

MZ series

- 105°C 5000hours, long life.
- High temperature, high ripple current resistance and high reliability.
- RoHS Compliance
- 105°C 5000小時長壽命。
- 耐高溫、高紋波、高信賴性。



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	10 ~ 100VDC					160 ~ 450VDC				
Leakage Current 洩漏電流	$I \leq 3\sqrt{CV}$ (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)	10	16	25	35	50	63	80~100	160~400	420~450
	tan δ (Max)	0.60	0.45	0.30	0.25	0.20	0.15	0.15	0.15	0.20
When nominal capacitance over 1000 μ F, tan δ shall be added 0.01 to the listed value with increase of every 1000 μ F.										
Low Temperature Stability 低溫特性 Impedance Ratio(Max) 阻抗比率(最大值)	Measurement Frequency: 120Hz.									
	Rated Voltage(V)	10	16	25	35	50	63	80~100	160~400	420~450
	Z(-25°C)/Z(20°C)	4	4	3	3	2	2	2	4	8
Z(-40°C)/Z(20°C)										
15 15 10 8 6 6 5 - -										
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 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 ± 15% 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 (IEC 60384)									

Frequency Coefficient of Permissible Ripple Current

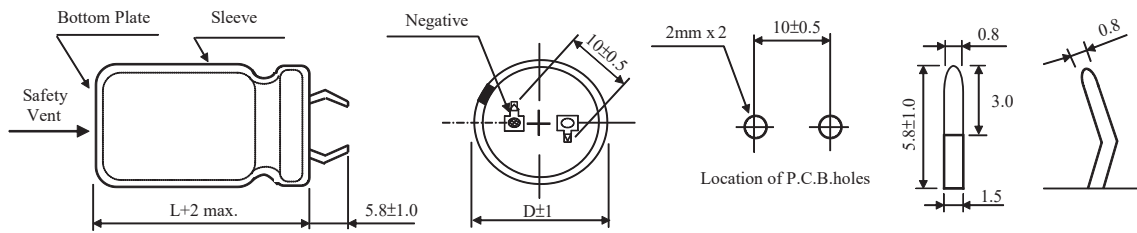
Rated Voltage (V)	Frequency (Hz)				
	50	120	1K	10K	50K
10 ~ 100	0.90	1.00	1.05	1.10	1.15
160 ~ 250	0.80	1.00	1.15	1.45	1.50
315 ~ 450	0.76	1.00	1.14	1.40	1.42

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use , the rms ripple current has to be reduced.

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DIMENSIONS(mm)



STANDARD RATINGS

D×L(mm) ; R.C.(A rms) at 105°C 120Hz

Cap (µF)	V	10		16		25		35		50	
		Item	D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L
1500										22x25	1.02
1800										22x30	1.18
										25x25	1.17
2200								22x25	1.11	22x35	1.32
2700										22x40	1.51
										25x30	1.48
										30x25	1.51
3300								22x30	1.42	25x35	1.71
								25x25	1.41	30x30	1.72
										35x25	1.74
3900						22x25	1.32	22x35	1.58	22x50	1.91
								25x30	1.59	25x40	1.89
4700						22x30	1.51	22x40	1.78	30x35	2.12
						25x25	1.52	30x25	1.78	35x30	2.16
5600				22x25	1.45	22x35	1.71	25x35	1.98	25x50	2.39
								30x30	1.99	30x40	2.39
								35x25	2.03	35x35	2.41
6800		22x25	1.31	22x30	1.67	22x40	1.92	22x50	2.26	30x50	2.79
				25x25	1.66	25x30	1.88				
						30x25	1.90	25x40	2.25	35x40	2.79
8200				22x35	1.88	25x35	2.15	25x50	2.57		
						30x30	2.16	30x35	2.51		
						35x25	2.19	35x30	2.56		
10000		22x30	1.65	22x40	2.12	22x50	2.45	30x40	2.87	35x50	3.56
		25x25	1.63	25x30	2.08						
				30x25	2.12	25x40	2.44	35x35	2.88		
12000		22x35	1.84	25x35	2.38	25x50	2.78	30x50	3.32		
		25x30	1.85	30x30	2.37	30x35	2.71				
		30x25	1.88	35x25	2.41	35x30	2.76	35x40	3.31		
15000		22x40	2.11	22x50	2.74	30x40	3.14				
		25x35	2.15	25x40	2.72	35x35	3.16				
18000		22x50	2.45	25x50	3.12	30x50	3.63	35x50	4.28		
		25x40	2.42								
		30x30	2.38	30x35	3.03						
		35x25	2.41	35x30	3.09	35x40	3.62				
22000		30x35	2.72	30x40	3.47						
		35x30	2.78	35x35	3.49						
27000		25x50	3.12	30x50	4.07	35x50	4.72				
		30x40	3.14	35x40	4.05						
33000		35x35	3.48								
39000		30x50	3.98	35x50	5.15						
		35x40	3.95								
47000		35x50	4.62								

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STANDARD RATINGS

D×L(mm) ; R.C.(A rms) at 105°C 120Hz

Cap (μF)	V Item	63		80		100		160		180			
		D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L	R.C.		
330										22x25	1.22		
390						22x25	0.78	22x25	1.32				
470										22x30	1.53		
										25x25	1.52		
560						22x30	0.99	22x30	1.66	22x35	1.70		
						25x25	0.98	25x25	1.67	30x25	1.78		
680				22x25	0.97	22x35	1.12	22x35	1.87	22x40	1.91		
								25x30	1.89				
								30x25	1.95	25x30	1.89		
820				22x30	1.12			22x40	1.26	22x40	2.09		
								25x30	1.24			25x35	2.16
								30x25	1.25			30x30	2.17
												35x25	2.31
1000	22x25	1.00		22x35	1.26	25x35	1.41	22x45	2.41	22x50	2.25		
				25x25	1.24	30x30	1.42	25x40	2.38	25x45	2.47		
						35x25	1.44	30x30	2.39	30x35	2.46		
								35x30	2.53				
1200	22x30	1.16		22x40	1.42	22x50	1.60	25x45	2.71	25x50	2.76		
				25x30	1.40	25x40	1.59	30x40	2.76	30x40	2.77		
				30x25	1.41	30x35	1.61	35x30	2.85	35x35	2.85		
1500	22x35	1.32		25x35	1.62	25x50	1.86	25x50	3.09	30x45	3.17		
						30x40	1.87	30x45	3.16	30x50	3.20		
						35x30	1.85	35x40	3.21	35x35	3.22		
1800	22x40	1.49		22x50	1.84	35x35	2.06	30x50	3.53	35x45	3.73		
				25x40	1.83								
				30x30	1.79								
				35x25	1.82								
2200	25x30	1.46		30x30	1.79	35x50	2.81	35x50	4.14	35x50	4.23		
				30x25	1.48								
				35x25	1.82								
2700	30x35	1.48		25x35	1.67	25x50	2.10	30x50	2.40				
				30x30	1.68	30x35	2.06	35x40	2.39				
				35x25	1.70	35x25	2.09						
3300	22x50	1.92		30x40	2.35								
				25x40	1.91	35x35	2.36						
3900	30x35	1.93		25x50	2.20	30x50	2.75						
				35x30	2.18	35x40	2.73						
4700	30x40	2.41											
				35x35	2.43								
6800	30x50	2.79											
				35x40	2.78	35x50	3.46						

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STANDARD RATINGS

D×L(mm) ; R.C.(A rms) at 105°C 120Hz

Cap (μF)	V Item	200		220		250		315	
		D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L	R.C.
150								22x25	0.80
180								22x30	0.93
								25x25	0.94
220		22x25	1.00			22x25	1.01	22x35	1.04
								25x25	1.16
270		22x25	1.11	22x25	1.11	22x30	1.20	22x40	1.18
								25x30	1.19
330				22x30	1.18	25x30	1.32	22x45	1.33
								25x35	1.37
								30x30	1.40
								35x25	1.48
390		22x30	1.38	22x35	1.39	22x40	1.44	22x50	1.49
		25x25	1.39	25x25	1.39	25x30	1.43	25x40	1.52
						30x25	1.50		
470		22x35	1.55	22x35	1.55	22x45	1.62	25x45	1.70
				25x30	1.56	25x35	1.70	30x35	1.71
				30x25	1.62	30x30	1.74	35x30	1.81
560		22x40	1.73	22x45	1.73	22x50	1.84	25x50	1.88
		25x30	1.72	25x35	1.81	25x40	1.78	30x40	1.92
						30x35	1.83	30x45	1.97
		30x25	1.77	30x30	1.85	35x25	1.90	35x35	1.99
680		22x45	1.82	22x50	1.98	25x45	2.04	30x50	2.21
		25x35	1.86	25x40	1.96	30x40	2.06		
		30x30	1.97	30x35	2.02			35x30	2.14
		35x25	2.09	35x25	2.09				
820		25x50	2.17	25x45	2.24	25x50	2.28	35x45	2.57
		25x40	2.09	30x40	2.29	30x45	2.38		
		30x35	2.21	35x30	2.35	35x35	2.37		
1000		25x50	2.39	25x55	2.52	30x50	2.68	35x50	2.89
		30x40	2.53	30x45	2.58				
		35x30	2.60	35x35	2.63	35x40	2.71		
1200		30x45	2.85	30x50	2.89	35x45	3.05		
		35x40	2.88	35x40	2.97				
1500		35x45	3.34	35x45	3.41	35x50	3.49		
1800		35x50	3.82	35x50	3.82				

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STANDARD RATINGS

D×L(mm) ; R.C.(A rms) at 105°C 120Hz

Cap (μF)	V Item	350		400		420		450	
		D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L	R.C.
82								22x25	0.60
100				22x25	0.66	22x25	0.66	22x30	0.69
								25x25	0.70
120	22x25		0.72	22x30	0.75	22x30	0.76	22x35	0.76
						25x25	0.77		
150	22x30		0.84	22x35	0.85	22x35	0.86	22x45	0.90
				25x25	0.86			25x35	0.92
								30x25	0.93
180	25x25		0.94	22x40	0.96	22x45	0.98	22x50	1.01
				25x30	0.97	25x35	1.01	25x40	1.02
				30x25	1.03	30x25	1.02	30x30	1.03
								35x25	1.09
220	22x40		1.06	22x45	1.09	22x50	1.11	25x45	1.16
	25x30		1.07	25x35	1.12	25x40	1.13	30x35	1.17
					30x30	1.14			
	30x25		1.12	35x25	1.21	35x25	1.21	35x30	1.23
270	22x45		1.21	22x50	1.24	25x45	1.29	25x50	1.31
	25x35		1.24	25x45	1.29	30x35	1.30	30x40	1.33
	30x30		1.27						
	35x25		1.34	30x35	1.27	35x30	1.37	35x35	1.38
330	22x50		1.37	25x50	1.44	25x50	1.45	30x45	1.51
	25x40		1.39	30x35	1.43	30x40	1.48		
	30x35		1.42	35x30	1.51	35x35	1.54		
390	25x45		1.55	30x40	1.61	30x45	1.65	30x50	1.67
	30x40		1.59						
	35x30		1.65	35x35	1.66	35x40	1.73	35x45	1.76
470	25x50		1.73	30x50	1.85	30x50	1.85	35x50	1.98
	30x45		1.81	35x40	1.89	35x45	1.93		
	35x35		1.82						
560	30x50		2.01	35x45	2.13	35x50	2.17		
	35x40		2.06						
680			35x45	2.34	35x50	2.38			
820			35x50	2.62					