

VEU Series

Features

- 4 φ ~ 18 φ , 105°C, 3,000 ~ 5,000 hours assured
- Long life assured
- Designed for surface mounting on high density PC board
- RoHS compliance



Marking color: Black

Specifications

Items	Performance																																										
	6.3 ~ 100V	160 ~ 400V	450V																																								
Category Temperature Range	-55°C ~ +105°C	-40°C ~ +105°C	-25°C ~ +105°C																																								
Capacitance Tolerance	±20% (at 120 Hz, 20°C)																																										
Leakage Current (at 20°C)	Rated Voltage	6.3 ~ 100V	160 ~ 450V																																								
	Time	after 2 minutes	after 5 minutes																																								
	Leakage Current	I = 0.01CV or 3 (μA), whichever is greater	I = 0.04CV + 100 (μA)																																								
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> <th>63</th> <th>80</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Tanδ (max)</td> <td>0.30</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.13</td> <td>0.12</td> <td>0.09</td> <td>0.08</td> <td>0.07</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.20</td> <td>0.20</td> </tr> </tbody> </table>													Rated Voltage	6.3	10	16	25	35	50	63	80	100	160	200	250	400	450	Tanδ (max)	0.30	0.24	0.20	0.16	0.13	0.12	0.09	0.08	0.07	0.15	0.15	0.15	0.20	0.20
Rated Voltage	6.3	10	16	25	35	50	63	80	100	160	200	250	400	450																													
Tanδ (max)	0.30	0.24	0.20	0.16	0.13	0.12	0.09	0.08	0.07	0.15	0.15	0.15	0.20	0.20																													
Low Temperature Characteristics (at 120 Hz)	Impedance ratio shall not exceed the values given in the table below.																																										
	Rated Voltage	6.3	10	16	25	35	50	63	80	100	160	200	250	400	450																												
Impedance Ratio	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	2	2	2	3	3	3	6	6																												
	Z(-55/-40°C)/Z(+20°C)	10	7	5	3	3	3	3	3	3	6	6	6	10	-																												
Endurance	Test Time	3,000 Hrs for φ D ≤ 10 mm; 5,000 Hrs for φ D ≥ 12.5 mm																																									
	Capacitance Change	Within ±30% of initial value																																									
	Tanδ	Less than 300% of specified value																																									
	Leakage Current	Within specified value																																									
	* 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.																																										
Shelf Life Test	Test Time	1,000 Hrs																																									
	Capacitance Change	Within ±30% of initial value																																									
	Tanδ	Less than 300% of specified value																																									
	Leakage Current	Within specified value																																									
	* The above specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.																																										
Ripple Current and Frequency Multipliers	Frequency (Hz)		50	120	1k	10k up																																					
	Cap.(μF)	≤ 1,000	0.70	1.00	1.30	1.40																																					
		1,000 < C ≤ 1,500	0.85	1.00	1.13	1.15																																					

Diagram of Dimensions

Fig. 1

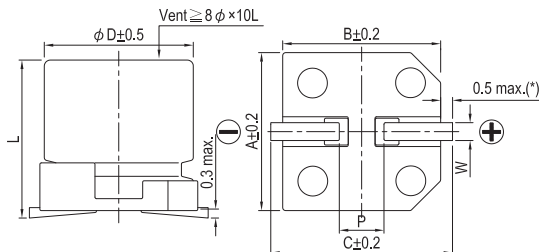
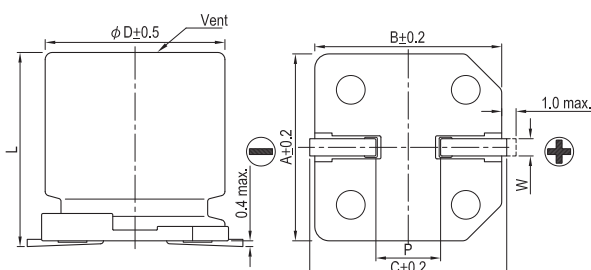


Fig. 2



Lead Spacing and Diameter

Unit: mm

φ D	L	A	B	C	W	P ± 0.2	Fig. No.
4	5.7 ± 0.3	4.3	4.3	5.1	0.5 ~ 0.8	1.0	1
5	5.7 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5	1
6.3	5.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
8	10 ± 0.5	8.3	8.3	9.0	0.7 ~ 1.1	3.1	1
10	10 ± 0.5	10.3	10.3	11.0	0.7 ~ 1.3	4.7	1
12.5	13.5 ± 0.5	13.0	13.0	13.7	1.1 ~ 1.4	4.4	2
12.5	16 ± 0.5	13.0	13.0	13.7	1.1 ~ 1.4	4.4	2
16	16.5 ± 0.5	17.0	17.0	18.0	1.1 ~ 1.4	6.4	2
16	21.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2
18	16.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2
18	21.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2

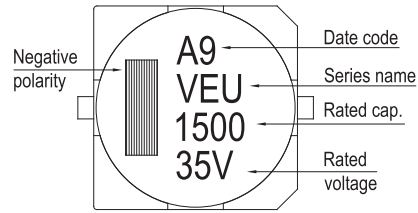
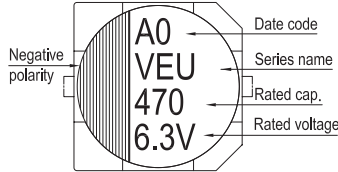
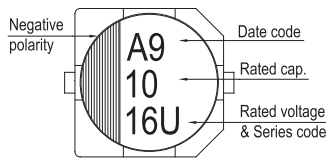
(*): For 4 ~ 6.3 φ is 0.4 max.

Marking

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

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

$\phi D \geq 12.5\text{mm}$



Dimension and Permissible Ripple Current

Dimension: $\phi D \times L(\text{mm})$

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

Rated Volt. (V _{DC})	Cap. (μF)	Contents	6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)		80V (1K)		
			$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	
1	010																		
2.2	2R2												4×5.7	8					
3.3	3R3												4×5.7	17					
4.7	4R7										4×5.7	16	5×5.7	22					
10	100						4×5.7	18	5×5.7	27	5×5.7	27	6.3×5.7	32					
22	220		4×5.7	22	4×5.7	22	5×5.7	30	6.3×5.7	44	6.3×5.7	44	6.3×7.7	58					
33	330		5×5.7	35	5×5.7	35	6.3×5.7	48	6.3×5.7	50	6.3×7.7	57	8×10	130					
47	470		5×5.7	38	6.3×5.7	50	6.3×5.7	50	6.3×7.7	63	8×10	92	8×10	141					
100	101		6.3×5.7	69	6.3×7.7	81	6.3×7.7	81	8×10	116	10×10	151	10×10	160			12.5×13.5	220	
150	151															12.5×13.5	240	12.5×16	290
220	221		6.3×7.7	120	8×10	141	8×10	141	10×10	290	10×10	320	12.5×13.5	280	12.5×16	320	16×16.5	410	
330	331		8×10	141	10×10	290	10×10	290	10×10	320	12.5×13.5	320	12.5×16	360	16×16.5	450	16×16.5	510	
470	471		10×10	320	10×10	320	10×10	320			12.5×16	410	16×16.5	510	16×16.5	540	18×16.5	650	
1,000	102		10×10	410							16×16.5	690	18×16.5	780					
1,500	152										18×16.5	900							

Rated Volt. (V _{DC})	Cap. (μF)	Contents	100V (2A)		160V (2C)		200V (2D)		250V (2E)		400V (2G)		450V (2W)	
			$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA
3.3	3R3												12.5×13.5	40
4.7	4R7								12.5×13.5	65	12.5×16	50	12.5×16	50
10	100						12.5×13.5	80	12.5×16	105	16×16.5	85	16×16.5	85
22	220						12.5×16	105	16×16.5	180	18×21.5	130	18×21.5	130
33	330				12.5×13.5	95	16×16.5	220	18×16.5	230				
47	470				16×16.5	260	18×16.5	270	18×21.5	280				
68	680		12.5×13.5	180	18×16.5	320	18×21.5	330						
100	101		12.5×16	240	16×21.5	380								
150	151		16×16.5	340										
220	221		16×16.5	410										
330	331		18×16.5	540										

Part Numbering System

VEU Series	470μF	±20%	6.3V	Carrier Tape	10 ϕ × 10L	Pb-free and PET coating case
VEU	471	M	0J	TR	-	1010
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.