HV Series

Featurs

- Long life of 2000 hrs at 105
- Reflow soldering is available
- Available for high density mounting
- RoHS Compliant

Specications

Item	Performance Characteristics	
Operating Temperature Range	-55~ +105℃	-40~ +105℃
Rated Voltage Range	6.3~100 VDC	160~450 VDC
Capacitance Range	0.1 to 6800μF	2.2 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)		6.3	10	16	25	35	50	63	80	100	160～250	＞250
D.F.(%)max	φ4~6.3	30	24	20	16	14	14	12	10	10	-	-
	φ8~10	35	26	24	18	14	14	12	10	10	15	20
	≧φ12.5	37	34	24	18	14	14	12	10	10	15	20

Low Temperature Characteristics (at 120Hz)

Impedance ratio max

Rated voltage(VDC)	6.3	10	16	25	35	50	63	80	100	160～250	400	450
Z-25℃ / Z+20℃	6	4	4	3	2	2	2	3	3	3	6	6
Z-40℃ / Z+20℃	12	10	8	6	4	4	4	4	4	6	10	15

Endurance

Test conditions

Duration time :2000 Hrs

Ambient temperature :+105℃

Applied voltage :Rated DC working voltage

After test requirement at +20℃:

Capacitance change :Within ±30% of the initial value

Dissipation factor :Not more than 300% of specified value

Leakage current :Not more than the specified value

Shelf Life

Test conditions

Duration time :1000 Hrs

Ambient temperature :+105℃

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

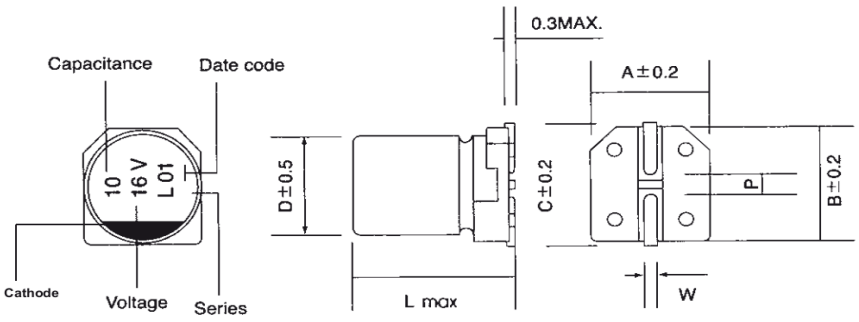
The capacitors shall be kept on the hot plate maintained at 250℃for 30 seconds. After removing form the hot plate and restored at room temperature, they meet the characteristic requirements listed under.

Leakage	Less than specified value
Capacitance	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)

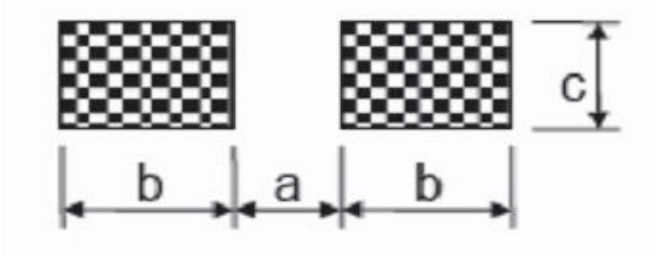


6.3×5.5:L±0.2

φ16~φ18:L±0.5

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	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	17.1	17.1	18.0	1.0~1.4	7.0
16	21.5	17.1	17.1	18.0	1.0~1.4	7.0
18	16.5	19.1	19.1	20.0	1.0~1.4	7.5
18	21.5	19.1	19.1	20.0	1.0~1.4	7.5

Recommended land pattern:(unit:mm)



ΦDxL	a	b	c
4 x all	1	2.6	1.6
5 x all	1.4	3	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	6.5	3.5
18x all	6	7.5	3.5

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (mArms/105℃ /120Hz)
6.3	22	4×5.5	23
6.3	33	4×5.5	28
6.3	47	4×5.5	37
6.3	47	5×5.5	40
6.3	100	5×5.5	46
6.3	100	6.3×5.5	57
6.3	150	6.3×5.5	70
6.3	150	8×6.5	90
6.3	220	6.3×7.7	90
6.3	220	8×6.5	130
6.3	330	6.3×7.7	140
6.3	330	8×10.5	170
6.3	470	8×10.5	210
6.3	560	8×10.5	310
6.3	680	8×10.5	330
6.3	680	10×10.5	370
6.3	1000	8×10.5	420
6.3	1000	10×10.5	480
6.3	1200	10×10.5	500
6.3	1500	10×10.5	520
6.3	1800	12.5×14	600
6.3	2200	12.5×14	650
6.3	3300	12.5×14	700
6.3	6800	16×17	930
10	22	4×5.5	25
10	33	4×5.5	34
10	47	5×5.5	42
10	100	6.3×5.5	55
10	100	8×6.5	60
10	150	6.3×5.5	90
10	150	8×6.5	110
10	220	6.3×7.7	140
10	220	8×6.5	160
10	330	8×10.5	195
10	470	8×10.5	350
10	470	10×10.5	420
10	560	10×10.5	450
10	680	10×10.5	480
10	1000	10×10.5	530
10	1200	12.5×14	570
10	1500	12.5×14	750
10	4700	16×17	880
16	10	4×5.5	20
16	22	4×5.5	31
16	22	5×5.5	35
16	33	5×5.5	36
16	33	6.3×5.5	40
16	47	5×5.5	45
16	47	6.3×5.5	56
16	100	6.3×7.7	58
16	100	8×6.5	62
16	150	6.3×7.7	125
16	150	8×6.5	140
16	220	6.3×7.7	170
16	220	8×10.5	185
16	330	8×10.5	250
16	470	8×10.5	370
16	470	10×10.5	420
16	560	10×10.5	480
16	680	10×10.5	540
16	1000	12.5×14	580
16	1200	12.5×14	590
16	1500	12.5×14	620
16	3300	16×17	850
25	4.7	4×5.5	12
25	10	4×5.5	22
25	22	5×5.5	38
25	33	6.3×5.5	48
25	47	6.3×7.7	56
25	47	8×6.5	60
25	100	6.3×7.7	110
25	100	8×10.5	160
25	150	8×10.5	175
25	220	8×10.5	180
25	220	10×10.5	190
25	330	8×10.5	290
25	470	10×10.5	440
25	560	12.5×14	490
25	680	12.5×14	510
25	1000	12.5×14	600
25	2200	16×17	805
35	4.7	4×5.5	14
35	10	4×5.5	24
35	22	5×5.5	40
35	22	6.3×5.5	46
35	33	6.3×7.7	47
35	33	8×6.5	50
35	47	6.3×7.7	60
35	47	8×6.5	65
35	100	6.3×7.7	130
35	100	8×10.5	180
35	150	8×10.5	190
35	220	8×10.5	250
35	220	10×10.5	280
35	330	10×10.5	360
35	470	12.5×14	460
35	560	12.5×14	500
35	1500	16×17	740
50	0.1	4×5.5	1
50	0.22	4×5.5	2
50	0.33	4×5.5	3
50	0.47	4×5.5	4
50	1	4×5.5	8
50	2.2	4×5.5	11
50	3.3	4×5.5	13
50	4.7	4×5.5	18
50	10	6.3×5.5	28
50	22	6.3×7.7	50
50	22	8×6.5	55
50	33	6.3×7.7	95
50	33	8×10.5	135
50	47	6.3×7.7	115
50	47	8×10.5	155
50	100	10×10.5	315
50	150	10×10.5	330
50	220	10×10.5	350
50	330	12.5×14	400
50	470	16×17	570
50	1000	16×17	655
63	0.1	4×5.5	0.7

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (mArms/105℃ /120Hz)
63	0.22	4×5.5	1.6
63	0.33	4×5.5	2.5
63	0.47	4×5.5	3.5
63	1	4×5.5	7
63	2.2	4×5.5	11
63	3.3	5×5.5	14
63	4.7	5×5.5	22
63	10	6.3×5.5	40
63	22	6.3×7.7	58
63	33	8×10.5	112
63	47	8×10.5	119
63	100	10×10.5	280
63	220	12.5×14	300
63	470	16×17	630
80	1	4×5.5	7
80	2.2	5×5.5	12
80	3.3	6.3×5.5	17
80	4.7	6.3×5.5	25
80	10	6.3×7.7	35
80	22	6.3×7.7	58
80	33	8×10.5	112
80	47	10×10.5	160
80	100	12.5×14	380
80	150	16×17	500
80	220	16×17	600
100	1	4×5.5	7
100	2.2	6.3×6.1	15
100	2.2	6.3×5.5	13
100	3.3	6.3×6.1	20
100	4.7	6.3×7.7	28
100	10	6.3×7.7	35
100	22	8×10.5	85
100	33	10×10.5	135
100	47	12.5×14	240
100	150	16×17	500
160	10	8×10.5	57
160	12	8×10.5	60
160	18	10×10.5	65
160	22	10×10.5	70
160	27	12.5×14	85
160	33	12.5×14	95
160	39	12.5×14	105
160	47	16×17	260
160	68	16×17	300
200	10	10×10.5	64
200	10	12.5×14	80
200	22	12.5×14	105
200	27	12.5×14	115
200	33	12.5×14	170
200	33	16×17	220
200	47	16×17	260
250	4.7	8×10.5	50
250	6.8	10×10.5	60
250	10	10×10.5	75
250	15	12.5×14	120
250	22	16×17	180
250	27	16×17	200
250	33	16×17	230
250	39	16×17	260
250	47	16×17	285

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (mArms/105℃ /120Hz)
400	2.2	8×10.5	27
400	3.3	8×10.5	34
400	3.9	10×10.5	40
400	4.7	10×10.5	40
400	4.7	12.5×14	50
400	6.8	12.5×14	60
400	8.2	12.5×14	65
400	10	12.5×14	70
400	10	16×17	85
400	12	16×17	95
400	22	16×17	120
450	3.3	10×10.5	40
450	3.9	10×10.5	40
450	4.7	12.5×14	50
450	6.8	12.5×14	60
450	8.2	12.5×14	65
450	10	12.5×14	70
450	10	16×17	85
450	12	16×17	95
450	15	16×17	100
450	22	16×17	120