

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

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

Technical drawing showing top, side, and cross-sectional views of the VJ capacitor. Dimensions include diameter (ΦD), length (L), height (H), and various internal and external radii and thicknesses.

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	1.3~1.7
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	
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)	50Hz	120Hz	300Hz	1kHz	≥ 10KHz
	Cap.(μF)					
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