

VA 型片式铝电解电容

VA Series Chip Type Aluminum Electrolytic Capacitors

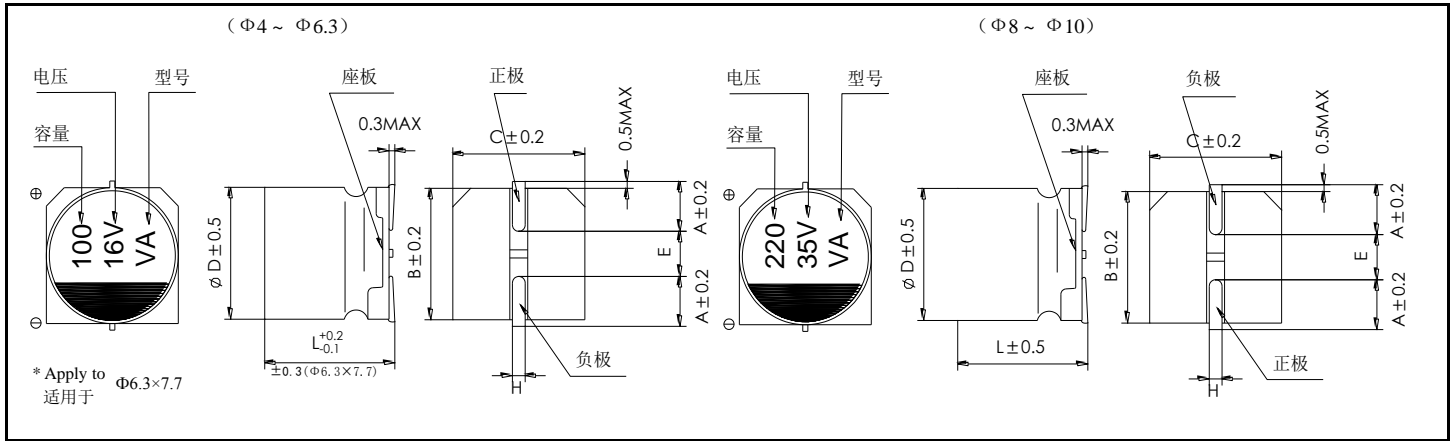
特点 Features

- 低阻抗。Low impedance.
- 适用于再流焊。Reflow soldering is available.
- 适用于高密度表面组装。available for high density surface mounting.
- 工作温度范围宽（-55℃ ~ +105℃）Operating over wide temperature range.
- ROHS 指令（2002/95/EC）已对应完毕。Adapted to the ROHS directive（2002/95/EC）。

主要技术性能 Specifications

项目 Items	特性 Characteristics						
工作温度范围 Operating Temperature Range	-55℃ ~ +105℃						
额定电压范围 Rated Voltage Range	6.3V ~ 50V						
标称容量范围 Nominal Capacitance Range	1 ~ 1000μF						
标称容量允许偏差 Nominal Capacitance Tolerance	±20% (20℃, 120Hz)						
漏电流 Leakage Current	I ≤ 0.01C _R V _R or 3(μA), 取较大者 (2 分钟) C _R : 标称容量 (μF) U _R : 额定电压 (V) I ≤ 0.01C _R V _R or 3(μA) Whichever is greater (at 20℃, after 2 minutes) C _R : Nominal Capacitance (μF) U _R : Rated voltages (V)						
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50
	tgδ	0.22	0.19	0.16	0.14	0.12	0.12
耐久性 Load Life	+105℃ 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 105℃, the capacitor shall meet the following requirement:						
	容量变化率 Capacitance Change	±30% 初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300% 初始规定值 Not more than 300% 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	+105℃ 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 +105℃, 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)	6.3	10	16	25	35	50
	Z(-25℃)/Z(+20℃)	2	2	2	2	2	2
	Z(-40℃)/Z(+20℃)	4	4	3	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃ 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℃ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.						
	容量变化率 Capacitance Change	±10% 初始值以内 Within ±10% of the initial value					
	损耗角正切 (tgδ) 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					

尺寸图 Dimensions



(mm)

	4 x 5.4	5 x 5.4	6.3 x 5.4	6.3 x 7.7	8 x 6.5	8 x 10.5	10 x 10.5	
A	3.0	2.1	2.4	2.4	2.9	2.9	3.2	
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	
E	1.0	1.3	2.2	2.2	2.3	3.1	4.5	
L	5.4	5.4	5.4	7.7	6.5	10.5	10.5	
H	0.5 ~ 0.8					0.8 ~ 1.1		

■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

V	6.3			10			16			25			35			50		
	DxL mm	Impedance Ω	I~ mA	DxL mm	Impedance Ω	I~ mA	DxL mm	Impedance Ω	I~ mA	DxL mm	Impedance Ω	I~ mA	DxL mm	Impedance Ω	I~ mA	DxL mm	Impedance Ω	I~ mA
1.0																4x5.4	5.00	30
2.2																4x5.4	5.00	30
3.3																4x5.4	5.00	30
4.7													4x5.4	3.0	60	5x5.4	3.0	50
10										4x5.4	3.00	60	5x5.4	1.8	95	6.3x5.4	2.0	70
22				4x5.4	3.00	60	5x5.4	1.8	95	5x5.4	1.8	95	5x5.4	1.8	95	6.3x5.4	2.0	70
33	5x5.4	1.8	95	5x5.4	1.8	95	6.3x5.4	1.0	140	6.3x5.4	1.0	140	6.3x5.4	1.0	140	6.3x7.7	1.4	120
47	5x5.4	1.8	95	6.3x5.4	1.0	140	6.3x5.4	1.0	140	6.3x5.4	1.0	140	6.3x5.4	1.0	140	6.3x7.7	1.4	120
100	6.3x5.4	1.0	140	6.3x5.4	1.0	140	6.3x5.4	1.0	140	6.3x7.7	0.7	220	8x10.5	0.3	300	8x10.5	0.6	300
220	6.3x5.4	1.0	140	6.3x7.7	0.7	220	6.3x7.7	0.7	220	8x10.5	0.3	450	8x10.5	0.3	450	10x10.5	0.3	500
330	6.3x7.7	0.7	220	8x10.5	0.3	450	8x10.5	0.3	450	8x10.5	0.3	450	10x10.5	0.15	650			
470	8x10.5	0.3	450	8x10.5	0.3	450	8x10.5	0.3	450	10x10.5	0.15	650						
1000	8x10.5	0.3	450	10x10.5	0.15	650												

— I~ = Rated ripple current (mA) (105°C, 100kHz) I~ = 额定纹波电流 (mA) (105°C, 100kHz)

— 20°C 100 KHz 时的电阻 (Ω) MAX

■ 额定纹波电流的频率系数

Frequency coefficient of ripple current

Frequency 频率	50Hz	120Hz	300Hz	1KHz	$\geq 10\text{KHz}$
Coefficient 系数	0.64	0.50	0.64	0.83	1.00

VB 型片式铝电解电容

VB Series Chip Type Aluminum Electrolytic Capacitors

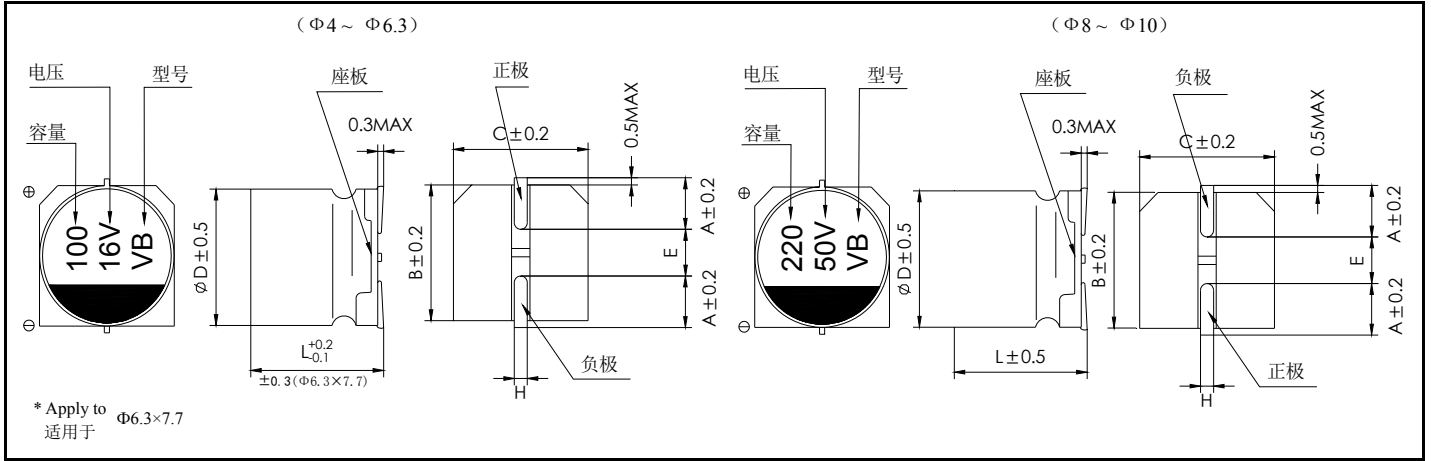
特点 Features

- 低阻抗。Low impedance.
- 适用于再流焊。Reflow soldering is available.
- 适用于高密度表面组装。available for high density surface mounting.
- 工作温度范围宽（-55℃ ~ +105℃）Operating over wide temperature range.
- ROHS 指令（2002/95/EC）已对应完毕。Adapted to the ROHS directive（2002/95/EC）。

主要技术性能 Specifications

项目 Items	特性 Characteristics						
工作温度范围 Operating Temperature Range	-55℃ ~+105℃						
额定电压范围 Rated Voltage Range	6.3V ~ 50V						
标称容量范围 Nominal Capacitance Range	1 ~ 1500μF						
标称容量允许偏差 Nominal Capacitance Tolerance	±20% (20℃, 120Hz)						
漏电流 Leakage Current	I ≤ 0.01C _R V _R or 3(μA), 取较大者 (2 分钟) C _R : 标称容量 (μF) U _R : 额定电压 (V) I ≤ 0.01C _R V _R or 3(μA) Whichever is greater (at 20℃, after 2 minutes) C _R : Nominal Capacitance (μF) U _R : Rated voltages (V)						
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50
	tgδ	0.26	0.20	0.16	0.14	0.12	0.12
耐久性 Load Life	+105℃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 105℃, the capacitor shall meet the following requirement:						
	容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% 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	+105℃ 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 +105℃, 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)	6.3	10	16	25	35	50
	Z(-25℃)/Z(+20℃)	3	2	2	2	2	2
	Z(-40℃)/Z(+20℃)	5	4	4	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃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℃ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.						
	容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value					
	损耗角正切 (tgδ) 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					

尺寸图 Dimensions



	(mm)					
	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 7.7	8 × 10.5	10 × 10.5
A	1.8	2.1	2.4	2.4	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	10.3
E	1.0	1.3	2.2	2.2	3.1	4.5
L	5.4	5.4	5.4	7.7	10.5	10.5
H	0.5 ~ 0.8				0.8 ~ 1.1	

■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

V	6.3			10			16			25			35			50		
	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA
1.0																4×5.4	5.00	30
2.2																4×5.4	5.00	30
3.3																4×5.4	5.00	30
4.7													4×5.4	1.8	80	5×5.4	1.52	85
10							4×5.4	1.80	80	5×5.4	0.76	150	5×5.4	0.76	150	6.3×5.4	0.88	165
22				4×5.4	1.80	80	5×5.4	0.76	150	5×5.4	0.76	150	5×5.4	0.76	150	6.3×5.4	0.88	165
33	5×5.4	0.76	150	5×5.4	0.76	150	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×7.7	0.68	185
47	5×5.4	0.76	150	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×7.7	0.34	280	6.3×7.7	0.68	185
100	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×7.7	0.34	280	8×10.5	0.17	600	8×10.5	0.34	300
220	6.3×5.4	0.44	230	6.3×7.7	0.34	280	6.3×7.7	0.34	280	8×10.5	0.17	600	8×10.5	0.17	600	10×10.5	0.18	670
330	6.3×7.7	0.34	280	8×10.5	0.17	600	8×10.5	0.17	600	8×10.5	0.17	600	10×10.5	0.09	850			
470	8×10.5	0.17	600	8×10.5	0.17	600	8×10.5	0.17	600	10×10.5	0.09	850						
1000	8×10.5	0.17	600	10×10.5	0.09	850												
1500	10×10.5	0.09	850															

I~ = Rated ripple current (mA) (105°C, 100kHz) I~ = 额定纹波电流 (mA) (105°C, 100kHz)

— 20°C 100 KHz 时的电阻 (Ω) MAX

■ 额定纹波电流的频率系数

Frequency coefficient of ripple current

Frequency 频率	50Hz	120Hz	300Hz	1KHz	≥ 10KHz
Coefficient 系数	0.35	0.50	0.64	0.83	1.00

VD 型片式铝电解电容

VD Series Chip Type Aluminum Electrolytic Capacitors

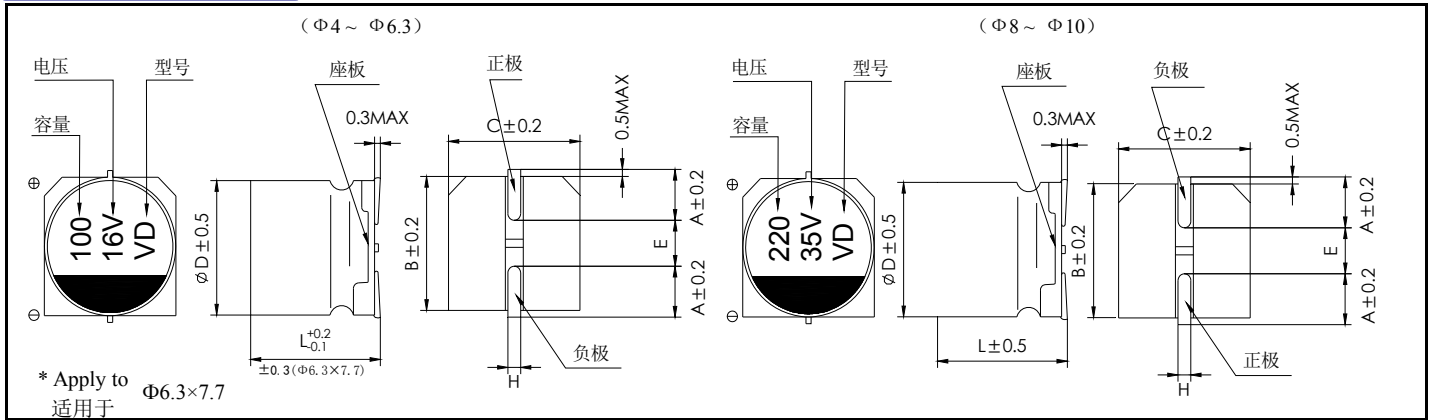
特点 Features

- 低阻抗。Low impedance.
- 适用于再流焊。Reflow soldering is available.
- 适用于高密度表面组装。available for high density surface mounting.
- 工作温度范围宽（-55℃ ~ +105℃）Operating over wide temperature range.
- ROHS 指令已对应完毕。Adapted to the ROHS directive.

主要技术性能 Specifications

项目 Items	特性 Characteristics						
工作温度范围 Operating Temperature Range	-55℃ ~ +105℃						
额定电压范围 Rated Voltage Range	6.3V ~ 50V						
标称容量范围 Nominal Capacitance Range	1 ~ 1000μF						
标称容量允许偏差 Nominal Capacitance Tolerance	±20% (20℃, 120Hz)						
漏电流 Leakage Current	I ≤ 0.01C _R V _R or 3(μA), 取较大者 (2 分钟) C _R : 标称容量 (μF) U _R : 额定电压 (V) I ≤ 0.01C _R V _R or 3(μA) Whichever is greater (at 20℃, after 2 minutes) C _R : Nominal Capacitance (μF) U _R : Rated voltages (V)						
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50
	tgδ	0.26(0.28)	0.20(0.24)	0.16(0.20)	0.14(0.16)	0.12(0.14)	0.12(0.14)
注: () 为 Φ8 以上产品。							
耐久性 Load Life	+105℃施加额定电压 5000 小时后 (ΦD=4, 5 和 6.3 为 2000 小时), 电容器应满足以下要求: After 5000 hours (2000 hours for φD = 4, 5 and 6.3) . application of rated voltage at 105℃, the capacitor shall meet the following requirement:						
	容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% 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	+105℃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 +105℃, 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)	6.3	10	16	25	35	50
	Z(-25℃)/Z(+20℃)	3	2	2	2	2	2
	Z(-40℃)/Z(+20℃)	5	4	4	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃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℃ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.						
	容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value					
	损耗角正切 (tgδ) 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					

尺寸图 Dimensions



(mm)

	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 7.7	8 × 10.5	10 × 10.5
A	1.8	2.1	2.4	2.4	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	10.3
E	1.0	1.3	2.2	2.2	3.1	4.5
L	5.4	5.4	5.4	7.7	10.5	10.5
H	0.5 ~ 0.8			0.8 ~ 1.1		

■ 标称容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

V	6.3			10			16			25			35			50		
	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA
1.0																4×5.4	5.00	30
2.2																4×5.4	5.00	30
3.3																4×5.4	5.00	30
4.7													4×5.4	1.8	80	5×5.4	1.52	85
10										4×5.4	1.80	80	5×5.4	0.76	150	6.3×5.4	0.88	165
22				4×5.4	1.80	80	5×5.4	0.76	150	5×5.4	0.76	150	5×5.4	0.76	150	6.3×5.4	0.88	165
33	5×5.4	0.76	150	5×5.4	0.76	150	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×7.7	0.68	185
47	5×5.4	0.76	150	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×7.7	0.34	280	8×10.5	0.34	350
100	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×7.7	0.34	280	8×10.5	0.17	600	10×10.5	0.18	670
220	6.3×5.4	0.44	230	6.3×7.7	0.34	280	6.3×7.7	0.34	280	8×10.5	0.17	600	10×10.5	0.09	850			
330	6.3×7.7	0.34	280	8×10.5	0.17	600	8×10.5	0.17	600	10×10.5	0.09	850						
470	8×10.5	0.17	600	8×10.5	0.17	600	10×10.5	0.09	850									
1000	10×10.5	0.09	850	10×10.5	0.09	850												

I~ = Rated ripple current (mA) (105°C, 100kHz) I~ = 额定纹波电流 (mA) (105°C, 100kHz)

20°C 100kHz 时的电阻 (Ω) MAX

■ 额定纹波电流的频率系数

Frequency coefficient of ripple current

Frequency 频率	50Hz	120Hz	300Hz	1KHz	≥ 10KHz
Coefficient 系数	0.35	0.50	0.64	0.83	1.00

VH 型片式铝电解电容

VH Series Chip Type Aluminum Electrolytic Capacitors

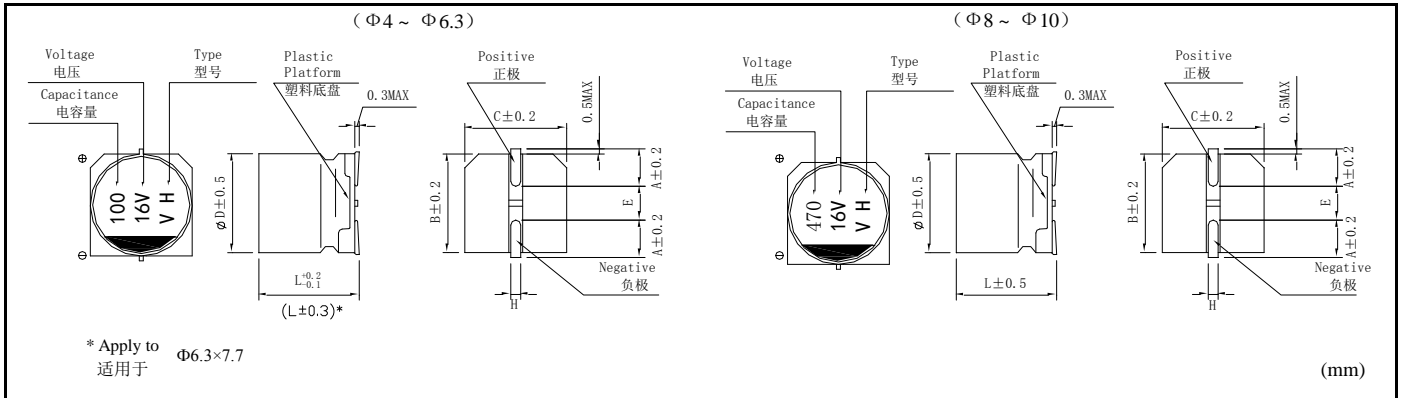
特点 Features

- 产品直径 Case diameter: : Φ 4mm – Φ 10mm
- 适用于再流焊。 Reflow soldering is available.
- 适用于高密度表面组装。 Available for high density surface mounting.
- ROHS 指令已对应完毕。 Adapted to the ROHS directive.

主要技术性能 Specifications

项目 Items	特性 Characteristics												
工作温度范围 Operating Temperature Range	-55℃ ~+105℃(6.3-100V), -40℃ ~+105℃(160-400V)												
额定电压范围 Rated Voltage Range	6.3V ~ 400V												
标称容量范围 Nominal Capacitance Range	1 ~ 1000 μ F												
标称容量允许偏差 Nominal Capacitance Tolerance	\pm 20% (20℃, 120Hz)												
漏电流 Leakage Current	6.3to100V						160-400V						
	I \leq 0.01C _R V _R or 3(μ A), 取较大者 (2 分钟) C _R : 标称容量 (μ F) U _R 额定电压 (V)						I \leq 0.04 C _R V _R +100(μ A) (20℃, 1 分钟) C _R : 标称容量 (μ F) U _R 额定电压 (V)						
损耗角正切 (tg δ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50	63	80	100	120-250	350-400	
	tg δ	0.32	0.24	0.20	0.16	0.13	0.12	0.12	0.11	0.10	0.15	0.20	
耐久性 Load Life	+105℃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 105℃, the capacitor shall meet the following requirement:												
	容量变化率 Capacitance Change	\pm 30%初始值以内(160-400V 为 \pm 20%) Within \pm 30% of the initial value (\pm 20% of 160-400V)											
	损耗角正切 Dissipation Factor	\leq 300%初始规定值(160-400V 为 \leq 200%) Not more than 300% of the initial specified value(\leq 200% of 160-400V)											
	漏电流 Leakage Current	\leq 初始规定值 Not more than the initial specified value											
高温贮存 Shelf Life	+105℃ 贮存 1000 小时后, 加额定工作电压 30 分钟, 电容器应满足以上耐久性要求 After storage for 1000 hours at +105℃, U _R to be applied for 30 minutes ,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)	6.3	10	16	25	35	50	63	80	100	160-250	350-400	
	Z(-55℃)/Z(+20℃)	4	4	3	3	3	2	3	4	4	-	-	
	Z(-40℃)/Z(+20℃)	-	-	-	-	-	-	-	-	-	6	10	
耐焊接热 Resistance to Soldering Heat	在 250℃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℃ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.												
	容量变化率 Capacitance Change	\pm 10%初始值以内 Within \pm 10% of the initial value											
	损耗角正切 (tg δ) Dissipation Factor	\leq 初始规定值 Not more than the initial specified value											
	漏电流 Leakage Current	\leq 初始规定值 Not more than the initial specified value											

尺寸图 Dimensions



	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 7.7	8 × 6.5	8 × 10.5	10 × 10.5	8 × 12.5	10 × 12.5
A	1.8	2.1	2.4	2.4	2.9	2.9	3.2	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	8.3	10.3
E	1.0	1.3	2.2	2.2	2.3	3.1	4.5	3.1	4.5
L	5.4	5.4	5.4	7.7	6.5	10.5	10.5	12.5	12.5
H	0.5 ~ 0.8					0.8 ~ 1.1			

注：160-400 产品 L 值公差为 ±1

■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

电压 WV (Vdc)	容量 Ca (μA)	产品尺寸	纹波电流	电压 WV (Vdc)	容量 Ca (μA)	产品尺寸	纹波电流
6.3	22	4*5.4	22	16	10	4*5.4	18
	33	4*5.4	26		22	5*5.4	30
	47	5*5.4	36		33	5*5.4	32
	100	5*5.4	38		47	6.3*5.4	50
	220	6.3*5.4	86		100	6.3*5.4	60
	330	6.3*7.7	105		220	6.3*7.7	100
	470	8*10.5	340		330	8*10.5	290
	680	8*10.5	350		470	8*10.5	320
	1000	10*10.5	495		680	10*10.5	470
	1500	10*12.5	560		1000	10*12.5	510
10	2200	10*12.5	580	1200	10*12.5	520	
	25	10	4*5.4	20	10	5*5.4	21
		22	5*5.4	27	22	5*5.4	23
		33	5*5.4	35	47	6.3*5.4	38
		47	5*5.4	34	100	6.3*7.7	66
		100	6.3*5.4	60	220	8*10.5	240
		220	6.3*7.7	105	330	10*10.5	410
		330	8*10.5	290	470	10*10.5	450
		470	8*10.5	320	560	10*12.5	500
		680	10*10.5	395	680	10*12.5	510
1000		10*10.5	450				
1500	10*12.5	520					
35	50	4.7	4*5.4	16	1	4*5.4	6.3
		10	5*5.4	27	2.2	4*5.4	11
		22	6.3*5.4	44	3.3	4*5.4	14
		33	6.3*5.4	48	4.7	5*5.4	19

	47	6.3*7.7	80		10	6.3*5.4	36
	100	8*10.5	230		22	6.3*5.4	32
	220	10*10.5	260		33	6.3*7.7	60
	330	10*10.5	450		47	8*10.5	210
	470	10*12.5	500		100	8*10.5	230
	560	10*12.5	510		220	10*10.5	375
63	10	6.3*5.4	26	80	22	8*10.5	100
	22	6.3*7.7	48		33	10*10.5	100
	33	8*10.5	140		47	10*10.5	150
	47	8*10.5	170		100	10*12.5	180
	100	10*10.5	310				
	150	10*12.5	330				
100	10	6.3*7.7	24	160	10	8*10.5	57
	22	8*10.5	100		15	8*12.5	65
	33	10*10.5	150		22	10*12.5	80
	47	10*12.5	180	200	10	10*10.5	75
	56	10*12.5	180		15	10*12.5	81
					22	10*12.5	83
250	3.3	8*10.5	36	400	2.2	8*10.5	29
	4.7	8*10.5	42		3.3	8*10.5	30
	6.8	8*10.5	64		4.7	8*12.5	40
	8.2	10*10.5	70		5.6	10*12.5	51
	10	10*10.5	72		6.8	10*12.5	52
					8.2	10*12.5	55
			10	10*12.5	60		

I_r=Rated ripple current (mA) (105°C, 120Hz) I_r=额定纹波电流 (mA) (105°C, 120Hz)

Frequency coefficient of ripple current 额定纹波电流的频率系数

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

CHANGZHOU HUAWEI ELECTRONICS CO.,LTD

VJ 型片式铝电解电容

VJ Series Chip Type Aluminum Electrolytic Capacitors

特点 Features

- 适用于再流焊。Reflow soldering is available.
- 适用于高密度表面组装。available for high density surface mountin .
- ROHS 指令已对应完毕。Adapted to the ROHS directive.

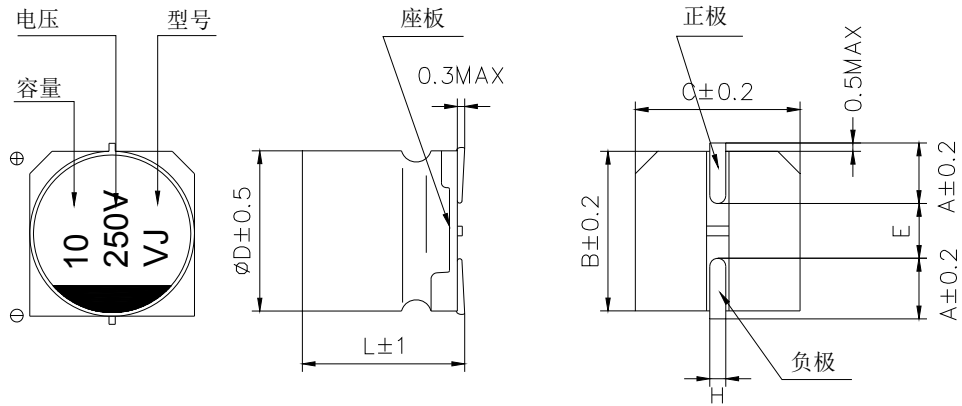
主要技术性能 Specifications

项目 Items	特性 Characteristics		
工作温度范围 Operating Temperature Range	-40~+105℃		
额定电压范围 Rated Voltage Range	160 ~ 400V		
标称电容容量范围 Nominal Capacitance Range	1 ~ 22μF		
标称电容容量允许偏差 Nominal Capacitance Tolerance	±20% (20℃, 120Hz)		
漏电流 Leakage Current	160~400V		
	$I = 0.04 C_R V_R + 100 (\mu A) \text{ max.}(1 \text{ min})$		
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	$U_R (V)$	160~250	350~400
	tgδ	0.15	0.20
耐久性 Load Life	+105℃施加额定电压 5000 小时后, 电容器应满足以下要求: After 5000 hours' application of rated voltage at 105℃, 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	+105℃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 +105℃, the capacitors shall meet the requirement of load life above		
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	$U_R (V)$	160~250	350~400
	$Z(-25^\circ C)/Z(+20^\circ C)$	3	6
	$Z(-40^\circ C)/Z(+20^\circ C)$	6	10
耐焊接热 Resistance to Soldering Heat	在 250℃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℃ 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 (tgδ) 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	

尺寸图 Dimensions

■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table



(mm)

	$\Phi 8 \times 10.5$	$\Phi 8 \times 12.5$	$\Phi 10 \times 10.5$	$\Phi 10 \times 12.5$
A	2.9	2.9	3.2	3.2
B	8.3	8.3	10.3	10.3
C	8.3	8.3	10.3	10.3
E	3.1	3.1	4.5	4.5
L	10.5	12.5	10.5	12.5
H	0.8 ~ 1.1			

V	160		200		250		350		400	
μF	D×L mm	I_{\sim} mA	D×L mm	I_{\sim} mA	D×L mm	I_{\sim} mA	D×L mm	I_{\sim} mA	D×L mm	I_{\sim} mA
1								45	8*10.5	42
2.2							8*10.5	44	8*12.5	40
3.3			8*10.5	55	8*10.5	34	8*12.5	43	10*10.5	58
4.7	8*10.5	68	8*10.5	53	8*10.5	34	10*10.5	60	10*10.5	56
5.6	8*10.5	67	8*10.5	51	8*10.5	36	10*10.5	58	10*12.5	72
6.8	8*10.5	65	8*10.5	49	8*12.5	38	10*10.5	56	10*12.5	70
8.2	8*10.5	64	8*12.5	43	10*10.5	50	10*12.5	73	10*12.5	68
10	8*12.5	59	10*10.5	53	10*12.5	72	10*12.5	71	10*12.5	65
15	10*12.5	79	10*12.5	75						
22	10*12.5	72								

■ 额定纹波电流补偿系数 Rated ripple current compensation coefficient

频率 Frequency	50Hz	120Hz	300Hz	1KHz	$\geq 10\text{KHz}$
系数 Coefficient	0.80	1.00	1.25	1.40	1.60

VK 型片式铝电解电容

VK Series Chip Type Aluminum Electrolytic Capacitors

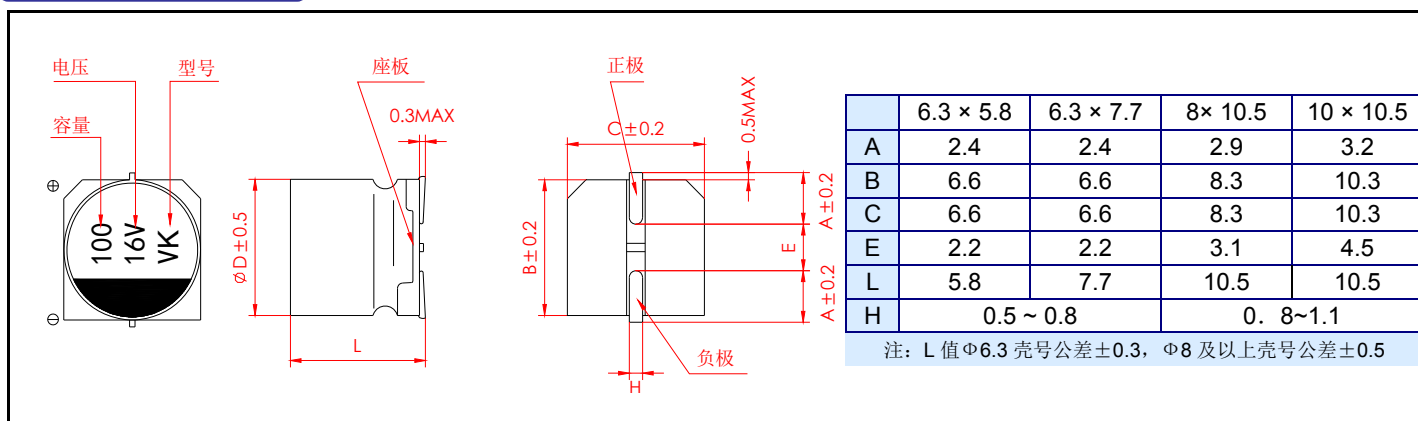
特点 Features

- 125℃ 1000~1500 小时保证品
- 产品尺寸: $\Phi 6.3\sim\Phi 10$
- 适用于车载电装品的高温用途
- ROHS 指令 (2002/95/EC) 已对应完毕

主要技术性能 Specifications

项目 Items	特性 Characteristics					
工作温度范围 Operating Temperature Range	-40℃ ~+125℃					
额定电压范围 Rated Voltage Range	10V ~ 50V					
标称容量允许偏差 Nominal Capacitance Tolerance	±20% (20℃, 120Hz)					
漏电流 Leakage Current	I \leq 0.01C _R V _R or 3(μ A), 取较大者 (2 分钟) C _R : 标称容量 (μ F) U _R : 额定电压 (V) I \leq 0.01C _R V _R or 3(μ A) Whichever is greater (at 20℃, after 2 minutes) C _R : Nominal Capacitance (μ F) U _R : Rated voltages (V)					
损耗角正切 (tg δ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	10	16	25	35	50
	tg δ	0.30	0.24	0.20	0.17	0.14
耐久性 Load Life	+125℃连续加 1000-1500 小时额定电压小时后, 电容器应满足以下要求: After 1000-1500hours' application of rated voltage at 105℃, the capacitor shall meet the following requirement:					
	规定时间 Specified time	$\Phi 6.3*5.8\sim\Phi 6.3*7.7$:1000 小时 $\Phi 8*10.5\sim\Phi 10*10.5$:1500 小时				
	电容量变化率 Capacitance Change	±30%初始值 Within ±30% of the initial value				
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% 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	+125℃贮存 1000 小时后, 加额定工作电压 30 分钟, 电容器应满足以上耐久性要求 After storage for 1000 hours at +125℃, U _R to be applied for 30 minutes, 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)	10	16	25	35	50
	Z(-25℃)/Z(+20℃)	6	5	4	3	3
	Z(-40℃)/Z(+20℃)	12	8	6	4	4
耐焊接热 Resistance to Soldering Heat	在 250℃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℃ 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 (tg δ) 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				

尺寸图 Dimensions



标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

(mm)

电压 WV (Vdc)	容量 Cap (μA)	产品 尺寸 Size	纹波电流 mArms 120Hz/125°C	电压 WV (Vdc)	容量 Cap (μA)	产品尺寸 Size	纹波电流 mArms 120Hz/125°C		
10	68	6.3*5.8	50	35	10	6.3*5.8	50		
	100	6.3*7.7	75		22	6.3*5.8	50		
	220	8*10.5	130		33	6.3*7.7	70		
	330	8*10.5	130		47	6.3*7.7	70		
	330	10*10.5	180		47	8*10.5	130		
	470	10*10.5	180		100	8*10.5	130		
16	33	6.3*5.8	50	50	100	10*10.5	180		
	47	6.3*7.7	70		220	10*10.5	180		
	100	6.3*7.7	75		10	6.3*5.8	50		
	100	8*10.5	130		22	6.3*7.7	70		
	220	8*10.5	130		33	6.3*7.7	70		
	220	10*10.5	180		33	8*10.5	130		
	330	10*10.5	180		47	8*10.5	130		
25	22	6.3*5.8	50	47	10*10.5	180			
	33	6.3*5.8	50	100	10*10.5	180			
	47	6.3*7.7	70	纹波修正系数:					
	100	8*10.5	130	频率	50Hz	120Hz	300Hz	1KHz	10KHz~
	220	8*10.5	130	修正系数	0.85	1.0	1.17	1.36	1.50
	220	10*10.5	180						
	330	10*10.5	180						

VL 型片式铝电解电容

VL Series Chip Type Aluminum Electrolytic Capacitors

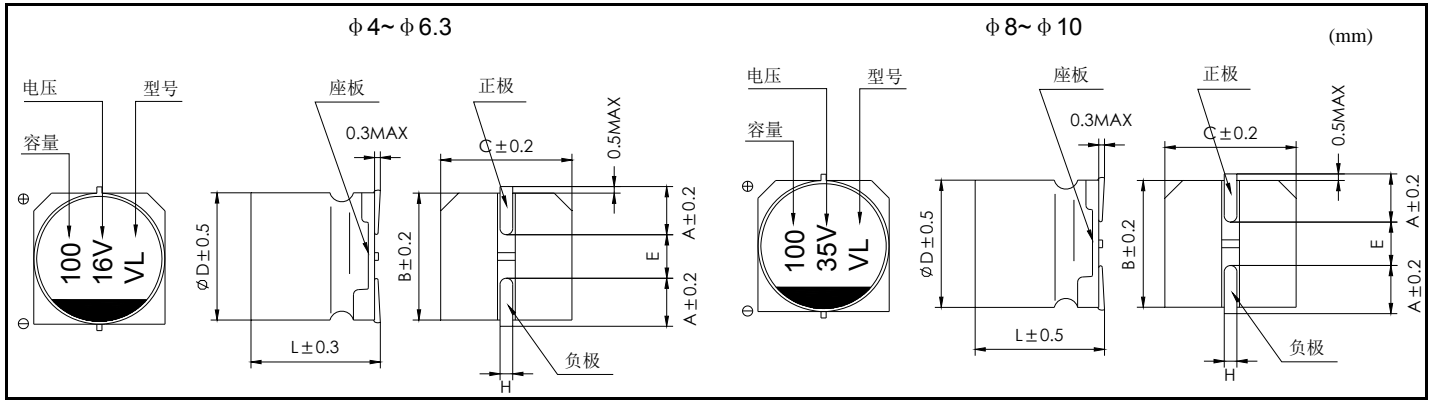
特点 Features

- +105℃3000-5000 小时保证品。load life of 3000-5000 hours at +105℃
- 适用于再流焊。Reflow soldering is available.
- 适用于高密度表面组装。available for high density surface mounting.
- ROHS 指令（2002/95/EC）已对应完毕。Adapted to the ROHS directive（2002/95/EC）。

主要技术性能 Specifications

项目 Items	特性 Characteristics						
工作温度范围 Operating Temperature Range	-40℃ ~+105℃						
额定电压范围 Rated Voltage Range	6.3V ~ 50V						
标称电容量范围 Nominal Capacitance Range	1 ~ 1000μF						
标称电容量允许偏差 Nominal Capacitance Tolerance	±20% (20℃, 120Hz)						
漏电流 Leakage Current	I ≤ 0.01C _R V _R or 3(μA), 取较大者 (2 分钟) C _R : 标称电容量 (μF) U _R : 额定电压 (V) I ≤ 0.01C _R V _R or 3(μA) Whichever is greater (at 20℃, after 2 minutes) C _R : Nominal Capacitance (μF) U _R : Rated voltages (V)						
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50
	tgδ	0.32	0.24	0.20	0.16	0.13	0.12
耐久性 Load Life	+105℃施加额定电压 5000 小时后 (ΦD=4, 5 和 6.3 为 3000 小时), 电容器应满足以下要求: After 5000 hours (3000 hours for ΦD = 4, 5 and 6.3) . application of rated voltage at 105℃, the capacitor shall meet the following requirement:						
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% 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	+105℃ 贮存 1000 小时后, 加额定工作电压 30 分钟, 电容器应满足以上耐久性要求 After storage for 1000 hours at +105℃, U _R to be applied for 30 minutes ,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)	6.3	10	16	25	35	50
	Z(-25℃)/Z(+20℃)	4	3	2	2	2	2
	Z(-40℃)/Z(+20℃)	10	7	5	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃ 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℃ 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 (tgδ) 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					

尺寸图 Dimensions



	4 × 5.8	5 × 5.8	6.3 × 5.8	6.3 × 7.7	8x10.5	10x10.5
A	1.8	2.1	2.4	2.4	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	10.3
E	1.0	1.3	2.2	2.2	3.1	4.5
L	5.8	5.8	5.8	7.7	10.5	10.5
H	0.5 ~ 0.8			0.8 ~ 1.1		

■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

V	6.3		10		16		25		35		50	
	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA
1.0											4×5.8	8
2.2											4×5.8	12
3.3											4×5.8	17
4.7									4×5.8	20	5×5.8	21
10					4×5.8	20	5×5.8	30	5×5.8	30	6.3×5.8	35
22			5×5.8	30	5×5.8	35	6.3×5.8	45	6.3×5.8	50	6.3×7.7	52
33	5×5.8	40	5×5.8	40	6.3×5.8	50	6.3×5.8	50	6.3×7.7	62	8x10.5	80
47	5×5.8	45	6.3×5.8	55	6.3×5.8	60	6.3×7.7	65	8x10.5	100	8x10.5	95
100	6.3×5.8	70	6.3×5.8	75	6.3×7.7	90	8x10.5	140	10x10.5	260	10x10.5	99
220	6.3×7.7	105	8x10.5	170	10x10.5	230	10x10.5	230	10x10.5	230		
330	8x10.5	245	10x10.5	245	10x10.5	240	10x10.5	250				
470	10x10.5	350	10x10.5	350	10x10.5	360						
1000	10x10.5	350										

I~=Rated ripple current (mA) (105°C, 120Hz) I~=额定纹波电流 (mA) (105°C, 120Hz)

■ 额定纹波电流的频率系数

Frequency coefficient of ripple current

Frequency 频率	50Hz	120Hz	300Hz	1KHz	≥ 10KHz
Coefficient 系数	0.70	1.00	1.17	1.36	1.50

VM 型片式铝电解电容

VM Series Chip Type Aluminum Electrolytic Capacitors

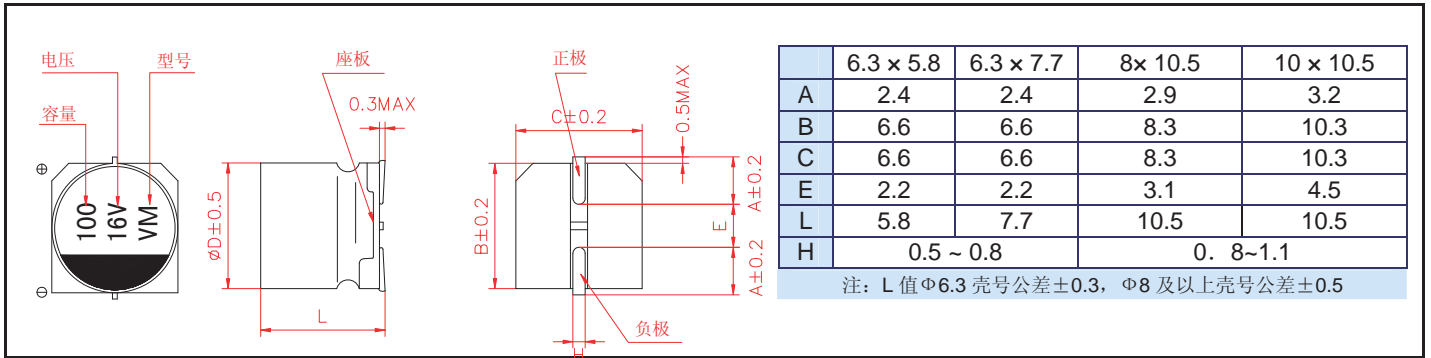
特点 Features

- 125℃ 2000~3000 小时保证品
- 产品尺寸: $\Phi 6.3\sim\Phi 10$
- 适用于车载电装品的高温用途
- ROHS 指令 (2002/95/EC) 已对应完毕

主要技术性能 Specifications

项目 Items	特性 Characteristics					
工作温度范围 Operating Temperature Range	-40℃ ~+125℃					
额定电压范围 Rated Voltage Range	10V ~ 50V					
标称容量允许偏差 Nominal Capacitance Tolerance	$\pm 20\%$ (20℃, 120Hz)					
漏电流 Leakage Current	$I \leq 0.01C_R V_R$ or $3(\mu A)$, 取较大者 (2 分钟) C_R : 标称容量 (μF) U_R : 额定电压 (V) $I \leq 0.01C_R V_R$ or $3(\mu A)$ Whichever is greater (at 20℃, after 2 minutes) C_R : Nominal Capacitance (μF) U_R : Rated voltages (V)					
损耗角正切 (tg δ) Dissipation Factor (Max) 20℃, 120Hz	U_R (V)	10	16	25	35	50
	tg δ	0.24	0.20	0.16	0.14	0.14
耐久性 Load Life	+125℃ 连续加载规定时间的额定电压后待温度恢复到 20℃ 进行测量时, 应满足以下要求: + 125℃ continuous loading at a predetermined time after the rated voltage until the temperature returns to 20℃ measured					
	规定时间 Specified time	$\Phi 6.3\&50V$ 的 $\Phi 8\sim\Phi 10$ 产品:2000 小时 $\Phi 8\sim\Phi 10$:3000 小时				
	容量变化率 Capacitance Change	$\pm 30\%$ 初始值 Within $\pm 30\%$ of the initial value				
	损耗角正切 Dissipation Factor	$\leq 300\%$ 初始规定值 Not more than 300% of the initial specified value				
	漏电流 Leakage Current	\leq 初始规定值 Not more than the initial specified value				
高温贮存 Shelf Life	+125℃ 贮存 1000 小时后, 加额定工作电压 30 分钟, 电容器应满足以上耐久性要求 After storage for 1000 hours at +125℃, U_R to be applied for 30 minutes, 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)	10	16	25	35	50
	$Z(-25^\circ C)/Z(+20^\circ C)$	6	5	4	3	3
	$Z(-40^\circ C)/Z(+20^\circ C)$	12	8	6	4	4
耐焊接热 Resistance to Soldering Heat	在 250℃ 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℃ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.					
	容量变化率 Capacitance Change	$\pm 10\%$ 初始值以内 Within $\pm 10\%$ of the initial value				
	损耗角正切 (tg δ) Dissipation Factor	\leq 初始规定值 Not more than the initial specified value				
	漏电流 Leakage Current	\leq 初始规定值 Not more than the initial specified value				

尺寸图 Dimensions



■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

电压 WV (Vdc)	容量 Cap (μA)	产品 尺寸 Size	纹波电流 mArms 100KHz/1 25℃	等价串联 电阻(Ω max/100k Hz)	电压 WV (Vdc)	容量 Cap (μA)	产品尺寸 Size	纹波电流 mArms 120Hz/125 ℃	等价串联电 阻(Ω max/100kHz (mm))						
10	68	6.3*5.8	110	1.2	35	10	6.3*5.8	110	1.2						
	100	6.3*7.7	220	0.6		22	6.3*5.8	110	1.2						
	220	8*10.5	296	0.3		33	6.3*7.7	220	0.6						
	330	8*10.5	296	0.3		47	6.3*7.7	220	0.6						
	330	10*10.5	440	0.2		47	8*10.5	296	0.3						
	470	10*10.5	440	0.2		100	8*10.5	296	0.3						
16	33	6.3*5.8	110	1.2	50	100	10*10.5	440	0.2						
	47	6.3*7.7	220	0.6		220	10*10.5	440	0.2						
	100	6.3*7.7	220	0.6		10	6.3*5.8	51	2.8						
	100	8*10.5	296	0.3		22	6.3*7.7	83	2.0						
	220	8*10.5	296	0.3		33	6.3*7.7	83	2.0						
	220	10*10.5	440	0.2		33	8*10.5	160	0.7						
	330	10*10.5	440	0.2		47	8*10.5	160	0.7						
25	22	6.3*5.8	110	1.2	纹波修正系数:	100	10*10.5	247	0.5						
	33	6.3*5.8	110	1.2											
	47	6.3*7.7	220	0.6											
	100	8*10.5	296	0.3						频率 (Hz)	120	1K	10K	100K	
	220	8*10.5	296	0.3						静电容量 (μF)	10	0.66	0.86	0.93	1.0
	220	10*10.5	440	0.2						22-470	0.93	0.97	1.0	1.0	
	330	10*10.5	440	0.2											

VN 型片式铝电解电容

VN Series Chip Type Aluminum Electrolytic Capacitors

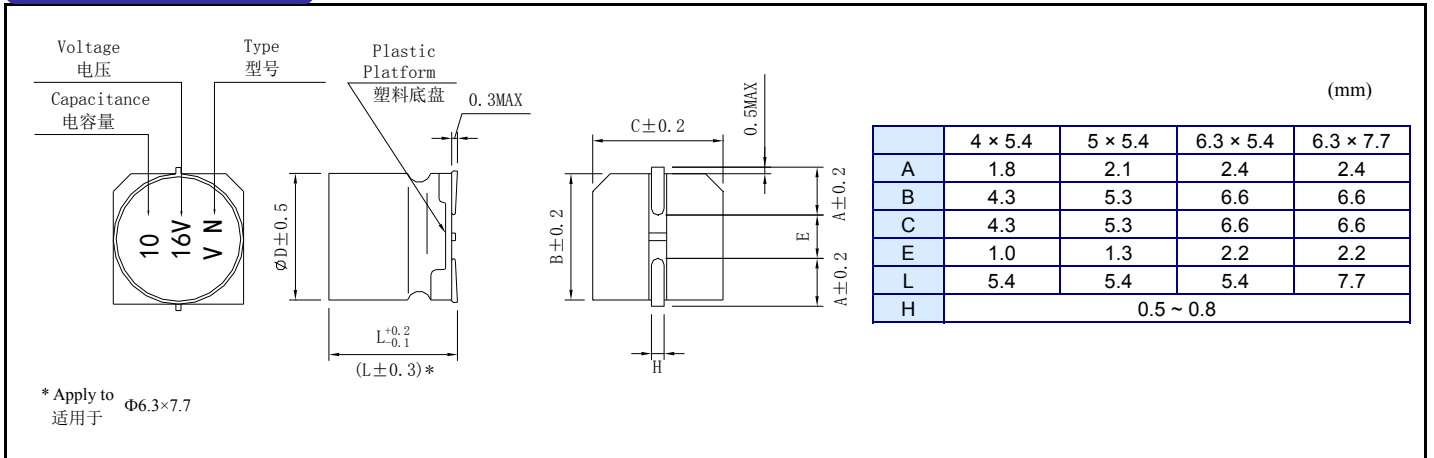
特点 Features

- 双极性。Bi-polar.
- 适用于再流焊。Reflow soldering is available.
- 适用于高密度表面组装。Available for high density surface mounting.
- ROHS 指令已对应完毕。Adapted to the ROHS directive.

主要技术性能 Specifications

项目 Items	特性 Characteristics						
工作温度范围 Operating Temperature Range	-40℃ ~ +85℃						
额定电压范围 Rated Voltage Range	6.3V ~ 50V						
标称容量范围 Nominal Capacitance Range	0.1 ~ 100μF						
标称容量允许偏差 Nominal Capacitance Tolerance	±20% (20℃, 120Hz)						
漏电流 Leakage Current	I ≤ 0.05C _R V _R or 10(μA), 取较大者 (2 分钟) C _R : 标称容量 (μF) U _R : 额定电压 (V) I ≤ 0.05C _R V _R or 10(μA) Whichever is greater (at 20℃, after 2 minutes) C _R : Nominal Capacitance (μF) U _R : Rated voltages (V)						
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50
	tgδ	0.26	0.22	0.20	0.20	0.20	0.18
耐久性 Load Life	+85℃施加额定电压 1000 小时后, 每 250 小时换向一次, 电容器应满足以下要求: After 1000 hours' application of rated voltage at 85℃, with the polarity inverted every 250 hours, the capacitor shall meet the following requirement:						
	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℃贮存 1000 小时后, 加额定工作电压 30 分钟, 电容器应满足以上耐久性要求 After storage for 1000 hours at +85℃, U _R to be applied for 30 minutes, 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)	6.3	10	16	25	35	50
	Z(-25℃)/Z(+20℃)	4	3	2	2	2	2
	Z(-40℃)/Z(+20℃)	8	6	4	4	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃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℃ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.						
	容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value					
	损耗角正切 (tgδ) 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					

尺寸图 Dimensions



■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

V	6.3		10		16		25		35		50	
	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA
0.1											4×5.4	2.3
0.22											4×5.4	3.3
0.33											4×5.4	4.1
0.47											4×5.4	4.9
1.0											4×5.4	8.4
2.2									4×5.4	10	5×5.4	13
3.3							4×5.4	13	5×5.4	17	5×5.4	17
4.7					4×5.4	14	5×5.4	20	5×5.4	21	6.3×5.4	20
10			4×5.4	18	5×5.4	26	6.3×5.4	35	6.3×5.4	35	6.3×7.7	36
22	5×5.4	28	6.3×5.4	40	6.3×5.4	45	6.3×7.7	50	6.3×7.7	54		
33	6.3×5.4	37	6.3×5.4	50	6.3×5.4	55	6.3×7.7	61				
47	6.3×5.4	45	6.3×7.7	61	6.3×7.7	75						
100	6.3×7.7	82										

I~ = Rated ripple current (mA) (85°C, 120Hz) I~ = 额定纹波电流 (mA) (85°C, 120Hz)

■ Frequency coefficient of ripple current 额定纹波电流的频率系数

Frequency 频率	50Hz	120Hz	300Hz	1KHz	≥ 10KHz
Coefficient 系数	0.70	1.00	1.17	1.36	1.50

VS 型片式铝电解电容

VS Series Chip Type Aluminum Electrolytic Capacitors

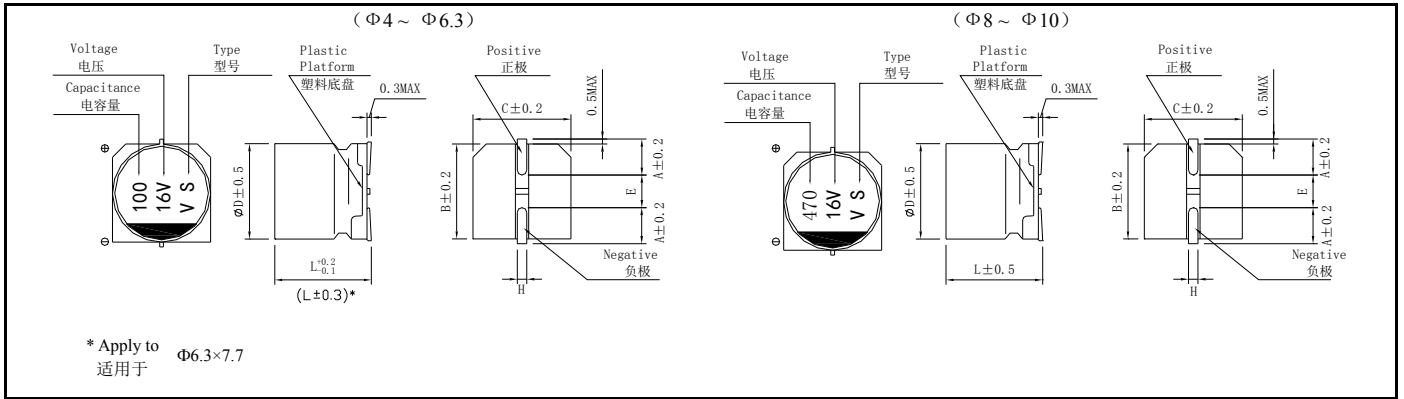
特点 Features

- 产品直径 Case diameter: Φ 4mm – Φ 10mm.
- 适用于再流焊。 Reflow soldering is available.
- 适用于高密度表面组装。 Available for high density surface mounting.
- ROHS 指令已对应完毕。 Adapted to the ROHS directive.

主要技术性能 Specifications

项目 Items	特性 Characteristics									
工作温度范围 Operating Temperature Range	-40℃ ~ 85℃									
额定电压范围 Rated Voltage Range	6.3V ~ 100V									
标称容量范围 Nominal Capacitance Range	0.1 ~ 1500 μ F									
标称容量允许偏差 Nominal Capacitance Tolerance	\pm 20% (20℃, 120Hz)									
漏电流 Leakage Current	$I \leq 0.01C_R V_R$ or 3(μ A), 取较大者 (2 分钟) C_R : 标称容量 (μ F) U_R : 额定电压 (V) $I \leq 0.01C_R V_R$ or 3(μ A) Whichever is greater(at 20℃, After 2 minutes) C_R : Nominal Capacitance (μ F) U_R : Rated voltages (V)									
损耗角正切 (tg δ) Dissipation Factor (Max) 20℃, 120Hz	U_R (V)	6.3	10	16	25	35	50	63	100	
	tg δ	0.28	0.24	0.20	0.16	0.14	0.12	0.12	0.10	
耐久性 Load Life	+85℃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℃, the capacitor shall meet the following requirement:									
	电容量变化率 Capacitance Change	\pm 20%初始值以内 Within \pm 20% of the initial value								
	损耗角正切 Dissipation Factor	\leq 200%初始规定值 Not more than 200% of the initial specified value								
	漏电流 Leakage Current	\leq 初始规定值 Not more than the initial specified value								
高温贮存 Shelf Life	+85℃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℃, 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)									
		6.3	10	16	25	35	50	63	100	
	Z(-25℃)/Z(+20℃)	$< \Phi$ 8	4	3	2	2	2	2	2	
		$\geq \Phi$ 8	5	4	3	2	2	2	2	
Z(-40℃)/Z(+20℃)	$< \Phi$ 8	8	8	4	4	3	3	3	3	
	$\geq \Phi$ 8	10	8	6	4	3	3	3	3	
耐焊接热 Resistance to Soldering Heat	在 250℃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℃ 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	\pm 10%初始值以内 Within \pm 10% of the initial value								
	损耗角正切 Dissipation Factor	\leq 初始规定值 Not more than the initial specified value								
	漏电流 Leakage Current	\leq 初始规定值 Not more than the initial specified value								

尺寸图 Dimensions



	(mm)							
	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 7.7	8 × 6.5	8 × 10.5	10 × 10.5	
A	1.8	2.1	2.4	2.4	2.9	2.9	3.2	
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	
E	1.0	1.3	2.2	2.2	2.3	3.1	4.5	
L	5.4	5.4	5.4	7.7	6.5	10.5	10.5	
H	0.5 ~ 0.8					0.8 ~ 1.1		

■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

μF	6.3		10		16		25		35		50		63		100	
	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA
0.1											4×5.4	3.2				
0.22											4×5.4	4.7				
0.33											4×5.4	5.7				
0.47											4×5.4	6.8				
1.0											4×5.4	10				
2.2											4×5.4	15				
3.3											4×5.4	18				
4.7							4×5.4	22	4×5.4	20	4×5.4	24			6.3×7.7	40
											5×5.4	25				
10					4×5.4	26	4×5.4	24	4×5.4	24	5×5.4	41	6.3×7.7	50	8×10.5	77
							5×5.4	32	5×5.4	34	6.3×5.4	43				
22	4×5.4	31	4×5.4	30	4×5.4	30	5×5.4	38	5×5.4	39	6.3×5.4	71	6.3×7.7	96	8×10.5	100
			5×5.4	39	5×5.4	44	6.3×5.4	55	6.3×5.4	59						
33	4×5.4	31	4×5.4	34	5×5.4	44	5×5.4	46	6.3×5.4	65	6.3×7.7	94	8×10.5	117	10×10.5	130
	5×5.4	44	5×5.4	48	6.3×5.4	63	6.3×5.4	67								
47	4×5.4	40	5×5.4	47	5×5.4	52	6.3×5.4	70	6.3×7.7	94	6.3×7.7	105	10×10.5	140		
	5×5.4	52	6.3×5.4	67	6.3×5.4	75					8×10.5	140				
100	5×5.4	47	5×5.4	54	6.3×5.4	103	6.3×7.7	143	6.3×7.7	132	8×10.5	200				
	6.3×5.4	89	6.3×5.4	98					8×10.5	175	10×10.5	250				
220	6.3×5.4	91	6.3×7.7	173	6.3×7.7	162	8×10.5	230	8×10.5	200	10×10.5	320				
			8×6.5	250	8×10.5	280	10×10.5	310	10×10.5	310						
330	6.3×7.7	188	8×10.5	390	8×10.5	320	8×10.5	270	10×10.5	360						
							10×10.5	340								
470	8×10.5	380	8×10.5	390	8×10.5	350	10×10.5	380								
						420										
1000	8×10.5	370	10×10.5	580												
	10×10.5	700														
1500	10×10.5	750														

L I~ = Rated ripple current (mA) (85°C, 120Hz) I~ = 额定纹波电流 (mA) (85°C, 120Hz)

VT 型片式铝电解电容

VT Series Chip Type Aluminum Electrolytic Capacitors

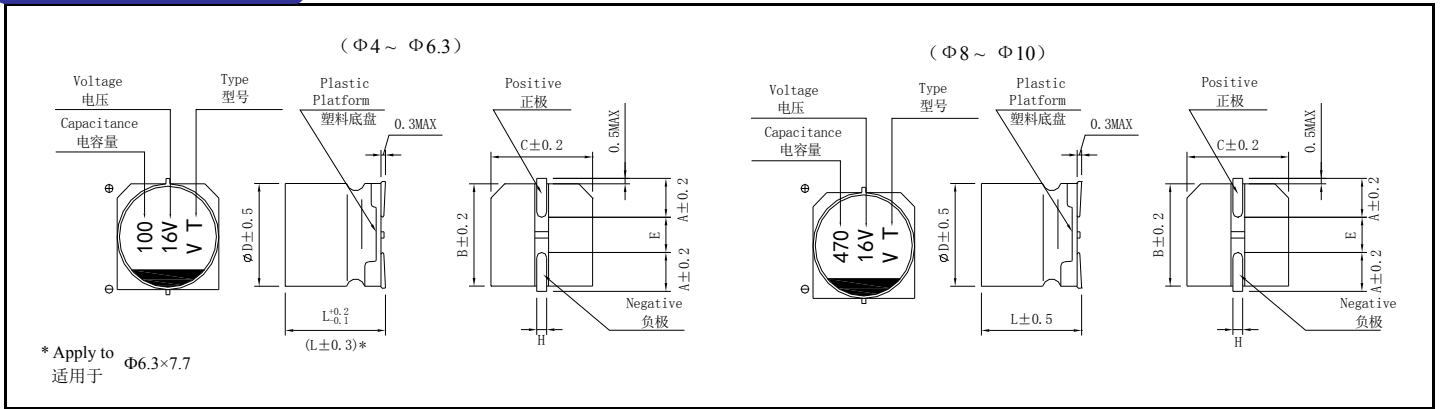
特点 Features

- 产品直径 Case diameter: Φ 4mm – Φ 10mm.
- 适用于再流焊。 Reflow soldering is available.
- 适用于高密度表面组装。 Available for high density surface mounting.
- 工作温度范围宽 ($-40 \sim +105^{\circ}\text{C}$) Operating over wide temperature range.
- ROHS 指令已对应完毕。 Adapted to the ROHS directive.

主要技术性能 Specifications

项目 Items	特性 Characteristics							
工作温度范围 Operating Temperature Range	-40 $^{\circ}\text{C}$ ~ +105 $^{\circ}\text{C}$							
额定电压范围 Rated Voltage Range	6.3V ~ 50V							
标称容量范围 Nominal Capacitance Range	0.1 ~ 1500 μF							
标称容量允许偏差 Nominal Capacitance Tolerance	$\pm 20\%$ (20 $^{\circ}\text{C}$, 120Hz)							
漏电流 Leakage Current	$I \leq 0.01C_R V_R$ or 3(μA), 取较大者 (2分钟) C_R : 标称容量 (μF) U_R : 额定电压 (V) $I \leq 0.01C_R V_R$ or 3(μA) Whichever is greater (at 20 $^{\circ}\text{C}$, After 2 minutes) C_R : Nominal Capacitance (μF) U_R : Rated voltages (V)							
损耗角正切 (tg δ) Dissipation Factor (Max) 20 $^{\circ}\text{C}$, 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
耐久性 Load Life	+105 $^{\circ}\text{C}$ 施加额定电压 1000 小时后, 电容器应满足以下要求: After 1000 hours' application of rated voltage at 105 $^{\circ}\text{C}$, the capacitor shall meet the following requirement:							
	容量变化率 Capacitance Change	$\pm 20\%$ 初始值以内 Within $\pm 20\%$ of the initial value						
	损耗角正切 Dissipation Factor	$\leq 200\%$ 初始规定值 Not more than 200% of the initial specified value						
	漏电流 Leakage Current	\leq 初始规定值 Not more than the initial specified value						
高温贮存 Shelf Life	+105 $^{\circ}\text{C}$ 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 +105 $^{\circ}\text{C}$, the capacitors shall meet the requirement of load life above							
低温特性 Low Temperature Stability	U_R (V)	4	6.3	10	16	25	35	50
阻抗比 Impedance Ratio (120Hz)	Z(-25 $^{\circ}\text{C}$)/Z(+20 $^{\circ}\text{C}$)	7	4	3	2	2	2	2
	Z(-40 $^{\circ}\text{C}$)/Z(+20 $^{\circ}\text{C}$)	15	8	6	4	4	3	3
耐焊接热 Resistance to Soldering Heat	在 250 $^{\circ}\text{C}$ 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 $^{\circ}\text{C}$ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.							
	容量变化率 Capacitance Change	$\pm 10\%$ 初始值以内 Within $\pm 10\%$ of the initial value						
	损耗角正切 (tg δ) Dissipation Factor	\leq 初始规定值 Not more than the initial specified value						
	漏电流 Leakage Current	\leq 初始规定值 Not more than the initial specified value						

尺寸图 Dimensions



(mm)

	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 7.7	8 × 6.5	8 × 10.5	10 × 10.5	
A	1.8	2.1	2.4	2.4	2.9	2.9	3.2	
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	
E	1.0	1.3	2.2	2.2	2.3	3.1	4.5	
L	5.4	5.4	5.4	7.7	6.5	10.5	10.5	
H	0.5 ~ 0.8						0.8 ~ 1.1	

■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

V μF	6.3		10		16		25		35		50	
	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA	D×L mm	I~ mA
0.1											4×5.4	2.3
0.22											4×5.4	3.4
0.33											4×5.4	4.1
0.47											4×5.4	5
1.0											4×5.4	10
2.2											4×5.4	16
3.3									4×5.4	13	4×5.4	16
4.7							4×5.4	22	4×5.4	22	5×5.4	23
10					4×5.4	28	5×5.4	28	5×5.4	30	6.3×5.4	32
22	4×5.4	29	5×5.4	30	5×5.4	39	6.3×5.4	55	6.3×5.4	60	6.3×7.7	51
33	5×5.4	34	5×5.4	34	5×5.4	35	6.3×5.4	65	8×6.5	84	6.3×7.7	70
47	5×5.4	46	6.3×5.4	48	6.3×5.4	70	6.3×5.4	70	6.3×7.7	80	6.3×7.7	80
100	6.3×5.4	71	6.3×5.4	69	6.3×5.4	70	6.3×7.7	100	8×10.5	296	8×10.5	230
220	6.3×7.7	120	6.3×7.7	120	6.3×7.7	120	8×10.5	320	10×10.5	435	10×10.5	375
330	8×10.5	290	8×10.5	305	8×10.5	425	10×10.5	450	10×10.5	450		
470	8×10.5	330	8×10.5	340	8×10.5	340	10×10.5	490				
1000	8×10.5	340	10×10.5	410	10×10.5	450						
1500	10×10.5	475										

└ I~ = Rated ripple current (mA) (105°C, 120Hz) I~ = 额定纹波电流 (mA) (105°C, 120Hz)

■ 额定纹波电流的频率系数 Frequency coefficient of ripple current

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

VZ 型片式铝电解电容

VZ Series Chip Type Aluminum Electrolytic Capacitors

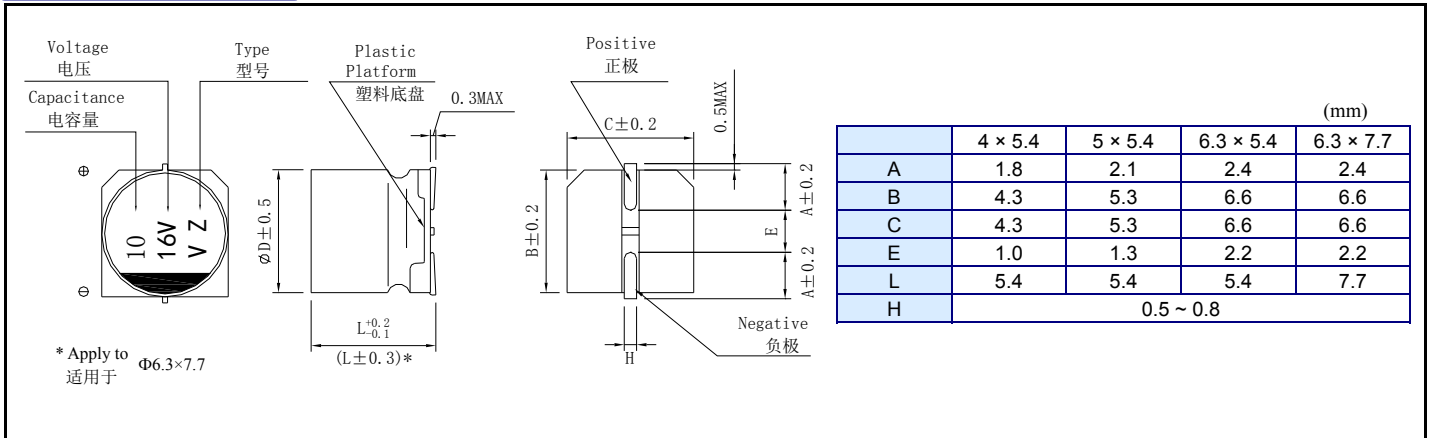
特点 Features

- 低阻抗。Low impedance.
- 适用于再流焊。Reflow soldering is available.
- 适用于高密度表面组装。available for high density surface mounting.
- 工作温度范围宽（-55℃ ~ +105℃）Operating over wide temperature range.
- ROHS 指令对应完毕。Adapted to the ROHS directive.

主要技术性能 Specifications

项目 Items	特性 Characteristics					
工作温度范围 Operating Temperature Range	-55℃ ~+105℃					
额定电压范围 Rated Voltage Range	6.3V ~ 35V					
标称容量范围 Nominal Capacitance Range	1 ~ 220μF					
标称容量允许偏差 Nominal Capacitance Tolerance	±20% (20℃, 120Hz)					
漏电流 Leakage Current	I ≤ 0.01C _R V _R or 3(μA), 取较大者 (2 分钟) C _R : 标称容量 (μF) U _R : 额定电压 (V) I ≤ 0.01C _R V _R or 3(μA) Whichever is greater (at 20℃, after 2 minutes) C _R : Nominal Capacitance (μF) U _R : Rated voltages (V)					
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35
	tgδ	0.22	0.19	0.16	0.14	0.12
耐久性 Load Life	+105℃施加额定电压 1000 小时后, 电容器应满足以下要求: After 1000 hours' application of rated voltage at 105℃, the capacitor shall meet the following requirement:					
	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	+105℃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 +105℃, 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)	6.3	10	16	25	35
	Z(-25℃)/Z(+20℃)	2	2	2	2	2
	Z(-40℃)/Z(+20℃)	4	4	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃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℃ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.					
	容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value				
	损耗角正切 (tgδ) 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				

尺寸图 Dimensions



■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

V μF	6.3			10			16			25			35		
	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA	D×L mm	Impedance Ω	I~ mA
1.0													4×5.4	5.0	50
1.5													4×5.4	5.0	50
2.2													4×5.4	5.0	50
3.3													4×5.4	5.0	50
4.7										4×5.4	5.0	50	4×5.4	5.0	50
6.8										4×5.4	5.0	50	5×5.4	2.6	80
10							4×5.4	5.0	50	5×5.4	2.6	80	5×5.4	2.6	80
15							5×5.4	2.6	80	6.3×5.4	1.3	115	6.3×5.4	1.3	115
22	4×5.4	5.0	50	5×5.4	2.6	80	5×5.4	2.6	80	6.3×5.4	1.3	115	6.3×5.4	1.3	115
33	5×5.4	2.6	80	5×5.4	2.6	80	6.3×5.4	1.3	115	6.3×5.4	1.3	115	6.3×7.7	0.8	150
47	5×5.4	2.6	80	6.3×5.4	1.3	115	6.3×5.4	1.3	115	6.3×7.7	0.8	150	6.3×7.7	0.8	150
68	6.3×5.4	1.3	115	6.3×5.4	1.3	115	6.3×7.7	0.8	150	6.3×7.7	0.8	150			
100	6.3×5.4	1.3	115	6.3×7.7	0.8	150	6.3×7.7	0.8	150						
150	6.3×7.7	0.8	150	6.3×7.7	0.8	150									
220	6.3×7.7	0.8	150												

I~ = Rated ripple current (mA) (105°C, 100KHz) I~ = 额定纹波电流 (mA) (105°C, 100KHz)

Low impedance (20°C 100KHz)

■ 额定纹波电流的频率系数

Frequency coefficient of ripple current

Frequency 频率	50Hz	120Hz	300Hz	1KHz	10KHz~100Hz
Coefficient 系数	0.64	0.50	0.64	0.83	1.00