



## VT Wide Temperature 全系列宽温度标准品

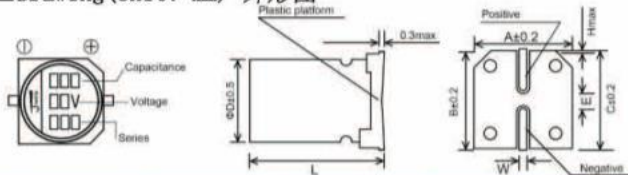
- 105°C, 2000 hours assured. 105°C, 负荷寿命2000小时。
- Case diameter  $\Phi 4\text{mm} \sim \Phi 18\text{mm}$ . 产品直径 $\Phi 4\text{mm} \sim \Phi 18\text{mm}$ 。
- Available for high density surface mounting. 适用于高密度表面组装。
- High stability and reliability. 性能稳定, 可靠性高。



### Specifications 特性表

Items 项目	Characteristics 主要特性														
Rated Voltage Range 额定工作电压范围	6.3 ~ 100V <sub>dc</sub>						160 ~ 400V <sub>dc</sub>			450V <sub>dc</sub>					
Category Temperature Range 使用温度范围	-55 ~ +105°C						-40 ~ +105°C			-25 ~ +105°C					
Capacitance Tolerance 静电容量允许偏差	±20% (M), at 20°C, 120Hz														
Leakage Current (at 20°C, Application Rated Voltage) 漏电流(20°C环境下施加额定工作电压)	Rated Voltage 额定工作电压	6.3 ~ 100V <sub>dc</sub>						160 ~ 450V <sub>dc</sub>							
	Time 时间	After 2 minutes 施加电压2分钟后						After 5 minutes 施加电压5分钟后							
	Case Size 产品尺寸	$\Phi 4 \sim \Phi 10$			$\Phi 12.5 \sim \Phi 18$			$\Phi 6.3 \Phi 18$							
	Leakage Current 漏电流	≤0.01CV or 3uA, whichever is greater			≤0.03CV or 4uA, whichever is greater			≤0.04CV+100uA							
Where, I : Max. leakage current (漏电流, uA), C : Nominal capacitance (静电容量, uF), V : Rated voltage (额定电压V)															
Dissipation Factor (Tand, at 20°C, 120Hz) 损耗角正切值 (测试条件为 20°C, 120Hz)	Rated voltage (V) 额定工作电压	6.3	10	16	25	35	50	63	100	160~250	350~450				
	$\Phi 4 \sim \Phi 10$	0.3	0.26	0.22	0.18	0.16	0.14	0.12	0.1	0.2	0.25				
	$\Phi 12.5 \sim \Phi 18$	0.38	0.34	0.3	0.26	0.22	0.18	0.14	0.1	0.2	0.25				
When nominal capacitance exceeds 1,000uF, add 0.02 to the value above for each 1,000uF increase. 静电容量大于1000uF, 每增加1000uF, 损耗角正切增加0.02															
Low Temperature Characteristics (Max. Impedance Ratio, 120Hz) 低温特性最大阻抗比	Rated voltage (V) 额定工作电压	6.3	10	16	25	35	50	63	100	160~250	350~400	450			
	Z(-25°C)/Z(20°C)	$\Phi 4 \sim \Phi 10$	5	4	3	2	2	2	2	3	2	3	3		
		$\Phi 12.5 \sim \Phi 18$	7	5	4	2	2	2	2	2	2	4	5		
	Z(-55°C)/Z(20°C)	$\Phi 4 \sim \Phi 10$	8	6	4	4	3	3	3	4	3	6	—		
	$\Phi 12.5 \sim \Phi 18$	10	8	6	4	3	3	3	3	6	10	—			
Endurance 耐久性	The following specification shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the ripple current is applied for the specified period of time at 105°C. 在105°C环境中, 不超过额定电压的范围下叠加额定纹波电流, 连续加载规定时间的额定电压后, 待温度恢复到20°C进行测量时, 应满足以下要求。														
	Test Time 测试时间	2,000Hrs													
	Case Size 产品尺寸	$\Phi 4 \sim \Phi 6.3 \times 5.4$			$\Phi 6.3 \times 7.7 \sim \Phi 10$				$\Phi 12.5 \sim \Phi 18$						
	Capacitance Change 静电容量变化率	Within ±30% initial value 初始值的±30%以内			Within ±25% initial value 初始值的±25%以内				Within ±20% initial value 初始值的±20%以内						
	Dissipation Factor 损耗角正切	≤300% of specified value 不大于规范值的300%			≤300% of specified value 不大于规范值的300%				≤200% of specified value 不大于规范值的200%						
	Leakage Current 漏电流	≤The initial specified value 不大于规范值													
Shelf Life 高温贮存	After storage for 1000 hours at 105°C with no voltage applied and then being stabilized at +20°C, capacitors shall meet the limits specified in Endurance. (Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of IEC 60384-4.) 在105°C环境中, 无负荷放置1,000小时后待温度恢复到20°C, 进行试验前处理(IEC 60384-4 4.1项)后进行测量时, 电容器的特性符合高温负荷特性中所列的规格值														

### Drawing (Unit: mm) 外形图



Case Size 产品尺寸	$\Phi 4 \times 5.4$	$\Phi 5 \times 5.4$	$\Phi 6.3 \times 5.4$	$\Phi 6.3 \times 7.7$	$\Phi 8 \times 6.5$	$\Phi 8 \times 10.5$	$\Phi 10 \times 10.5$	$\Phi 12.5 \times 13.5$	$\Phi 12.5 \times 18$	$\Phi 16 \times 16.5$	$\Phi 18 \times 16.5$	
A	4.3	5.3	6.6	6.6	8.3	8.3	10.3	13	13	17	19	
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	13	13	17	19	
C	5	6	7.3	7.3	9	9	11	13.7	13.7	18	20	
E	1	1.5	2	2	3.1	3.1	4.7	4.4	4.4	6.4	6.4	
L	5.4±0.3	5.4±0.3	5.4±0.4	7.7±0.3	6.5±0.3	10.5±0.5	10.5±0.5	13.5±0.5	16±0.5	16.5±0.5	16.5±0.5	
W	0.5 ~ 0.8			0.8 ~ 1.1			1.0 ~ 1.4					
H	0.5max.						1.0max.			1.0max.		



## VT Series

■Standard ratings 标准品一览表

Rated Ripple Current (mArms)105°C,120Hz

uF	VV	6.3v		10v		16v		25v		35v		50v		63v		80v		100v				
		ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	
0.22												4x5.4	3.4	4x5.4	2.3							
0.33												4x5.4	4.1	4x5.4	2.5							
0.47												4x5.4	5	4x5.4	3.5							
1												4x5.4	10	4x5.4	10					4x5.4	10	
2.2												4x5.4	16	4x5.4	12					6.3x5.4	14	
3.3											4x5.4	13	4x5.4	16	4x5.4	15				6.3x5.4	20	
														5x5.4	20					6.3x7.7	32	
4.7								4x5.4	22	4x5.4	22	4x5.4	16	5x5.4	20					6.3x5.4	21	
												5x5.4	23							6.3x7.7	35	
10						4x5.4	28	4x5.4	22	4x5.4	22	5x5.4	23	6.3x5.4	42					6.3x7.7	35	
								5x5.4	28	5x5.4	30	6.3x5.4	32	6.3x7.7	50					8x10.5	77	
22	4x5.4	22	4x5.4	25	4x5.4	28	5x5.4	32	5x5.4	45	6.3x5.4	42	6.3x7.7	50	8x10.5	100	8x10.5	100	8x10.5	84		
			5x5.4	29	5x5.4	39	6.3x5.4	55	6.3x5.4	60	6.3x7.7	51	8x10.5	98					10x10.5	126		
33	4x5.4	22	4x5.4	30	5x5.4	30	5x5.4	35		6.3x5.4	60	6.3x7.7	60	8x10.5	112	8x10.5	100		10x10.5	133		
	5x5.4	31	5x5.4	34	6.3x5.4	34	6.3x5.4	65														
47	4x5.4	25	4x5.4	30	5x5.4	30	5x5.4	40	6.3x5.4	65	6.3x7.7	63	8x10.5	118	10x10.5	150	10x10.5	150	10x10.5	140		
	5x5.4	33	5x5.4	45	6.3x5.4	46	6.3x5.4	70	6.3x7.7	80	8x10.5	120	10x10.5	160					12.5x13.5	250		
68	5x5.4	46	5x5.4	46	6.3x5.4	60	6.3x5.4	70	6.3x7.7	80	6.3x5.4	80										
100	5x5.4	50	5x5.4	45	6.3x5.4	60	6.3x5.4	70	6.3x7.7	90	8x10.5	140	10x10.5	195	10x10.5	180						
	6.3x5.4	55	6.3x5.4	60	6.3x7.7	100	6.3x7.7	100	8x10.5	120	10x10.5	170	12.5x13.5	270					12.5x13.5	380		
150	6.3x5.4	95	6.3x5.4	90	6.3x7.7	100	6.3x7.7	100	8x10.5	155	10x10.5	200	10x13.5	225	12.5x13.5	280			16x16.5	450		
								8x10.5	200													
220	6.3x5.4	100	6.3x5.4	95	6.3x7.7	110	6.3x7.7	120	8x10.5	190	10x10.5	220	12.5x13.5	470	16x16.5	410			16x16.5	550		
	6.3x7.7	105	6.3x7.7	120	8x10.5	150	8x10.5	200	10x10.5	220	10x13.5	280	16x16.5	580								
330	6.3x7.7	140	6.3x7.7	130	8x10.5	300	8x10.5	220		10x10.5	245	12.5x13.5	420	12.5x16	510	16x16.5	510		16x16.5	590		
			8x10.5	196			10x10.5	240				16x16.5	800	16x16.5	650							
470	6.3x7.7	150	6.3x7.7	140	8x10.5	300	8x10.5	220	10x10.5	375	12.5x16	520			16x16.5	700						
	8x10.5	210	8x10.5	330	10x10.5	340	10x10.5	280	10x13.5	520	16x16.5	700										
680	8x10.5	340	8x10.5	330	10x10.5	400			10x13.5	400	12.5x13.5	530	16x16.5	750								
			10x10.5	335																		
1000	8x10.5	340	8x10.5	340	10x10.5	450			12.5x13.5	580	12.5x16	600										
	10x10.5	450	10x10.5	410	10x13.5	500					16x16.5	750	16x16.5	860								
1500	10x10.5	450	10x13.5	460	12.5x13.5	550					16x16.5	820										
	10x13.5	500	12.5x13.5	600																		
2200	10x13.5	500	12.5x13.5	680	12.5x16	750					16x16.5	900	16x16.5	1050								
	12.5x13.5	620			16x16.5	900																
3300	12.5x13.5	660	16x16.5	950	16x16.5	950				16x16.5	1150											
4700	16x16.5	1000	16x16.5	1000	16x16.5	1050																
6800	18x16.5	1150	18x16.5	1150																		



## VT

### Series

#### Standard ratings 标准品一览表

#### Rated Ripple Current (mA<sub>rms</sub>)105°C,120Hz

uF	WV	160V		200V		250V		350V		400V		450V	
		ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.
2.2												8x10.5	20
2.7												8x10.5	22
3.3										8x10.5	27	8x10.5	24
3.9										8x10.5	29	10x10.5	29
4.7								8x10.5	35	8x10.5	32	10x10.5	32
5.6						8x10.5	42	10x10.5	40	10x10.5	38	10x10.5	35
6.8						8x10.5	46	10x10.5	44	10x10.5	42	12.5x13.5	45
8.2		8x10.5	47	8x10.5	50	10x10.5	55	10x10.5	48	12.5x13.5	58	12.5x13.5	49
10		8x10.5	52	8x10.5	55	10x10.5	60	12.5x13.5	72	12.5x13.5	65	12.5x13.5	54
12		8x10.5	58	10x10.5	65	10x10.5	67	12.5x13.5	78	12.5x13.5	70	12.5x13.5	60
15		10x10.5	70	10x10.5	75	12.5x13.5	89	12.5x13.5	89	12.5x13.5	79	12.5x13.5	65
22		10x10.5	85	10x13.5	90	12.5x13.5	105	12.5x16	105	12.5x16	95	12.5x16	85
27		10x13.5	98	12.5x13.5	115	12.5x13.5	118	12.5x16	115	16x16.5	115	16x16.5	105
33		12.5x13.5	130	12.5x13.5	140	12.5x16	142	16x16.5	140	16x16.5	128	16x16.5	118
39		12.5x13.5	142	12.5x13.5	148	12.5x16	156	16x16.5	150	16x16.5	139	18x16.5	135
47		12.5x13.5	155	12.5x16	172	16x16.5	175	18x16.5	175	18x16.5	160		
56		12.5x16	185	12.5x16	188	16x16.5	190	18x16.5	190				
68		12.5x16	205	16x16.5	210	18x16.5	210						
82		16x16.5	220	16x16.5	230	18x16.5	235						
100		16x16.5	240	16x16.5	255								

Note1: Case size ΦD x L(mm), ripple current (mA<sub>rms</sub>) at 105°C, 120Hz. 尺寸ΦD x L(mm), 纹波电流於105°C, 120Hz

Note2: Produce custom product too, which are not found in these tables. 客户定制品不在标准品一览表内

#### Rated ripple current multipliers(Unit: mm) 额定纹波修正系数

Frequency 频率 (Hz)		60Hz	120Hz	300Hz	1KHz	10KHz~	
6.3 ~ 100v	Φ4 ~ Φ10	0.1 ~ 68uF	0.7	1	1.17	1.36	1.5
		100 ~ 3300uF	0.85	1	1.08	1.2	1.3
	Φ12.5 ~ Φ18	~ 68uF	0.75	1	1.35	1.57	2
		100 ~ 680uF	0.8	1	1.23	1.34	1.5
		1000 ~ 6800uF	0.85	1	1.1	1.13	1.15
		160 ~ 450v	0.8	1	1.08	1.25	1.4

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

铝电解电容器由于在纹波电流叠加时自我发热、温度上升而老化，每升温 5°C 寿命减少一半。要想保持长寿命请在使用过程中降低纹波电流。