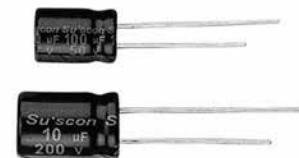


# HH series

- Miniature HE series, long-life products.
- Load life:10000~12000 hours , 105°C
- Suitable for electronic ballast for lighting equipment,
- long-life power input with smooth function.
- RoHS Compliance
- HE系列的小型化長壽命品。
- 105°C 保證壽命10000~12000小時。
- 適用於照明設備電子整流器，長壽命電源輸入平滑用等。



## SPECIFICATIONS

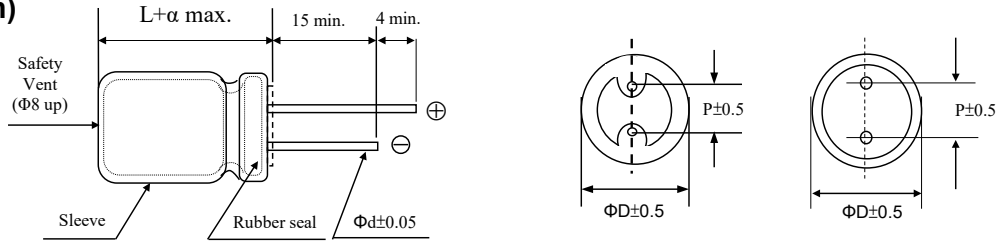
Items 項目	Characteristics 特性						
Capacitance Tolerance 靜電容量誤差	± 20%(120Hz, 20°C)						
Operating Temperature Range 適用溫度範圍	- 40 ~ +105°C			- 25 ~ +105°C			
Rated Voltage Range 額定電壓範圍	160 ~ 450VDC			500VDC			
Leakage Current 洩漏電流	$I \leq 0.04CV + 100\mu A$ . ( After 1minutes application of DC rated voltage, at 20 °C)						
Dissipation Factor 散逸因素( tan δ)	Measurement Frequency:120Hz. Temperature: 20°C						
	Rated Voltage(V)	160	200~220	250	350	400~420	450~500
	tanδ(MAX)	0.20	0.20	0.20	0.24	0.24	0.24
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	200~220	250	350	400~420	450~500
	Z(-25°C) / Z(20°C)	3	3	3	5	5	6
	Z(-40°C) / Z(20°C)	8	8	8	10	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 12,000 hours at 105°C.(L≤20mm,10,000 hours)						
	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 1,000hours 105°C without voltage applied. Before the measurement. The Capacitance 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	500% or less of Initial Specified Value					
Standards 參照標準	IEC 60384-4 ( JIS C 5101-4 )						

## Frequency Coefficient of Permissible Ripple Current

Capacitance (µF)	Frequency (Hz)			
	120	1K	10K	100K
6.8~82	1.00	1.75	2.25	2.50
100~680	1.00	1.67	2.05	2.25

# HH series

**DIMENSIONS(mm)**



ΦD	10	12.5	14.5	16	18
P	5.0	5.0	7.5	7.5	7.5
Φd	0.6	0.6	0.8	0.8	0.8

$\alpha$	(L < 20) 1.5
	(L ≥ 20) 2.0

**STANDARD RATINGS**

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

Cap (μF)	V	160		200		220		250		350		
		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.
12										10x16	135	
22								10x16	185	10x20	200	
27				10x16	200	10x16	200			10x25	240	
										10x30	255	
33								10x20	240	12.5x20	330	
39	10x16	245				10x20	265			10x35	325	
47	10x20	275	10x20	290				10x25	315	10x40	375	
								10x30	340	12.5x25	425	
										14.5x20	420	
56	10x20	315	10x25	345	10x25	345	10x25	345	12.5x20	430	10x45	425
						10x30	370			12.5x30	495	
										16x20	475	
68	10x25	380	10x30	405	12.5x20	475	10x35	430	10x35	430	10x50	485
								14.5x20	505	12.5x35	580	
										14.5x25	545	
										18x20	550	
82	10x25	415	12.5x20	520	10x35	470	10x40	495	10x40	495	12.5x40	655
	10x30	445			14.5x20	555	10x45	515	10x45	515	14.5x31.5	645
							12.5x25	565	12.5x25	565	16x25	625
100	12.5x20	575	10x35	520	10x40	545	10x50	585	10x50	585	12.5x45	750
			12.5x25	625	10x45	565	12.5x30	660	12.5x30	660	12.5x50	770
			14.5x20	615	12.5x25	625	14.5x25	665	14.5x25	665	14.5x35.5	740
							16x20	635	16x20	635	16x31.5	740
			10x40	595	10x50	645	12.5x35	770	12.5x35	770	18x25	710
120	10x35	570	10x45	620	12.5x30	725	16x25	755	16x25	755	14.5x40	835
	14.5x20	675	12.5x30	725	14.5x25	725	18x20	730	18x20	730	14.5x45	860
			16x20	695	16x20	695					16x35.5	830
150	10x40	665	10x50	720	12.5x35	860	12.5x40	890	12.5x40	890	14.5x50	980
	10x45	695	12.5x35	860	16x25	845	12.5x45	920	12.5x45	920	16x40	960
	12.5x25	765	14.5x25	810	18x20	815	14.5x31.5	870	14.5x31.5	870	16x45	975
											18x31.5	940
180	10x50	785	14.5x31.5	955	12.5x40	975	12.5x50	1035	12.5x50	1035	16x50	1090
	12.5x30	885	16x25	925	12.5x45	1005	14.5x35.5	990	14.5x35.5	990	18x35.5	1065
	14.5x25	890	18x20	895	14.5x31.5	955	14.5x40	1020	14.5x40	1020		
	16x20	855					16x31.5	995	16x31.5	995	18x40	1080
							18x25	950	18x25	950		



# HH series

## STANDARD RATINGS

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

Cap ( $\mu$ F)	V Item	160		200		220		250		350	
		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.
220		12.5x35	1040	12.5x40	1075	12.5x50	1145	14.5x45	1160	18x45	1210
		16x25	1020	12.5x45	1110	14.5x35.5	1095	14.5x50	1185		
		18x20	990	14.5x35.5	1095	16x31.5	1100	18x31.5	1135	18x50	1220
				18x25	1050	18x25	1050				
270		12.5x40	1190	12.5x50	1265	14.5x45	1285	16x40	1285		
		12.5x45	1230	14.5x40	1250	14.5x50	1315	16x45	1310		
		14.5x31.5	1170	14.5x45	1290	16x35.5	1245				
		14.5x35.5	1210	16x31.5	1220	18x31.5	1260	18x35.5	1300		
			16x35.5	1250							
330		12.5x50	1400	14.5x50	1450	16x40	1425	16x50	1475		
		14.5x40	1385	16x40	1425	16x45	1450	18x40	1460		
		16x31.5	1350	18x31.5	1395	18x35.5	1440	18x45	1485		
		18x25	1290								
390		14.5x45	1545	16x45	1575	16x50	1600	18x50	1625		
		16x35.5	1500	18x35.5	1565	18x40	1590				
						18x45	1620				
470		14.5x50	1735	16x50	1755	18x50	1785				
		16x40	1700	18x40	1745						
		16x45	1730								
		18x31.5	1660	18x45	1770						
		18x35.5	1715								
560		16x50	1920	18x50	1945						
		18x40	1905								
680		18x45	2130								
		18x50	2145								

HH

# HH series

**STANDARD RATINGS**

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

Cap (μF)	V Item	400		420		450		500	
		D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L	R.C.
6.8				10x16	105	10x16	105	10x20	90
8.2								10x25	110
10		10x16	125					10x30	130
12				10x20	150	10x20	150	12.5x20	135
15				10x25	185	10x25	185	10x35	170
								10x40	175
								12.5x25	165
18		10x20	180	10x30	215	10x30	215	10x45	190
						12.5x20	255	12.5x30	190
22		10x25	215	12.5x20	285	10x35	250	10x50	230
								12.5x35	220
27		10x30	255	10x35	275	10x40	290	12.5x40	260
				10x40	290	10x45	305		
		12.5x20	300	12.5x25	340	12.5x25	340		
				14.5x20	335	14.5x20	335		
33		10x35	300	10x45	335	12.5x30	400	12.5x45	285
				12.5x30	400	14.5x25	400		
				16x20	385	16x20	385		
39		10x40	340	10x50	375	10x50	375	12.5x50	330
		10x45	355			12.5x35	460		
		12.5x25	390	14.5x25	435	18x20	440		
		14.5x20	385						
47		12.5x30	455	12.5x35	505	12.5x40	525		
		16x20	435	16x25	500	14.5x31.5	515		
				18x20	480	16x25	500		
56		10x50	440	12.5x40	570	12.5x45	590		
		12.5x35	525	12.5x45	590	14.5x35.5	580		
		14.5x25	495	14.5x31.5	560	16x31.5	585		
		18x20	500			18x25	560		
68		12.5x40	600	12.5x50	670	12.5x50	670		
		14.5x31.5	585	14.5x35.5	640	14.5x40	660		
				14.5x40	660	14.5x45	680		
		16x25	570	16x31.5	645	16x35.5	660		
				18x25	615				
82		12.5x45	680	14.5x45	750	14.5x50	765		
		12.5x50	700	16x35.5	725	16x40	750		
		14.5x35.5	670			16x45	760		
		16x31.5	670	18x31.5	730	18x31.5	730		
		18x25	640						
100		14.5x40	760	14.5x50	845	16x50	855		
		14.5x45	785	16x40	825				
		16x35.5	760	16x45	840	18x35.5	835		
				18x35.5	835				
120		14.5x50	875	16x50	935	18x40	930		
		16x40	860	18x40	930				
		16x45	875						
		18x31.5	840	18x45	945	18x45	945		
		18x35.5	870						
150		16x50	995	18x50	1060	18x50	1060		
		18x40	985						
180		18x45	1095						
220		18x50	1220						

