

VEU Series

Features

- $4\phi \sim 18\phi$, 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																																										
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><tr><td>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td></tr><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></tr></table>										Rated Voltage	6.3	10	16	25	35	50	63	80	100	Tanδ (max)	0.30	0.24	0.20	0.16	0.13	0.12	0.09	0.08	0.07													
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Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below. <table><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><td>63</td><td>80</td><td>100</td></tr><tr><td>Impedance</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><td>2</td><td>2</td><td>2</td></tr><tr><td>Ratio</td><td>Z(-55°C)/Z(+20°C)</td><td>10</td><td>7</td><td>5</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table>										Rated Voltage		6.3	10	16	25	35	50	63	80	100	Impedance	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	2	2	2	Ratio	Z(-55°C)/Z(+20°C)	10	7	5	3	3	3	3	3	3
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Endurance	<table><tr><td>Test Time</td><td>3,000 Hrs for ϕD ≤ 10 mm; 5,000 Hrs for ϕD ≥ 12.5 mm</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></table> * 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.										Test Time	3,000 Hrs for ϕD ≤ 10 mm; 5,000 Hrs for ϕD ≥ 12.5 mm	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	<table><tr><td>Test Time</td><td>1,000 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></table> * 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.										Test Time	1,000 Hrs	Capacitance Change	Within ±30% of initial value	Tanδ	Less than 300% of specified value	Leakage Current	Within specified value																									
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Ripple Current & Frequency Multipliers	<table><tr><td>Frequency (Hz)</td><td>50</td><td>120</td><td>1k</td><td>10k up</td></tr><tr><td>Cap.(μF)</td><td></td><td></td><td></td><td></td></tr><tr><td>Under 1,000</td><td>0.70</td><td>1.00</td><td>1.30</td><td>1.40</td></tr><tr><td>1,000 < C ≤ 1,500</td><td>0.85</td><td>1.00</td><td>1.13</td><td>1.15</td></tr></table>										Frequency (Hz)	50	120	1k	10k up	Cap.(μF)					Under 1,000	0.70	1.00	1.30	1.40	1,000 < C ≤ 1,500	0.85	1.00	1.13	1.15													
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Diagram of Dimensions

Fig. 1

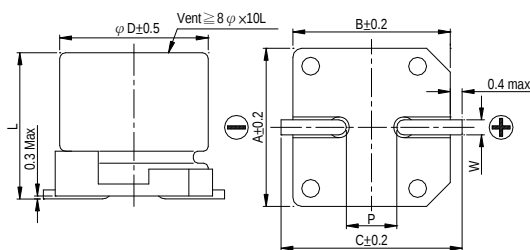
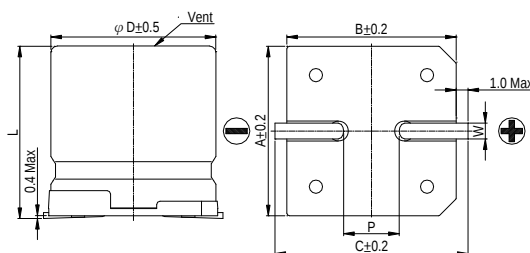


Fig. 2



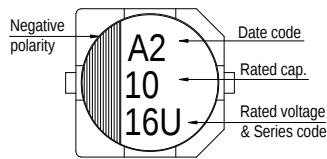
Lead Spacing and Diameter

Unit: mm

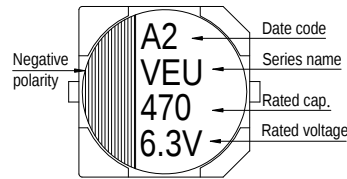
φ D	L	A	B	C	W	P ± 0.2	Fig. No.
4	5.7 ± 0.3	4.3	4.3	5.1	0.5 ~ 0.8	1.0	1
5	5.7 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5	1
6.3	5.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
8	10 ± 0.5	8.4	8.4	9.0	0.7 ~ 1.1	3.1	1
10	10 ± 0.5	10.4	10.4	11.0	0.7 ~ 1.3	4.7	1
12.5	13.5 ± 0.5	13.0	13.0	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
18	16.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2

Marking

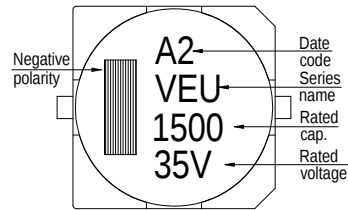
$\phi D \leq 6.3\text{mm}$



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



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



Dimension & Permissible Ripple Current

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

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

V. DC	6.3V (0J)	10V (1A)	16V (1C)	25V (1E)	35V (1V)	50V (1H)	63V (1J)	80V (1K)
μF Contents	$\phi D \times L$ 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						4×5.7 8		
2.2 2R2						4×5.7 12		
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 30	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	10×10 310		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	8×10 290	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			

V. DC	100V (2A)
μF Contents	$\phi D \times L$ mA
68 680	12.5×13.5 180
100 101	12.5×16 240
150 151	16×16.5 340
220 221	16×16.5 410
330 331	18×16.5 540

Part Numbering System

VEU series 470 μF $\pm 20\%$ 6.3V Carrier Tape 10 $\phi \times 10\text{L}$ 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 12.