

VES Series

Features

- 4 ϕ ~ 6.3 ϕ , 105°C, 1,000 hours assured
- Vertical chip type miniaturized for 5.5mm high capacitor
- Designed for surface mounting on high density PC board
- RoHS compliance



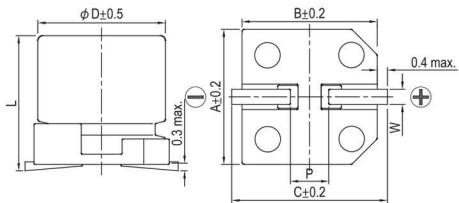
AEC-Q200 Qualified Parts Available: Use "LS" or "KS" Suffix

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"> <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>0.30</td> <td>0.26</td> <td>0.22</td> <td>0.16</td> <td>0.13</td> <td>0.12</td> </tr> </table>	Rated Voltage	6.3	10	16	25	35	50	Tanδ (max)	0.30	0.26	0.22	0.16	0.13	0.12							
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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"> <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>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> </tr> <tr> <td></td> <td>Z(-55°C)/Z(+20°C)</td> <td>8</td> <td>5</td> <td>4</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		Z(-55°C)/Z(+20°C)	8	5	4	3	3
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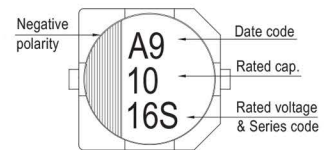
Diagram of Dimensions



Lead Spacing and Diameter

φD	L	A	B	C	W	P ± 0.2
4	5.3 ± 0.2	4.3	4.3	5.1	0.5 ~ 0.8	1.0
5	5.3 ± 0.2	5.3	5.3	5.9	0.5 ~ 0.8	1.5
6.3	5.3 ± 0.2	6.6	6.6	7.2	0.5 ~ 0.8	2.0

Marking



Dimension and Permissible Ripple Current

Dimension: φD × L(mm)

Ripple Current: mA/ms at 120 Hz, 105°C

Rated Volt. (Voc)	6.3V (0J)	10V (1A)	16V (1C)	25V (1E)	35V (1V)	50V (1H)
Cap. (μF) Contents	φD×L	mA	φD×L	mA	φD×L	mA
1 010						4×5.3 7
2.2 2R2						4×5.3 10
3.3 3R3						4×5.3 12
4.7 4R7						5×5.3 17
10 100		4×5.3 15	4×5.3 16	5×5.3 21	5×5.3 23	6.3×5.3 26
22 220	4×5.3 21	5×5.3 25	5×5.3 28	6.3×5.3 36	6.3×5.3 50	6.3×5.3 51
33 330	5×5.3 30	5×5.3 31	6.3×5.3 40	6.3×5.3 44		
47 470	5×5.3 36	6.3×5.3 43	6.3×5.3 47	6.3×5.3 60		
100 101	6.3×5.3 61	6.3×5.3 65	6.3×5.3 70			

Part Numbering System

VES Series	10μF	±20%	16V	Carrier Tape	4φ × 5.3L	Pb-free and PET coating case
VES	100	M	1C	TR	-	S
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case size
						Lead Wire and Coating Type

For automotive application, please replace "S" suffix with an "LS" or "KS" suffix, for non-safety critical and safety critical applications respectively

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