

## 系列 :VS

### 产品特点

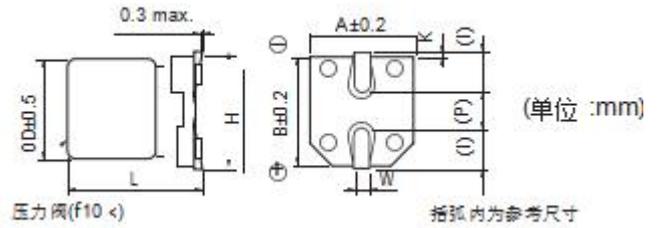
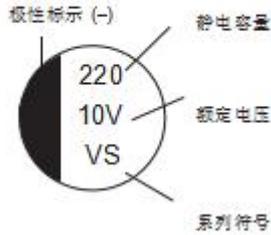
- 高温无铅回流焊产品
- 保证时间 : 85 °C 2000 小时
- 可满足耐振要求
- 符合 RoHS 标准

项目 Items	特性 Characteristics								
工作温度范围 Operating Temperature Range	-40°C ~ 85°C								
额定电压范围 Rated Voltage Range	4V ~ 50V								
标称电容量范围 Nominal Capacitance Range	0.1 ~ 10000 μF								
标称电容量允许偏差 Nominal Capacitance Tolerance	±20% (20°C, 120Hz)								
漏电流 Leakage Current	$I \leq 0.01C_R U_R$ or $3(\mu A)$ , 取较大者 (2 分钟) $C_R$ : 标称电容量 (μF) $U_R$ : 额定电压 (V) $I \leq 0.01C_R U_R$ or $3(\mu A)$ Whichever is greater (at 20°C, After 2 minutes) $C_R$ : Nominal Capacitance (μF) $U_R$ : Rated voltages (V)								
损耗角正切 (tg δ) Dissipation Factor (Max) 20°C, 120Hz	$U_R$ (V)	4	6.3	10	16	25	35	50	
	tg δ	0.35	0.28	0.24	0.20	0.16	0.14	0.12	
容量大于 1000uF 者, 每增加 1000uF, 其损耗角正切值增加 0.02 When nominal capacitance exceeds 1000uF, add 0.02 to the value above for each 1000uF increase									
耐久性 Load Life	+85°C 施加额定电压 2000 小时后, 电容器应满足以下要求: After 2000 hours' application of rated voltage at 85°C, the capacitor shall meet the following requirement:								
	电容量变化率 Capacitance Change	±20% 初始值以内 Within ±20% of the initial value							
	损耗角正切 Dissipation Factor	≤ 200% 初始规定值 Not more than 200% of the initial specified value							
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value							
高温贮存 Shelf Life	+85°C 贮存 1000 小时后, 电容器应满足以上耐久性要求 After storage for 1000 hours at +85°C, the capacitors shall meet the requirement of load life above								
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	$U_R$ (V)	4	6.3	10	16	25	35	50	
	$Z(-25^\circ C)/Z(+20^\circ C)$	< Φ8	7	4	3	2	2	2	2
		≥ Φ8	7	5	4	3	2	2	2
	$Z(-40^\circ C)/Z(+20^\circ C)$	< Φ8	15	8	8	4	4	3	3
≥ Φ8		15	10	8	6	4	3	3	
耐焊接热 Resistance to Soldering Heat	在 250°C 的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.								
	电容量变化率 Capacitance Change	±10% 初始值以内 Within ±10% of the initial value							
	损耗角正切 Dissipation Factor	≤ 初始规定值 Not more than the initial specified value							
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value							
AEC-Q200	符合 AEC-Q200								

## 标 示

## 外观尺寸

例: 10V.DC 220uF VS系列



φD	L	A, B	H.	I	W	P	K
4	5.4±0.3	4.3	5.5	1.8	0.5~0.8	1.0	0.35 + 0.15/ - 0.20
5	5.4±0.3	5.3	6.5	2.1	0.5~0.8	1.3	
6.3	5.4±0.3	6.6	7.8	2.4	0.5~0.8	2.2	
6.3	7.7±0.3	6.6	7.8	2.4	0.5~0.8	2.2	
8	6.2±0.3	8.3	9.5	3.4	0.5~0.8	2.2	
8	10.5±0.5	8.3	10	3.4	0.8~1.1	3.1	0.70±0.20
8	12.5±0.5	8.3	10	3.4	0.8~1.1	3.1	0.70±0.20
10	7.7±0.3	8.3	8.3	3.5	0.7~1.3	4.5	0.70±0.20
10	10.5±0.5	10.3	12	3.5	0.7~1.3	4.5	0.70±0.20
10	12.5±0.5	10.3	12	3.5	0.7~1.3	4.5	0.70±0.20
12.5	13.5±0.5	13.5	15	4.7	1.1~1.4	4.4	0.70±0.20
12.5	16.5±0.5	13.5	15	4.7	1.1~1.4	4.4	0.70±0.20
16	16.5±0.5	17	19	5.5	1.1~1.4	6.4	0.70±0.20
16	21.5±0.5	17	19	5.5	1.1~1.4	6.4	0.70±0.20
18	16.5±0.5	19	21	6.7	1.1~1.4	6.4	0.70±0.20
18	21.5±0.5	19	21	6.7	1.1~1.4	6.4	0.70±0.20

特性一览表 1

额定电压 (V. DC)	静电容量 (±20%) (uF)	产品尺寸(mm)		电气特性		料号	最小包装 数量 (PCS)
		φD	L	额定纹波电流 (120HZ) (+105℃) ( mA r. m. s)	tan δ (120HZ) (+20℃)		
4	33	4	5.4	32	0.35	VS0Q330MB054000LP0	2000
	47	4	5.4	32	0.35	VS0Q470MB054000LP0	2000
	100	5	5.4	60	0.35	VS0Q101MC054000LP0	1000
	150	6.3	5.4	100	0.35	VS0Q151ME054000LP0	1000
	220	6.3	5.4	120	0.35	VS0Q221ME054000LP0	1000
	330	6.3	7.7	200	0.35	VS0Q331ME077000LP0	1000
	470	6.3	7.7	240	0.35	VS0Q471ME077000LP0	1000
	680	8	10.5	400	0.35	VS0Q681MF105000LP0	500
	1000	8	10.5	450	0.35	VS0Q102MF105000LP0	500
	1500	10	10.5	750	0.35	VS0Q152MG105000LP0	500
6.3	22	4	5.4	31	0.28	VS0J220MB054000LP0	2000
	33	4	5.4	31	0.28	VS0J330MB054000LP0	2000
	47	4	5.4	40	0.28	VS0J470MB054000LP0	2000
	47	5	5.4	52	0.28	VS0J470MC054000LP0	1000
	100	5	5.4	55	0.28	VS0J101MC054000LP0	1000
	100	6.3	5.4	89	0.28	VS0J101ME054000LP0	1000

特性一览表 2

额定电压 (V. DC)	静电容量 (±20%) (uF)	产品尺寸(mm)		电气特性		料号	最小包装 数量 (PCS)
		φD	L	额定纹波电流 (120HZ) (+105℃)	tan δ (120HZ) (+20℃)		
6.3	150	6.3	5.4	95	0.28	VS0J101ME054000LP0	1000
	220	6.3	5.4	100	0.28	VS0J221ME054000LP0	1000
	220	6.3	7.7	170	0.28	VS0J221ME077000LP0	1000
	330	6.3	7.7	188	0.28	VS0J331ME077000LP0	1000
	330	8	6.2	190	0.28	VS0J221MF062000LP0	1000
	470	6.3	7.7	210	0.28	VS0J471ME077000LP0	1000
	470	8	10.5	330	0.28	VS0J471MF105000LP0	500
	680	8	10.5	350	0.28	VS0J681MF105000LP0	500
	1000	8	10.5	370	0.28	VS0J102MF105000LP0	500
	1000	10	10.5	700	0.28	VS0J102MG105000LP0	500
	1500	10	10.5	750	0.28	VS0J152MG105000LP0	500
	2200	12.5	13.5	890	0.28	VS0J222MH135000LP0	200
	3300	12.5	16.5	1000	0.28	VS0J332MH165000LP0	200
	4700	16	16.5	1400	0.28	VS0J472MJ165000LP0	125
	6800	18	16.5	1700	0.28	VS0J682MK165000LP0	125
	10000	18	21.5	2000	0.28	VS0J103MK215000LP0	125
10	22	4	5.4	30	0.24	VS1A220MB054000LP0	2000
	22	5	5.4	39	0.24	VS1A220MC054000LP0	1000
	33	4	5.4	34	0.24	VS1A330MB054000LP0	2000
	33	5	5.4	48	0.24	VS1A330MC054000LP0	1000
	47	4	5.4	35	0.24	VS1A470MB054000LP0	2000
	47	5	5.4	48	0.24	VS1A470MC054000LP0	1000
	100	5	5.4	54	0.24	VS1A101MC054000LP0	1000
	100	6.3	5.4	90	0.24	VS1A101ME054000LP0	1000
	150	6.3	5.4	90	0.24	VS1A151ME054000LP0	1000
	220	6.3	5.4	95	0.24	VS1A221ME054000LP0	1000
	220	6.3	7.7	173	0.24	VS1A221ME077000LP0	1000
	220	8	6.2	175	0.24	VS1A221MF062000LP0	1000
	330	6.3	7.7	175	0.24	VS1A331ME077000LP0	1000
	470	6.3	7.7	190	0.24	VS1A471ME077000LP0	1000
	470	8	10.5	390	0.24	VS1A471MF105000LP0	500
	470	10	7.7	290	0.24	VS1A471MG077000LP0	500
	680	8	10.5	400	0.24	VS1A681MF105000LP0	500
	680	10	10.5	500	0.24	VS1A681MG105000LP0	500
	1000	10	10.5	580	0.24	VS1A102MG105000LP0	500
	1500	12.5	13.5	790	0.24	VS1A152MI135000LP0	200
2200	12.5	13.5	890	0.24	VS1A222MI135000LP0	200	
3300	16	16.5	1300	0.24	VS1A332MJ165000LP0	125	
4700	16	16.5	1400	0.24	VS1A472MJ165000LP0	125	
6800	18	16.5	1700	0.24	VS1A682MK165000LP0	125	
10000	18	21.5	2000	0.24	VS1A103MK215000LP0	125	
16	10	4	5.4	26	0.20	VS1C100MB054000LP0	2000
	22	4	5.4	30	0.20	VS1C220MB054000LP0	2000
	22	5	5.4	44	0.20	VS1C220MC054000LP0	1000

特性一览表 3

额定电压 (V. DC)	静电容量 (±20%) (uF)	产品尺寸(mm)		电气特性		料号	最小包装 数量 (PCS)
		φD	L	额定纹波电流 (120HZ) (+105℃)	tan δ (120HZ) (+20℃)		
16	33	4	5.4	44	0.20	VS1C330MC054000LP0	2000
	33	5	5.4	63	0.20	VS1C330MC054000LP0	1000
	47	5	5.4	52	0.20	VS1C470MC054000LP0	1000
	47	6.3	5.4	75	0.20	VS1C470ME054000LP0	1000
	100	6.3	5.4	103	0.20	VS1C101ME054000LP0	1000
	100	6.3	7.7	110	0.20	VS1C101ME077000LP0	1000
	100	8	6.2	125	0.20	VS1C101MF062000LP0	1000
	150	6.3	7.7	130	0.20	VS1C151ME077000LP0	1000
	220	6.3	7.7	162	0.20	VS1C221ME077000LP0	1000
	220	8	10.5	280	0.20	VS1C221MF105000LP0	500
	330	8	10.5	320	0.20	VS1C331MF105000LP0	500
	330	10	7.7	320	0.20	VS1C331MG077000LP0	500
	470	8	10.5	350	0.20	VS1C471MF105000LP0	500
	470	10	7.7	350	0.20	VS1C471M G077000LP0	500
	470	10	10.5	420	0.20	VS1C471MG105000LP0	500
	680	10	10.5	450	0.20	VS1C681MG105000LP0	500
	1000	10	10.5	500	0.20	VS1C102MG105000LP0	500
	1500	12.5	13.5	850	0.20	VS1C152MI135000LP0	200
	2200	16	16.5	1100	0.20	VS1C222MJ165000LP0	125
	3300	16	16.5	1300	0.20	VS1C332MJ165000LP0	125
4700	18	16.5	1600	0.20	VS1C472MK165000LP0	125	
6800	18	21.5	2000	0.20	VS1C682MK215000LP0	125	
25	3.3	4	5.4	18	0.16	VS1E3R3MB054000LP0	2000
	4.7	4	5.4	22	0.16	VS1E4R7MB054000LP0	2000
	10	4	5.4	24	0.16	VS1E100MB054000LP0	2000
	10	5	5.4	32	0.16	VS1E100MC054000LP0	1000
	22	5	5.4	38	0.16	VS1E220MC054000LP0	1000
	22	6.3	5.4	55	0.16	VS1E220ME054000LP0	1000
	33	5	5.4	46	0.16	VS1E330MC054000LP0	1000
	33	6.3	5.4	67	0.16	VS1E330ME054000LP0	1000
	47	6.3	5.4	70	0.16	VS1E470ME054000LP0	1000
	100	6.3	7.7	143	0.16	VS1E101ME077000LP0	1000
	100	8	6.2	145	0.16	VS1E101MF062000LP0	1000
	150	8	10.5	210	0.16	VS1E151MF105000LP0	500
	220	8	10.5	230	0.16	VS1E221MF105000LP0	500
	220	10	7.7	230	0.16	VS1E221MG077000LP0	500
	220	10	10.5	310	0.16	VS1E221MG105000LP0	500
	330	8	10.5	270	0.16	VS1E331MF105000LP0	500
	330	10	10.5	340	0.16	VS1E331MG105000LP0	500
	470	10	10.5	380	0.16	VS1E471MG105000LP0	500
	680	10	10.5	450	0.16	VS1E681MG105000LP0	500
	1000	12.5	13.5	750	0.16	VS1E102MI135000LP0	200
1500	16	16.5	1000	0.16	VS1E152MJ165000LP0	125	
2200	16	16.5	1100	0.16	VS1E222MJ165000LP0	125	
3300	18	16.5	1450	0.16	VS1E332MK165000LP0	125	
4700	18	21.5	1750	0.16	VS1E472MK215000LP0	125	

特性一览表 4

额定电压 (V. DC)	静电容量 (±20%) (uF)	产品尺寸(mm)		电气特性		料号	最小包装 数量 (PCS)
		φD	L	额定纹波电流 (120Hz) (+105°C)	tan δ (120Hz) (+20°C)		
35	3.3	4	5.4	18	0.14	VS1V3R3MB054000LP0	2000
	4.7	4	5.4	20	0.14	VS1V4R7MB054000LP0	2000
	10	4	5.4	24	0.14	VS1V100MB054000LP0	2000
	10	5	5.4	34	0.14	VS1V100MC054000LP0	1000
	22	5	5.4	39	0.14	VS1V220MC054000LP0	1000
	22	6.3	5.4	59	0.14	VS1V220ME054000LP0	1000
	33	6.3	5.4	65	0.14	VS1V330ME054000LP0	1000
	47	6.3	5.4	70	0.14	VS1V470ME054000LP0	1000
	47	6.3	7.7	94	0.14	VS1V470ME077000LP0	1000
	47	8	6.2	105	0.14	VS1V470MF062000LP0	1000
	100	6.3	7.7	132	0.14	VS1V101ME077000LP0	1000
	100	8	10.5	175	0.14	VS1V101MF105000LP0	500
	150	8	10.5	190	0.14	VS1V151MF105000LP0	500
	150	10	7.7	190	0.14	VS1V151MG077000LP0	500
	220	8	10.5	200	0.14	VS1V221MF105000LP0	500
	220	10	10.5	310	0.14	VS1V221MG105000LP0	500
	330	10	10.5	360	0.14	VS1V331MG105000LP0	500
	470	10	10.5	420	0.14	VS1V471MG105000LP0	500
	680	12.5	13.5	680	0.14	VS1V681MI135000LP0	200
	1000	16	16.5	1100	0.14	VS1V102MJ165000LP0	125
1500	16	16.5	1200	0.14	VS1V152MJ165000LP0	125	
2200	18	16.5	1450	0.14	VS1V222MK165000LP0	125	
3300	18	21.5	1750	0.14	VS1V332MK215000LP0	125	
50	0.1	4	5.4	3.2	0.12	VS1H1R0MB054000LP0	2000
	0.22	4	5.4	4.7	0.12	VS1HR22MB054000LP0	2000
	0.33	4	5.4	5.7	0.12	VS1HR33MB054000LP0	2000
	0.47	4	5.4	6.8	0.12	VS1HR47MB054000LP0	2000
	1	4	5.4	10	0.12	VS1H1R0MB054000LP0	2000
	2.2	4	5.4	15	0.12	VS1H2R2MB054000LP0	2000
	3.3	4	5.4	18	0.12	VS1H3R3MB054000LP0	2000
	4.7	4	5.4	18	0.12	VS1H4R7MB054000LP0	2000
	4.7	5	5.4	25	0.12	VS1H4R7MC054000LP0	1000
	10	5	5.4	30	0.12	VS1H100MC054000LP0	1000
	10	6.3	5.4	40	0.12	VS1H100ME054000LP0	1000
	22	6.3	5.4	43	0.12	VS1H220ME054000LP0	1000
	33	6.3	7.7	94	0.12	VS1H330ME077000LP0	1000
	33	8	6.2	95	0.12	VS1H330MF062000LP0	1000
	47	6.3	7.7	105	0.12	VS1H470ME077000LP0	1000
	47	8	10.5	140	0.12	VS1H470MF105000LP0	500
	100	8	10.5	200	0.12	VS1H101MF105000LP0	500

	100	10	10.5	250	0.12	VS1H101MG105000LP0	500
	150	10	10.5	280	0.12	VS1H151MG105000LP0	500
	220	10	10.5	320	0.12	VS1H221MG105000LP0	500
	330	10	10.5	400	0.12	VS1H331MG105000LP0	500
	470	12.5	13.5	600	0.12	VS1H471MI135000LP0	200
	680	16	16.5	1000	0.12	VS1H681MJ165000LP0	125
	1000	18	16.5	1350	0.12	VS1H102MK165000LP0	125

■ Frequency coefficient of ripple current

Frequency	50Hz	120Hz	300Hz	1KHz	10K~100Hz
Coefficient	0.70	1.00	1.17	1.36	1.50