

HF series

- Ultra Low impedance at High frequency range.
- High ripple current, 4000~8000 hours long life at 105°C .
- RoHS Compliance
- 高頻低阻抗。
- 高紋波電流.105°C 4000~8000小時長壽命產品。



SPECIFICATIONS

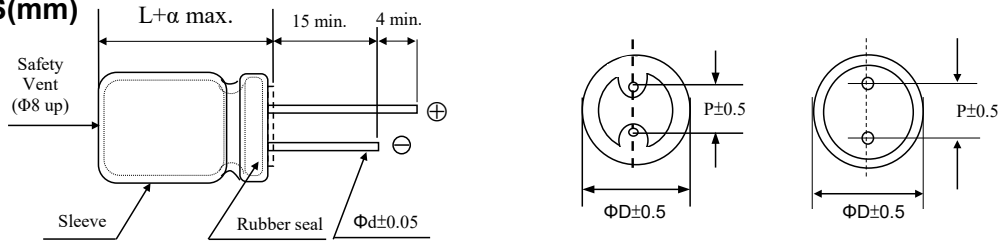
Items 項目	Characteristics 特性								
Capacitance Tolerance 靜電容量誤差	± 20%(120Hz,20°C)								
Operating Temperature Range 適用溫度範圍	-40 ~ +105°C								
Rated Voltage Range 額定電壓範圍	6.3 ~ 100VDC								
Leakage Current 洩漏電流	$I \leq 0.01CV$ or 3 (µA) which is greater.(After 2 minutes application of DC rated voltage, 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	100
	tan δ(Max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08
	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
	Z(-25°C)/Z(20°C)	4	3	2	2	2	2	2	2
	Z(-40°C)/Z(20°C)	8	6	4	3	3	3	3	3
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 varied hours according to varied Φ [please refer to below sheet] at 105°C.								
	Time	Φ	5	6.3	8	10	12.5~13	14.5~16	18
		hours	4000	4000	5000	6000	7000	8000	8000
	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	200% 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

Capacitance (µF)	Frequency (Hz)			
	120	1K	10K	100K
5.6 ~ 180	0.40	0.75	0.90	1.00
220 ~ 560	0.50	0.85	0.94	1.00
680 ~ 1800	0.60	0.87	0.95	1.00
2200 ~ 3900	0.75	0.90	0.95	1.00
4700 ~ 18000	0.85	0.95	0.98	1.00

HF series

DIMENSIONS(mm)



ΦD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
Φd	0.5	0.5	0.5	0.6	0.6	0.8	0.8

α	(L < 20) 1.5
	(L ≥ 20) 2.0

STANDARD RATINGS

DxL(mm), R.C : (mA rms) at 105°C 100kHz , IMP:(Ω max) at 20°C,-10°C 100kHz.

Cap (μF)	V	Item	6.3				10				16				25			
			D x L	IMP		R.C.	D x L	IMP		R.C.	D x L	IMP		R.C.	D x L	IMP		R.C.
				20°C	-10°C			20°C	-10°C			20°C	-10°C			20°C	-10°C	
47																		
100						5x11	0.500	1.000	170									
150		5x11	0.500	1.000	170					6.3x11	0.250	0.500	295	6.3x11	0.250	0.500	295	
220						6.3x11	0.240	0.500	295	6.3x15	0.170	0.360	410	6.3x15	0.180	0.350	420	
330		6.3x11	0.240	0.500	295	6.3x15	0.180	0.350	400	8x11.5	0.120	0.230	660	8x11.5	0.120	0.230	650	
390														8x15	0.090	0.180	750	
470		6.3x15	0.180	0.360	400	8x11.5	0.120	0.230	650	10x12.5	0.090	0.180	770	10x12.5	0.090	0.180	770	
560										8x20	0.080	0.160	830	8x20	0.079	0.150	820	
680		8x11.5	0.120	0.240	655	8x15	0.090	0.180	830	10x16	0.067	0.136	1070	10x20	0.052	0.104	1230	
820		10x12.5	0.091	0.180	860	10x12.5	0.090	0.180	860					10x20	0.052	0.104	1230	
1000		8x15	0.091	0.190	830	8x20	0.080	0.150	1010	10x20	0.052	0.103	1270	10x30	0.037	0.073	1720	
1200		8x20	0.082	0.170	1060	10x16	0.067	0.136	1250	10x20	0.052	0.103	1420	12.5x20	0.037	0.076	1670	
1500		10x20	0.051	0.103	1420	10x20	0.052	0.103	1420	10x25	0.045	0.090	1450					
1800						10x25	0.044	0.090	1640	10x30	0.036	0.074	1700	12.5x25	0.030	0.060	1960	
2200		10x25	0.044	0.090	1640	12.5x20	0.038	0.077	1650	12.5x20	0.030	0.060	1970	12.5x20	0.030	0.060	1970	
2700		10x30	0.038	0.075	1930					12.5x30	0.024	0.050	2330	12.5x40	0.016	0.034	2860	
3300		12.5x20	0.037	0.075	1650	12.5x25	0.030	0.060	1960	16x20	0.028	0.058	2220	16x25	0.027	0.056	2500	
3900		12.5x25	0.030	0.060	1960	12.5x30	0.024	0.050	2320	12.5x35	0.022	0.043	2520	16x31.5	0.019	0.038	3020	
4700		12.5x30	0.024	0.050	2320	16x20	0.028	0.058	2230	16x35.5	0.017	0.034	3160	18x25	0.020	0.040	2750	
5600		12.5x35	0.021	0.043	2520	16x35.5	0.017	0.034	3160	18x20	0.028	0.055	2490	16x35.5	0.017	0.034	3160	
6300						18x20	0.027	0.056	2490	18x31.5	0.017	0.035	3350	18x31.5	0.018	0.035	3340	
6800		12.5x40	0.017	0.034	2880	18x25	0.020	0.040	2750	18x35.5	0.016	0.032	3670	16x40	0.015	0.030	3720	
8200		16x31.5	0.019	0.038	3020	16x40	0.015	0.030	3720	18x25	0.200	0.040	2750	18x35.5	0.016	0.031	3690	
10000		18x25	0.020	0.040	2750	18x35.5	0.016	0.031	3670									
12000		16x40	0.015	0.030	3720													
15000		18x31.5	0.017	0.035	3340													
18000		18x35.5	0.016	0.031	3670													

HF

HF series

STANDARD RATINGS

DxL(mm), R.C : (mA rms) at 105°C 100kHz , IMP:(Ω max) at 20°C,-10°C 100kHz.

Cap (μF)	V	35				50				63				100				
		Item	D x L	IMP		R.C.	D x L	IMP		R.C.	D x L	IMP		R.C.	D x L	IMP		R.C.
				20°C	-10°C			20°C	-10°C			20°C	-10°C			20°C	-10°C	
5.6														5x11	2.000	5.200	90	
12										5x11	1.800	4.000	145		1.200	3.100	120	
18															0.620	1.800	200	
22						5x11	0.900	1.800	165					8x11.5	0.540	1.600	250	
27														10x12.5	0.480	1.400	350	
33		5x11	0.490	1.000	185									8x15	0.740	2.000	320	
39														10x16	0.620	1.650	460	
47											0.600	1.400	340	8x20	0.280	0.750	450	
56			0.250	0.500	300													
68							0.310	0.620	370					10x20	0.270	0.710	580	
100			0.170	0.360	410	8x11.5	0.210	0.430	490	8x15	0.260	0.650	540	10x25	0.200	0.530	760	
120										10x12.5	0.254	0.510	550	10x30	0.160	0.430	910	
150						8x15	0.160	0.320	640					12.5x20	0.160	0.430	840	
180						10x12.5	0.150	0.320	630	10x16	0.190	0.380	620	12.5x25	0.120	0.320	1010	
220		8x11.5	0.120	0.230	625					8x20	0.210	0.510	690	10x20	0.210	0.510	950	
270						8x20	0.120	0.240	740					12.5x30	0.130	0.360	1220	
330						10x16	0.130	0.250	860	10x20	0.144	0.290	890	16x20	0.120	0.320	1200	
390		8x15	0.090	0.180	740									12.5x35	0.088	0.250	1420	
470		10x12.5	0.090	0.170	770	10x20	0.087	0.180	1060	10x25	0.130	0.260	1060	16x25	0.082	0.230	1400	
560														12.5x40	0.060	0.180	1600	
680		8x20	0.079	0.160	820									18x20	0.085	0.240	1400	
820						10x25	0.073	0.15	1260	10x30	0.090	0.180	1310	16x31.5	0.059	0.180	1740	
1000										12.5x20	0.084	0.170	1290	18x25	0.070	0.200	1610	
1200						10x30	0.054	0.11	1520					16x35.5	0.053	0.150	1950	
1500						12.5x20	0.058	0.12	1490	12.5x25	0.070	0.140	1730	18x31.5	0.059	0.170	1820	
1800		10x20	0.052	0.103	1230					12.5x30	0.054	0.110	2100					
2200										16x20	0.058	0.120	1780	16x40	0.056	0.160	2100	
2700		10x25	0.044	0.090	1450	12.5x25	0.044	0.087	1850					18x35.5	0.053	0.150	2150	
3300		10x30	0.037	0.073	1700	12.5x30	0.038	0.078	2230	12.5x35	0.046	0.093	2280					
3900		12.5x20	0.038	0.076	1670	16x20	0.047	0.095	1850	16x25	0.050	0.100	2170	18x40	0.042	0.120	2300	
5600										18x20	0.054	0.110	2300					
6800						12.5x35	0.033	0.065	2300	12.5x40	0.042	0.084	2570					
8200						18x20	0.042	0.083	1990	16x31.5	0.042	0.085	2680					
10000										18x25	0.042	0.085	2690					
12000		12.5x25	0.030	0.060	1960	12.5x40	0.029	0.058	2510	16x35.5	0.035	0.071	2780					
15000						16x25	0.034	0.068	2250									
18000		12.5x30	0.024	0.050	2320	16x31.5	0.027	0.055	2710	16x35.5	0.030	0.060	2860					
22000		16x20	0.028	0.057	2220	18x25	0.028	0.057	2610	18x31.5	0.032	0.064	2960					
27000		12.5x35	0.022	0.043	2520	16x35.5	0.025	0.050	2810	18x35.5	0.030	0.060	3120					
33000		12.5x40	0.016	0.034	2880													
39000		16x25	0.022	0.044	2570	164x0	0.020	0.042	3210									
56000		18x20	0.027	0.055	2510	18x31.5	0.025	0.050	3010	18x40	0.025	0.050	3220					
68000		16x31.5	0.018	0.038	3020													
82000		18x25	0.020	0.040	2750	18x35.5	0.022	0.045	3110									
100000		16x35.5	0.017	0.033	3160													
120000		18x31.5	0.018	0.036	3340	18x40	0.020	0.040	3410									
150000																		
180000		16x40	0.015	0.030	3720													
220000		18x35.5	0.016	0.031	3690													
270000		18x40	0.015	0.030	3810													

HF