

VS series

Features

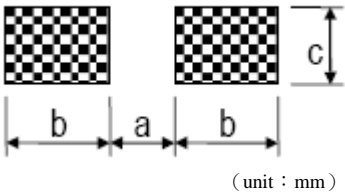
- ◆ SMD type, 2000 hours at 105°C.
- ◆ Low profile type , Lead free-reflow is supported.
- ◆ RoHS Compliant.



Specifications

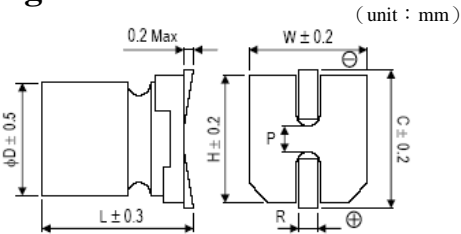
Items	Characteristics	
Operating Temp. Range	-55℃～+105℃	
Capacitance Range	10～560μF	
Capacitance Tolerance	M : ±20%	
Rated Voltage Range	2.5V～25V dc	
Dissipation Factor ( at 120Hz,20℃ )	Not to exceed the value specified	
Leakage Current	Not to exceed the value specified (μA, after 2 minutes)	
ESR ( 100K~300KHz )	Not to exceed the value specified	
Endurance 105℃ , 2000h , at rated voltage	Capacitance	Within ±20% of the value before test
	Leakage current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified
Moisture Resistance Stored at 60℃ , RH90～ 95% , 2000h	Capacitance	Within ±20% of the value before test
	Leakage Current	Not to exceed the value specified
	ESR	Not to exceed 150% of the value specified
	Dissipation Factor	Not to exceed 150% of the value specified

Recommended land pattern



φD×L	a	b	c
4×5.5	1.0	2.6	1.6
5×5.5	1.4	3.0	1.6
6.3×5.8	2.1	3.5	1.6
6.3×7.7	2.1	3.5	1.6

Diagram of Dimensions



φD×L	W	H	C	R	P
4×5.5	4.3	4.3	5.1	0.5 to 0.8	1.0
5×5.5	5.3	5.3	5.9	0.5 to 0.8	1.4
6.3×5.8	6.5	6.5	7.2	0.5 to 0.8	2.1
6.3×7.7	6.5	6.5	7.2	0.5 to 0.8	2.1

Size List

RV (SV)	2.5 (2.8)	4 (4.6)	6.3 (7.2)	10 (11.5)	16 (18.4)	20 (23)	25 (27.5)
CAP							
10				4×5.5	6.3×5.8/ 6.3×7.7	6.3×5.8/ 6.3×7.7	6.3×5.8/ 6.3×7.7
15				4×5.5	6.3×5.8/ 6.3×7.7	6.3×5.8/ 6.3×7.7	6.3×5.8/ 6.3×7.7
22				4×5.5	6.3×5.8/ 6.3×7.7	6.3×5.8/ 6.3×7.7	6.3×7.7
33				5×5.5/6.3×5.8	6.3×5.8/ 6.3×7.7	6.3×7.7	6.3×7.7
39				5×5.5 /6.3×5.8	6.3×5.8/ 6.3×7.7	6.3×7.7	6.3×7.7
47				6.3×5.8/ 6.3×7.7	6.3×5.8/ 6.3×7.7	6.3×7.7	
68				6.3×5.8/ 6.3×7.7	6.3×5.8/ 6.3×7.7		
82				6.3×5.8/ 6.3×7.7	6.3×7.7		
100	4×5.5 /5×5.5	5×5.5	6.3×5.8/6.3×7.7	6.3×5.8/ 6.3×7.7	6.3×7.7		
150	5×5.5 /6.3×5.8	6.3×5.8 /6.3×7.7	6.3×5.8/6.3×7.7	6.3×5.8/6.3×7.7			
180	5×5.5/6.3×5.8	6.3×5.8 / 6.3×7.7	6.3×5.8/6.3×7.7	6.3×7.7			
220	5×5.5/6.3×5.8	6.3×5.8 /6.3×7.7	6.3×5.8/6.3×7.7	6.3×7.7			
270	6.3×5.8/6.3×7.7	6.3×5.8 / 6.3×7.7	6.3×5.8/6.3×7.7				
330	6.3×5.8 / 6.3×7.7	6.3×5.8 /6.3×7.7	6.3×5.8/6.3×7.7				
390	6.3×5.8/6.3×7.7	6.3×5.8/6.3×7.7	6.3×5.8/6.3×7.7				
470	6.3×5.8/6.3×7.7	6.3×5.8/6.3×7.7					
560	6.3×5.8/6.3×7.7						

## Characteristics List

W.V. (V)	Capacitance ( $\mu$ F)	L.C. ( $\mu$ A,2min)	tg $\delta$ (120Hz,20℃)	ESR (m $\Omega$ ,100kHz)	Rated Ripple Current(mA,r.m.s)	Size $\Phi$ D×L (mm)	Part Number
2.5	100	300	0.08	30	1670	4×5.5	VS101M2R5B055
	100	300	0.08	30	1970	5×5.5	VS101M2R5C055
	150	300	0.08	30	1970	5×5.5	VS151M2R5C055
	150	300	0.08	30	2200	6.3×5.8	VS151M2R5E058
	180	300	0.08	30	1970	5×5.5	VS181M2R5C055
	180	300	0.08	30	2200	6.3×5.8	VS181M2R5E058
	220	300	0.08	30	2200	5×5.5	VS221M2R5 C055
	220	300	0.08	30	2610	6.3×5.8	VS221M2R5E058
	270	300	0.08	25	2610	6.3×5.8	VS271M2R5E058
	270	300	0.08	20	2690	6.3×7.7	VS271M2R5E077
	330	300	0.08	25	2610	6.3×5.8	VS331M2R5E058
	330	300	0.08	20	2690	6.3×7.7	VS331M2R5E077
	390	300	0.08	20	2690	6.3×7.7	VS391M2R5E077
	470	300	0.08	15	3100	6.3×7.7	VS471M2R5E077
	560	300	0.08	15	3100	6.3×7.7	VS561M2R5E077
4	100	300	0.08	30	1970	5×5.5	VS101M004 C055
	150	300	0.08	30	2200	6.3×5.8	VS151M004E058
	150	300	0.08	25	2670	6.3×7.7	VS151M004E077
	180	300	0.08	30	2200	6.3×5.8	VS181M004E058
	180	300	0.08	25	2670	6.3×7.7	VS181M004E077
	220	300	0.08	25	2610	6.3×5.8	VS221M004E058
	220	300	0.08	20	2690	6.3×7.7	VS221M004E077
	270	300	0.08	25	2610	6.3×5.8	VS271M004E058
	270	300	0.08	20	2690	6.3×7.7	VS271M004E077
	330	300	0.08	20	2690	6.3×5.8	VS331M004E058
	330	300	0.08	15	3100	6.3×7.7	VS331M004E077
	390	300	0.08	15	3100	6.3×7.7	VS391M004E077
	470	300	0.08	15	3100	6.3×7.7	VS471M004E077
6.3	100	300	0.08	25	2390	6.3×5.8	VS101M6R3E058
	100	300	0.08	20	2690	6.3×7.7	VS101M6R3E077
	150	300	0.08	25	2390	6.3×5.8	VS151M6R3E058
	150	300	0.08	20	2690	6.3×7.7	VS151M6R3E077
	180	300	0.08	20	2690	6.3×5.8	VS181M6R3E058
	180	300	0.08	20	2690	6.3×7.7	VS181M6R3E077
	220	300	0.08	15	3000	6.3×5.8	VS221M6R3E058
	220	300	0.08	15	3400	6.3×7.7	VS221M6R3E077
	270	300	0.08	15	3000	6.3×5.8	VS271M6R3E058
	270	300	0.08	15	3400	6.3×7.7	VS271M6R3E077
	330	300	0.08	15	3100	6.3×5.8	VS331M6R3E058
	330	300	0.08	15	3400	6.3×7.7	VS331M6R3E077
	390	300	0.08	15	3100	6.3×5.8	VS391M6R3E058
	390	300	0.08	15	3400	6.3×7.7	VS391M6R3E077
10	10	300	0.08	45	1200	4×5.5	VS100M010B055
	15	300	0.08	45	1200	4×5.5	VS150M010B055
	22	300	0.08	45	1200	4×5.5	VS220M010B055
	33	300	0.08	45	1670	5×5.5	VS330M010C055
	33	300	0.08	30	2200	6.3×5.8	VS330M010E058
	39	300	0.08	45	1670	5×5.5	VS390M010C055
	39	300	0.08	30	2200	6.3×5.8	VS390M010E058
	47	300	0.08	30	2200	6.3×5.8	VS470M010E058
	47	300	0.08	20	2690	6.3×7.7	VS470M010E077
	68	300	0.08	30	2200	6.3×5.8	VS680M010E058

## Characteristics List

W.V. (V)	Capacitance ( $\mu$ F)	L.C. ( $\mu$ A,2min)	tg $\delta$ (120Hz,20℃)	ESR (m $\Omega$ ,100kHz)	Maximum Permissible Ripple Current(mA,r.m.s)	Size $\Phi$ D×L(mm)	Part Number
10	68	300	0.08	20	2690	6.3×7.7	VS680M010E077
	82	300	0.08	30	2200	6.3×5.8	VS820M010E058
	82	300	0.08	20	2690	6.3×7.7	VS820M010E077
	100	300	0.08	30	2200	6.3×5.8	VS101M010E058
	100	300	0.08	20	2690	6.3×7.7	VS101M010E077
	150	300	0.08	20	2690	6.3×7.7	VS151M010E077
	180	300	0.08	20	2690	6.3×7.7	VS181M010E077
	220	300	0.08	20	2690	6.3×7.7	VS221M010E077
16	10	400	0.08	30	2200	6.3×5.8	VS100M016E058
	10	400	0.08	25	2610	6.3×7.7	VS100M016E077
	15	400	0.08	30	2200	6.3×5.8	VS150M016E058
	15	400	0.08	25	2610	6.3×7.7	VS150M016E077
	22	400	0.08	30	2200	6.3×5.8	VS220M016E058
	22	400	0.08	25	2610	6.3×7.7	VS220M016E077
	33	400	0.08	30	2200	6.3×5.8	VS330M016E058
	33	400	0.08	25	2610	6.3×7.7	VS330M016E077
	47	400	0.08	30	2200	6.3×5.8	VS470M016E058
	47	400	0.08	25	2610	6.3×7.7	VS470M016E077
	68	400	0.08	30	2200	6.3×5.8	VS680M016E058
	68	400	0.08	20	2690	6.3×7.7	VS680M016E077
	82	400	0.08	20	2690	6.3×7.7	VS820M016E077
	100	400	0.08	20	2690	6.3×7.7	VS101M016E077
20	10	600	0.08	30	2200	6.3×5.8	VS100M020E058
	10	600	0.08	25	2670	6.3×7.7	VS100M020E077
	15	600	0.08	30	2200	6.3×5.8	VS150M020E058
	15	600	0.08	25	2670	6.3×7.7	VS150M020E077
	22	600	0.08	30	2200	6.3×5.8	VS220M020E058
	22	600	0.08	25	2670	6.3×7.7	VS220M020E077
	33	600	0.08	25	2670	6.3×7.7	VS330M020E077
	39	600	0.08	25	2670	6.3×7.7	VS390M020E077
	47	600	0.08	25	2670	6.3×7.7	VS470M020E077
25	10	600	0.08	30	2200	6.3×5.8	VS100M025E058
	10	600	0.08	25	2670	6.3×7.7	VS100M025E077
	22	600	0.08	25	2670	6.3×7.7	VS220M025E077
	33	600	0.08	25	2670	6.3×7.7	VS330M025E077
	39	600	0.08	25	2670	6.3×7.7	VS390M025E077

## Frequency Coefficient for Ripple Current

Frequency	120Hz≤freq.<1KHz	1KHz≤freq.<10KHz	10KHz≤freq.<100KHz	100KHz≤freq.<300KHz
Coefficient	0.05	0.30	0.70	1.00