



## Features

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

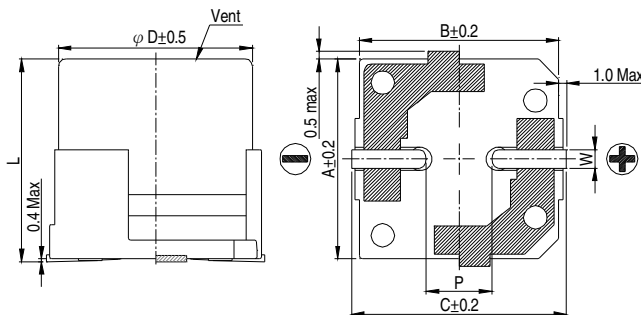


Marking color: Black

## SPECIFICATIONS

Items	Performance																					
Category Temperature Range	-40 ~ +125°C																					
Capacitance Tolerance	$\pm 20\%$ (at 120Hz, 20°C)																					
Leakage Current (at 20°C)	$I = 0.01CV$ or $3 (\mu A)$ whichever is greater (after 2 minutes) Where, C = rated capacitance in $\mu F$ V = rated DC working voltage in V																					
Dissipation Factor (Tan $\delta$ at 120Hz, 20°C)	<table border="1"> <tr> <th>Rated Voltage</th> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <th>Tan <math>\delta</math> (max)</th> <td>0.32</td> <td>0.24</td> <td>0.21</td> <td>0.18</td> <td>0.15</td> </tr> </table> <p>When the capacitance exceeds 1,000 <math>\mu F</math>, 0.002 shall be added every 1,000 <math>\mu F</math> increase.</p>	Rated Voltage	10	16	25	35	50	Tan $\delta$ (max)	0.32	0.24	0.21	0.18	0.15									
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Low Temperature Characteristics (at 120Hz)	<p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <tr> <th colspan="2">Rated Voltage</th> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <th>Impedance</th> <td>Z(-25°C)/Z(+20°C)</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <th>Ratio</th> <td>Z(-40°C)/Z(+20°C)</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°C)/Z(+20°C)	3	2	2	2	2	Ratio	Z(-40°C)/Z(+20°C)	5	4	3	3	3
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Ripple Current & Frequency Multipliers	<table border="1"> <tr> <th rowspan="2">Cap. (<math>\mu F</math>)</th> <th colspan="4">Frequency(Hz)</th> </tr> <tr> <th>50, 60</th> <th>120</th> <th>1k</th> <th>10k up</th> </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 &lt; C <math>\leq</math> 4,700</td> <td>0.85</td> <td>0.70</td> <td>1.20</td> <td>1.30</td> </tr> </table>	Cap. ( $\mu F$ )	Frequency(Hz)				50, 60	120	1k	10k up	Under 330	0.80	1.0	1.25	1.40	330 < C $\leq$ 4,700	0.85	0.70	1.20	1.30		
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Vibration	<p>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.</p>																					

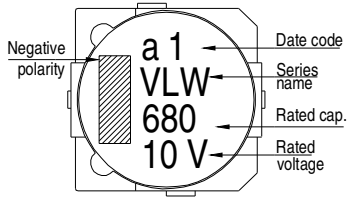
## DIAGRAM OF DIMENSIONS



LEAD SPACING AND DIAMETER							Unit: mm
$\phi D$	L	A	B	C	W	P $\pm 0.2$	
12.5	13.5 $\pm 0.5$	13.0	13.4	15.4	1.1 ~ 1.4	4.4	
12.5	16 $\pm 0.5$	13.0	13.4	15.4	1.1 ~ 1.4	4.4	
16	16.5 $\pm 0.5$	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

$\mu\text{F}$	V. DC Contents	10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)	
		$\phi D \times L$	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								