

# MC series

- Low IMP and E.S.R., Ripple current resistance, long life.
- Suitable for output return circuit of switching power supply, for IT products.
- RoHS Compliance.
- 低等效串聯阻抗，耐紋波，長壽命。
- 適於電腦之開關電源供應器的輸出迴路。



MC

## SPECIFICATIONS

Items 項目	Characteristics 特性									
Capacitance Tolerance 靜電容量誤差	±20% (120Hz, 20°C)									
Operating Temperature Range 適用溫度範圍	-55 ~ +105°C			-40 ~ +105°C				-25 ~ +105°C		
Rated Voltage Range 工作電壓範圍	6.3 ~ 100V			160 ~ 400V				450V		
Leakage Current 洩漏電流	WV ≤ 100V, I ≤ 0.01CV or 3µA (After 2 minutes application of DC working voltage, at 20°C) WV > 100V, I ≤ 0.03CV+20 (µA) (After 5 minutes application of DC working voltage, at 20°C)									
Dissipation Factor 散逸因素 (tan δ)	Measurement Frequency: 120Hz. Temperature: 20°C									
	Rated Voltage (V)	6.3	10	16	25	35	50	63~100	160~350	400~450
	tan δ (Max)	0.15	0.12	0.10	0.09	0.08	0.07	0.06	0.20	0.25
Low Temperature Stability 低溫特性 Impedance Ratio (Max) 阻抗比率 (最大值)	When nominal capacitance exceeds 1000µF, add 0.02 to the value above for each 1000µF increase. (20°C · 120Hz)									
	Measurement Frequency: 120Hz.									
	Rated Voltage (V)	6.3	10	16	25	35	50	63~100	160~350	400~450
	Z (-25°C) / Z (20°C)	4	3	2	2	2	2	2	3	6
	Z (-40°C) / Z (20°C)	-	-	-	-	-	-	3	6	-
Z (-55°C) / Z (20°C)	8	6	4	3	3	3	-	-	-	
Load Life 負荷壽命	3000hours, with application of working voltage at 105°C (φD ≤ 8mm, 2,000hrs)									
	Capacitance Change	Within ±20% of Initial Value								
	tan δ	200% or less of Initial Specified Value								
	Leakage Current	Initial Specified Value or less								
Shelf Life 放置壽命	1,000hours, no voltage applied, at 105°C. After Test : Ur to be applied for 30 minutes, 24 to 48hours before measurement.									
	Capacitance Change	Within ±20% of Initial Value								
	tan δ	200% or less of Initial Specified Value								
	Leakage Current	Initial Specified Value or less								
Standards 參照標準	JIS C 5101-4-1 and JIS C 5101-2									

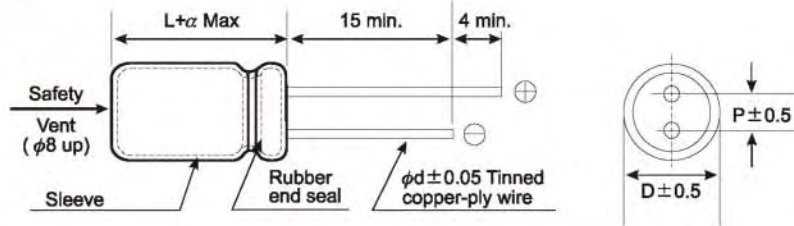
## PERMISSIBLE RIPPLE CURRENT

### Frequency Coefficient

Capacitance (µF)	Frequency (Hz)				
	50	120	1K	10K	100K
47 ~ 100	0.45	0.55	0.75	0.90	1.00
220 ~ 1000	0.60	0.70	0.85	0.95	1.00
2200 ~ 15000	0.70	0.80	0.95	0.98	1.00

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## DIMENSIONS (mm)



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

α	(L < 16) 1.0
	(L ≥ 16) 2.0

## STANDARD RATINGS

DxL (mm); R.C.: (mA rms) at 105°C, 100KHz; IMP: (Ω max) at 20°C, 100KHz.

Cap (μF)	WV(V) (Code)	6.3 (0J)			10 (1A)			16 (1C)			25 (1E)		
		Item	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.
33											5x11	155	0.800
39											5x11	175	0.650
47								5x11	155	0.800	6.3x11	210	0.550
56								5x11	175	0.650	6.3x11	235	0.440
68					5x11	155	0.800	6.3x11	220	0.500	6.3x11	260	0.336
82					5x11	175	0.650	6.3x11	240	0.420	6.3x11	285	0.330
100		5x11	200	0.620	6.3x11	200	0.420	6.3x11	255	0.370	8x12	360	0.220
220		6.3x11	275	0.320	8x12	360	0.220	8x12	550	0.140	8x14	750	0.100
270		6.3x11	320	0.250	8x12	420	0.185	8x16	650	0.140	8x20	750	0.095
330		8x12	420	0.180	8x12	550	0.140	10x13	750	0.100	10x16	800	0.069
470		10x13	580	0.140	10x13	750	0.100	10x16	800	0.085	10x20	1050	0.064
680		10x16	700	0.100	10x16	800	0.085	10x20	1050	0.064	13x21	1370	0.049
1000		10x16	950	0.069	10x20	1080	0.065	13x21	1360	0.039	13x25	1600	0.038
2200		10x25	1450	0.043	13x25	1650	0.038	13x30	2050	0.028	13x40	2300	0.024
3300		13x25	1750	0.035	13x35	2100	0.028	13x40	2360	0.024	16x36	2600	0.019
3900		13x30	1710	0.034	13x40	2360	0.024	16x32	2470	0.022	16x40	2820	0.019
4700		13x35	2050	0.028	16x32	2370	0.024	16x36	2600	0.019	18x40	2900	0.019
6800		16x32	2300	0.024	16x36	2600	0.019	18x35	2850	0.019			
8200		16x36	2420	0.021	18x35	2800	0.019	18x40	3040	0.017			
10000		18x32	2550	0.019	18x40	3000	0.018						
15000		18x40	2900	0.019									

※ 13mm may be replaced by 12.5mm upon customer's request.



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## STANDARD RATINGS

DxL (mm); R.C.: (mA rms) at 105°C, 100KHz; IMP: ( $\Omega$  max) at 20°C, 100KHz.

Cap ( $\mu$ F)	WV(V) (Code)	35 (V)			50 (1H)			63 (1J)			100 (2A)		
		D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP
47					8x12	320	0.350	8x12	450	0.300	10x25	550	0.350
68		8x12	360	0.220	8x12	450	0.250	8x16	550	0.220	13x21	650	0.240
100		8x12	450	0.140	10x16	550	0.200	10x20	700	0.170	13x25	800	0.180
220		10x16	810	0.069	10x20	1100	0.100	13x21	1300	0.070	16x32	1400	0.071
330		10x20	1100	0.044	13x21	1300	0.095	13x25	1400	0.054	18x40	1650	0.049
470		13x21	1370	0.039	13x25	1450	0.070	13x35	1650	0.047			
680		13x25	1600	0.038	13x35	1800	0.040	16x32	2000	0.037			
1000		13x30	1930	0.029	16x32	2100	0.034	18x35	2200	0.034			
2200		16x36	2500	0.019	18x40	2600	0.025						
3300		18x40	3000	0.019									

Cap ( $\mu$ F)	WV(V) (Code)	160 (2C)			200 (2D)			250 (2E)		
		D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP
2.2								8x12	85	13.0
3.3		8x12	85	11.0	8x12	90	11.0	8x12	97	11.0
4.7		8x12	90	6.50	8x12	100	6.10	10x13	112	4.30
10		10x13	144	4.30	10x13	168	3.80	10x16	240	3.50
22		10x16	200	1.50	10x20	372	1.10	13x21	388	1.20
33		10x20	450	0.71	10x25	480	0.58	13x21	495	1.13
47		13x21	580	0.46	13x21	584	0.46	13x25	650	0.60
68		13x21	680	0.46	13x25	788	0.39	16x26	810	0.57
100		16x26	1028	0.24	16x26	1030	0.24	16x32	1124	0.30
220		16x36	1160	0.13	18x32	1208	0.13	18x40	1200	0.27
330		18x35	1480	0.12						

Cap ( $\mu$ F)	WV(V) (Code)	400 (2G)			450 (2W)		
		D x L	R.C.	IMP	D x L	R.C.	IMP
2.2		8x12	65	7.60	10x13	75	9.50
3.3		10x13	88	5.20	10x16	100	7.90
4.7		10x16	128	2.80	10x20	115	6.20
10		10x20	156	2.10	13x21	224	3.70
22		13x25	280	0.85	16x26	460	1.00
33		13x25	460	0.76	16x26	488	0.95
47		16x26	580	0.61	16x32	680	0.85
68		16x32	960	0.55	18x32	750	0.71
100		18x35	1000	0.48	18x40	880	0.43

※ 13mm may be replaced by 12.5mm upon customer's request.