

## LV Series

### Features

- ◆ 85°C standard, case diameter  $\phi$  4~  $\phi$  10mm
- ◆ Reflow soldering is available
- ◆ Available for high density mounting
- ◆ For detail specifications, please refer to Engineering Bulletin No. E130
- ◆ RoHS Compliant



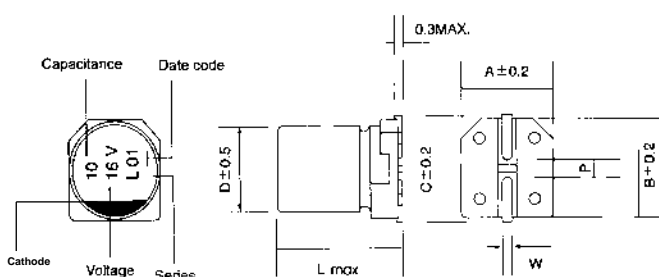
### Specifications

Item	Performance Characteristics																										
Operating Temperature Range	-40~ +85°C																										
Rated Voltage Range	4~50 VDC																										
Capacitance Range	0.1 to 1500 $\mu$ F																										
Capacitance Tolerance	$\pm$ 20%(120Hz,+20°C)																										
Leakage Current (+20°C,max.)	$I \leq 0.01$ CV or 3 ( $\mu$ A) After 2 minutes, whichever is greater measured with rated working voltage applied																										
Dissipation Factor ( $\tan \delta$ , at 20°C , 120Hz)	<table border="1"> <tr> <td>Rated voltage(VDC)</td> <td>4</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>D.F.(%)</td> <td><math>\phi</math> 4~6.3</td> <td>42</td> <td>30</td> <td>22</td> <td>18</td> <td>16</td> <td>14</td> <td>14</td> </tr> <tr> <td>max</td> <td><math>\phi</math> 8~10</td> <td>45</td> <td>34</td> <td>26</td> <td>20</td> <td>16</td> <td>14</td> <td>14</td> </tr> </table>	Rated voltage(VDC)	4	6.3	10	16	25	35	50	D.F.(%)	$\phi$ 4~6.3	42	30	22	18	16	14	14	max	$\phi$ 8~10	45	34	26	20	16	14	14
	Rated voltage(VDC)	4	6.3	10	16	25	35	50																			
	D.F.(%)	$\phi$ 4~6.3	42	30	22	18	16	14	14																		
max	$\phi$ 8~10	45	34	26	20	16	14	14																			
Low Temperature Characteristics (at 120Hz)	Impedance ratio max																										
	<table border="1"> <tr> <td>Rated voltage(VDC)</td> <td>4</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Z-25°C / Z+20°C</td> <td>7</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>15</td> <td>8</td> <td>8</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </table>	Rated voltage(VDC)	4	6.3	10	16	25	35	50	Z-25°C / Z+20°C	7	4	3	2	2	2	2	Z-40°C / Z+20°C	15	8	8	4	4	3	3		
	Rated voltage(VDC)	4	6.3	10	16	25	35	50																			
Z-25°C / Z+20°C	7	4	3	2	2	2	2																				
Z-40°C / Z+20°C	15	8	8	4	4	3	3																				
Load Life	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 Load life. 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.																										
	<table border="1"> <tr> <td>Leakage current</td> <td>Less than specified value</td> </tr> <tr> <td>Capacitance change</td> <td>Within <math>\pm</math>10% of initial value</td> </tr> <tr> <td><math>\tan \delta</math></td> <td>Less than specified value</td> </tr> </table>	Leakage current	Less than specified value	Capacitance change	Within $\pm$ 10% of initial value	$\tan \delta$	Less than specified value																				
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### Multiplier for Ripple Current vs. Frequency

CAP( $\mu$ F ) \ Frequency(Hz)	60(50)	120	500	1K	$\geq$ 10K
$0.1 \leq CAP \leq 100 \mu F$	0.8	1.0	1.20	1.30	1.50
$100 < CAP \leq 1500 \mu F$	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	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

## Case Size

φ DxL(mm)

WV (SV) Cap(μF)	4 (5)		6.3 (8)		10 (13)		16 (20)		25 (32)		35 (44)		50 (63)	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1													4X5.5	1.0
0.22													4X5.5	2.0
0.33													4X5.5	2.8
0.47													4X5.5	4.0
1													4X5.5	8.4
2.2													4X5.5	14
3.3													4X5.5	17
4.7									4X5.5	18	4X5.5	18	4X5.5	22
10					4X5.5	21	4X5.5	23	4X5.5	27	4X5.5	29	6.3X5.5	35
22			4X5.5	29	4X5.5	33	4X5.5	37	5X5.5	40	5X5.5	45	6.3X7.7	75
					5X5.5	37			6.3X5.5	40	6.3X5.5	48	8X6.5	80
33			4X5.5	33	4X5.5	41	5X5.5	45	5X5.5	46	6.3X5.5	58	6.3X7.7	188
			5X5.5	37	5X5.5	43			6.3X5.5	54			8X6.5	200
47	4X5.5	28	4X5.5	40	5X5.5	52	5X5.5	50	6.3X5.5	60	6.3X5.5	65	6.3X7.7	225
			5X5.5	46									6.3X5.5	60
100	4X5.5	34	5X5.5	70	6.3X5.5	76	6.3X5.5	100	6.3X7.7	150	6.3X7.7	250	8X10.5	300
									8X6.5	160	8X10.5	280		
220	6.3X5.5	61	6.3X7.7	141	6.3X7.7	170	6.3X7.7	185	8X10.5	300	10X10.5	400	10X10.5	450
			8X6.5	150	8X6.5	190	8X10.5	290						
330	6.3X7.7	135	6.3X7.7	197	8X10.5	330	8X10.5	330	10X10.5	450	10X10.5	460		
	8X6.5	145	8X6.5	210										
470	8X6.5	220	8X10.5	380	8X10.5	420	10X10.5	480	10X10.5	460				
	8X10.5	220												
560	8X10.5	242	8X10.5	410	10X10.5	450	10X10.5	500						
680	8X10.5	285	8X10.5	460	10X10.5	480								
1000	10X10.5	370	10X10.5	500	10X10.5	510								
1200	10X10.5	410	10X10.5	510										
1500	10X10.5	470	10X10.5	530										

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