

Features

- 5 ϕ ~ 10 ϕ , 105°C, 2,000 hours assured
- Low impedance 30 ~ 50% less than VZH series
- Large capacitance with ultra low impedance capacitors
- Designed for surface mounting on high density PC board
- RoHS compliance
- AEC-Q200 qualified

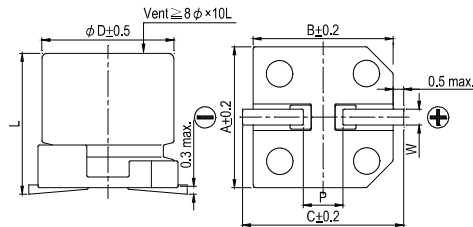


Marking color: Black

Specifications

Items	Performance																							
Category Temperature Range	-55°C ~ +105°C																							
Capacitance Tolerance	±20% (at 120 Hz, 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 120 Hz, 20°C)	<table border="1"> <thead> <tr> <th>Rated Voltage</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>Tanδ (max)</td> <td>0.30</td> <td>0.26</td> <td>0.22</td> <td>0.16</td> <td>0.13</td> <td>0.10</td> </tr> </tbody> </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)	0.30	0.26	0.22	0.16	0.13	0.10									
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Low Temperature Characteristics (at 120 Hz)	<p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <thead> <tr> <th colspan="2">Rated Voltage</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <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> </tbody> </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
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Endurance	<table border="1"> <thead> <tr> <th>Test Time</th> <th>2,000 Hrs</th> </tr> </thead> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±30% 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> </tbody> </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 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"> <thead> <tr> <th>Frequency (Hz)</th> <th>50, 60</th> <th>120</th> <th>1k</th> <th>10k up</th> </tr> </thead> <tbody> <tr> <td>Multiplier</td> <td>0.60</td> <td>0.70</td> <td>0.85</td> <td>1.0</td> </tr> </tbody> </table>	Frequency (Hz)	50, 60	120	1k	10k up	Multiplier	0.60	0.70	0.85	1.0													
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Diagram of Dimensions



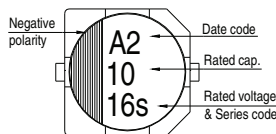
Lead Spacing and Diameter

Unit: mm

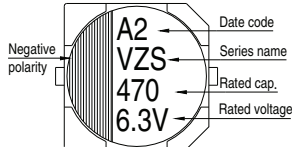
ϕD	L	A	B	C	W	P ± 0.2
5	5.8 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5
6.3	5.8 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0
8	6.5 ± 0.3	8.3	8.3	9.0	0.5 ~ 0.8	2.3
8	10 ± 0.5	8.3	8.3	9.0	0.7 ~ 1.1	3.1
10	10 ± 0.5	10.3	10.3	11	0.7 ~ 1.3	4.7
10	12.5 ± 0.5	10.3	10.3	11	0.7 ~ 1.3	4.7

Marking

$\phi D \leq 6.3 \text{ mm}$



$\phi D = 8 \sim 10 \text{ mm}$



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

Dimension and Permissible Ripple Current

Rated Volt. (Voc)		6.3V (0J)			10V (1A)			16V (1C)			25V (1E)			35V (1V)			50V (1H)						
Cap. (μ F)	Contents	$\phi D \times L$	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				
22	220							5×5.8	0.36	240				5×5.8	0.36	240	5×5.8	0.36	240				
33	330				5×5.8	0.36	240				5×5.8	0.36	240	6.3×5.8	0.26	300	6.3×5.8	0.26	300				
47	470	5×5.8	0.36	240				5×5.8	0.36	240	6.3×5.8	0.26	300	6.3×5.8	0.26	300	6.3×5.8	0.26	300				
68	680							6.3×5.8	0.26	300	6.3×5.8	0.26	300	6.3×5.8	0.26	300	6.3×7.7	0.16	600				
100	101	5×5.8 6.3×5.8	0.36 0.26	240 300	5×5.8	0.36	240	6.3×5.8 6.3×7.7	0.26 0.16	300 600	6.3×5.8 6.3×7.7 8×6.5	0.26 0.16 0.18	300 600 500	8×10	0.08	850	8×10	0.08	850	8×10	0.18	670	
150	151				6.3×5.8	0.26	300	6.3×7.7	0.16	600	8×10	0.08	850	8×10	0.08	850							
220	221	6.3×5.8	0.26	300	6.3×7.7 8×6.5	0.16 0.18	600 500	6.3×7.7 8×6.5 8×10	0.16 0.18 0.08	600 500 850	8×10	0.08	850							10×10	0.15	900	
330	331	6.3×7.7 8×6.5	0.16 0.18	600 500	8×10	0.08	850	8×10	0.08	850				10×10	0.06	1,190							
470	471	8×10	0.08	850	8×10	0.08	850	8×10	0.08	850	10×10	0.06	1,190	10×12.5	0.06	1,190							
680	681	8×10	0.08	850	8×10	0.08	850	10×10	0.06	1,190	10×12.5	0.06	1,190										
1,000	102				10×10	0.06	1,190	10×10	0.06	1,190													
1,500	152	10×10	0.06	1,190	10×12.5	0.06	1,190																
2,200	222	10×12.5	0.06	1,190																			

Part Numbering System

VZS Series 470 μ F \pm 20% 6.3V Carrier Tape 8 ϕ × 10L

VZS **471** **M** **0J** **TR** - **0810** **XX**

Series Name Capacitance Capacitance Tolerance Rated Voltage Package Type Terminal Type Case Size

XX
 S = Standard
 KS = AEC-Q200 Qualified,
 Safety Critical Application
 LS = AEC-Q200 Qualified,
 Non-Safety Critical Application