

HZ series

- Down size, load life extend to 3000 hours.
- 105°C, high temperature, high ripple current resistance and high reliability.
- RoHS Compliance
- Done size、壽命3000小時。
- 105°C 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	16 ~ 250VDC					350 ~ 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)	16	25	35	50	63	80	100	160	200~250	350~450
	tan δ (Max)	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.15	0.20
	When nominal capacitance over 1000 μF , tan δ shall be added 0.01 to the listed value with increase of every 1000 μF .										
Low Temperature Stability 低溫特性 Impedance Ratio(Max) 阻抗比率(最大值)	Measurement Frequency: 120Hz.										
	Rated Voltage(V)	16	25	35	50	63	80	100	160~250	350~450	
	Z(-25°C)/Z(20°C)	6	6	4	4	4	4	4	4	8	
	Z(-40°C)/Z(20°C)	16	15	10	10	8	6	6	15	-	
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 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 ± 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	IEC 60384-4 (JIS C 5101-4)										

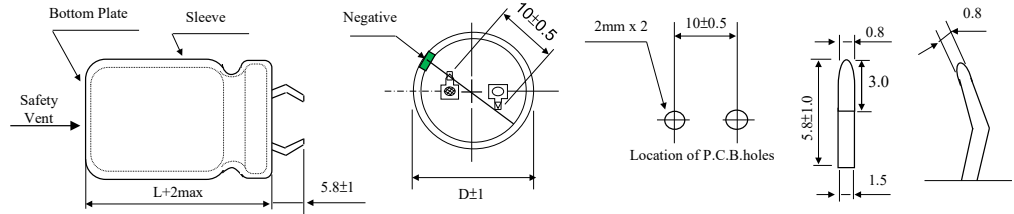
Frequency Coefficient of Permissible Ripple Current

Rated Voltage (V)	Frequency (Hz)				
	50	120	1K	10K	100K
16 ~ 100	0.88	1.00	1.05	1.10	1.15
160 ~ 250	0.85	1.00	1.20	1.30	1.50
350 ~ 450	0.88	1.00	1.20	1.25	1.40

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DIMENSIONS(mm)



STANDARD RATINGS

D×L(mm) ; R.C.(A rms) at 105°C 120Hz

Cap (μF)	V Item	16		25		35		50		63		80		100	
		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.	D x L	R.C.	D x L	R.C.
560														20x25	0.95
680														20x30	1.15
820												20x25	1.04	20x35	1.32
1000										20x25	1.35	20x30 22x25	1.24	20x35 22x30	1.47
1500								20x25	1.02	20x30 22x25	1.47	20x35 22x30	1.59	22x40 25.4x35	1.98
2200								20x30 22x25	1.60	20x40 22x35	1.82	22x40 25.4x30	2.03	25.4x45 30x35	2.55
2700						20x25	1.29	20x35 22x30	1.73	22x35 25.4x30	2.11	22x45 25.4x35	2.39	25.4x50 30x40	2.89
3300						20x30	1.57	20x40 22x35	1.97	22x45 25.4x35	2.33	25.4x40 30x35	2.64	30x45 35x35	3.30
3900				20x25	1.65	22x25	1.78	22x40 25.4x30	2.22	22x50 25.4x40	2.55	25.4x50 30x35	2.97	30x50 35x40	3.67
4700				20x25	1.75	20x35 22x30	2.02	22x45 25.4x35	2.43	25.4x45 30x35	2.97	30x40 35x35	3.38	35x45	3.80
6800	20x25	1.50	20x35 22x30	2.11	22x40 25.4x30	2.41	25.4x45 30x35	3.30	30x40 35x35	3.65	35x45	4.10	35x50	4.05	
8200	20x30	1.70	20x40 22x30	2.34	22x45 25.4x35	2.85	25.4x50 30x40	3.60	30x50 35x40	4.04	35x50	4.30			
10000	20x35 22x30	1.85	22x35 25.4x30	2.65	22x50 25.4x40	3.05	30x45 35x35	4.05	35x45	4.48					
12000	20x40 22x30	2.01	22x40 25.4x30	2.81	25.4x45 30x35	3.37	30x50 35x40	4.56	35x50	4.75					
15000	22x35 25.4x30	2.39	22x45 25.4x35	3.13	25.4x50 30x40	3.72	35x50	4.77							
18000	22x40 25.4x30	2.90	25.4x40 30x30	3.56	30x45 35x35	4.37									
22000	22x45 25.4x35	3.10	25.4x50 30x35	4.04	30x50 35x40	4.92									
27000	22x50 25.4x40	3.55	30x45 35x35	4.74	35x50	5.30									
33000	25.4x45 30x35	4.05	30x50 35x40	5.50											
39000	25.4x50 30x40	4.55	35x45	5.80											
47000	30x45 35x40	5.36	35x50	6.30											
56000	30x50 35x45	5.60													

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STANDARD RATINGS

DxL(mm), R.C : (A rms) at 105°C 120 Hz

Cap (µF)	V	160		180		200		220		250		315	
		Item	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.	D x L
68												22x20	0.45
82												22x20	0.47
100												22x25	0.61
												25.4x20	0.56
120										22x20	0.60	22x25	0.75
												25.4x20	0.62
												30x20	0.65
150						22x20	0.73	22x20	0.67	22x25	0.65	22x30	0.82
										25.4x20	0.74	25.4x25	0.82
												30x20	0.70
												35x20	0.76
				22x20	0.80	22x20	0.80	25.4x20	0.76	22x25	0.78	22x35	0.92
180										25.4x20	0.75	25.4x25	0.92
												30x25	0.90
												35x20	0.85
		22x20	0.81	25.4x20	0.90	20x25	1.00	22x25	1.00	20x30	0.95	22x40	1.04
220		20x25	1.10			25.4x20	0.85	25.4x20	0.84	22x25	0.95	25.4x30	1.04
										25.4x25	0.95	30x25	1.04
										30x20	0.95	35x20	0.90
		25.4x20	0.98	22x25	1.00	22x25	1.10	22x30	1.15	22x30	1.18	22x45	1.16
270			25.4x20	0.95	30x20	1.05	25.4x25	1.08	25.4x25	1.18	25.4x35	1.16	
							30x20	0.98	30x20	1.00	30x25	1.16	
											35x25	1.15	
		20x30	1.21	22x25	1.20	20x30	1.25	22x35	1.25	20x40	1.20	22x50	1.33
330		22x25	1.20	25.4x25	1.16	22x30	1.25	25.4x25	1.25	22x35	1.30	25.4x40	1.33
		25.4x20	1.02	30x20	1.15	25.4x25	1.25	35x20	1.13	25.4x30	1.30	30x30	1.33
						30x20	1.10			30x25	1.30	35x25	1.33
										35x20	1.16		
390		20x30	1.30	22x30	1.35	22x30	1.35	22x35	1.40	25.4x30	1.35	25.4x45	1.47
		22x25	1.30	25.4x25	1.35	25.4x25	1.35	25.4x30	1.40	22x40	1.49	30x35	1.47
		25.4x25	1.26	30x20	1.20	35x20	1.30	30x25	1.36	25.4x35	1.49	35x30	1.47
		30x20	1.25					35x20	1.23	30x25	1.49		
470		20x35	1.41	22x35	1.50	22x35	1.50	22x40	1.51	22x45	1.65	25.4x50	1.70
		22x30	1.41	25.4x30	1.50	25.4x30	1.50	25.4x35	1.54	25.4x35	1.65	30x40	1.70
		30x20	1.30	30x25	1.50	30x25	1.50	30x25	1.50	30x30	1.65	35x30	1.70
				35x20	1.36	35x20	1.41			35x25	1.65		
560		22x35	1.67	22x40	1.67	22x40	1.67	22x45	1.70	22x50	1.67	30x45	2.05
		25.4x30	1.67	25.4x30	1.67	25.4x30	1.67	30x30	1.70	25.4x40	1.80	35x35	2.05
		30x25	1.67	30x25	1.67	30x25	1.67	25.4x40	1.72	30x30	1.80		
		35x20	1.46	35x20	1.43			35x25	1.71	35x25	1.80		
680		22x40	1.82	22x45	1.78	22x45	1.78	25.4x45	1.94	25.4x50	2.00	30x50	2.17
		25.4x30	1.82	25.4x35	1.78	25.4x35	1.78	30x35	1.93	30x35	2.00	35x40	2.17
		30x25	1.82	30x30	1.78	30x30	1.78	35x25	1.89	35x30	2.00		
		35x20	1.51	35x25	1.83	35x25	1.78						
820		20x45	2.00	22x50	2.04	22x50	1.95	25.4x50	2.18	25.4x60	2.20	35x45	2.20
		22x45	2.04	25.4x40	2.04	25.4x45	2.04	30x40	2.19	30x40	2.30		
		25.4x35	2.04	30x30	2.04	30x30	2.04	35x30	2.16	35x35	2.30		
		30x30	2.04	35x25	2.04	35x25	2.04						
	35x25	2.04											
1000		22x50	2.25	25.4x45	2.30	25.4x45	2.30	25.4x60	2.54	30x45	2.35	35x60	2.55
		25.4x40	2.25	30x35	2.30	25.4x50	2.30	30x45	2.50	35x35	2.35		
		30x30	2.25	35x30	2.30	30x35	2.30	35x35	2.44	30x50	2.47		
		35x25	2.25			35x30	2.30			35x40	2.47		
1200		25.4x45	2.49	25.4x50	2.55	25.4x60	2.66	30x50	2.81	30x60	2.85		
		30x35	2.49	30x40	2.55	30x40	2.65	35x40	2.79	35x40	2.50		
		35x30	2.49	35x30	2.55	35x35	2.65			35x45	2.60		
1500		25.4x60	2.97	30x45	2.90	30x50	3.08	30x60	3.30	35x50	3.00		
		30x40	2.84	35x35	2.90	35x40	3.08	35x45	3.22				
		35x30	2.84										
1800		30x45	3.32	30x60	3.49	30x60	3.49	35x50	3.63	35x60	3.42		
		35x35	3.00	35x40	3.30	35x45	3.48						
2200		30x60	3.86	35x50	3.65	35x50	3.78	35x60	4.23				
		35x45	3.50										
2700		35x50	4.00	35x60	4.19								
3300		35x60	4.63										

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STANDARD RATINGS

DxL(mm), R.C : (A rms) at 105°C 120 Hz

Cap (μ F)	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.
47				22x20	0.37	22x20	0.37		
56		22x20	0.41	25.4x20	0.42	25.4x20	0.42	22x25	0.40
68		25.4x20	0.46	22x25	0.50	22x25	0.50	22x30	0.53
				25.4x20	0.46	25.4x20	0.46	25.4x25	0.50
82		22x25	0.55	22x25	0.64	22x25	0.64	22x30	0.64
		25.4x20	0.51	30x20	0.55	25.4x25	0.58	25.4x25	0.64
						30x20	0.53		
100		30x20	0.60	22x30	0.70	22x30	0.70	22x35	0.69
		22x25	0.69	25.4x25	0.70	25.4x25	0.70	25.4x30	0.69
				30x20	0.60	30x20	0.59	30x25	0.64
120		22x30	0.75	22x35	0.75	22x35	0.75	22x40	0.80
		25.4x25	0.75	25.4x25	0.75	25.4x30	0.75	25.4x30	0.80
		30x20	0.65	35x20	0.75	30x25	0.73	30x25	0.80
				30x25	0.73	35x20	0.67	35x25	0.73
150		22x35	0.82	22x40	0.88	22x40	0.88	22x 45	0.88
		30x25	0.82	25.4x30	0.88	25.4x35	0.88	25.4x35	0.88
		25.4x30	0.83	30x25	0.88	30x25	0.88	30x30	0.88
		35x20	0.76	35x20	0.80			35x25	0.75
180		22x40	0.92	22x45	0.98	22x45	0.95	22x50	1.00
		25.4x30	0.92	25.4x35	0.98	25.4x35	0.95	25.4x40	1.00
		30x25	0.90	30x30	0.98	30x30	0.95	30x30	1.00
				35x25	0.98	35x25	0.94		
220		22x45	1.05	22x50	1.10	22x50	1.10	25.4x45	1.12
		30x30	1.02	25.4x40	1.10	25.4x45	1.10	30x35	1.12
		25.4x35	1.04	30x30	1.10	30x35	1.10	35x30	1.12
		35x25	1.04	35x25	1.10	35x25	1.10		
270		22x50	1.16	25.4x45	1.22	25.4x50	1.22	25.4x60	1.18
		25.4x40	1.18	30x35	1.22	30x40	1.22		
		30x30	1.17	35x30	1.22	35x30	1.22	30x40	1.28
		35x25	1.20					35x35	1.28
330		25.4x45	1.29	25.4x50	1.44	25.4x60	1.41	30x50	1.45
		30x35	1.34	30x40	1.44	30x45	1.45	35x40	1.45
		35x30	1.22	35x30	1.44	35x35	1.45		
390		25.4x50	1.51	25.4x60	1.51	30x50	1.55	30x60	1.51
		30x40	1.51	30x45	1.60	35x40	1.55	35x40	1.55
		35x35	1.47	35x35	1.60				
470		25.4x60	1.66	30x50	1.90	30x60	1.79	35x50	1.85
		30x45	1.65	35x40	1.90	35x45	1.90		
		35x35	1.69						
560		30x50	1.85	30x60	2.10	35x50	2.15	35x60	1.91
		35x40	1.90	35x45	2.12				
680		30x60	2.15	35x50	2.27	35x60	2.27		
		35x45	2.00	35x60	2.27				
		35x50	1.99						
820		35x55	2.30						
		35x60	2.31						