

VSE series

- Eco friendly (Halogen less)
- High ripple current
- Super low ESR at a high frequency



Specifications

Items	Characteristics	
Temperature range	-55°C ~ +105°C	
Rated voltage range	2.5Vdc ~ 25.0Vdc	
Capacitance range	6.8μF ~ 1,500μF	
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	$Z_{+105^{\circ}\text{C}}/Z_{+20^{\circ}\text{C}} \leq 1.25$, $Z_{-55^{\circ}\text{C}}/Z_{+20^{\circ}\text{C}} \leq 1.25$ 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 2.5 to 25V products for 120 minutes at 105°C

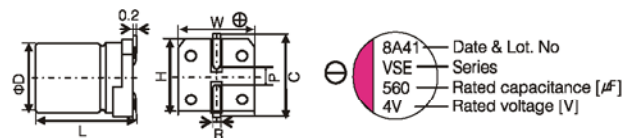
Dimensions

(unit : mm)

RV [SV]	2.5(3.3)	4(5.2)	6.3(8.2)	10(11.5)	16(18.4)	20(23.0)	25(28.7)
6.8							6.3x5.9
10							8.0x6.9
22						6.3x5.9	
27					6.3x5.9	6.3x5.9	
33						8.0x6.9	8.0x11.9
39					6.3x5.9		
47				6.3x5.9	6.3x5.9	8.0x6.9	
56				6.3x5.9	8.0x6.9		10x12.6
82			6.3x5.9		8.0x6.9		
100		6.3x5.9	6.3x5.9		8.0x6.9	8.0x11.9	
120			6.3x5.9 8.0x6.9	8.0x6.9			
150		6.3x5.9	8.0x6.9	8.0x6.9		10x12.6	
180					8.0x11.9		
220	6.3x5.9		8.0x6.9				
330		8.0x6.9		8.0x11.9	10x12.6		
470	8.0x6.9		8.0x11.9		10x12.6		
560		8.0x11.9		10x12.6			
680	8.0x11.9						
820			10x12.6				
1000			10x12.6				
1200		10x12.6					
1500	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
6.3x5.9	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
6.3x5.9	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 [μF]	Size Φ D x L [mm]	ESR (20°C, 100kHz) [mΩ][max.]	Rated Ripple Current (105°C, 100kHz) [mA rms, max.]	Tangent of Loss Angle [max.]	Leakage Current [μA, max.]	Part Number
2.5	220	6.3x5.9	23	2390	0.10	110	2VSE5220MC6
	470	8.0x6.9	23	3300	0.10	235	2VSE470MD7
	680	8.0x11.9	13	4520	0.10	340	2VSE680MD12
	1500	10x12.6	12	5440	0.10	750	2VSE1500ME12
4	100	6.3x5.9	45	1810	0.10	80	4VSE100MC6
	150	6.3x5.9	40	1810	0.10	120	4VSE150MC6
	330	8.0x6.9	35	2560	0.10	264	4VSE330MD7
	560	8.0x11.9	13	4520	0.10	448	4VSE560MD12
	1200	10x12.6	12	5440	0.10	960	4VSE1200ME12
6.3	82	6.3x5.9	45	1700	0.10	103	6VSE82MC6
	100	6.3x5.9	40	1810	0.10	126	6VSE100MC6
	120	6.3x5.9	40	1810	0.10	151	6VSE120MC6
	120	8.0x6.9	50	2560	0.10	151	6VSE120MD7
	150	8.0x6.9	40	2560	0.10	189	6VSE150MD7
	220	8.0x6.9	35	2560	0.10	277	6VSE220MD7
	470	8.0x11.9	15	4210	0.10	592	6VSE470MD12
	820	10x12.6	12	5440	0.10	1033	6VSE820ME12
1000	10x12.6	12	5440	0.10	1260	6VSE1000ME12	
10	47	6.3x5.9	50	1620	0.10	94	10VSE47MC6
	56	6.3x5.9	45	1700	0.10	112	10VSE56MC6
	120	8.0x6.9	35	2560	0.10	240	10VSE120MD7
	150	8.0x6.9	35	2560	0.10	300	10VSE150MD7
	330	8.0x11.9	17	3950	0.10	660	10VSE330MD12
	560	10x12.6	13	5230	0.10	1120	10VSE560ME12
16	27	6.3x5.9	50	1620	0.10	86	16VSE27MC6
	39	6.3x5.9	50	1620	0.10	125	16VSE39MC6
	47	6.3x5.9	50	1620	0.10	150	16VSE47MC6
	56	8.0x6.9	45	1890	0.10	179	16VSE56MD7
	82	8.0x6.9	40	2120	0.10	262	16VSE82MD7
	100	8.0x6.9	40	2120	0.10	320	16VSE100MD7
	180	8.0x11.9	20	3640	0.10	576	16VSE180MD12
	330	10x12.6	16	4720	0.10	1056	16VSE330ME12
470	10x12.6	16	4720	0.10	1504	16VSE470ME12	
20	22	6.3x5.9	60	1450	0.10	88	20VSE22MC6
	27	6.3x5.9	60	1450	0.10	108	20VSE27MC6
	33	8.0x6.9	45	1890	0.10	132	20VSE33MD7
	47	8.0x6.9	45	1890	0.10	188	20VSE47MD7
	100	8.0x11.9	24	3320	0.10	400	20VSE100MD12
150	10x12.6	20	4320	0.10	600	20VSE150ME12	
25	6.8	6.3x5.9	80	1200	0.10	85	25VSE6R8MC6
	10	8.0x6.9	60	1500	0.10	125	25VSE10MD7
	33	8.0x11.9	30	2980	0.10	413	25VSE33MD12
	56	10x12.6	28	3800	0.10	700	25VSE56ME12