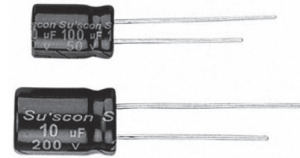


HE series

- High ripple current.
- 8000~10000 hours long life product.
- RoHS Compliance
- 高紋波電流。
- 8000~10000小時長壽命品。



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			-25 ~ +105°C			
Rated Voltage Range 額定電壓範圍	160 ~ 400VDC			450VDC			
Leakage Current 洩漏電流	$I \leq 0.04CV + 100 (\mu A)$ (After 1 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)	160	200	250	350	400	450
	tan δ(Max)	0.15	0.15	0.15	0.20	0.20	0.20
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)	160	200	250	350	400	450
	Z(-25°C)/Z(20°C)	3	3	3	6	6	6
Z(-40°C)/Z(20°C)							
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 10,000 hours(φ D=10:8,000 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	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)						

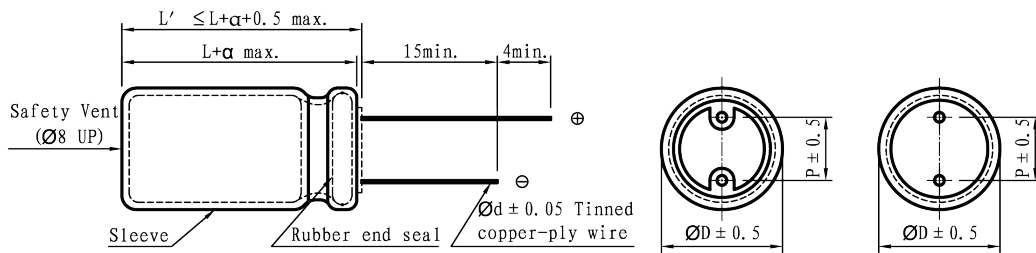
Frequency Coefficient of Permissible Ripple Current

Capacitance (μF)	Frequency (Hz)				
	50	120	1K	10K	100K
6.8 ~ 82	0.70	1.00	1.75	2.25	2.50
100 ~ 330	0.75	1.00	1.67	2.05	2.25

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.

HE series

DIMENSIONS(mm)



ϕD	8	10	13	14.5	16	18
P	3.5	5.0	5.0	7.5	7.5	7.5
ϕd	0.5	0.6	0.6	0.8	0.8	0.8

α	(L < 16) 1.0
	(L ≥ 16) 2.0

STANDARD RATINGS

D×L(mm) ; R.C.(mA rms) at 105°C 120Hz.

Cap (μF)	V	160				200				250			
		Item	D x L	R.C.		D x L	R.C.		D x L	R.C.			
				120Hz	100KHZ		120Hz	100KHZ		120Hz	100KHZ		
10		10x16	125	313	10x16	125	313	10x20	140	350			
22		10x20	200	500	10x20	200	500	10x20	200	500			
33		10x20	250	625	10x20	260	650	13x21	320	800			
47		10x20	300	750	13x21	390	975	13x21	390	975			
68		13x21	470	1175	13x21	470	1175	16x22	520	1300			
82		13x21	510	1275	16x22	550	1375	16x22	550	1375			
100		13x25	620	1395	16x22	630	1418	16x26	680	1530			
		16x22	630	1418									
150		16x22	770	1733	16x26	840	1890	18x25	860	1935			
220		18x25	1020	2295	18x26	1050	2363	18x32	1130	2543			
330		18x32	1390	3128	18x36	1430	3218						

Cap (μF)	V	350				400				450			
		Item	D x L	R.C.		D x L	R.C.		D x L	R.C.			
				120Hz	100KHZ		120Hz	100KHZ		120Hz	100KHZ		
6.8		10x16	110	275	10x16	110	275	10x20	110	275			
10		10x20	140	350	10x20	140	350	13x21	180	450			
22		13x21	260	650	13x21	260	650	16x22	290	725			
33		16x22	360	900	16x22	360	900	16x26	390	975			
								18x22	380	950			
47		16x22	430	1075	16x25	470	1175	18x25	480	1200			
					18x22	450	1125						
68		16x26	560	1400	18x25	585	1463	18x32	630	1575			
		18x22	550	1375									
82		18x25	610	1525	18x25	610	1525	18x35	715	1788			
100		18x25	700	1575	18x32	765	1721	18x40	800	1800			
120		18x32	830	1868	18x35	865	1946						
150		18x35	960	2160	18x40	985	2216						

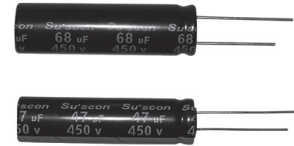
※ 13mm may be replaced by 12.5mm upon customer's request.

HE

HE series

SLIM TYPE

- 105°C high-temperature and high voltage 350~450V, life 8000~10000hrs.
- Specially Size, 8~16mm diameter.
- For LCD-TV and LCD-Monitor power.
- RoHS Compliance.
- 105°C 耐高溫，高壓350~450V，壽命8000~10000小時。
- 特殊專用尺寸，直徑8~16mm。
- 使用於LCD TV與LCD Monitor電源應用。



STANDARD RATINGS

D×L(mm) ; R.C.(mA rms) at 105°C 120Hz.

Cap (μF)	V	350			400			450			
		Item	D x L	R.C.		D x L	R.C.		D x L	R.C.	
				120Hz	100KHZ		120Hz	100KHZ		120Hz	100KHZ
22		10x30	212	530	8x50	236	590	8x50	254	635	
					10x35	260	650	10x40	280	700	
33		8x50	240	600	8x61	280	700	8x61	280	700	
		10x35	260	650	10x40	312	780	10x45	332	830	
39		10x40	280	700	10x50	380	950	10x50	420	1050	
					13x35	368	920	13x45	408	1020	
47		10x50	380	950	10x60	480	1200	10x60	520	1300	
		13x35	400	1000	13x40	460	1150	13x50	560	1400	
		14.5x30	400	1000	14.5x35	440	1100	14.5x45	512	1280	
53		10x50	440	1100	10x60	480	1200	13x50	600	1500	
		13x40	480	1200	13x45	500	1250	14.5x45	512	1280	
		14.5x30	400	1000	14.5x35	440	1100	16x35	560	1400	
68		10x60	520	1300	13x50	540	1350	13x60	660	1650	
		13x45	480	1200	14.5x45	600	1500	14.5x50	680	1700	
		14.5x35	440	1100				16x40	628	1570	
82		13x50	540	1350	13x60	600	1500	13x60	700	1750	
		14.5x40	588	1470	14.5x50	648	1620	14.5x50	720	1800	
					16x40	648	1620	16x45	792	1980	
100		13x60	660	1485	14.5x50	770	1733	14.5x60	855	1924	
		14.5x45	682	1534	16x50	902	2030	16x50	990	2228	

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