VJ Chip Type Aluminum Electrolytic Capacitors

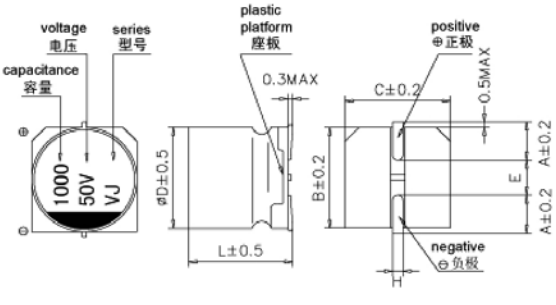
Features

- Higher Capacitance in larger case sizes (Φ12.5,Φ16,Φ18,Φ20).
- Reflow soldering is available.
- Available for high density surface mounting.
- Adapted to the RoHS directive.

Specifications

<table>
<tr><th>Item</th><th>Performance Characteristics</th></tr>
<tr><td>Operating Temperature Range</td><td>-55℃ ~+105℃ (6.3~100V), -40℃ ~+105℃ (160~450V)</td></tr>
<tr><td>Rated Voltage Range</td><td>6.3~450V</td></tr>
<tr><td>Nominal Capacitance Range</td><td>3.3~6800μF</td></tr>
<tr><td>Nominal Capacitance Tolerance</td><td>±20%(+20℃ ,120Hz)</td></tr>
<tr><td>Leakage Current</td><td>6.3~100V, $I \le 0.03C_RU_R$ or 4(μA),Whichever is greater (at 20℃ , after 1 minutes)
160~450V, $I = 0.04C_RU_R + 100$(μA)max (after 1 minutes)
C_R: Nominal capacitance(μF) , U_R: Rated voltage(V)</td></tr>
<tr><td>Dissipation Factor(Max)
(tgδ,+20℃ ,120Hz)</td><td>
<table>
<tr><td>U_R(V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td><td>160~250</td><td>400~450</td></tr>
<tr><td>tgδ</td><td>0.26</td><td>0.22</td><td>0.18</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.08</td><td>0.15</td><td>0.20</td></tr>
</table>
For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.</td></tr>
<tr><td>Load Life</td><td>After 5000 hours' application of rated voltage at 105℃ , the capacitor shall meet the following requirement:
<table>
<tr><td>Capacitance change</td><td>Within ±20% of the initial value</td></tr>
<tr><td>Dissipation factor</td><td>Not more than 200% of the initial specified value</td></tr>
<tr><td>Leakage current</td><td>Not more than the initial specified value</td></tr>
</table></td></tr>
<tr><td>Shelf Life</td><td>After storage for 1000 hours at 105℃ , the capacitors shall meet the requipment of load life above.</td></tr>
<tr><td>Low Temperature Stability
Impedance Ratio(120Hz)</td><td>
<table>
<tr><td>U_R(V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td><td>160~250</td><td>400~450</td></tr>
<tr><td>Z-25℃ /+20℃</td><td>5</td><td>4</td><td>3</td><td>2</td><td>2</td><td>5</td><td>2</td><td>2</td><td>3</td><td>6</td></tr>
<tr><td>Z-40℃ /+20℃</td><td>10</td><td>8</td><td>6</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td>6</td><td>10</td></tr>
</table></td></tr>
<tr><td>Resistance to Soldering Heat</td><td>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:
<table>
<tr><td>Capacitance change</td><td>Within ±10% of the initial value</td></tr>
<tr><td>Dissipation factor</td><td>Not more than the initial specified value</td></tr>
<tr><td>Leakage current</td><td>Not more than the initial specified value</td></tr>
</table></td></tr>
</table>

Diagram of Dimensions



Unit: mm

ΦD	A	B	C	E	L	H
12.5×13.5	4.8	13.6	13.6	4.0	13.5	1.0~1.4
12.5×16	4.8	13.6	13.6	4.0	16.0	
12.5×21	4.8	13.6	13.6	4.0	21.0	
16×16.5	5.4	17.1	17.1	6.3	16.5	
16×21.5	5.4	17.1	17.1	6.3	21.5	
18×16.5	6.4	19.1	19.1	6.3	16.5	
18×21.5	6.4	19.1	19.1	6.3	21.5	
20×16.5	6.2	21.1	21.1	8.8	16.5	1.3~1.7
20×21.5	6.2	21.1	21.1	8.8	21.5	

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

V / Item / Cap.(μF)	6.3		10		16		25		35		50	
	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)
220									12.5×13.5	280	12.5×16	320
330							12.5×13.5	320	12.5×16	360	● 16×16.5	440
470					12.5×13.5	360	12.5×16	400	● 16×16.5	490	▵ 18×16.5	550
1000					● 16×16.5	630	▵ 18×16.5	700	▵ 18×16.5	750	18×21.5	820
2200	● 16×16.5	750	● 16×16.5	810	18×16.5	930	18×21.5	1050	20×21.5	1150		
3300	▵ 18×16.5	930	▵ 18×16.5	1000	18×21.5	1150						
4700	★ 18×21.5	1100	18×21.5	1200								
6800	20×21.5	1350	20×21.5	1450								

V / Item / Cap.(μF)	63		100		160		200		200		400		450	
	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)	ΦD×L (mm)	I~ (mA)
3.3													12.5×13.5	40
4.7									12.5×13.5	65	12.5×16	50	12.5×16	50
10							12.5×13.5	80	12.5×16	105	16×16.5	85	16×16.5	85
22							12.5×16	105	● 16×16.5	180	18×21.5	130	18×21.5	130
33					12.5×13.5	95	● 16×16.5	220	▵ 18×16.5	230	20×21.5	160	20×21.5	160
47			12.5×13.5	160	● 16×16.5	260	▵ 18×16.5	270	★ 18×21.5	280				
68	12.5×13.5	175	12.5×16	205	▵ 18×16.5	320	★ 18×21.5	330	20×21.5	340				
100	12.5×16	225	● 16×16.5	285	★ 16×21.5	380	20×21.5	410						
220	● 16×16.5	385	▵ 18×16.5	440										
330	▵ 18×16.5	490	18×21.5	500										
470	18×21.5	590												

● : suitable for Φ12.5×21 ▵ : suitable for Φ16×21.5 ★ : suitable for Φ20×16.5
I~ =Rated ripple current (mA)(+105° C ,120Hz)

Frequency coefficient of ripple current

V	Frequency(Hz) / Cap.(μF)	50Hz	120Hz	300Hz	1kHz	≥ 10KHz
6.3 ~ 100	< 68	0.70	1.00	1.35	1.57	2.00
	100~470	0.80	1.00	1.23	1.34	1.50
	1000~6800	0.85	1.00	1.10	1.13	1.15
160~450	3.3~100	0.80	1.00	1.25	1.40	1.60