

LS Series

- Standard series for general purpose.
- Large size for PCB board mounting hole.
- Load life 2,000 hours at 85°C.

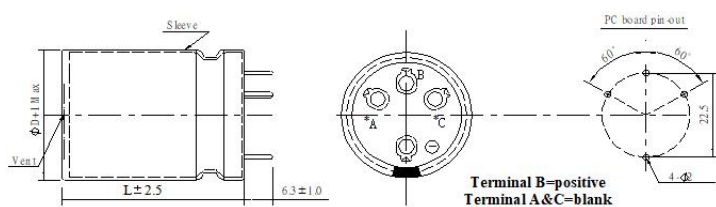
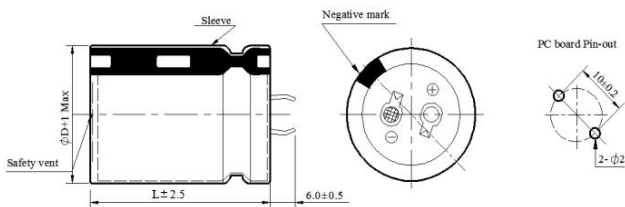
◆ SPECIFICATIONS

Item	Performance Characteristics												
Category Temperature Range	-40 ~ +85°C					-25 ~ +85°C							
Working Voltage Range	16~ 100Vdc					160 ~550Vdc							
Capacitance Range	820~68,000μF					47~3,300 μF							
Capacitance Tolerance	±20% (at 20°C and 120Hz)												
Dissipation Factor (tan δ) (at 20°C, 120Hz)	Rated Voltage (V)	16	25	35	50	63	80 ~ 100	160 ~ 250	350 ~ 450	500~550			
	tan δ (Max)	0.35	0.35	0.25	0.25	0.25	0.20	0.15	0.15	0.20			
The above values should be increased by 0.02 for every additional 1000μF													
Leakage Current	$I \leq 3 \sqrt{CV}$ I : Leakage current (μA) C : Rated capacitance (μF) V : Rated voltage (V) Apply rated voltage the rated voltage for 5 minutes.												
Low Temperature Characteristics Impedance Ratio(MAX)	Rated Voltage (V)	16	25	35	50	63	80 ~100	100	160 ~ 250	350	400	420 ~ 550	(at 120Hz)
	Z(-25°C)/Z(+20°C)	—	—	—	—	—	—	—	4	4	4	8	
	Z(-40°C)/Z(+20°C)	15	10	8	6	6	5	5	—	—	—	—	
Endurance	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 2,000 hours at 85°C.												
	Capacitance change	≒ ±20% of the initial value											
	Dissipation factor(tan δ)	≒ 200% of the specified value											
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 20°C after the rated voltage applied for 1,000 hours at 85°C without voltage applied.												
	Capacitance change	≒ ±20% of the initial value											
	Dissipation factor(tan δ)	≒ 200% of the specified value											
Others	Conforms to JIS-C-5101-4 (1998) and IEC 60384-4												

◆ DIMENSIONS(mm)

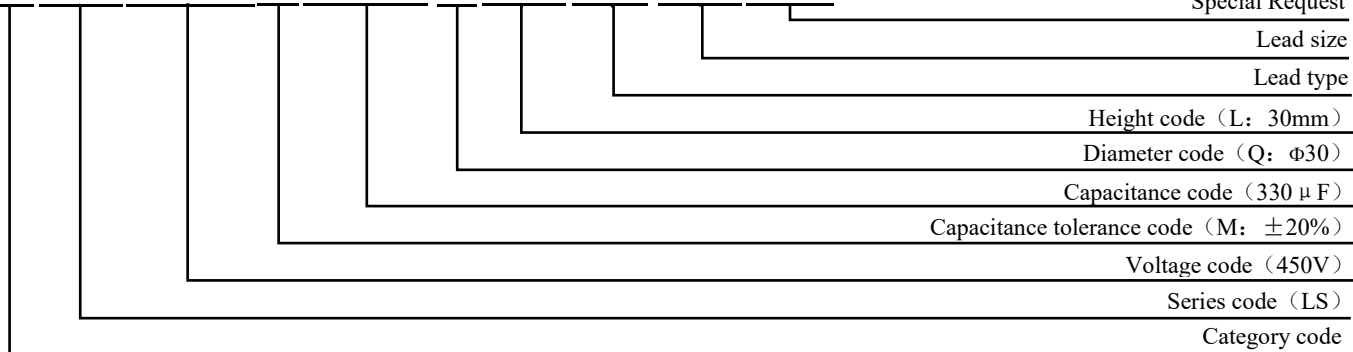
Terminal Code :S2

Terminal Code :S4



◆ PART NUMBER SYSTEM(Example : 450V 330μF)

E L S 4 5 0 M 3 3 1 Q 3 0 S 2 6 0 A A



LS Series

◆ Case size & Permissible rated ripple current: (mA rms) at 85°C / 120Hz

uF	V _{dc}		16								uF	V _d		25							
	ΦD		Φ 22		Φ 25		Φ30		Φ35			ΦD		Φ 22		Φ 25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
8200	22×25	2580								4700											
10000	22×30	2830								5600	22×25	2300									
12000	22×30	3290	25×25	2990						6800	22×30	2580	25×25	2740							
15000	22×35	3690	25×30	3690	30×25	3760				8200	22×35	2800	25×25	3080							
18000	22×40	4000	25×35	3990	30×25	4000				10000	22×40	3190	25×30	3450	30×25	3610					
22000	22×50	4570	25×40	4560	30×30	4410	35×25	4170		12000	22×45	3500	25×35	3410	30×30	3860	35×25	3540			
27000			25×45	4925	30×35	4820	35×30	4850		15000	22×50	4100	25×40	3920	30×30	4300	35×25	3950			
33000			25×50	5550	30×40	5390	35×30	5330		18000			25×45	4550	30×35	4660	35×30	4640			
39000					30×45	6100	35×35	5980		22000			25×50	5050	30×40	5210	35×35	5210			
47000					30×50	6790	35×40	6760		27000					30×45	6010	35×40	6020			
56000							35×45	7720		33000							35×45	6700			
68000							35×50	8530		39000							35×50	7550			

uF	V _{dc}		35								uF	V _{dc}		50							
	ΦD		Φ 22		Φ 25		Φ30		Φ35			ΦD		Φ 22		Φ 25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
3900	22×25	2220								2200	22×25	1920									
4700	22×30	2450	25×25	2420						3300	22×30	2270	25×25	2370							
5600	22×35	2800	25×25	2725						3900	22×35	2450	25×30	2680	30×25	3050					
6800	22×40	2880	25×30	2840	30×25	3070				4700	22×40	2790	25×35	3050	30×25	3310					
8200	22×45	3490	25×35	3200	30×30	3230	35×25	3065		5600	22×45	3360	25×35	3350	30×30	3770	35×25	3420			
10000	22×50	3610	25×40	3550	30×30	3595	35×25	3595		6800	22×50	3810	25×40	3850	30×35	4050	35×30	3850			
12000			25×45	4050	30×35	3910	35×30	4420		8200			25×50	4330	30×40	4360	35×30	4410			
15000			25×50	4400	30×40	4420	35×35	5010		10000					30×45	4980	35×35	4920			
18000					30×45	5025	35×40	5540		12000					30×50	5580	35×40	5580			
22000					30×50	5615	35×45	6040		15000							35×45	6400			
27000							35×50	6890		18000							35×50	6690			

uF	V _{dc}		63								uF	V _{dc}		80							
	ΦD		Φ 22		Φ 25		Φ30		Φ35			ΦD		Φ 22		Φ 25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
1500										1200	22×25	1790									
1800	22×25	1880								1500	22×25	1980									
2200	22×30	2360	25×25	2280						1800	22×30	2240	25×25	2250							
2700	22×35	2500	25×25	2330						2200	22×35	2540	25×30	2490	30×25	2510					
3300	22×35	2680	25×30	2580	30×25	2780				2700	22×40	2980	25×35	2900	30×25	2950					
3900	22×40	3040	25×35	3050	30×30	3000	35×25	3000		3300	22×45	3260	25×40	3180	30×30	3270	35×25	3210			
4700	22×50	3490	25×40	3350	30×30	3320	35×25	3360		3900	22×50	3520	25×45	3570	30×35	3570	35×25	3500			
5600			25×45	3820	30×35	3750	35×30	3760		4700			25×50	4140	30×40	4150	35×30	4090			
6800			25×50	4320	30×40	4370	35×30	4380		5600					30×45	4540	35×35	4510			
8200					30×45	4880	35×35	4890		6800					30×50	5160	35×40	5140			
10000					30×50	5380	35×40	5460		8200							35×45	5830			
12000							35×45	6080		10000							35×50	6630			

LS Series

◆ Case size & Permissible rated ripple current: (mA rms) at 85°C / 120Hz

Vdc ΦD uF	100								Vdc ΦD uF	160							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
820	22×25	1910							390	22×25	1610						
1200	22×30	2030	25×25	2195					470	22×30	1760						
1500	22×35	2310	25×30	2400	30×25	2460			560	22×35	2040	25×25	1950				
1800	22×40	2670	25×35	2750	30×25	2780			680	22×40	2370	25×30	2230	30×25	2230		
2200	22×45	3080	25×40	3200	30×30	3090	35×25	3120	820	22×45	2580	25×35	2550	30×25	2510		
2700	22×50	3430	25×45	3660	30×35	3580	35×30	3720	1000	22×50	2820	25×40	2900	30×30	2860		
3300			25×50	4020	30×40	4070	35×30	4040	1200			25×45	3230	30×35	3210	35×25	3200
3900					30×45	4440	35×35	4490	1500			25×50	3760	30×40	3760	35×30	3840
4700					30×50	5030	35×40	5100	1800					30×45	4200	35×35	4080
5600							35×45	5740	2200					30×50	4760	35×40	4360
6800							35×50	6200	2700							35×45	4740
8200									3300							35×50	5330

Vdc ΦD uF	200								Vdc ΦD uF	220							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
390	22×25	1510							330	22×25	1410						
470	22×30	1970							390	22×30	1580	25×25	1580				
560	22×35	2180	25×25	2150					470	22×35	1800	25×30	1800				
680	22×40	2480	25×30	2480					560	22×40	2030	25×35	2030	30×25	2030		
820	22×45	2700	25×35	2790	30×25	2780			680	22×45	2330	25×40	2330	30×30	2330		
1000	22×50	3280	25×40	3280	30×30	3000	35×25	3250	820	22×50	2560	25×45	2560	30×35	2560	35×25	2560
1200			25×45	3610	30×35	3610	35×30	3570	1000			25×50	2850	30×40	2850	35×30	2850
1500			25×50	4130	30×40	4130	35×35	4060	1200					30×45	3130	35×35	3130
1800					30×45	4600	35×40	4590	1500					30×50	3750	35×40	3750
2200					30×50	5250	35×45	5250	1800							35×45	3900
2700							35×50	5320	2200							35×50	4050

Vdc ΦD uF	250								Vdc ΦD uF	400							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
270	22×25	1310							100	22×25	900						
330	22×30	1750	25×25	1610					120	22×30	1020	25×25	1130				
390	22×35	1910	25×30	1880					150	22×35	1160	25×30	1270				
470	22×40	2110	25×35	2110	30×25	2040			180	22×40	1440	25×35	1440				
560	22×45	2250	25×40	2090	30×30	2250			220	22×45	1500	25×40	1500	30×25	1520		
680	22×50	2500	25×45	2500	30×35	2500	35×25	2750	270	22×50	1670	25×45	1650	30×30	1700	35×25	1650
820			25×50	2800	30×40	2850	35×30	2900	330			25×50	1900	30×35	1950	35×30	1900
1000					30×45	3290	35×35	3320	390					30×40	2130	35×35	2130
1200					30×50	3580	35×40	3530	470					30×45	2390	35×40	2420
1500							35×45	4040	560					30×50	2700	35×45	2710
1800							35×50	4150	680							35×50	2970

LS Series

◆ Case size & Permissible rated ripple current: (mA rms) at 85°C / 120Hz

uF	Vdc		420								uF	Vdc		450							
	ΦD	ΦD	Φ 22		Φ 25		Φ30		Φ35			ΦD	ΦD	Φ 22		Φ25		Φ30		Φ35	
			ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC				ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
											82	22×25	830								
100			22×25	970							100	22×30	930								
120			22×30	1070							120	22×35	1040	25×25	1070						
150			22×35	1300	25×25	1290					150	22×40	1190	25×30	1190						
180			22×40	1480	25×30	1480	30×25	1480			180	22×45	1350	25×35	1350	30×25	1380				
220			22×45	1500	25×35	1500	30×30	1500			220	22×50	1550	25×40	1500	30×30	1550				
270			22×50	1940	25×40	1940	30×35	1940	35×25	1940	270			25×45	1780	30×35	1780	35×25	1780		
330					25×45	2170	30×40	2170	35×30	2170	330			25×50	2010	30×40	2010	35×30	2010		
390					25×50	2270	30×45	2220	35×35	2270	390					30×45	2240	35×35	2240		
470							30×50	2500	35×40	2610	470					30×50	2530	35×40	2530		
560									35×45	2820	560							35×45	2620		
680									35×50	2900	680							35×50	2700		

uF	Vdc		500								uF	Vdc		550							
	ΦD	ΦD	Φ 22		Φ 25		Φ30		Φ35			ΦD	ΦD	Φ 22		Φ 25		Φ30		Φ35	
			ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC				ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
56											47	22×25	385								
68											56	22×30	420	25×25	420						
82			22×25	785							68	22×35	465	25×25	465						
100			22×30	840	25×25	800					82	22×40	600	25×30	600	30×25	600				
120			22×35	920	25×30	890					100	22×45	785	25×35	785	30×25	785	35×25	785		
150			22×40	1070	25×35	1070	30×25	1100			120	22×50	840	25×40	840	30×30	840	35×25	840		
180			22×45	1380	25×40	1380	30×30	1380	35×25	1380	150			25×45	920	30×35	920	35×25	920		
220			22×50	1610	25×45	1600	30×35	1610	35×30	1610	180			25×50	1245	30×40	1245	35×30	1245		
270					25×50	1750	30×40	1810	35×35	1810	220					30×45	1380	35×35	1380		
330							30×45	1985	35×40	1985	270					30×50	1610	35×40	1610		
390							30×50	2100	35×45	2120	330							35×45	1810		
470									35×50	2480	390							35×50	1985		

◆ RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Vdc	Frequency (Hz)				
	50	120	1K	10K	≥50K
16 ~ 100	0.80	1.00	1.15	1.19	1.20
160 ~ 250	0.81	1.00	1.32	1.45	1.50
350 ~ 550	0.77	1.00	1.30	1.40	1.43