ 10000pF	220pF ~ 27000pF	56000pF ~ 0.1uF	0.12uF ~ 0.27uF
Z5U (Y5V) CAPACITANCE RANGE AT EACH WVDC		16V	0.1uF ~ 1.0uF	0.47uF ~ 1.0uF	1.0uF ~ 2.2uF	-----	-----
		25V	33000pF ~ 0.1uF	0.1uF ~ 0.39uF	0.1uF ~ 1.0uF	0.22uF ~ 0.68uF	0.47uF ~ 1.8uF
		50V	1000pF ~ 47000pF	10000pF ~ 0.1uF	10000pF ~ 0.47uF	0.22uF ~ 0.56uF	0.47uF ~ 1.5uF

NOTE : OTHER CAPACITANCE VALUE AND VOLTAGE ARE AVAILABLE UPON REQUEST.

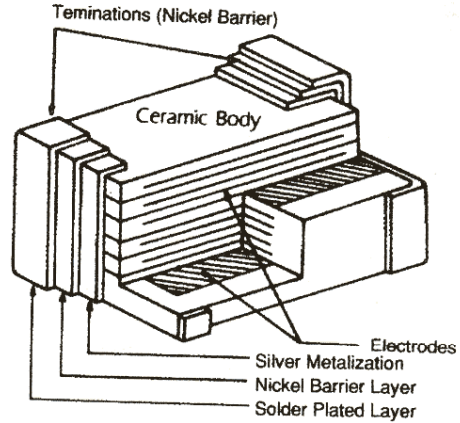


Multilayer Ceramic Chip Capacitors

CONFIGURATION



NICKEL-BARRIER TERMINATIONS



HOW TO ORDER

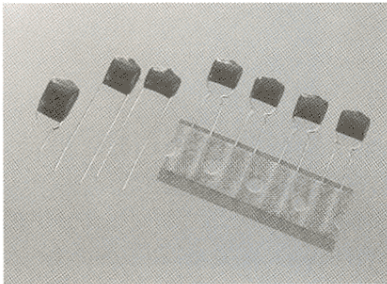
SIZE CODE	0805	CG	101	J	N	500	ER
DIELECTRIC CODE							
CG: COG							
XR: X7R							
ZU: Z5U							
CAPACITANCE CODE							
8R2: 8.2 pF							
101: 100 pF							
223: 22 nF or 0.022 uF							
104: 100 nF or 0.1 uF							
TOLERANCE CODE							
A = ± 0.05 pF	H = ± 3.0 %	(EIA Code)					
B = ± 0.10 pF	J = ± 5.0 %						
C = ± 0.25 pF	K = ± 10 %						
D = ± 0.50 pF	M = ± 20 %						
F = ± 1.0 %	Z = -20 % ~ +80 %						
G = ± 2.0 %	P = 0 % ~ +100 %						
For values less than 10 pF use C or D							
TERMINATION CODE							
N: Nickel-barrier terminations							
Test Conditions : 260°C, 60 Sn/40 Pb Solder, 60 Secs.							
RATED VOLTAGE CODE							
2 significant digits + number of zeros.							
250: 25V 500: 50V							
101: 100V							
PACKAGING CODE							
PR: Tape and Reel, Cardboard Tape							
ER: Tape and Reel, Embossed Tape							



Metalized Polyester Film Capacitor

Mini Size MEF Type:

Radial Dipped, Non-Inductive

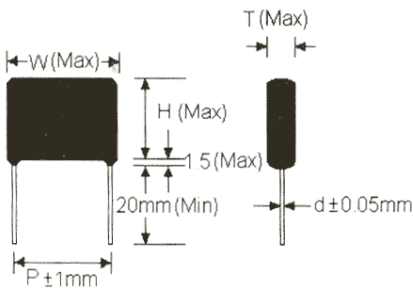


INTRODUCTION

1. HIGH STABILITY.
2. MINIATURE SIZE.
3. SELF-HEALING CHARACTERISTICS.
4. DIPPED EPOXY COATING PROTECTS FROM HUMIDITY.
5. EXCELLENT FOR USED IN COUPLING, BY-PASS, R.F. FILTERING, AND SOLID-STATE APPLICATION WHERE SIZE IS CRITICAL

SPECIFICATION:

1. OPERATING TEMPERATURE : $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
2. CAPACITANCE RANGE : $0.001 \sim 1.5\mu\text{F}$
3. CAPACITANCE TOLERANCE : $\pm 5\%$ (J), $\pm 10\%$ (K), $\pm 20\%$ (M)
4. RATED VOLTAGE : 100VDC. 250VDC. 400VDC. 630VDC.
5. DISSIPATION FACTOR : 1.0% MAX AT 1KHz, 25°C
6. INSULATION RESISTANCE : $>9000\text{M}\Omega$ ($C \leq 0.33\mu\text{F}$)
 $>3000\text{M}\Omega / \mu\text{F}$ ($C > 0.33\mu\text{F}$) AT 25°C



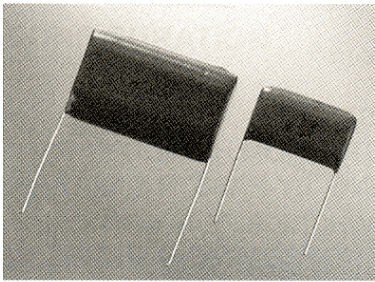
UNIT:mm

CAPACITANCE		2A(100VDC)					2E(250VDC)					2G(+00VDC)					2J(630VDC)				
SYMBOL	μF	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d
102	0.001	11.0	9.0	5.0	7.5	0.6	11.0	9.0	5.0	7.5	0.6	11.0	9.0	5.0	7.5	0.6	11.0	9.5	6.0	7.5	0.6
152	0.0015	11.0	9.0	5.0	7.5	0.6	11.0	9.0	5.0	7.5	0.6	11.0	9.5	5.5	7.5	0.6	11.0	10.0	6.5	7.5	0.6
222	0.0022	11.0	9.0	5.0	7.5	0.6	11.0	9.0	5.0	7.5	0.6	11.0	9.5	5.5	7.5	0.6	10.0	10.0	6.5	7.5	0.6
332	0.0033	11.0	9.5	5.5	7.5	0.6	11.0	9.5	5.5	7.5	0.6	11.0	9.5	6.0	7.5	0.6	11.0	10.5	7.0	7.5	0.6
472	0.0047	11.0	9.5	6.0	7.5	0.6	11.0	9.5	6.0	7.5	0.6	11.0	10.0	6.0	7.5	0.6	11.0	10.5	7.0	7.5	0.6
682	0.0068	11.0	9.5	6.0	7.5	0.6	10.0	9.5	6.0	7.5	0.6	11.0	10.0	6.0	7.5	0.6	11.0	10.5	7.0	7.5	0.6
103	0.01	11.0	10.0	6.0	7.5	0.6	11.0	10.0	6.0	7.5	0.6	11.0	10.0	6.0	7.5	0.6	11.0	10.5	7.0	7.5	0.6
153	0.015	11.0	10.0	6.0	7.5	0.6	11.0	10.0	6.0	7.5	0.6	11.0	10.0	6.0	7.5	0.6	11.0	10.5	7.0	7.5	0.6
223	0.022	11.0	10.0	6.0	7.5	0.6	11.0	10.0	6.0	7.5	0.6	11.0	10.0	6.0	7.5	0.6					
333	0.033	11.0	10.0	6.0	7.5	0.6	11.0	10.5	6.0	7.5	0.6	11.0	10.5	6.5	7.5	0.6					
473	0.047	11.0	10.0	6.0	7.5	0.6	11.0	10.5	6.0	7.5	0.6	11.0	11.0	7.0	7.5	0.6					
563	0.056	11.0	11.0	7.0	7.5	0.6	11.0	11.0	7.0	7.5	0.6	11.0	11.5	7.5	7.5	0.6					
683	0.068	11.0	10.0	6.0	7.5	0.6	11.0	11.0	7.0	7.5	0.6	11.0	11.5	7.5	7.5	0.6					
823	0.082	11.0	11.0	7.0	7.5	0.6	11.0	11.0	7.0	7.5	0.6	11.0	11.5	7.5	7.5	0.6					
104	0.1	11.0	10.0	6.0	7.5	0.6	11.0	11.0	7.0	7.5	0.6	11.0	12.0	8.0	7.5	0.6					
154	0.15	11.0	10.0	6.0	7.5	0.6	11.0	11.0	7.0	7.5	0.6										
224	0.22	11.0	10.0	6.0	7.5	0.6	11.0	11.0	7.0	7.5	0.6										
274	0.27	11.0	10.0	6.0	7.5	0.6															
334	0.33	11.0	10.5	7.0	7.5	0.6															
394	0.39	11.0	11.0	7.5	7.5	0.6															
474	0.47	11.0	11.0	7.5	7.5	0.6															
564	0.56	11.0	11.5	8.0	7.5	0.6															
684	0.68	11.0	11.5	8.0	7.5	0.6															
105	1.0	11.0	11.5	8.0	7.5	0.6															
155	1.5	11.0	12.5	9.0	7.5	0.6															



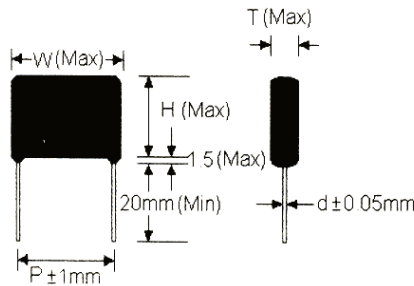
Metallized Polyester Film Capacitor

MEF Type: Radial Dipped, Non-Inductive



INTRODUCTION

1. HIGH STABILITY.
2. NON-INDUCTIVE.
3. MINIATURE SIZE.
4. SELF-HEALING CHARACTERISTICS.
5. DIPPED EPOXY COATING PROTECTS FROM HUMIDITY.
6. EXCELLENT FOR USED IN COUPLING, BY-PASS, R.F. FILTERING, AND SOLID-STATE APPLICATION WHERE SIZE IS CRITICAL



SPECIFICATION:

1. OPERATING TEMPERATURE : -40°C ~ + 85°C
2. CAPACITANCE RANGE : 0.001~10uF
3. CAPACITANCE TOLERANCE : ±5%(J), ±10%(K), ±20%(M)
4. RATED VOLTAGE : 100VDC, 250VDC, 400VDC, 630VDC.
5. DISSIPATION FACTOR : 0.1% MAX AT 1KHz, 25°C
6. INSULATION RESISTANCE : >30000MΩ (C ≤ 0.33uF)
>10000MΩ / uF (C > 0.33uF) AT 25° C

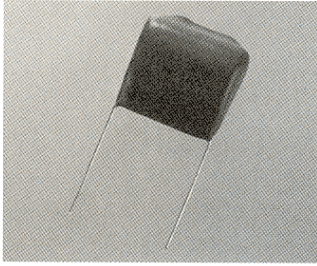
UNIT:mm

CAPACITANCE		100VDC					250VDC					400VDC					630VDC				
SYMBOL	uF	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d
102	0.001	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.5	10.0	0.6
152	0.0015	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.5	10.0	0.6
222	0.0022	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.5	10.0	0.6
332	0.0033	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.5	6.5	10.0	0.6
472	0.0047	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.5	6.5	10.0	0.6
682	0.0068	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.5	6.5	10.0	0.6
103	0.01	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.5	6.5	10.0	0.6
153	0.015	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	11.0	7.0	10.0	0.6
223	0.022	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	11.0	6.0	10.0	0.6	13.0	11.0	7.0	10.0	0.6
333	0.033	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	12.5	7.0	10.0	0.6	18.0	13.0	7.5	15.0	0.8
473	0.047	13.0	10.0	6.0	10.0	0.6	13.0	10.5	6.0	10.0	0.6	13.0	12.5	7.5	10.0	0.6	18.0	14.0	8.5	15.0	0.8
683	0.068	13.0	11.0	6.5	10.0	0.6	13.0	11.5	6.5	10.0	0.6	18.0	13.0	8.0	15.0	0.8	18.0	14.5	9.5	15.0	0.8
104	0.1	13.0	12.0	8.0	10.0	0.6	13.0	12.5	8.0	10.0	0.6	18.0	13.5	8.5	15.0	0.8	23.0	16.0	10.0	20.0	0.8
154	0.15	18.0	13.0	8.0	15.0	0.8	18.0	13.0	8.0	15.0	0.8	18.0	15.5	9.5	15.0	0.8	23.0	17.0	11.0	20.0	0.8
224	0.22	18.0	13.0	8.5	15.0	0.8	18.0	14.5	8.5	15.0	0.8	23.0	15.5	9.0	20.0	0.8	31.0	19.0	11.5	27.5	0.8
334	0.33	18.0	13.5	8.5	15.0	0.8	18.0	15.0	9.0	15.0	0.8	23.0	16.5	10.5	20.0	0.8	31.0	21.0	13.5	27.5	0.8
474	0.47	18.0	14.0	9.0	15.0	0.8	23.0	16.0	9.5	20.0	0.8	31.0	17.0	11.0	27.5	0.8	31.0	22.0	15.5	27.5	0.8
684	0.68	18.0	16.0	9.5	15.0	0.8	23.0	17.5	11.0	20.0	0.8	31.0	18.0	12.0	27.5	0.8	31.0	24.0	17.0	27.5	0.8
105	1.0	23.0	17.5	10.5	20.0	0.8	31.0	18.5	11.0	27.5	0.8	31.0	22.0	15.0	27.5	0.8	31.0	30.0	20.0	27.5	0.8
155	1.5	31.0	18.5	12.5	27.5	0.8	31.0	20.5	14.0	27.5	0.8	37.0	24.0	19.0	32.5	1.0	41.0	33.0	20.0	37.5	1.0
225	2.2	31.0	19.0	11.0	27.5	0.8	31.0	21.0	14.5	27.5	0.8	41.0	30.0	18.0	37.5	1.0	41.0	38.0	22.0	37.5	1.0
335	3.3	31.0	23.0	13.0	27.5	0.8	31.0	25.0	17.0	27.5	0.8	41.0	38.0	22.0	37.5	1.0					
475	4.7	37.0	24.0	14.0	32.5	1.0	37.0	27.0	18.0	32.5	1.0										
685	6.8	41.0	30.0	17.0	37.5	1.0	41.0	33.0	19.0	37.5	1.0										
106	10	41.0	33.0	19.0	37.5	1.0	41.0	38.0	22.0	37.5	1.0										



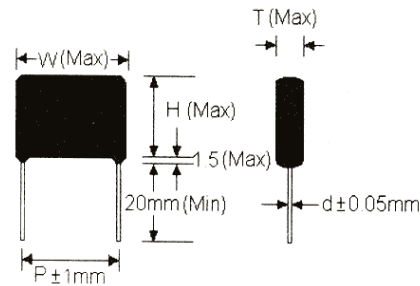
Metalized Polyester Film Capacitor

MPR Type: Epoxy Dip Coated, Radial Leads.



INTRODUCTION

- 1.HIGH STABILITY.
2. NON-INDUCTIVE.
- 3.MINIATURE SIZE.
- 4.SELF-HEALING CHARACTERISTICS.
- 5.DIPPED EPOXY COATING PROTECTS FROM HUMIDITY.
- 6.EXCELLENT FOR USED IN COUPLING, BY-PASS, R.F.FILTERING,
AND SOLID-STATE APPLICATION WHERE SIZE IS CRITICAL



SPECIFICATION:

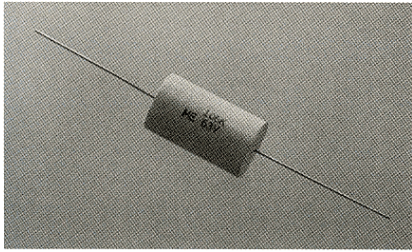
- 1.OPERATING TEMPERATURE : -40°C ~ + 85°C
- 2.CAPACITANCE RANGE : 0.001~10uF
- 3.CAPACITANCE TOLERANCE : ±5%(J), ±10%(K), ±20%(M)
- 4.RATED VOLTAGE : 100VDC, 250VDC, 400VDC, 630VDC.
- 5.DISSIPATION FACTOR : 0.1%MAX AT 1KHz, 25°C
- 6.INSULATION RESISTANCE : >30000MΩ (C ≤ 0.33uF)
>10000MΩ / uF (C > 0.33uF) AT 25° C

CAPACITANCE		100VDC					250VDC					400VDC					630VDC					UNIT:mm
SYMBOL	uF	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d	
102	0.001	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.5	10.0	0.6	
152	0.0015	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.5	10.0	0.6	
222	0.0022	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.5	10.0	0.6	
332	0.0033	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.5	6.5	10.0	0.6	
472	0.0047	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.5	6.5	10.0	0.6	
682	0.0068	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.5	6.5	10.0	0.6	
103	0.01	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.5	6.5	10.0	0.6	
153	0.015	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	11.0	7.0	10.0	0.6	
223	0.022	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	11.0	6.0	10.0	0.6	13.0	11.0	7.0	10.0	0.6	
333	0.033	13.0	10.0	6.0	10.0	0.6	13.0	10.0	6.0	10.0	0.6	13.0	12.5	7.0	10.0	0.6	18.0	13.0	7.5	15.0	0.8	
473	0.047	13.0	10.0	6.0	10.0	0.6	13.0	10.5	6.0	10.0	0.6	13.0	12.5	7.5	10.0	0.6	18.0	14.0	8.5	15.0	0.8	
683	0.068	13.0	11.0	6.5	10.0	0.6	13.0	11.5	6.5	10.0	0.6	18.0	13.0	8.0	15.0	0.8	18.0	14.5	9.5	15.0	0.8	
104	0.1	13.0	12.0	8.0	10.0	0.6	13.0	12.5	8.0	10.0	0.6	18.0	13.5	8.5	15.0	0.8	23.0	16.0	10.0	20.0	0.8	
154	0.15	18.0	13.0	8.0	15.0	0.8	18.0	13.0	8.0	15.0	0.8	18.0	15.5	9.5	15.0	0.8	23.0	17.0	11.0	20.0	0.8	
224	0.22	18.0	13.0	8.5	15.0	0.8	18.0	14.5	8.5	15.0	0.8	23.0	15.5	9.0	20.0	0.8	31.0	19.0	11.5	27.5	0.8	
334	0.33	18.0	13.5	8.5	15.0	0.8	18.0	15.0	9.0	15.0	0.8	23.0	16.5	10.5	20.0	0.8	31.0	21.0	13.5	27.5	0.8	
474	0.47	18.0	14.0	9.0	15.0	0.8	23.0	16.0	9.5	20.0	0.8	31.0	17.0	11.0	27.5	0.8	31.0	22.0	15.5	27.5	0.8	
684	0.68	18.0	16.0	9.5	15.0	0.8	23.0	17.5	11.0	20.0	0.8	31.0	18.0	12.0	27.5	0.8	31.0	24.0	17.0	27.5	0.8	
105	1.0	23.0	17.5	10.5	20.0	0.8	31.0	18.5	11.0	27.5	0.8	31.0	22.0	15.0	27.5	0.8	31.0	30.0	20.0	27.5	0.8	
155	1.5	31.0	18.5	12.5	27.5	0.8	31.0	20.5	14.0	27.5	0.8	37.0	24.0	19.0	32.5	1.0	41.0	33.0	20.0	37.5	1.0	
225	2.2	31.0	19.0	11.0	27.5	0.8	31.0	21.0	14.5	27.5	0.8	41.0	30.0	18.0	37.5	1.0	41.0	38.0	22.0	37.5	1.0	
335	3.3	31.0	23.0	13.0	27.5	0.8	31.0	25.0	17.0	27.5	0.8	41.0	38.0	22.0	37.5	1.0						
475	4.7	37.0	24.0	14.0	32.5	1.0	37.0	27.0	18.0	32.5	1.0											
685	6.8	41.0	30.0	17.0	37.5	1.0	41.0	33.0	19.0	37.5	1.0											
106	10	41.0	33.0	19.0	37.5	1.0	41.0	38.0	22.0	37.5	1.0											



Metallized Polyester Film Capacitor

MET Type: Tubular, Axial Leads.

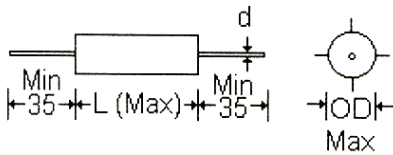


INTRODUCTION

1. HIGH STABILITY.
2. NON-INDUCTIVE.
3. MINIATURE SIZE.
4. SELF-HEALING CHARACTERISTICS.
5. POLYESTER WRAPPING, WITH EPOXY RESIN END FILL.
6. EXCELLENT FOR USED IN COUPLING, BY-PASS, R.F. FILTERING, AND SOLID-STATE APPLICATION WHERE SIZE IS CRITICAL

SPECIFICATION:

1. OPERATING TEMPERATURE : -40°C ~ + 85°C
2. CAPACITANCE RANGE : 0.01~10uF
3. CAPACITANCE TOLERANCE : ±5%(J), ±10%(K), ±20%(M)
4. RATED VOLTAGE : 100VDC, 250VDC, 400VDC, 630VDC.
5. DISSIPATION FACTOR : 1.0% MAX AT 1KHz, 25°C
6. INSULATION RESISTANCE : >9000MΩ (C ≤ 0.33uF)
>3000MΩ / uF (C > 0.33uF) AT 25°C



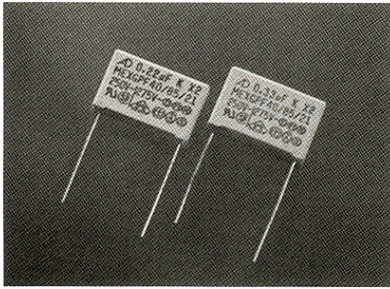
UNIT:mm

CAPACITANCE		2A(100VDC)			2E(250VDC)			2G(400VDC)			2J(630VDC)		
SYMBOL	uF	L	OD	d	L	OD	d	L	OD	d	L	OD	d
103	0.01							16.0	6.0	0.6	16.0	6.0	0.6
153	0.015							16.0	6.0	0.6	16.0	7.0	0.6
223	0.022							16.0	8.0	0.6	16.0	8.0	0.6
333	0.033							16.0	6.5	0.6	16.0	9.0	0.6
473	0.047				16.0	6.0	0.6	16.0	7.0	0.6	21.0	8.0	0.8
683	0.068				16.0	6.0	0.6	16.0	9.5	0.6	21.0	9.0	0.8
104	0.1	16.0	6.0	0.6	16.0	7.0	0.6	21.0	8.0	0.8	21.0	10.0	0.8
154	0.15	16.0	6.0	0.6	16.0	7.5	0.6	21.0	8.0	0.8	26.0	11.0	0.8
224	0.22	16.0	7.0	0.6	21.0	8.0	0.8	21.0	9.0	0.8	26.0	13.0	0.8
334	0.33	21.0	7.0	0.8	21.0	8.5	0.8	26.0	10.0	0.8	26.0	14.0	0.8
474	0.47	21.0	7.5	0.8	21.0	9.5	0.8	26.0	12.0	0.8	31.0	15.0	0.8
684	0.68	21.0	8.5	0.8	26.0	9.0	0.8	26.0	12.5	0.8	31.0	18.0	0.8
105	1.0	21.0	10.0	0.8	26.0	11.0	0.8	31.0	15.0	0.8	31.0	20.5	0.8
155	1.5	26.0	10.5	0.8	26.0	12.0	0.8	31.0	18.0	0.8			
225	2.2	26.0	11.0	0.8	31.0	13.5	0.8						
335	3.3	26.0	14.0	0.8	31.0	16.5	0.8						
475	4.7	31.0	15.0	0.8									
685	6.8	31.0	17.5	0.8									
106	10	31.0	20.5	0.8									



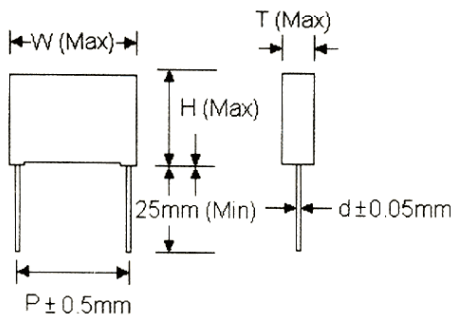
Metallized Film Capacitor

MEX Type: Plastic Case, Radial Leads



INTRODUCTION

1. HIGH STABILITY.
2. NON-INDUCTIVE.
3. MINIATURE SIZE.
4. SELF-HEALING CHARACTERISTICS.
5. PLASTIC CASE, EPOXY RESIN FILLED, BOX MADE OF SOLVENT RESISTANT MATERIAL.
6. EXCELLENT FOR USED IN ANTENNA COUPLING, LINE-BY-PASS, AND ACROSS-THE-LINE. APPLICATION WHERE SIZE IS CRITICAL.
7. TESTED STANDARD: IEC384-14, DIN EN 132 400, UL 1414, CSA C22.2
8. SAFETY APPROVDE:



SPECIFICATION:

- | | |
|--------------------------|--|
| 1. OPERATING TEMPERATURE | : -40°C ~ + 85°C |
| 2. CAPACITANCE RANGE | : 0.0047~1.0MFD. |
| 3. CAPACITANCE TOLERANCE | : ±5%(J), ±10%(K), ±20%(M) |
| 4. RATED VOLTAGE | : 250VAC, 275VAC. |
| 5. DISSIPATION FACTOR | : 0.1% MAX AT 1KHz, 25°C |
| 6. INSULATION RESISTANCE | : >30000MΩ (C ≤ 0.33uF)
>10000MΩ / uF (C > 0.33uF) AT 25° C |

UNIT:mm

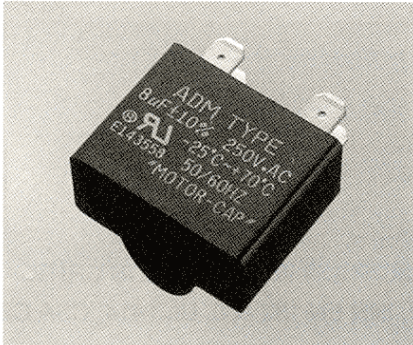
CAPACITANCE		250V~ 275V~					CAPACITANCE		250V~ 275V~				
uF	CASE CODE	W	H	T	P	d	uF	CASE CODE	W	H	T	P	d
0.0047	C2	13.0	11.0	5.0	10.0	0.6 / 0.8	0.1	D2	18.0	12.0	6.0	15.0	0.8
0.0068	C2	13.0	11.0	5.0	10.0	0.6 / 0.8	0.12	D3	18.0	13.5	7.5	15.0	0.8
0.01	C2	13.0	11.0	5.0	10.0	0.6 / 0.8	0.15	D4	18.0	14.5	8.5	15.0	0.8
0.012	C2	13.0	11.0	5.0	10.0	0.6 / 0.8	0.18	D4 / E1	18 / 26.5	14.5 / 15	8.5 / 6	15 / 22.5	0.8
0.015	C2	13.0	11.0	5.0	10.0	0.6 / 0.8	0.22	D5 / E2	18 / 26.5	16 / 16.5	10 / 7	15 / 22.5	0.8
0.018	C2	13.0	11.0	5.0	10.0	0.6 / 0.8	0.27	E3	26.5	17.0	8.5	22.5	0.8
0.022	C3	13.0	12.0	6.0	10.0	0.6 / 0.8	0.33	E3	26.5	17.0	8.5	22.5	0.8
0.027	C3	13.0	12.0	6.0	10.0	0.6 / 0.8	0.39	E4	26.5	19.0	10.0	22.5	0.8
0.033	D1	18.0	11.0	5.0	15.0	0.8	0.47	E4 / F1	26.5 / 32	19 / 20	10 / 11	22.5/27.5	0.8
0.039	D1	18.0	11.0	5.0	15.0	0.8	0.56	F1	32.0	20.0	11.0	27.5	0.8
0.047	D1	18.0	11.0	5.0	15.0	0.8	0.68	F1	32.0	20.0	11.0	27.5	0.8
0.056	D1	18.0	11.0	5.0	15.0	0.8	0.82	F2	32.0	22.0	13.0	27.5	0.8
0.068	D2	18.0	12.0	6.0	15.0	0.8	1.0	F2	32.0	22.0	13.0	27.5	0.8
0.082	D2	18.0	12.0	6.0	15.0	0.8							



Metallized Polyester Film Capacitor

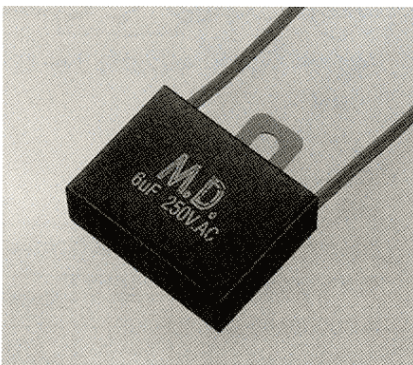
ADM Type:

Plastic Case, Amp Insertion, Wire Leads



INTRODUCTION

1. HIGH STABILITY. NON-INDUCTIVE. SELF-HEALING CHARACTERISTICS.
2. MOLDED RECTANGULAR CASE OF BLACK POLYESTER-GLASS WHICH IS FLAME RETARDANT PER UL94V-0
3. THE EPOXY FILLING USED TO FILL THE ENCLOSURE AND PROTECT THE CAPACITOR IS FLAME RETARDANT, PER UL94V-0
4. ADM TYPE USED IN FANS, AIR-CONDITIONING, REFRIGERATION. OFFICE EQUIPMENT, MERCURY LAMP, FLUORESCENT LAMP AND BUSINESS MACHINES.



SPECIFICATION:

- | | |
|---------------------------|--------------------------------|
| 1. DIELECTRICS: | : POLYESTER FILM. |
| 2. COATING | : PLASTICS EPOXY RESIN SEALED. |
| 3. OPERATING TEMPERATURE | : -25°C ~ + 70°C |
| 4. RANGE VOLTAGE | : 250, 330, 370, 440, 500VAC. |
| 5. CAPACITANCE | : 1.0µF ~ 20µF. |
| 6. CAPACITANCE TOLERANCE | : +10%, -5%, ±5%, ±10%. |
| 9. OPERATING FREQUENCY | : 50, 60Hz |
| 10. TEST VOLTAGE | : R.V. X 175% FOR 1 MINUTE. |
| 11. INSULATION RESISTANCE | : MORE THAN 1000MΩ X µF. |
| 12. DISSIPATION FACTOR | : 0.35% MAX. AT 60 KHz 25°C |

CAP. µF	250VAC	330VAC	370VAC	440VAC	500VAC
1.0	A	A	A	E	E
1.5	A	A	A	E	J
2.0	A	E	E	E	J
2.5	A	E	E	J	L
3.0	A	E	E	J	L
4.0	E	J	J	N	N
5.0	E	L	L	P	P
6.0	E	N	N	P	
7.0	E	N	N	P	
7.5	G	N	N		
8.0	J	P	N		
10.0	L	R	R		
12.0	L	R	R		
12.5	N	R	R		
15.0	P	R	R		
16.0	P				
17.0	P				
18.0	P				
20.0	P				

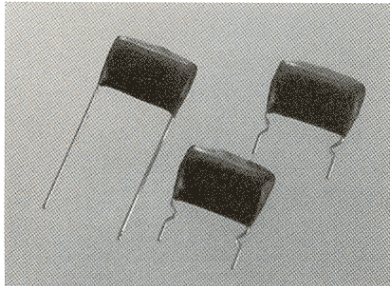
UNIT:mm

CASE CODE	W	H	T	d
A	32.5	22.5	13.0	4.5
E	38.5	26.0	15.5	4.5
G	38.5	32.5	21.5	4.5
J	39.0	29.0	19.0	4.5
L	38.5	32.0	21.5	4.5
N	50.0	30.0	22.5	4.5
P	52.0	35.0	22.5	4.5
R	51.5	40.0	30.5	4.5



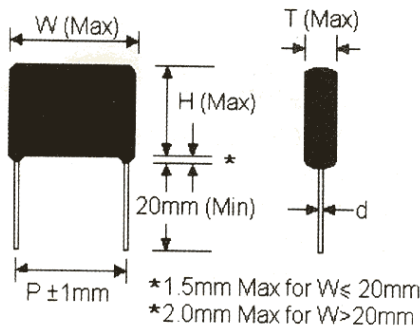
Polypropylene Film Capacitor

PPN Type: Non-Inductive



INTRODUCTION

1. LOW D.F.
2. HIGH STABILITY AGAINST FREQUENCY AND TEMPERATURE VARIATION.
3. SUITABLE FOR HIGH FREQUENCY AND/OR PULSE APPLICATION.
4. NEGATIVE TEMPERATURE COEFFICIENT.
5. NON-INDUCTIVE CONSTRUCTION.
6. LOW EQUIVALENT SERIES RESISTANCE.



SPECIFICATION:

1. OPERATING TEMPERATURE : -40°C ~ + 85°C
2. CAPACITANCE RANGE : 0.001~0.68uF
3. CAPACITANCE TOLERANCE : ±1%, ±2%, ±5%, ±10%
4. RATED VOLTAGE : 50/100VDC. 250VDC. 400VDC. 630VDC.
5. DISSIPATION FACTOR : 0.08% MAX AT 1KHz, 25°C
6. INSULATION RESISTANCE : >100,000MΩ (C ≤ 0.33uF)
> 33,000MΩ / uF (C > 0.33uF)
7. DIELECTRIC STRENGTH : 250% OF RATED VOLTAGE FOR 5 SEC

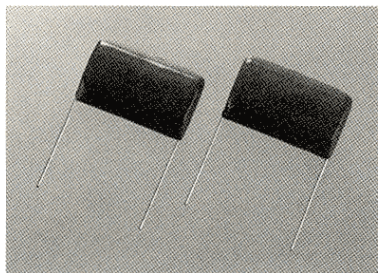
UNIT:mm

RV uF SIZE	50/100VDC					250VDC					400VDC					630VDC				
	W	H	T	P	D	W	H	T	P	D	W	H	T	P	D	W	H	T	P	D
0.001	10.5	9.5	6.0	7.0	0.6	10.5	9.5	6.0	7.0	0.6	14.0	8.5	5.5	10.0	0.6	14.0	5.5	6.0	10.0	0.6
0.0015	10.5	9.5	6.0	7.0	0.6	10.5	9.5	6.0	7.0	0.6	14.0	9.5	6.0	10.0	0.6	14.0	9.0	6.5	10.0	0.6
0.0022	10.5	9.5	6.0	7.0	0.6	10.5	9.5	6.0	7.0	0.6	14.0	9.5	6.0	10.0	0.6	14.0	10.0	6.5	10.0	0.6
0.0033	10.5	9.5	6.0	7.0	0.6	10.5	9.5	6.0	7.0	0.6	14.0	9.5	6.0	10.0	0.6	14.0	12.0	6.5	10.0	0.6
0.0047	10.5	9.5	6.0	7.0	0.6	10.5	9.5	6.0	7.0	0.6	14.0	9.5	6.0	10.0	0.6	14.0	13.0	7.5	10.0	0.6
0.0068	10.5	9.5	6.0	7.0	0.6	10.5	9.5	6.0	7.0	0.6	14.0	10.0	6.5	10.0	0.6	19.0	12.5	7.5	15.0	0.8
0.01	10.5	9.5	6.0	7.0	0.6	14.0	9.5	6.0	10.0	0.6	14.0	11.5	7.5	10.0	0.6	19.0	12.5	8.0	15.0	0.8
0.015	10.5	9.5	6.0	7.0	0.6	14.0	10.0	6.5	10.0	0.6	14.0	13.0	8.0	10.0	0.6	19.0	14.5	8.5	15.0	0.8
0.022	10.5	9.5	6.0	7.0	0.6	14.0	12.0	7.0	10.0	0.6	19.0	12.0	7.5	15.0	0.8	19.0	16.5	9.0	15.0	0.8
0.033	14.0	12.0	7.0	10.0	0.6	19.0	11.5	6.5	15.0	0.8	19.0	14.0	8.5	15.0	0.8	23.5	18.5	11.0	21.0	0.8
0.047	14.0	12.5	7.5	10.0	0.6	19.0	12.5	7.0	15.0	0.8	19.0	15.5	9.5	15.0	0.8	23.5	19.0	11.5	21.0	0.8
0.068	19.0	13.0	8.0	15.0	0.8	19.0	13.0	7.5	15.0	0.8	26.0	16.5	9.0	21.0	0.8	32.0	19.0	11.0	27.5	0.8
0.1	19.0	15.0	8.5	15.0	0.8	19.0	16.0	9.5	15.0	0.8	26.0	18.5	11.0	21.0	0.8	32.0	21.5	12.5	27.5	0.8
0.15	26.0	15.0	9.0	21.0	0.8	26.0	17.5	10.0	21.0	0.8	26.0	21.0	14.0	21.0	0.8	32.0	25.5	15.5	27.5	0.8
0.22	26.0	18.0	10.0	21.0	0.8	26.0	21.0	12.5	21.0	0.8	32.0	22.0	14.5	27.5	0.8	32.0	27.5	16.0	27.5	0.8
0.33	32.0	18.5	11.0	27.5	0.8	32.0	22.5	13.0	27.5	0.8										
0.47	32.0	20.0	12.0	27.5	0.8	32.0	26.0	15.5	27.5	0.8										
0.68	32.0	20.0	12.0	27.5	0.8	32.0	31.0	19.0	27.5	0.8										



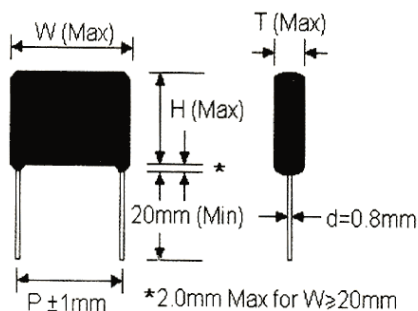
Metallized Polypropylene Film Capacitor

PPS Type: For High Pulse/Large Current



INTRODUCTION

1. LOW D.F.
2. INTERNALLY SERIES-CONNECTED.
3. SELF-HEALING PROPERTY.
4. SUITABLE FOR HIGH VOLTAGE, LARGE CURRENT/PULSE APPLICATION. e.g. CRT DEFLECTION TUNING CIRCUIT, ELECTRONIC BALLAST.



SPECIFICATION:

1. OPERATING TEMPERATURE : -40°C ~ + 85°C
2. CAPACITANCE RANGE : 0.001~0.033uF
3. CAPACITANCE TOLERANCE : ±2%, ±5%, ±10%
4. RATED VOLTAGE : DC 1000/1200V, 1500V/1600V, 2000V, 2500V.
5. DISSIPATION FACTOR : 0.08% MAX AT 1KHz, 25°C
6. INSULATION RESISTANCE : 100,000MΩ MIN
7. DIELECTRIC STRENGTH : 250% OF RATED VOLTAGE FOR 5 SEC

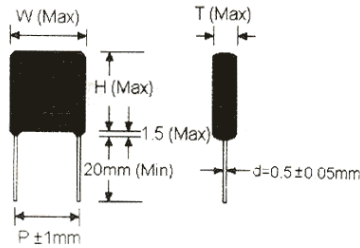
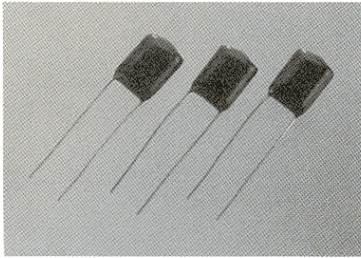
UNIT:mm

RV uF SIZE	1000/1200VDC				1500/1600VDC				2000VDC				2500VDC			
	W	H	T	P	W	H	T	P	W	H	T	P	W	H	T	P
0.001	25.0	13.0	7.0	21.0	25.0	13.0	7.0	21.0	25.0	14.0	8.0	21.0	25.0	16.0	9.0	21.0
0.0012	25.0	13.0	7.0	21.0	25.0	13.0	7.5	21.0	25.0	14.5	9.0	21.0	25.0	17.0	9.0	21.0
0.0015	25.0	13.0	7.0	21.0	25.0	14.0	7.5	21.0	25.0	15.0	9.0	21.0	25.0	18.0	10.0	21.0
0.0018	25.0	13.0	7.0	21.0	25.0	14.0	8.0	21.0	25.0	15.5	9.5	21.0	25.0	20.0	10.5	21.0
0.0022	25.0	13.5	8.0	21.0	25.0	14.5	8.5	21.0	25.0	17.5	10.0	21.0	25.0	21.0	11.5	21.0
0.0027	25.0	13.5	8.0	21.0	25.0	15.5	9.5	21.0	25.0	18.5	11.0	21.0	25.0	22.0	12.0	21.0
0.0033	25.0	14.0	8.0	21.0	25.0	16.5	10.0	21.0	25.0	19.5	11.5	21.0	32.0	20.0	13.0	27.5
0.0039	25.0	14.5	8.5	21.0	25.0	17.0	11.0	21.0	25.0	20.0	12.0	21.0	32.0	21.0	13.0	27.5
0.0047	25.0	15.0	9.5	21.0	25.0	18.5	12.5	21.0	32.0	18.0	11.0	27.5	32.0	22.0	14.0	27.5
0.0056	25.0	15.5	9.5	21.0	25.0	20.0	13.0	21.0	32.0	20.0	12.5	27.5	32.0	25.0	14.5	27.5
0.0068	25.0	17.5	11.0	21.0	32.0	17.0	10.0	27.5	32.0	21.5	14.0	27.5	32.0	27.0	16.0	27.5
0.0082	25.0	18.5	11.5	21.0	32.0	21.0	11.5	27.5	32.0	22.5	14.5	27.5	32.0	29.0	17.0	27.5
0.01	25.0	20.0	11.5	21.0	32.0	21.0	13.0	27.5	32.0	24.0	15.5	27.5				
0.012	25.0	22.5	13.5	21.0	32.0	22.5	13.5	27.5	32.0	25.5	17.0	27.5				
0.015	25.0	23.0	14.0	21.0	32.0	23.5	15.5	27.5								
0.018	32.0	22.0	11.5	27.5	32.0	25.0	16.5	27.5								
0.022	32.0	24.5	12.5	27.5	32.0	26.5	18.0	27.5								
0.027	32.0	27.0	14.0	27.5	32.0	29.5	19.0	27.5								
0.033	32.0	28.5	15.0	27.5	32.0	31.0	21.0	27.5								



Polyester Film Capacitor

PEI Type: Inductive



INTRODUCTION

1. HIGH MOISTURE RESISTANCE.
2. GOOD SOLDERABILITY.
3. AVAILABLE ON TAPE AND REEL FOR AUTOMATIC INSERTION.
4. LOW ESR.
5. SPACE-SAVING MINIATURE SIZE.

SPECIFICATION:

1. OPERATING TEMPERATURE : -40°C ~ + 85°C
2. CAPACITANCE RANGE : 0.001~0.47uF
3. CAPACITANCE TOLERANCE : ±5%(J), ±10%(K), ±20%(M)
4. RATED VOLTAGE : 50VDC/100VDC, 200VDC, 400VDC .
5. DISSIPATION FACTOR : 0.75% MAX AT 1KHz, 25°C
6. INSULATION RESISTANCE : >50000MΩ AT 25°C

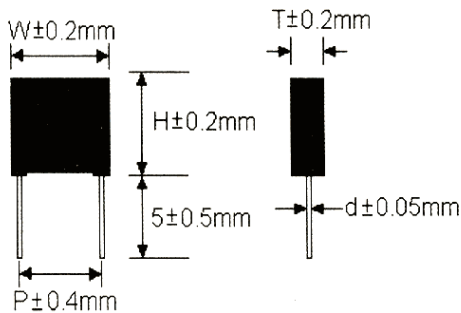
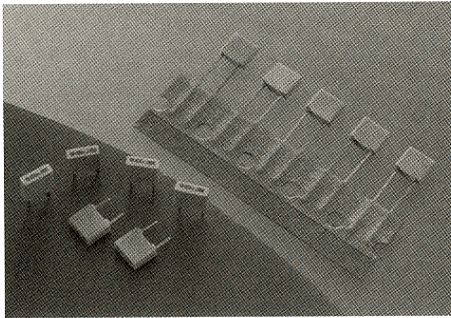
Unit:mm

RV uF	SIZE	50VDC/100VDC				200VDC				400VDC			
		W	H	T	P	W	H	T	P	W	H	T	P
0.001		5.8	10.5	3.5	4.0	7.0	11.0	4.0	4.0	8.0	12.0	4.0	4.0
0.0012		5.8	10.5	3.5	4.0	7.0	11.0	4.0	4.0	8.0	12.0	4.0	4.0
0.0015		5.8	10.5	3.5	4.0	7.0	11.0	4.0	4.0	8.0	12.0	4.0	4.0
0.0018		5.8	10.5	3.5	4.0	7.0	11.0	4.0	4.0	8.0	12.0	4.0	4.0
0.0022		5.8	10.5	3.5	4.0	7.0	11.0	4.0	4.0	9.0	12.0	5.0	4.0
0.0027		5.8	10.5	3.5	4.0	7.0	11.0	4.0	4.0	9.0	12.0	5.0	4.0
0.0033		5.8	10.5	3.5	4.0	7.0	11.0	4.0	4.0	9.0	12.0	5.0	4.0
0.0039		6.0	10.5	3.5	4.0	7.0	11.0	4.0	4.0	9.0	12.0	5.0	4.0
0.0047		6.5	10.5	3.5	4.0	7.0	11.0	4.0	4.0	9.0	12.0	6.0	4.0
0.0056		6.5	10.5	3.5	4.0	7.0	11.0	4.0	4.0	10.0	12.0	6.0	4.0
0.0068		6.5	10.5	3.5	4.0	7.0	11.0	4.0	4.0	10.0	12.0	6.0	4.0
0.0082		6.5	10.5	4.0	4.0	7.0	11.0	4.5	4.0	10.0	12.0	6.0	4.0
0.01		6.5	10.5	4.0	4.0	7.0	11.0	4.5	4.0	10.0	14.0	6.0	5.0
0.012		6.5	10.5	4.0	4.0	7.0	11.0	4.5	4.0	10.0	14.0	6.0	5.0
0.015		7.5	10.5	4.0	4.0	9.0	13.0	5.0	4.0	10.0	14.0	6.0	5.0
0.018		7.5	10.5	4.0	4.0	9.0	13.0	5.0	4.0	10.0	14.0	6.0	6.0
0.022		7.8	10.5	4.5	4.0	9.0	13.0	5.0	4.0	10.0	14.0	6.0	6.0
0.027		7.8	12.0	4.5	5.0	9.0	13.0	5.5	5.0	11.0	14.0	6.0	6.0
0.033		8.0	12.0	4.5	5.0	9.0	13.0	5.5	5.0	12.0	14.0	7.0	7.0
0.039		8.0	12.5	5.0	5.0	11.0	14.0	6.0	5.0	12.0	16.0	7.0	7.0
0.047		9.5	12.5	5.0	5.0	11.0	14.0	6.0	6.0	13.0	16.0	8.0	8.0
0.056		10.0	12.5	5.0	6.0	11.0	14.0	7.0	6.0				
0.068		10.0	12.5	5.5	6.0	12.0	14.0	7.0	6.0				
0.082		10.5	12.5	6.0	7.0	13.0	15.0	8.0	7.0				
0.1		11.5	13.0	6.5	7.0	14.0	15.0	8.0	7.0				
0.12		12.0	13.0	7.0	7.0	14.0	15.0	8.0	7.0				
0.15		12.0	15.0	7.0	7.0	15.0	17.0	8.0	7.0				
0.18		12.0	16.0	7.5	7.0	16.0	18.0	9.0	8.0				
0.22		12.0	16.0	8.0	7.0	18.0	18.0	10.0	8.0				
0.27		12.5	16.0	8.5	7.0								
0.33		13.5	17.0	8.5	8.0								
0.39		14.0	17.0	9.0	8.0								
0.47		15.0	17.0	10.0	8.0								



Metallized Polyester Capacitor

MSC Type: Mini Box.



INTRODUCTION

1. SPACE-SAVING MINIATURE SIZE.
2. NON-INDUCTIVE CONSTRUCTION.
3. SELF-HEALING PROPERTY.
4. FLAME-RETARDANT PLASTIC CASE AND EPOXY RESIN (COMPLIANCE WITH UL94V-0)
5. HIGH-MOISTURE RESISTANCE.

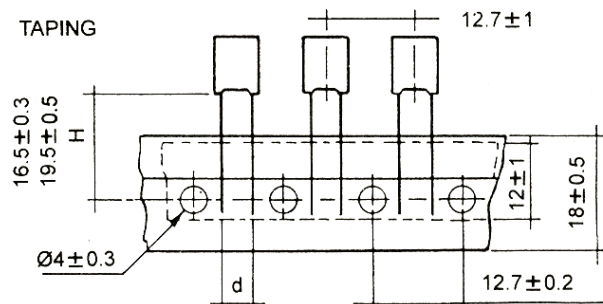
SPECIFICATION:

1. OPERATING TEMPERATURE : $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
2. CAPACITANCE RANGE : $0.001 \sim 1.0\mu\text{F}$
3. CAPACITANCE TOLERANCE : $\pm 5\%$ (J), $\pm 10\%$ (K).
4. RATED VOLTAGE : 50/63VDC, 100VDC.
5. DISSIPATION FACTOR : 1.0% MAX AT 1KHz, 25°C
6. INSULATION RESISTANCE : $>10000\text{M}\Omega$ ($C \leq 0.33\mu\text{F}$)
 $>3000\text{M}\Omega / \mu\text{F}$ ($C > 0.33\mu\text{F}$)

UNIT:mm

R.V. CAP SIZE	50/63VDC	100VDC
	CASE CODE	CASE CODE
0.001	0 1	0 1
0.0015	0 1	0 1
0.0022	0 1	0 1
0.0033	0 1	0 1
0.0047	0 1	0 1
0.0068	0 1	0 1
0.01	0 1	0 1
0.015	0 1	0 1
0.022	0 1	0 1
0.033	0 1	0 1
0.047	0 1	0 1
0.068	0 1	0 1
0.1	0 1	0 1
0.15	0 2	0 7
0.22	0 2	0 7
0.33	0 2	0 7
0.47	0 7	0 5
0.68	0 6	
1.0	0 7	

CASE CODE	W (MAX)	H (MAX)	T (MAX)	P±0.5mm
0 1	7.5	6.5	2.5	5.0
0 2	7.5	8.0	3.2	5.0
0 5	7.5	12.0	6.0	5.0
0 6	7.5	10.0	6.0	5.0
0 7	7.5	8.0	5.0	5.0

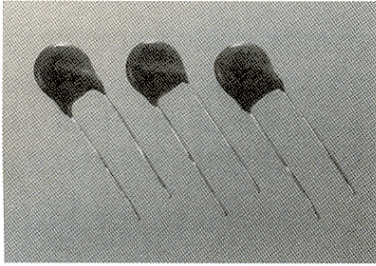


CASE	Q'TY	REEL	AMMOPACK	BULK
0 1		2500	2500	5000
0 2		1800	2000	3800
0 5		900	1100	1500
0 6		900	1100	1500
0 7		1200	1250	2500



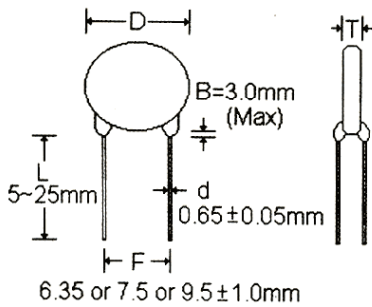
Ceramic Capacitor

MEY Type



INTRODUCTION

1. IDEAL FOR ACROSS THE LINE APPLICATIONS.
2. COMPACT SIZE.
3. COST EFFECTIVE PRODUCT.
4. SAFETY STANDARDS RECOGNIZED FOR AC APPLICATIONS.
5. SAFETY APPROVED:



SPECIFICATION:

1. OPERATING TEMPERATURE: $-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
2. CAPACITANCE RANGE : 100pF TO 10000pF
3. CAPACITANCE TOLERANCE : K= $\pm 10\%$, M= $\pm 20\%$, Z= $+80\%$
-20%
4. RATED VOLTAGE : 125, 250 AND 400VAC.
5. TEMPERATURE COEFFICIE : $\pm 10\%$ FOR B (Y5P), +30 TO -80% FOR F (Y5V)
6. DISSIPATION FACTOR : Y5P: 2.5% MAX, AT 25°C AND 1KHZ, $1 \pm 0.2\text{Vrms}$.
Y5V: 5.0% MAX. AT 25°C AND 1KHZ, $1 \pm 0.2\text{Vrms}$.
7. INSULATION RESISTANCE : $> 10000\text{M}\Omega$ AT 500VDC FOR 1 MINUTE.

Unit:mm

PART NUMBER	T.C.	CAPACITANCE	TOLERANCE	DIMENSION(mm)		
				D (Max)	F	T (Max)
JY101KY5PAC400	$\pm 10\%$ (Y5P)	100PF	K $\pm 10\%$	8	7.5 ± 1	6
JY151KY5PAC400		150PF		8	7.5 ± 1	6
JY221KY5PAC400		220PF		8	7.5 ± 1	6
JY331KY5PAC400		330PF		8	7.5 ± 1	6
JY471KY5PAC400		470PF		8	7.5 ± 1	6
JY561KY5PAC400		560PF		10	7.5 ± 1	6
JY681KY5PAC400		680PF		10	7.5 ± 1	6
JY102KY5PAC400		1000PF		12	7.5 ± 1	6
JY102MY5VAC400		+ 30~ -80% (Y5V)		1000PF	M $\pm 20\%$	10
JY152MY5VAC400	1500PF		10	7.5 ± 1		6
JY222MY5VAC400	2200PF		12	7.5 ± 1		6
JY332MY5VAC400	3300PF		14	9.5 ± 1		6
JY392MY5VAC400	3900PF		16	9.5 ± 1		6
JY472MY5VAC400	4700PF		16	9.5 ± 1		6
JY682MY5VAC400	6800PF		16	9.5 ± 1		6
JY822MY5VAC400	8200PF		16	9.5 ± 1		6
JY103MY5VAC400	10000PF		18	9.5 ± 1		6



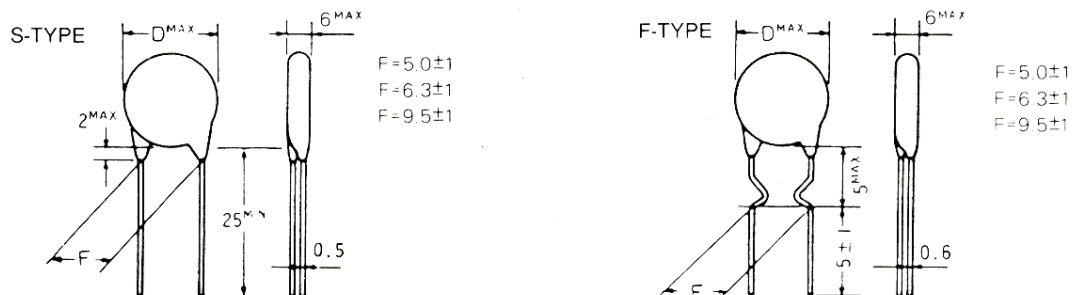
Ceramic Disc Capacitors

HIGH VOLTAGE 1KV ~ 3KV

HOW TO ORDER

CII	B	102	M	3A	F	5	25
Class	Temp. Char	Capacitance	Tolerance	Rated Voltage	Lead Style	Pitch	Package & Lead Length
CI = Class I CII = Class II	C = NPO U = N750 SL = P350-N1000 B = 2B4/Y5P E = 2R5/Z5U F = Z5V	101 = 100pF 472 = 4700pf 103 = 0.01UF	D = ± 0.5 PF J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$ Z = $+80\%$ - 20%	3A = 1000V 3D = 2000V 3F = 3000V	S = Straight type F = Forming type	5 = 5.0mm 6 = 6.3mm 9 = 9.5mm	R = Tape/Reel T = Tape/Box L = 25mm min 9 = 9 ± 1 mm 6 = 6 ± 1 mm 4 = 4 ± 1 mm

STYLE & DIMENSIONS



DIAMETER AND CAPACITANCE RANGE

Dimension (mm)		1KV				
D (Max)	F (± 1)	NPO	SL	B	E	F
6.5	6.35	1-25	30-80	300-1000	1000-2000	2000
8.5	6.35	26-40	81-140	1200-1500		5000
9.5	6.35	41-70	141-240	2000-2200	5000	
11	6.35			2700-3300		10000
13	9.52	71-120	241-400		10000	
14	9.52			3900		
15	9.52			5000		20000
17	9.52				20000	
19	9.52			10000		

Dimension (mm)		2KV				
D (Max)	F (± 1)	NPO	SL	B	E	F
7	6.35	1-10	20-33	100-680		1000
8.5	6.35	11-18	34-68	820-1000	1000	1200-1800
10	6.35		69-100	1200-1500		2200-3300
11	6.35	19-39	110-140		1200-2200	3600-4700
12	6.35			1800-2200		
13	9.52	40-62	150-230		2700-3300	
15	9.52			2700-3300	3900-4700	
16	9.52	63-82	240-310			10000

Dimension (mm)		3KV				
D (Max)	F (± 1)	NPO	SL	B	E	F
7	6.35			100-300		
8	6.35			360-470	1000	
9	6.35			560-680		
10	6.35	1-16	15-56	820-1000		
11	6.35	18-24	62-82			2200-3300
12	6.35			1200-1500	1200-2200	3600-3900
14	9.52			1800-2200	2700-3600	
15	9.52	27-51	91-160			4700-5600
16	9.52			2700-3300	3900-4700	

* High voltage over 3KV is available for special order



Multilayer Ceramic Chip Capacitor

Description

EASE Radial leaded, Epoxy dipped Multilayer Ceramic Capacitors are built by Superior moisture and shock resistant epoxy coating can be supplied in bulk or taped & reel package for automatic insertion in PCB. Our RD series capacitors have wide applications in computer, data processing, telecommunication, industrial control and instrumentation equipment, etc.

HOW TO ORDER



R 20 Z5U 104 Z 5 H 5 05 B

Product Type:

R: Mono Radial
(Radial Leaded)

Color:

B=Blue
Y=Yellow

Size Code:

See size chart for available size by value and voltage

Working Voltage:

02= 25v
05= 50v
10= 100v
20= 200v

Temperature characteristic:

NPO=COG
X7R
Z5U
Y5V

Lead Length:

3=3mm 7=7mm A=2.5mm
4=4mm 8=8mm B=3.5mm
5=5mm 9=9mm C=4.5mm
6=6mm 0=10mm D=5.5mm
E=6.0mm G=8.5mm
F=7.5mm H=9.5mm
S=25mm Min. (Long L eaded)
U=Tape & Reel X=Pending
U=Tape & AMMD Pack

Capacitance(pf):

The first two digits are significant of capacitance,
The last digit is multiplier

0=*1 4=*10000
1=*10 5=*100000
3=*1000 9=*0.1

Lead Style:

L: Straight leads
K: Outward kind
H: High seated & right angle.
A: High seated & slope angle.

Capacitance Tolerance:

C=±0.25PF K=±10%
D=±0.5PF M=±20%
G=±2% Z=±80%-20%
J=±5% P=±100%-0%

Lead Spacing:

2=2.54mm(0.100")
5=5.08mm(0.200")
6=6.35mm(0.250")
7=7.62mm(0.300")