

VZL Series

Features

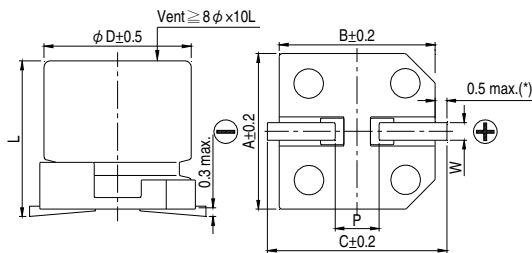
- 4φ ~ 10φ, 105°C, 2,000 hours assured
- Large capacitance with ultra low impedance capacitors
- Designed for surface mounting on high density PC board
- RoHS compliance

Marking color: Black

Specifications

Items	Performance																							
Category Temperature Range	-55°C ~ +105°C																							
Capacitance Tolerance	±20% (at 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>0.26</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </tbody> </table>	Rated Voltage	6.3	10	16	25	35	50	Tanδ (max)	0.26	0.19	0.16	0.14	0.12	0.10									
Rated Voltage	6.3	10	16	25	35	50																		
Tanδ (max)	0.26	0.19	0.16	0.14	0.12	0.10																		
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
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	<table border="1"> <tbody> <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 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															
Test Time	2,000 Hrs																							
Capacitance Change	Within ±30% of initial value																							
Tanδ	Less than 300% of specified value																							
Leakage Current	Within specified value																							
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													
Frequency(Hz)	50, 60	120	1k	10k up																				
Multiplier	0.60	0.70	0.85	1.0																				

Diagram of Dimensions



Lead Spacing and Diameter

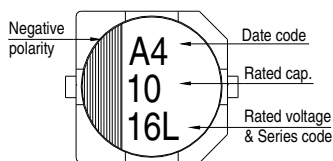
Unit: mm

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	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	0.7 ~ 1.3	4.7

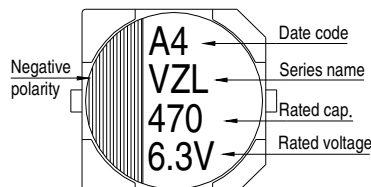
(*): For 4 ~ 6.3φ is 0.4 max.

Marking

φ D ≤ 6.3 mm



φ D = 8 ~ 10 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. (Vdc)		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
4.7	4R7													4×5.8	1.35	90			
10	100							4×5.8	1.35	90	4×5.8	1.35	90	5×5.8	0.70	160			
22	220	4×5.8	1.35	90	4×5.8	1.35	90	5×5.8	0.70	160	5×5.8	0.70	160	6.3×5.8	0.36	240			
33	330	4×5.8	1.35	90	5×5.8	0.70	160	6.3×5.8	0.36	240	6.3×5.8	0.36	240	6.3×5.8	0.36	240			
47	470	5×5.8	0.70	160	6.3×5.8	0.36	240	6.3×5.8	0.36	240	6.3×5.8	0.36	240	6.3×5.8	0.36	240			
68	680	6.3×5.8	0.36	240	6.3×5.8	0.36	240	6.3×5.8	0.36	240	6.3×5.8	0.36	240	6.3×7.7 8×6.5	0.32 0.26	290 300			
100	101	6.3×5.8	0.36	240	6.3×5.8	0.36	240	6.3×5.8	0.36	240	6.3×7.7 8×6.5	0.32 0.26	290 300	6.3×7.7 8×10	0.32 0.16	290 600	8×10	0.34	350
150	151	6.3×5.8	0.36	240	6.3×5.8	0.36	240	6.3×7.7	0.32	290	8×10	0.16	600	8×10	0.16	600			
220	221	6.3×5.8	0.36	240	6.3×7.7 8×6.5	0.32 0.26	290 300	6.3×7.7 8×6.5	0.32 0.26	290 300	8×10	0.16	600	10×10	0.08	850	10×10	0.18	670
330	331	6.3×7.7 8×6.5 8×10	0.32 0.26 0.16	290 300 600	8×10	0.16	600	8×10	0.16	600	8×10	0.16	600	10×10	0.08	850			
470	471	8×10	0.16	600	8×10	0.16	600	8×10 10×10	0.16 0.08	600 850	10×10	0.08	850						
680	681	8×10	0.16	600	10×10	0.08	850	10×10	0.08	850									
1,000	102	8×10	0.16	600	10×10	0.08	850												
1,500	152	10×10	0.08	850															

Part Numbering System

VZL Series	470 μ F	$\pm 20\%$	6.3V	Carrier Tape	8 ϕ × 10L	Pb-free and PET coating case
VZL	471	M	0J	TR	-	0810
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case size
						Lead Wire and Coating Type

Note: For more details, please refer to "Part Numbering System (SMD Type)" on page 15.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Lelon:

[VZL101M1ATR-0606](#) [VZL101M1CTR-0607](#) [VZL101M1ETR-0806](#) [VZL220M1VTR-0606](#) [VZL221M0JTR-0606](#)
[VZL221M1CTR-0806](#) [VZL221M1VTR-0810](#) [VZL331M0JTR-0607](#) [VZL331M1CTR-0810](#) [VZL470M1CTR-0506](#)
[VZL470M1VTR-0607](#) [VZL471M1ETR-1010](#) [VZL680M1ETR-0606](#) [VZL821M1CTR-1010](#) [VZL470M1VTR-0606](#)
[VZL101M1CTR-0606](#) [VZL152M0JTR-1010](#) [VZL470M1ETR-0606](#) [VZL101M1VTR-0607](#) [VZL101M1VTR-0810](#)
[VZL101M1ETR-0607](#) [VZL221M1ATR-0806](#) [VZL331M1ETR-0810](#) [VZL151M1CTR-0607](#) [VZL221M1ETR-0810](#)
[VZL101M1ETR-0606](#) [VZL471M1CTR-0810](#)