

## VZT/VZU Series

### Features

- $4\phi \sim 10\phi$ , 105°C, 2,000 ~ 5,000 hours assured
- Capacitance more than VZS series
- Designed for surface mounting on high density PC board
- RoHS Compliance

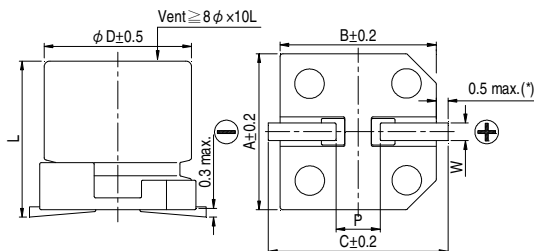


Marking color: Black

### Specifications

Items	Performance																							
Category Temperature Range	-55°C ~ +105°C																							
Capacitance Tolerance	±20% (at 120Hz, 20°C)																							
Leakage Current (at 20°C)	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																							
Tanδ (at 120Hz, 20°C)	<table border="1"> <tr> <td>Rated Voltage</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Tanδ (max)</td> <td>0.26</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </table> <p>When the capacitance exceeds 1,000μF, 0.02 shall be added every 1,000μF increase.</p>	Rated Voltage	6.3	10	16	25	35	50	Tanδ (max)	0.26	0.19	0.16	0.14	0.12	0.10									
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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> <td colspan="2">Rated Voltage</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td rowspan="2">Impedance Ratio</td> <td>Z(-25°C)/Z(+20°C)</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-55°C)/Z(+20°C)</td> <td>8</td> <td>5</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>	Rated Voltage		6.3	10	16	25	35	50	Impedance Ratio	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	Z(-55°C)/Z(+20°C)	8	5	4	3	3	3
Rated Voltage		6.3	10	16	25	35	50																	
Impedance Ratio	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2																	
	Z(-55°C)/Z(+20°C)	8	5	4	3	3	3																	
Endurance of VZT Series	<table border="1"> <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>Tanδ</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </table> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied for 2,000 hours at 105°C.</p>	Test Time	2,000 Hrs	Capacitance Change	Within ±30% of initial value	Tanδ	Less than 200% of specified value	Leakage Current	Within specified value															
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Endurance of VZU Series	<table border="1"> <tr> <td>Test Time</td> <td>3,000 Hrs for voltage = 6.3 V 5,000 Hrs for voltage ≥ 10 V</td> </tr> <tr> <td>Capacitance Change</td> <td>Within ±35% of initial value</td> </tr> <tr> <td>Tanδ</td> <td>Less than 300% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </table> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied for 3,000 ~ 5,000 hours at 105°C.</p>	Test Time	3,000 Hrs for voltage = 6.3 V 5,000 Hrs for voltage ≥ 10 V	Capacitance Change	Within ±35% of initial value	Tanδ	Less than 300% of specified value	Leakage Current	Within specified value															
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Shelf Life Test	Test time: 1,000 hours; other items are the same as those for the Endurance.																							
Ripple Current and Frequency Multipliers	<table border="1"> <tr> <td rowspan="2">Cap. (μF)</td> <td>Frequency (Hz)</td> <td>50, 60</td> <td>120</td> <td>1k</td> <td>10k up</td> </tr> <tr> <td>Under 470</td> <td>0.50</td> <td>0.65</td> <td>0.85</td> <td>1.00</td> </tr> <tr> <td>560 ≤ C &lt; 2200</td> <td></td> <td>0.55</td> <td>0.70</td> <td>0.90</td> <td>1.00</td> </tr> </table>	Cap. (μF)	Frequency (Hz)	50, 60	120	1k	10k up	Under 470	0.50	0.65	0.85	1.00	560 ≤ C < 2200		0.55	0.70	0.90	1.00						
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### Diagram of Dimensions



### Lead Spacing and Diameter

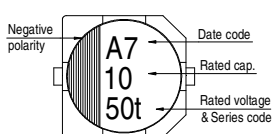
Unit: mm

φ D	L	A	B	C	W	P ± 0.2
4	5.8 ± 0.3	4.3	4.3	5.1	0.5 ~ 0.8	1.0
5	5.8 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5
6.3	5.8 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0
8	10 ± 0.5	8.3	8.3	9.0	0.7 ~ 1.1	3.1
10	10 ± 0.5	10.3	10.3	11	0.7 ~ 1.3	4.7

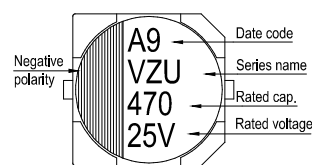
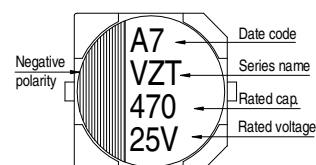
(\*): For 4 ~ 6.3 φ is 0.4 max.

### Marking

φ D ≤ 6.3mm



φ D = 8 ~ 10 mm





Dimension:  $\phi D \times L$ (mm)  
 Ripple Current: mA/rms at 100k Hz, 105°C  
 Impedance:  $\Omega$ / at 100k Hz, 20°C

**Dimension and Permissible Ripple Current**

$\mu F$	V. DC Contents	6.3V (0J)			10V (1A)			16V (1C)			25V (1E)			35V (1V)			50V (1H)		
		$\phi D \times L$	Imp.	mA	$\phi D \times L$	Imp.	mA	$\phi D \times L$	Imp.	mA	$\phi D \times L$	Imp.	mA	$\phi D \times L$	Imp.	mA	$\phi D \times L$	Imp.	mA
10	100																4x5.8	2.30	85
22	220										4x5.8	0.85	160	4x5.8	0.85	160	5x5.8	0.88	165
33	330										4x5.8	0.85	160	5x5.8	0.36	240			
47	470							4x5.8	0.85	160	5x5.8	0.36	240	5x5.8	0.36	240	6.3x5.8	0.68	195
68	680				4x5.8	0.85	160	5x5.8	0.36	240	5x5.8	0.36	240	6.3x5.8	0.26	300			
100	101	4x5.8	0.85	160				5x5.8	0.36	240	6.3x5.8	0.26	300	6.3x5.8	0.26	300	6.3x7.7	0.34	350
150	151				5x5.8	0.36	240	6.3x5.8	0.26	300	6.3x7.7	0.16	600	6.3x7.7	0.16	600			
220	221	5x5.8	0.36	240	6.3x5.8	0.26	300	6.3x5.8	0.26	300	6.3x7.7	0.16	600				8x10*	0.18	670
330	331	6.3x5.8	0.26	300	6.3x7.7	0.16	600	6.3x7.7	0.16	600				8x10*	0.08	850	10x10*	0.12	900
470	471	6.3x7.7	0.16	600	6.3x7.7	0.16	600				8x10*	0.08	850						
560	561													10x10*	0.06	1,190			
680	681	6.3x7.7	0.16	600				8x10*	0.08	850									
820	821										10x10*	0.06	1,190						
1,000	102				8x10*	0.08	850	10x10*	0.06	1,190									
1,500	152	8x10*	0.08	850	10x10*	0.06	1,190												
2,200	222	10x10*	0.06	1,190															

Note: For the case sizes with the mark of " \* ", the endurance requirements of VZU series are available.

**Part Numbering System**

VZT Series	1500 $\mu F$	$\pm 20\%$	6.3V	Carrier Tape	8 $\phi \times 10L$	Pb-free and PET coating case
<b>VZT</b>	<b>152</b>	<b>M</b>	<b>0J</b>	<b>TR</b>	<b>-</b>	<b>0810</b>
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case size
						Lead Wire and Coating Type

Note: 1. If the life time of product was required 5,000 hours, the series name is VZU.  
 2. For more details, please refer to "Part Numbering System (SMD Type)" on page 15.