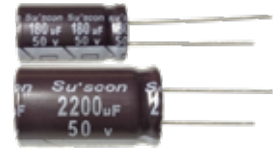


MF series

- Low impedance、High reliability、2000~5000 hours Long life at 105°C.
- Suitable for switching regulator of computer,etc.
- RoHS Compliance
- 低阻抗、高信賴性、105°C 2000~5000小時壽命。
- 適用於電腦類開關調節器。



SPECIFICATIONS

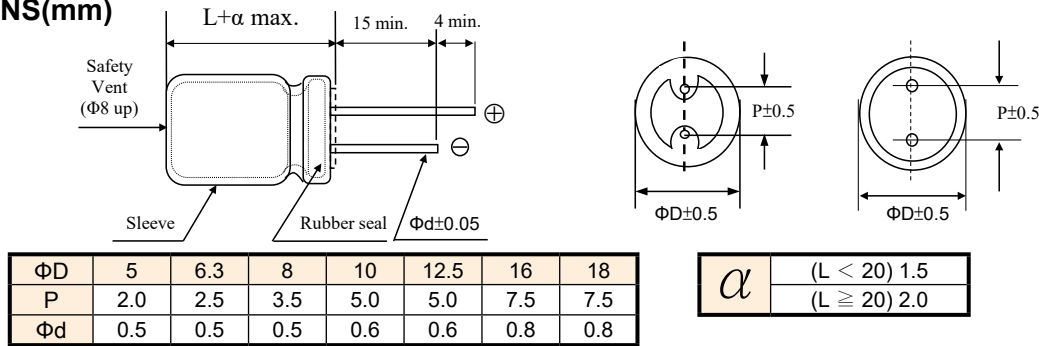
Items 項目	Characteristics 特性													
Capacitance Tolerance 靜電容量誤差	± 20%(120Hz,20°C)													
Operating Temperature Range 適用溫度範圍	-40 ~ +105°C							-25 ~ +105°C						
Rated Voltage Range 額定電壓範圍	6.3 ~ 400VDC							450VDC						
Leakage Current 洩漏電流	V ≤ 100V I ≤ 0.01CV or 3 (μA) (After 2 minutes application of DC rated voltage, at 20°C) V > 100V I ≤ 0.03CV +20 (μA) (After 5 minutes application of DC rated 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	80	100	160~250	350	400~450	500
	tan δ(Max)	0.20	0.17	0.16	0.14	0.12	0.10	0.08	0.08	0.08	0.15	0.20	0.25	0.25
	When nominal capacitance over 1000μF, tanδ shall be added 0.02 to the listed value with increase of every 1000μF .													
Low Temperature Stability 低溫特性 Impedance Ratio(Max) 阻抗比率(最大值)	Measurement Frequency: 120Hz.													
	Rated Voltage(V)	6.3	10	16	25	35	50	63~100	160~250	350~400	450			
	Z(-25°C)/Z(20°C)	4	3	2	2	2	2	2	3	6	15			
	Z(-40°C)/Z(20°C)	8	6	4	3	3	3	3	4	10	-			
Load Life 負荷壽命	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 5,000 hours (ΦD≤6.3:2,000 hours;ΦD=8:3,000 hours) at 105°C.													
	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	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to them 4.1 of JIS C5101-4.													
	Capacitance Change		Within ± 20% of Initial Value											
	tan δ		150% or less of Initial Specified Value											
	Leakage Current		Initial Specified Value or less											
Standards 參照標準	IEC 60384-4(JIS C5101-4)													

Frequency Coefficient of Permissible Ripple Current

Rated Voltage (V)	Capacitance (μF)	Frequency (Hz)				
		50	120	1K	10K	100K
6.3 ~ 100	10 ~ 150	0.60	0.70	0.85	0.95	1.00
	220 ~ 1800	0.65	0.75	0.90	0.98	1.00
	2200 ~ 15000	0.75	0.80	1.00	1.00	1.00
160 ~ 450	1 ~ 330	0.55	0.65	0.80	0.90	1.00

MF series

DIMENSIONS(mm)



STANDARD RATINGS

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

Cap (μF)	V	6.3			10			16			25		
	Item	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP
33											5x11	145	0.920
47								5x11	180	0.650	6.3x11	210	0.600
100	5x11	140	0.920		5x11	180	0.650	5x11	230	0.550	6.3x11	370	0.350
220	6.3x11	275	0.300		6.3x11	340	0.300	8x11.5	580	0.280	8x11.5	640	0.230
330	6.3x11	320	0.300		8x11.5	580	0.280	8x11.5	640	0.230	10x12.5	865	0.080
470	8x11.5	580	0.280		8x11.5	640	0.230	8x15	840	0.150	10x16	1210	0.060
560	8x11.5	640	0.230		10x12.5	780	0.160	10x12.5	880	0.100	10x16	1320	0.055
680	8x11.5	720	0.140		10x12.5	820	0.110	10x16	1000	0.085	10x20	1380	0.052
820	8x15	840	0.087		8x15	865	0.080	10x16	1040	0.076	10x20	1400	0.046
1000	10x12.5	865	0.080		10x16	1040	0.076	10x20	1210	0.060	12.5x20	1900	0.035
1200	10x16	960	0.064		10x16	1210	0.060	10x25	1580	0.042	12.5x20	2058	0.032
1500	10x16	1210	0.060		10x20	1400	0.058	12.5x20	1870	0.035	12.5x20	2124	0.030
1800	10x20	1400	0.058		12.5x20	1580	0.042	12.5x20	1900	0.032	12.5x30	2340	0.028
2200	10x25	1450	0.046		12.5x20	1900	0.032	12.5x20	2124	0.030	12.5x35	2450	0.026
2700	12.5x20	1580	0.042		12.5x20	2124	0.030	12.5x30	2340	0.028	12.5x35	2743	0.024
3300	12.5x20	1870	0.035		12.5x30	2340	0.028	12.5x35	2450	0.026	16x31.5	3029	0.022
3900	12.5x20	1900	0.032		12.5x35	2450	0.026	16x25	2500	0.028	16x35.5	3124	0.020
4700	12.5x20	2124	0.030		16x25	2500	0.028	16x31.5	3029	0.022	18x35.5	3638	0.019
5600	12.5x30	2524	0.026		16x25	2552	0.026	16x35.5	3124	0.020	18x40	3781	0.016
6800	16x25	2760	0.028		16x31.5	3029	0.022	16x40	3586	0.019			
8200	16x31.5	3029	0.022		16x31.5	3600	0.020	18x35.5	3750	0.018			
10000	16x35.5	3124	0.020		18x35.5	3638	0.019						
12000	18x31.5	3600	0.020										
15000	18x35.5	3781	0.018										

Cap (μF)	V	35			50			63			100		
	Item	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP
10					5x11	120	1.400	5x11	125	1.650	6.3x11	130	1.250
22	5x11	150	0.920		5x11	160	1.200	6.3x11	240	0.780	8x11.5	230	0.850
33	5x11	220	0.430		6.3x11	230	0.300	8x11.5	270	0.650	10x12.5	330	0.690
47	6.3x11	280	0.300		6.3x11	295	0.300	8x11.5	300	0.504	10x12.5	370	0.450
100	8x11.5	450	0.200		10x12.5	760	0.120	10x16	610	0.160	10x25	560	0.300
220	10x12.5	760	0.100		10x16	1150	0.078	10x20	1100	0.120	12.5x20	880	0.280
330	10x16	1210	0.060		12.5x20	1660	0.055	12.5x20	1280	0.100	16x25	1440	0.130
470	10x20	1400	0.058		12.5x20	1950	0.046	12.5x20	1710	0.082	18x31.5	1690	0.110
560	12.5x20	1660	0.055		12.5x20	2124	0.034	16x25	1820	0.058	18x35.5	2020	0.043
680	12.5x20	1900	0.035		12.5x30	2310	0.030	16x25	1850	0.055	18x35.5	2100	0.043
820	12.5x20	2124	0.030		12.5x35	2510	0.025	16x31.5	2250	0.043			
1000	12.5x20	2340	0.028		12.5x35	2920	0.022	16x35.5	2450	0.036			
1200	12.5x30	2524	0.026		16x31.5	3010	0.022	18x31.5	2580	0.031			
1500	16x25	2600	0.026		16x35.5	3150	0.020						
1800	16x25	2850	0.025		18x31.5	3635	0.020						
2200	16x31.5	3029	0.022		18x35.5	3680	0.017						
2700	18x31.5	3600	0.020										
3300	18x40	3781	0.015										

MF series

STANDARD RATINGS

DxL(mm), R.C : (mA rms) at 105°C 100kHz.

Cap (μ F)	V	160		200		250	
	Item	D x L	R.C.	D x L	R.C.	D x L	R.C.
4.7						8x11.5	150
10		10x16	330	10x16	330	10x16	330
22		10x20	510	10x20	510	10x20	510
33		10x20	650	10x20	650	12.5x20	800
47		10x20	750	12.5x20	980	12.5x20	980
100		12.5x25	1420	16x25	1580	16x31.5	1750
150		16x25	1900	16x25	1900	18x31.5	2050
330		18x25	2100	18x31.5	2300		

Cap (μ F)	V	350		400		450	
	Item	D x L	R.C.	D x L	R.C.	D x L	R.C.
2.2				10x13	150		
3.3				10x13	160		
4.7		10x13	140	10x16	230	10x20	210
10		10x20	350	10x20	350	12.5x20	450
22		12.5x20	640	12.5x20	640	16x20	750
33		16x20	850	16x20	850	16x25	950
47		16x25	1030	16x25	1030	18x25	1050
100		16x31.5	1180	18x31.5	1180	18x31.5	1230