

## LV Series

### Features

- ◆ 85°C standard, case diameter  $\phi 4 \sim \phi 10\text{mm}$
- ◆ Reflow soldering is available
- ◆ Available for high density mounting
- ◆ RoHS Compliant
- ◆ AEC-Q200 qualified



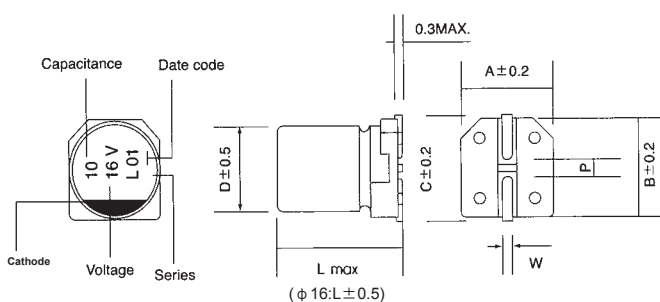
### Specifications

Item	Performance Characteristics										
Operating Temperature Range	-40~ +85°C										
Rated Voltage Range	4~100 VDC										
Capacitance Range	0.1 to 6800 $\mu\text{F}$										
Capacitance Tolerance	$\pm 20\%$ (120Hz, +20°C)										
Leakage Current (+20°C, max.)	$I \leq 0.01 \text{ CV}$ or $3 (\mu\text{A})$ After 2 minutes, whichever is greater measured with rated working voltage applied										
Dissipation Factor ( $\tan \delta$ , at 20°C, 120Hz)	Rated voltage(VDC)	4	6.3	10	16	25	35	50	63	100	
	D.F.(%)max	$\phi 4 \sim 6.3$	42	30	22	18	16	14	14	12	10
		$\phi 8 \sim 10$	45	34	26	20	16	14	14	12	10
	$\geq \phi 12.5$	45	40	36	24	18	15	14	12	10	
Low Temperature Characteristics (at 120Hz)	Impedance ratio max										
	Rated voltage(VDC)	4	6.3	10	16	25	35	50	63	100	
	Z-25°C / Z+20°C	7	4	3	2	2	2	2	3	3	
	Z-40°C / Z+20°C	15	8	8	4	4	3	3	4	4	
Endurance	Test conditions										
	Duration time	:2000 Hrs									
	Ambient temperature	:+85°C									
	Applied voltage	:Rated DC working voltage									
	After test requirement at +20°C:										
	Capacitance change	:Within $\pm 25\%$ of the initial value									
	Dissipation factor	:Not more than 200% of specified value									
	Leakage current	:Not more than the specified value									
Shelf Life	Test conditions										
	Duration time	:1000 Hrs									
	Ambient temperature	:+85°C									
	Applied voltage	:None									
	After test requirement at +20°C	:Same limits as Endurance.									
	Pre-treatment for measurements	shall be conducted after application of DC working voltage for 30 minutes.									
Resistance to soldering heat	The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the characteristic requirements listed under.										
	Leakage current	Less than specified value									
	Capacitance change	Within $\pm 10\%$ of initial value									
	$\tan \delta$	Less than specified value									

### Multiplier for Ripple Current vs. Frequency

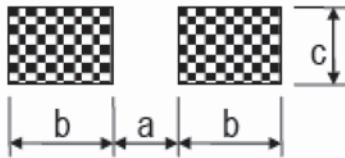
CAP( $\mu\text{F}$ ) \ Frequency(Hz)	60(50)	120	500	1K	$\geq 10\text{K}$
$0.1 \leq \text{CAP} \leq 100 \mu\text{F}$	0.8	1.0	1.20	1.30	1.50
$100 < \text{CAP}$	0.8	1.0	1.10	1.15	1.20

### Diagram of Dimensions:(unit:mm)



$\phi D$	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	6.1	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	4.5
16	17	17.1	17.1	18.0	1.0~1.4	7.0

Recommended land pattern:(unit:mm)



Φ DxL	a	b	c
4 x all	1.0	2.6	1.6
5 x all	1.4	3.0	1.6
6.3 x all	2.1	3.5	1.6
8 x 6.5(height ≤6.5)	2.1	4.5	1.6
8 x 6.5(height >6.5)	2.8	4.2	1.9
10 x all	4.3	4.4	1.9
12.5 x all	4.3	5.8	2.5
16 x all	6.0	6.5	3.5

## Case Size

WV(V) Cap(uF)	φ DxL(mm)																	
	4		6.3		10		16		25		35		50		63		100	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1													4x5.5	1.0	4x5.5	1		
0.22													4x5.5	2.0	4x5.5	2		
0.33													4x5.5	2.8	4x5.5	2.8		
0.47													4x5.5	4.0	4x5.5	4		
1													4x5.5	8.4	4x5.5	8.4	4x5.5	8
2.2													4x5.5	14	4x5.5	14	6.3x5.5	18
3.3													4x5.5	17	5x5.5	18	6.3x5.5	25
4.7																	6.3x6.1	28
10					4x5.5	21	4x5.5	23	4x5.5	27	4x5.5	29	6.3x5.5	35	6.3x5.5	35	6.3x7.7	50
22			4x5.5	29	4x5.5	33	4x5.5	37	5x5.5	40	5x5.5	45	6.3x6.1	60	6.3x7.7	75	6.3x7.7	75
33			4x5.5	33	4x5.5	41	5x5.5	45	5x5.5	46	6.3x5.5	58	6.3x7.7	188	8x6.5	200	8x10.5	160
47	4x5.5	28	4x5.5	40	5x5.5	52	5x5.5	50	6.3x5.5	60	6.3x6.1	68	6.3x5.5	65	6.3x7.7	70	8x6.5	115
100	5x5.5	34	5x5.5	70	6.3x5.5	76	6.3x5.5	100	6.3x7.7	150	6.3x7.7	250	8x10.5	300	10x10.5	270	12.5x14	380
150	6.3x6.1	50	6.3x6.1	100	6.3x6.1	88	6.3x7.7	135	8x10.5	200	8x10.5	300	10x10.5	320	12.5x14	380	16x17	560
220	6.3x5.5	61	6.3x6.1	130	6.3x7.7	141	6.3x7.7	170	6.3x7.7	185	8x10.5	300	10x10.5	400	10x10.5	450	12.5x14	460
330	6.3x7.7	135	6.3x7.7	197	8x6.5	150	8x6.5	190	8x10.5	290	8x10.5	330	10x10.5	450	10x10.5	460	12.5x14	520
470	8x6.5	180	8x10.5	380	8x10.5	420	8x10.5	480	10x10.5	460	10x10.5	460	12.5x14	590	16x17	925	16x17	700
560	8x10.5	242	8x10.5	410	10x10.5	450	10x10.5	500	12.5x14	520	12.5x14	600						
680	8x10.5	285	8x10.5	460	10x10.5	480	10x10.5	550	12.5x14	580	12.5x14	610						
1000	10x10.5	370	10x10.5	500	10x10.5	510	12.5x14	600	12.5x14	660			16x17	940				
1200	10x10.5	410	10x10.5	510			12.5x14	660										
1500	10x10.5	470	10x10.5	530			12.5x14	710					16x17	1060				
2200					12.5x14	730			16x17	1150								
3300			12.5x14	750			16x17	1200										
4700					16x17	1200												
6800			16x17	1330														

Ripple Current ( mA, rms ) at 85°C 120Hz