



SMD Aluminum Electrolytic Capacitors

VLW

Features

- 12.5 ~ 16 ϕ , 125°C, 2,000 hours assured
- Suitable for automotive application
- Peak acceleration: 50G
- RoHS Compliance

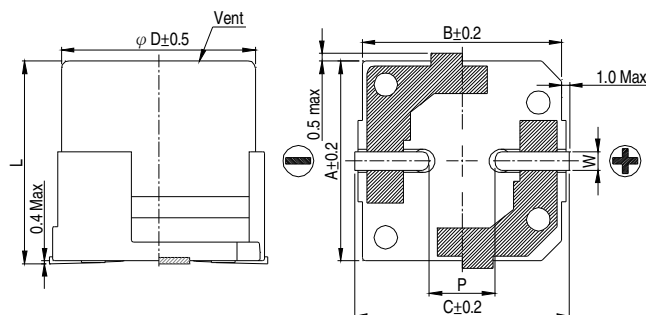


Marking color: Black

SPECIFICATIONS

Items	Performance																					
Category Temperature Range	-40 ~ +125℃																					
Capacitance Tolerance	±20% (at 120Hz, 20℃)																					
Leakage Current (at 20℃)	I = 0.01CV or 3 (μA) whichever is greater (after 2 minutes) Where, C = rated capacitance in μF V = rated DC working voltage in V																					
Dissipation Factor (Tan δ at 120Hz, 20℃)	<table><tr><td>Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>Tan δ (max)</td><td>0.32</td><td>0.24</td><td>0.21</td><td>0.18</td><td>0.15</td></tr></table> When the capacitance exceeds 1,000 μ F, 0.002 shall be added every 1,000 μ F increase.	Rated Voltage	10	16	25	35	50	Tan δ (max)	0.32	0.24	0.21	0.18	0.15									
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Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below. <table><tr><td colspan="2">Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>Impedance</td><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Ratio</td><td>Z(-40℃)/Z(+20℃)</td><td>5</td><td>4</td><td>3</td><td>3</td><td>3</td></tr></table>	Rated Voltage		10	16	25	35	50	Impedance	Z(-25℃)/Z(+20℃)	3	2	2	2	2	Ratio	Z(-40℃)/Z(+20℃)	5	4	3	3	3
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Endurance	<table><tr><td>Test Time</td><td>2,000 Hrs</td></tr><tr><td>Capacitance Change</td><td>Within ±30% of initial value</td></tr><tr><td>Dissipation Factor</td><td>Less than 300% of specified value</td></tr><tr><td>Leakage Current</td><td>Within specified value</td></tr></table> * The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied for 2,000 hours at 125℃.	Test Time	2,000 Hrs	Capacitance Change	Within ±30% of initial value	Dissipation Factor	Less than 300% of specified value	Leakage Current	Within specified value													
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Shelf Life Test	<table><tr><td>Test Time</td><td>1,000 Hrs</td></tr><tr><td>Capacitance Change</td><td>Within ±30% of initial value</td></tr><tr><td>Dissipation Factor</td><td>Less than 300% of specified value</td></tr><tr><td>Leakage Current</td><td>Within specified value</td></tr></table> * The above specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied.	Test Time	1,000 Hrs	Capacitance Change	Within ±30% of initial value	Dissipation Factor	Less than 300% of specified value	Leakage Current	Within specified value													
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Ripple Current & Frequency Multipliers	<table><tr><td>Frequency(Hz) Cap.(μ F)</td><td>50, 60</td><td>120</td><td>1k</td><td>10k up</td></tr><tr><td>Under 330</td><td>0.80</td><td>1.0</td><td>1.25</td><td>1.40</td></tr><tr><td>330 < C ≤ 4,700</td><td>0.85</td><td>0.70</td><td>1.20</td><td>1.30</td></tr></table>	Frequency(Hz) Cap.(μ F)	50, 60	120	1k	10k up	Under 330	0.80	1.0	1.25	1.40	330 < C ≤ 4,700	0.85	0.70	1.20	1.30						
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Vibration	Peak acceleration: 50G Peak to peak amplitude: 1.5mm Frequency: 5 to 2,000 Hz reciprocation for 20 min. Direction and duration of vibration: 3 orthogonal directions mutually each for 4 Hrs.																					

DIAGRAM OF DIMENSIONS

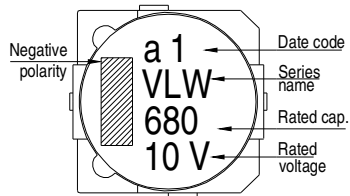


LEAD SPACING AND DIAMETER							Unit: mm
φD	L	A	B	C	W	P ± 0.2	
12.5	13.5 ± 0.5	13.0	13.4	15.4	1.1 ~ 1.4	4.4	
12.5	16 ± 0.5	13.0	13.4	15.4	1.1 ~ 1.4	4.4	
16	16.5 ± 0.5	16.5	16.9	18.9	1.1 ~ 1.4	6.4	



MARKING

$\phi D \geq 12.5\text{mm}$



Dimension: $\phi D \times L(\text{mm})$

Ripple Current: mA/rms at 120 Hz, 125°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V. DC		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)	
μF	Contents	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA
100	101									12.5×13.5	380
220	221							12.5×13.5	380	12.5×16	430
330	331			12.5×13.5	500	12.5×13.5	500	16×16.5	680	16×16.5	680
470	471	12.5×13.5	500	12.5×13.5	500	12.5×13.5	500	16×16.5	680	16×16.5	680
680	681	12.5×13.5	500	12.5×13.5	500	12.5×16	600	16×16.5	680		
1,000	102	12.5×16	600	12.5×16	600	16×16.5	680				
1,500	152	12.5×16	600	16×16.5	680						
2,200	222	16×16.5	680								