VEU Series

Features
- 4φ ~ 18φ, 105℃, 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	6.3 ~ 100V	160 ~ 400V	450V
	-55℃ ~ +105℃	-40℃ ~ +105℃	-25℃ ~ +105℃
Capacitance Tolerance	±20% (at 120 Hz, 20℃)		
Leakage Current (at 20℃)	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℃)

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℃)/Z(+20℃)	4	3	2	2	2	2	2	2	2	3	3	3	6	6
	Z(-55/-40℃)/Z(+20℃)	10	7	5	3	3	3	3	3	3	6	6	6	10	-

Endurance

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

* The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied for 3,000 ~ 5,000 hours at 105℃.

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℃ after exposing them for 1,000 hours at 105℃ without voltage applied.

Ripple Current and Frequency Multipliers

Cap.(μF) \ Frequency (Hz)	50	120	1k	10k up
≦ 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

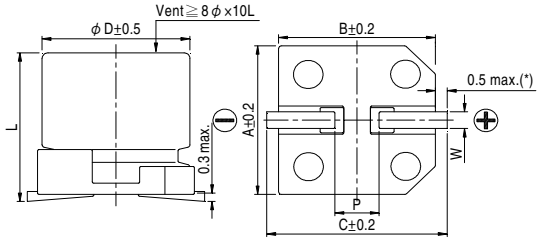
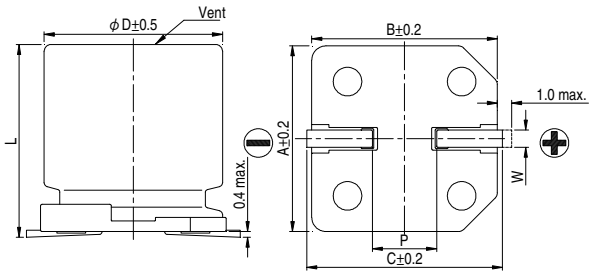


Fig. 2



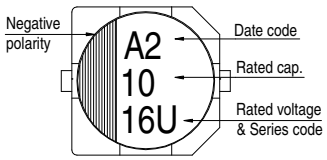
Lead Spacing and Diameter Unit: mm

φD	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	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
18	21.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2

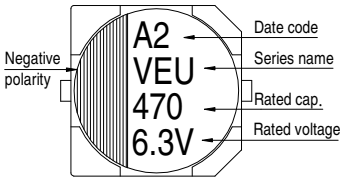
(*): For 4 ~ 6.3φ is 0.4 max.

Marking

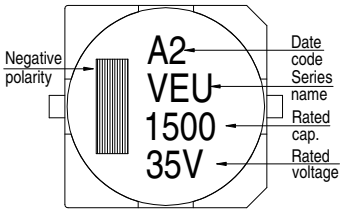
ϕD ≦ 6.3 mm



ϕD = 8 ~ 10 mm



ϕD ≧ 12.5 mm



Dimension and Permissible Ripple Current

Dimension: ϕD × L(mm)
Ripple Current: mA/rms at 120 Hz, 105℃

Rated Volt. (VDC) / Cap. (μF)	Contents	6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)		80V (1K)	
		ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×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	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. (VDC) / Cap. (μF)	Contents	100V (2A)		160V (2C)		200V (2D)		250V (2E)		400V (2G)		450V (2W)	
		ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×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		10ϕ×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.

Mouser Electronics

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VEU100M1CTR0406 VEU100M1ETR0506 VEU100M1HTR0606 VEU100M1VTR0506 VEU101M0JTR0606 VEU101M1ATR0607 VEU101M1CTR0607 VEU101M1ETR0810 VEU101M1HTR1010 VEU101M1KTR1313 VEU101M1VTR1010 VEU102M0JTR1010 VEU102M1HTR1816 VEU102M1VTR1616 VEU151M1JTR1313 VEU152M1VTR1816 VEU220M0JTR0406 VEU220M1ATR0406 VEU220M1CTR0506 VEU220M1ETR0606 VEU220M1HTR0607 VEU220M1VTR0606 VEU221M0JTR0607 VEU221M1ATR0810 VEU221M1CTR0810 VEU221M1ETR1010 VEU221M1HTR1313 VEU221M1JTR1316 VEU221M1VTR1010 VEU2R2M1HTR0406 VEU330M0JTR0506 VEU330M1ATR0506 VEU330M1CTR0606 VEU330M1ETR0606 VEU330M1HTR0810 VEU330M1VTR0607 VEU331M0JTR0810 VEU331M1ATR1010 VEU331M1CTR1010 VEU331M1ETR1010 VEU331M1HTR1316 VEU331M1JTR1616 VEU331M1VTR1313 VEU3R3M1HTR0406 VEU470M0JTR0506 VEU470M1ATR0606 VEU470M1CTR0606 VEU470M1ETR0607 VEU470M1HTR0810 VEU470M1VTR0810 VEU471M0JTR1010 VEU471M1ATR1010 VEU471M1CTR1010 VEU471M1HTR1616 VEU471M1JTR1816 VEU471M1VTR1316 VEU4R7M1HTR0506 VEU4R7M1VTR0406 VEU101M2ATR1316 VEU151M1KTR1316 VEU151M2ATR1616 VEU221M1KTR1616 VEU221M2ATR1616 VEU331M1KTR1616 VEU331M2ATR1816 VEU471M1KTR1816 VEU680M2ATR1313