

## VL series

- Larger capacitance or Lower ESR than VS series
- High ripple current



### Specifications

Items	Characteristics	
Temperature range	-55°C ~ +105°C	
Rated voltage range	2.5Vdc ~ 16.0Vdc	
Capacitance range	68μF ~ 2,700μF	
Capacitance tolerance	±20% [M] (at 20°C, 120Hz)	
Tangent of loss angle	Less than or equal to the value of STANDARD RATING (at 20°C, 120Hz)	
Leakage current	Less than or equal to the value of STANDARD RATING (at 20°C, after 2 minutes)	
ESR	Less than or equal to the value of STANDARD RATING	
Characteristics of impednace	Z <sub>+105°C/Z+20°C</sub> ≤ 1.25, Z <sub>-55°C/Z+20°C</sub> ≤ 1.25 at 100kHz	
Endurance	105°C, 2,000 hrs at rated voltage	
	Appearance	No significant damage
	Capacitance change	Within±20% of the initial value
	Tangent of loss angle (tanδ)	≤150% of the initial specified value
	ESR(mΩ)	≤150% of the initial specified value
Damp Heat (Steady state)	60°C, 90 to 95% RH, 1000 hrs, No-applied Voltage	
	Appearance	No significant damage
	Capacitance change	Within±20% of the initial value
	Tangent of loss angle (tanδ)	≤150% of the initial specified value
	ESR(mΩ)	≤150% of the initial specified value
Resistance to soldering heat	VPS (230°C, 75s)	
	Appearance	No significant damage
	Capacitance change	Within±10% of the initial value
	Tangent of loss angle (tanδ)	≤130% of the initial specified value
	ESR(mΩ)	≤130% of the initial specified value
	Leakage current	
	≤The initial specified value	

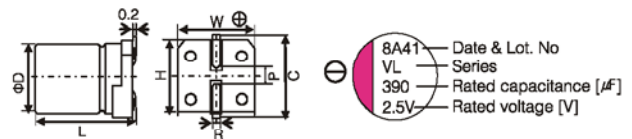
\* In case of some problems for measured values, measure after applying rated voltage for 120 minutes at 105°C

### Dimensions

μF	RV (SV)	(unit : mm)				
		2.5(3.3)	4(5.2)	6.3(8.2)	10(11.5)	16(18.4)
68						6.3x5.9
82						6.9x5.9
120					6.3x5.9	8.0x6.9
150						8.0x6.9
220				6.3x5.7 (5.8, 5.9)		
270					8.0x6.9	8.0x11.9
330			6.3x5.9	6.3x5.7 (5.8, 5.9)		8.0x11.9
390	6.3x5.7 (5.8, 5.9)					
560	6.3x5.7 (5.8, 5.9)		8.0x6.9 (11.9)			
680	8.0x6.9					
820	8.0x11.9			8.0x11.9		
1000	8.0x6.9					
1200			8.0x11.9			
1500	8.0x11.9		8.0x11.9			
2700	10x12.6					

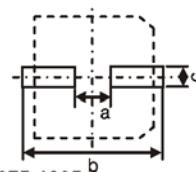
RV:Rated voltage [V] SV:Surge voltage [V] (at room temperature)

### Marking and Size list



Size	φD±0.5	L	+0.1 -0.4	W±0.2	H±0.2	C±0.2	R	P±0.2
6.3x5.7	6.3	(5.7±0.3)		6.6	6.6	7.3	0.6~0.8	2.1
6.3x5.8	6.3	(5.8±0.3)		6.6	6.6	7.3	0.6~0.8	2.1
6.3x5.9	6.3	5.9		6.6	6.6	7.3	0.6~0.8	2.1
8.0x6.9	8.0	6.9		8.3	8.3	9.0	0.6~0.8	3.2
8.0x11.9	8.0	11.9		8.3	8.3	9.0	0.8~1.1	3.2
10.0x12.6	10.0	12.6		10.3	10.3	11.0	0.8~1.1	4.6

### Recommended land pattern dimension of PCB



Size	a	b	c
6.3x5.7, 5.8, 5.9	2.1	9.1	1.6
8.0x6.9	2.8	11.1	1.9
8.0x11.9	2.8	11.1	1.9
10.0x12.6	4.3	13.1	1.9

## Standard ratings

Rated Voltage [Vdc]	Rated Capacitance [ $\mu$ F]	Size $\Phi$ D x L [mm]	ESR (20°C, 100kHz) [m $\Omega$ ][max.]	Rated Ripple Current (105°C, 100kHz) [mA rms, max.]	Tangent of Loss Angle [max.]	Leakage Current [ $\mu$ A, max.]	Part Number
2.5	390	6.3x5.7	15	3160	0.10	300	2VL390MC5R7
	390	6.3x5.8	15	3160	0.10	300	2VL390MC5R8
	390	6.3x5.9	15	3160	0.10	300	2VL390MC6
	560	6.3x5.7	16	3500	0.10	300	2VL560MC5R7
	560	6.3x5.8	16	3500	0.10	300	2VL560MC5R8
	560	6.3x5.9	16	3500	0.10	300	2VL560MC6
	680	8.0x6.9	20	3370	0.10	500	2VL680MD7
	820	8.0x11.9	9	5380	0.10	500	2VL820MD12
	1000	8.0x6.9	12	4260	0.10	500	2VL1000MD7
	1500	8.0x11.9	10	5150	0.10	750	2VL1500MD12
2700	10x12.6	12	5070	0.10	1350	2VL2700ME12	
4	330	6.3x5.9	15	3160	0.10	300	4VL330MC6
	560	8.0x6.9	22	3220	0.10	500	4VL560MD7
	560	8.0x11.9	9	5380	0.10	500	4VL560MD12
	1200	8.0x11.9	12	4700	0.10	960	4VL1200MD12
	1500	8.0x11.9	12	4700	0.10	1200	4VL1500MD12
6.3	220	6.3x5.7	15	3160	0.10	300	6VL220MC5R7
	220	6.3x5.8	15	3160	0.10	300	6VL220MC5R8
	220	6.3x5.9	15	3160	0.10	300	6VL220MC6
	330	6.3x5.7	17	3390	0.10	415	6VL330MC5R7
	330	6.3x5.8	17	3390	0.10	415	6VL330MC5R8
	330	6.3x5.9	17	3390	0.10	415	6VL330MC6
	390	8.0x6.9	22	3220	0.10	491	6VL390MD7
	820	8.0x11.9	12	4700	0.10	1033	6VL820MD12
10	120	6.3x5.9	22	2600	0.10	300	10VL120MC6
	270	8.0x6.9	22	3220	0.10	500	10VL270MD7
16	68	6.3x5.9	25	2440	0.10	300	16VL68MC6
	82	6.3x5.9	25	2490	0.10	300	16VL82MC6
	120	8.0x6.9	27	2900	0.10	500	16VL120MD7
	150	8.0x6.9	22	3500	0.10	500	16VL150MD7
	270	8.0x11.9	11	4070	0.10	864	16VL270MD12
	330	8.0x11.9	11	4070	0.10	1056	16VL330MD12