

ALUMINUM ELECTROLYTIC CAPACITORS

>SH Miniature and general purpose Series

- Features: 105°C 2000 hours
- Recommended Applications: For high quality , reliability application, high CV product
- Corresponding product to RoHS

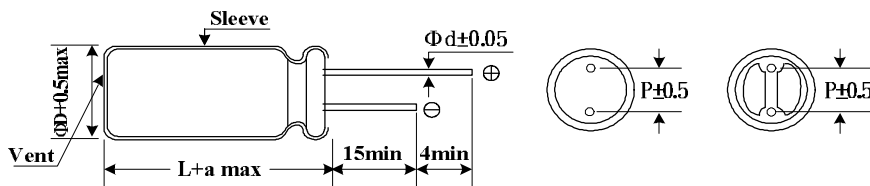
LSH
↑ Long Life
LSE



Specifications

Item	Characteristics									
Operating Temperature Range	-40~+105°C	-25~+105°C								
Rated Voltage Range	6.3 ~ 100VDC	160 ~ 450VDC								
Rated Capacitance Range	0.47 ~ 15000µF	0.47 ~ 470µF								
Capacitance Tolerance	± 20 % at 120Hz , 20°C									
Leakage Current (MAX)(20°C)	I=0.01CV or 3(µA) ,whichever is greater.	I=0.03CV+10(µA)								
	(After rated voltage applied for 2 minutes)									
Dissipation Factor (MAX) (tan δ) (120Hz ,20°C)	WV	6.3	10	16	25	35	50	63~100	160~250	350~450
	tan δ	0.26	0.22	0.18	0.16	0.14	0.12	0.10	0.15	0.20
	When nominal capacitance is over 1000uF , tan δ shall be added 0.02 to the listed value with increase of every 1000uF .									
Low Temperature Stability Impedance Ratio (MAX)	Z(120Hz)	WV		6.3	10	16	25~100	160~250	350~450	
		Z-25°C / Z+20°C	4	3	2	2	4	4		
		Z-40°C / Z+20°C	8	6	4	3	-	-		
Endurance	After applying rated voltage for 2000 hours at 105°C the capacitors shall meet the following requirements.									
	Capacitance Change	Within ± 20 % of initial value								
	Dissipation Factor	Not more than 200% of the specified value								
	Leakage Current	initial specified value or less								
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours. the capacitors shall meet the same requirement as Endurance.									

Diagram of Dimensions



φ D	5	6.3	8	10	13	16	18	22
p	2.0	2.5	3.5	5.0		7.5		10.0
φ d	0.5	0.5	0.6	0.6		0.8		0.8
a	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0

Multiplier for Ripple Current

Frequency coefficient

Frequency (Hz)	120	300	1K	10K
6.3 ~ 100V Below 68 µ F	1.00	1.30	1.57	2.00
6.3 ~ 100V 100 ~ 470 µ F	1.00	1.23	1.34	1.50
6.3 ~ 100V 471 ~ 22000 µ F	1.00	1.10	1.13	1.15
160 ~ 450V ALL Cap (µ F)	1.00	1.25	1.40	1.60

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■ Dimensions, Rated Ripple Current

Capacitance (μ F)	Rated (Surge) Voltage														
	6.3 (8)		10 (13)		16 (20)		25 (32)		35 (44)		50 (63)		63 (79)		
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	
0.47												5x11	7	5x11	8
1.0												5x11	12	5x11	12
2.2												5x11	18	5x11	20
3.3												5x11	25	5x11	27
4.7												5x11	30	5x11	34
6.8												5x11	30	5x11	37
10										5x11	44	5x11	50	5x11	55
15										5x11	50	5x11	50	5x11	65
22							5x11	60	5x11	65	5x11	75	6.3x11	90	
33					5x11	70	5x11	75	5x11	85	5x11	95	6.3x11	100	
47			5x11	75	5x11	85	5x11	90	5x11	100	6.3x11	115	8x11	155	
68			5x11	80	5x11	100	6.3x11	125	6.3x11	130	8x11	159	10x12.5	198	
100	5x11	100	5x11	110	5x11	130	6.3x11	145	6.3x11	170	8x11	200	10x12.5	260	
150	5x11	120	5x11	120	6.3x11	175	8x11	200	8x11	220	10x12.5	289	10x15	330	
220	6.3x11	165	6.3x11	180	6.3x11	220	8x11	240	10x12.5	315	10x12.5	360	10x20	465	
											10x15	415			
330	6.3x11	200	6.3x11	235	8x11	280	8x11	300	10x12.5	400	10x20	535	13x20	650	
			8x11	255			10x12.5	355							
470	6.3x11	230	6.3x11	250	8x11	375	8x15	420	10x15	480	10x20	630	13x20	700	
			8x11	305			10x12.5	440			13x20	730			
680	8x11	350	8x11	365	8x15	450	10x15	560	10x20	650	13x20	800	16x25	1000	
			10x12.5	420	10x12.5	480									
1000	8x15	445	8x15	480	10x15	640	10x20	740	13x20	900	13x25	1060	16x32	1200	
	10x12.5	470	10x12.5	540											
1500	10x15	600	10x20	800	10x20	830	13x20	920	13x25	1050	16x25	1300	16x36	1450	
2200	10x20	800	10x20	870	13x20	1050	13x25	1230	16x25	1370	16x36	1600	18x36	1650	
3300	13x20	1100	13x20	1100	13x25	1250	16x25	1500	16x36	1680	18x36	1780			
4700	13x20	1180	13x25	1380	16x25	1650	16x32	1800	18x36	1920					
6800	13x25	1490	16x25	1700	16x32	1900	18x36	2050							
10000	16x32	1830	16x36	1950	18x36	2070									
15000	16x36	2090	18x36	2180											
22000	18x40	2350													

☆ Size: D ϕ x L (mm) ☆ Ripple Current: (mA/rms). 105°C, 120Hz

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■ Dimensions, Rated Ripple Current

Capacitance (μ F)	Rated (Surge) Voltage															
	100 (125)		160 (200)		200 (250)		250 (300)		350 (400)		400 (450)		420 (470)		450 (500)	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.47	5X11	10	5x11	12	5x11	12	5x11	12	6.3x11	14	6.3x11	14	6.3x11	14	6.3x11	16
1.0	5x11	15	5x11	17	6.3x11	17	6.3x11	17	6.3x11	16	6.3x11	17	6.3x11	17	6.3x11	18
															8x11	22
2.2	5x11	22	6.3x11	25	6.3x11	25	6.3x11	29	8x11	31	8x11	31	8x11	29	8x11	30
															10x12.5	37
3.3	5x11	29	6.3x11	36	6.3x11	36	8X11	42	8x11	35	8x11	35	8x11	34	8X15	42
															10x12.5	40
4.7	5x11	37	6.3x11	43	8x11	50	8x11	52	8x11	45	8x11	45	10X12.5	55	10x12.5	52
													10X12.5	55		
6.8	5x11	46	8X11	54	8X11	60	8x11	62			8X15	60	10X15	68	10X15	62
											10X12.5	65				
10	6.3x11	65	8X11	70	10X12.5	80	10x12.5	80	10x15	80	10X15	80	10X20	98	10X20	85
15	6.3x11	75	10X12.5	90	10x15	110	10X15	110			10X20	100	13X20	130	13X20	120
22	8x11	115	10X15	115	10x20	140	10X20	140	13X20	150	13x20	150	13X25	155	13X25	150
33	8X11	140	10X20	160	13x20	200	13X20	200	13X25	200	13X25	200	16x25	205	16X25	210
47	10X12.5	185	10x20	195	13x20	220	13X25	240	16X25	260	16x25	265	16x25	235	16X25	260
68	10X15	240	13x20	255	13x25	280	13x25	290			16X32	410	16X32	400	18X32	370
											18x25	390	18x25	380		
100	10x20	305	13X25	350	16x25	350	16X25	380	18x32	400	18X32	500	18X36	490	18X36	495
120											18X32	520	18x40	530	18X40	565
											18x36	550				
150	13X20	370	16X25	435	16x32	480	16X32	420			18x40	620	18x45	570	18X45	650
220	13x25	520	16x32	550	16x36	675	18X36	680								
					18X32	685										
330	16x25	720	18x36	800	18x36	750										
470	16x32	875	18x40	900												
680	16x36	1200														

☆ Size: D ϕ x L (mm) ☆ Ripple Current: (mA/rms). 105°C, 120Hz