LV Series

Features

- ◆ 85℃ standard, case diameter φ4~φ10mm
- ◆ Reflow soldering is available
- ◆ Available for high density mounting
- ◆ RoHS Compliant
- ◆ AEC-Q200 qualified

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40~ +85℃
Rated Voltage Range	4~100VDC / 160~450VDC
Capacitance Range	0.1 to 6800μF / 3.3 to 68μF
Capacitance Tolerance	±20%(120Hz,+20℃)
Leakage Current (+20℃,max.)	I≦0.01 CV or 3 (μA) whichever is greater (2 minutes) / I≦0.04 CV+100μA (1 minute)

Dissipation Factor (tanδ , at 20℃ , 120Hz)

Rated voltage(VDC)		4	6.3	10	16	25	35	50	63	100	160～250	＞250
D.F.(%)max	φ4~6.3	42	30	22	18	16	14	14	12	10	-	-
	φ8~10	45	34	26	20	16	14	14	12	10	15	20
	≧φ12.5	45	40	36	24	18	15	14	12	10	15	20

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Rated voltage(VDC)	4	6.3	10	16	25	35	50	63	100	160～250	400	450
Z-25℃／Z+20℃	7	4	3	2	2	2	2	3	3	3	6	6
Z-40℃／Z+20℃	15	8	8	4	4	3	3	4	4	6	10	15

Endurance

Test conditions
Duration time :2000 Hrs
Ambient temperature :+85℃
Applied voltage :Rated DC working voltage
After test requirement at +20℃:
Capacitance change :Within ±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℃
Applied voltage :None
After test requirement at +20℃ : Same limits as Endurance.
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Resistance to soldering heat

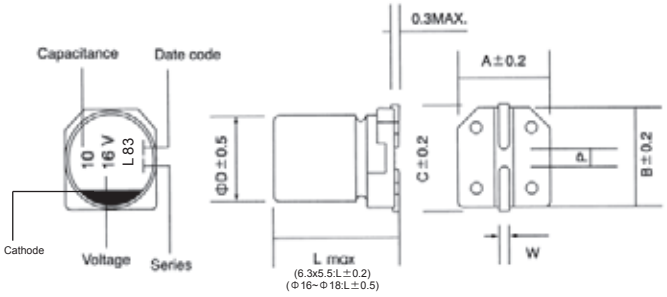
The capacitors shall be kept on the hot plate maintained at 250℃for 30 seconds. After removing form the hot plate and restored at room temperature, they meet the characteristic requirements listed under.

Leakage current	Less than specified value
Capacitance change	Within ±10% of initial value
tanδ	Less than specified value

Multiplier for Ripple Current vs. Frequency

CAP(μF)＼Frequency(Hz)	60(50)	120	500	1K	≧10K
0.1≦CAP≦100μF	0.8	1.0	1.20	1.30	1.50
100＜CAP	0.8	1.0	1.10	1.15	1.20

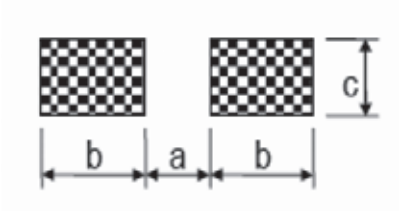
Diagram of Dimensions:(unit:mm)



φD	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	13.0	13.0	13.9	1.0~1.4	4.5
16	17	17.0	17.0	18.0	1.0~1.4	6.6
16	21.5	17.0	17.0	18.0	1.0~1.4	6.6
18	16.5	19.0	19.0	20.0	1.0~1.4	6.6
18	21.5	19.0	19.0	20.0	1.0~1.4	6.6

SMD

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4xall	1	2.6	1.6
5xall	1.4	3	1.6
6.3xall	2.1	3.5	1.6
8xL(height ≤6.5)	2.1	4.5	1.6
8xL(height>6.5)	2.8	4.2	1.9
10xall	4.3	4.4	1.9
12.5xall	4.3	5.8	2.5
16xall	6	6.5	3.5
18xall	6	7.5	3.5

Case Size

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (mArms/85℃ /120Hz)
4	47	4x5.5	28
4	100	5x5.5	34
4	150	6.3x6.1	50
4	220	6.3x5.5	61
4	330	6.3x7.7	135
4	330	8x6.5	145
4	470	8x6.5	180
4	470	8x10.5	220
4	560	8x10.5	242
4	680	8x10.5	285
4	1000	10x10.5	370
4	1200	10x10.5	410
4	1500	10x10.5	470
6.3	22	4x5.5	29
6.3	33	4x5.5	33
6.3	33	5x5.5	37
6.3	47	4x5.5	40
6.3	47	5x5.5	46
6.3	100	5x5.5	70
6.3	100	6.3x6.1	85
6.3	150	6.3x6.1	100
6.3	220	6.3x6.1	130
6.3	220	6.3x7.7	141
6.3	220	8x6.5	150
6.3	330	6.3x7.7	197
6.3	330	8x6.5	210
6.3	470	8x10.5	380
6.3	560	8x10.5	410
6.3	680	8x10.5	460
6.3	1000	8x10.5	480
6.3	1000	10x10.5	500
6.3	1200	10x10.5	510
6.3	1500	10x10.5	530
6.3	3300	12.5x14	750
6.3	6800	16x17	1330
10	10	4x5.5	21
10	22	4x5.5	33
10	22	5x5.5	37
10	33	4x5.5	41
10	33	5x5.5	43
10	47	5x5.5	52
10	100	6.3x5.5	76
10	150	6.3x6.1	88
10	220	6.3x7.7	170
10	220	8x6.5	190
10	330	8x10.5	330
10	470	8x10.5	420
10	560	10x10.5	450
10	680	10x10.5	480

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (mArms/85℃ /120Hz)
10	1000	10x10.5	510
10	2200	12.5x14	730
10	4700	16x17	1200
16	10	4x5.5	23
16	22	4x5.5	37
16	33	5x5.5	45
16	47	5x5.5	50
16	47	6.3x5.5	60
16	100	6.3x5.5	100
16	100	6.3x6.1	108
16	150	6.3x7.7	135
16	220	6.3x7.7	185
16	220	8x10.5	290
16	330	8x10.5	330
16	470	8x10.5	430
16	470	10x10.5	460
16	560	10x10.5	500
16	680	10x10.5	550
16	1000	12.5x14	600
16	1200	12.5x14	660
16	1500	12.5x14	710
16	3300	16x17	1200
25	4.7	4x5.5	18
25	10	4x5.5	27
25	22	5x5.5	40
25	22	6.3x5.5	46
25	33	5x5.5	46
25	33	6.3x5.5	54
25	47	6.3x5.5	60
25	47	6.3x6.1	68
25	100	6.3x7.7	150
25	100	8x6.5	160
25	150	8x10.5	200
25	220	8x10.5	300
25	330	8x10.5	390
25	330	10x10.5	450
25	470	10x10.5	480
25	560	12.5x14	520
25	680	12.5x14	580
25	1000	12.5x14	660
25	2200	16x17	1150
35	4.7	4x5.5	18
35	10	4x5.5	29
35	22	5x5.5	45
35	22	6.3x5.5	48
35	33	6.3x5.5	58
35	47	6.3x5.5	65
35	47	6.3x6.1	70
35	47	8x6.5	115

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (mArms/85℃ /120Hz)
35	100	6.3x7.7	250
35	100	8x10.5	280
35	150	8x10.5	300
35	220	8x10.5	350
35	220	10x10.5	400
35	330	10x10.5	460
35	470	12.5x14	590
35	560	12.5x14	600
35	680	12.5x14	610
35	1500	16x17	1060
50	0.1	4x5.5	1
50	0.22	4x5.5	2
50	0.33	4x5.5	2.8
50	0.47	4x5.5	4
50	1	4x5.5	8.4
50	2.2	4x5.5	14
50	3.3	4x5.5	17
50	4.7	4x5.5	22
50	10	5x5.5	30
50	10	6.3x5.5	35
50	22	6.3x6.1	60
50	22	6.3x7.7	75
50	22	8x6.5	80
50	33	6.3x7.7	188
50	33	8x6.5	200
50	47	6.3x7.7	225
50	47	8x6.5	240
50	100	8x10.5	300
50	150	10x10.5	320
50	220	10x10.5	450
50	330	12.5x14	520
50	470	16x17	925
50	1000	16x17	940
63	0.1	4x5.5	1
63	0.22	4x5.5	2
63	0.33	4x5.5	3
63	0.47	4x5.5	4
63	1	4x5.5	8
63	2.2	4x5.5	14
63	3.3	5x5.5	18
63	4.7	5x5.5	23
63	4.7	6.3x5.5	27
63	10	6.3x5.5	35
63	22	6.3x7.7	75
63	22	8x6.5	75
63	33	8x10.5	160
63	47	8x10.5	170
63	100	10x10.5	270
63	100	12.5x14	340
63	150	12.5x14	380
63	220	12.5x14	460
63	330	16x17	560
63	470	16x17	700
80	1	4x5.5	8
80	2.2	5x5.5	16
80	3.3	6.3x5.5	25
80	4.7	6.3x5.5	30
80	10	6.3x7.7	40
80	22	6.3x7.7	70
80	33	8x10.5	160
80	47	10x10.5	195
80	100	12.5x14	380

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (mArms/85℃ /120Hz)
80	150	12.5x14	450
80	220	16x17	550
100	1	4x5.5	8
100	2.2	6.3x5.5	18
100	2.2	6.3x6.1	20
100	3.3	6.3x5.5	25
100	3.3	6.3x6.1	28
100	4.7	6.3x7.7	38
100	4.7	8x6.5	38
100	10	6.3x7.7	50
100	22	8x10.5	120
100	33	10x10.5	190
100	47	12.5x14	330
100	100	12.5x14	380
100	150	16x17	560
160	10	8x10.5	70
160	12	8x10.5	80
160	18	10x10.5	100
160	22	10x10.5	150
160	27	12.5x14	235
160	33	12.5x14	250
160	39	12.5x14	270
160	47	16x17	400
160	68	16x17	500
200	10	10x10.5	100
200	10	12.5x14	130
200	22	12.5x14	235
200	27	12.5x14	250
200	33	12.5x14	270
200	39	16x17	370
200	47	16x17	420
200	68	16x17	520
250	4.7	8x10.5	70
250	6.8	10x10.5	95
250	10	10x10.5	115
250	15	12.5x14	180
250	22	16x17	280
250	27	16x17	305
250	33	16x17	340
250	39	16x17	370
250	47	16x17	430
400	3.3	10x10.5	50
400	4.7	10x10.5	90
400	4.7	12.5x14	115
400	6.8	12.5x14	130
400	8.2	12.5x14	140
400	10	12.5x14	145
400	10	16x17	160
400	12	16x17	175
400	15	16x17	170
400	18	16x17	195
400	22	16x17	235
450	4.7	12.5x14	115
450	6.8	12.5x14	130
450	8.2	12.5x14	140
450	10	12.5x14	145
450	10	16x17	160
450	12	16x17	175
450	15	16x17	170
450	18	16x17	195
450	22	16x17	235