

## VEJ Series

### Features

- 4  $\phi$  ~ 18  $\phi$ , 105°C, 2,000 hours 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											
	-55°C ~ +105°C	-40°C ~ +105°C											
Capacitance Tolerance	$\pm 20\%$ (at 120Hz, 20°C)												
Leakage Current (at 20°C)	Rated voltage	6.3 ~ 100V	160 ~ 450V										
	Time	after 2 minutes											
	Case size	4 ~ 10 $\phi$	12.5 ~ 18 $\phi$	12.5 ~ 18 $\phi$									
	Leakage Current	I = 0.01CV or 3 $\mu$ A, whichever is greater	I = 0.03CV or 4 $\mu$ A, whichever is greater	I = 0.04CV + 100 $\mu$ A									
Where, C = rated capacitance in $\mu$ F V = rated DC working voltage in V													
Dissipation Factor (Tan $\delta$ at 120Hz, 20°C)	Rated Voltage	6.3	10	16	25	35	50	63	100	160 ~ 250	400 ~ 450		
	4 ~ 10 $\phi$	0.45	0.35	0.28	0.18	0.16	0.14	0.12	0.12	-	-		
	12.5 ~ 18 $\phi$	0.40	0.38	0.34	0.26	0.22	0.18	0.14	0.10	0.20	0.25		
When the capacitance exceeds 1,000 $\mu$ F, 0.02 shall be added every 1,000 $\mu$ F increase.													
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below.												
	Impedance Ratio	Rated Voltage		6.3	10	16	25	35	50	63	100	160 ~ 250	400 ~ 450
		Z(-25°C)	$\phi D < 12.5$	4	4	3	2	2	2	2	3	-	-
		/Z(+20°C)	$\phi D \geq 12.5$	5	4	3	2	2	2	2	2	3	6
Z(-55/-40°C)		$\phi D < 12.5$	12	8	6	4	3	3	3	4	-	-	
		/Z(+20°C)	$\phi D \geq 12.5$	10	8	6	4	3	3	3	6	10	
Endurance	Test Time	2,000 Hrs											
	Capacitance Change	Within $\pm 25\%$ of initial value for $\phi D \leq 6.3$ mm; Within $\pm 20\%$ of initial value for $\phi D \geq 8$ mm											
	Dissipation Factor	Less than 300% of specified value for $\phi D \leq 6.3$ mm; Less than 200% of specified value for $\phi D \geq 8$ mm											
	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 2,000 hours at 105°C.													
Shelf Life Test	Test time: 1,000 hours; other items are the same as those for the Endurance. The rated voltage shall be applied to the capacitors before the measurements for 160 ~ 450V (Refer to JIS C 5101-4 4.1).												
Ripple Current & Frequency Multipliers	Cap. ( $\mu$ F)		Freq. (Hz)										
			50	120	1k	10k up							
	Under 1,000	0.80	1.00	1.25	1.40								
1,000 < C $\leq$ 6,800	0.85	1.00	1.15	1.25									

### Diagram of Dimensions

Fig. 1

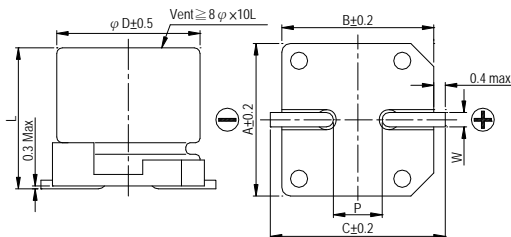
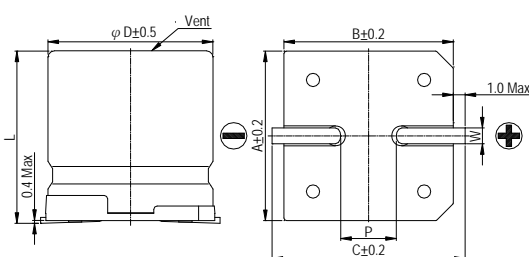


Fig. 2



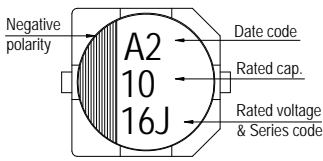
### Lead Spacing and Diameter

Unit: mm

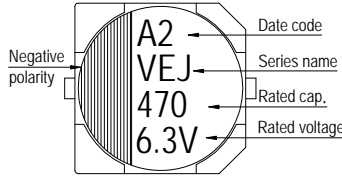
$\phi D$	L	A	B	C	W	P $\pm 0.2$	Fig. No.
4	5.7 $\pm$ 0.3	4.3	4.3	5.1	0.5 ~ 0.8	1.0	1
5	5.7 $\pm$ 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5	1
6.3	5.7 $\pm$ 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
6.3	7.7 $\pm$ 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
8	10 $\pm$ 0.5	8.4	8.4	9.0	0.7 ~ 1.1	3.1	1
10	7.7 $\pm$ 0.3	10.4	10.4	11.0	0.7 ~ 1.3	4.7	1
10	10 $\pm$ 0.5	10.4	10.4	11.0	0.7 ~ 1.3	4.7	1
10	10.3 $\pm$ 0.5	10.4	10.4	11.0	0.7 ~ 1.3	4.7	1
12.5	13.5 $\pm$ 0.5	13.0	13.0	13.7	1.1 ~ 1.4	4.4	2
12.5	16 $\pm$ 0.5	13.0	13.0	13.7	1.1 ~ 1.4	4.4	2
16	16.5 $\pm$ 0.5	17.0	17.0	18.0	1.1 ~ 1.4	6.4	2
16	21.5 $\pm$ 0.5	17.0	17.0	18.0	1.1 ~ 1.4	6.4	2
18	16.5 $\pm$ 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2
18	21.5 $\pm$ 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2

## Marking

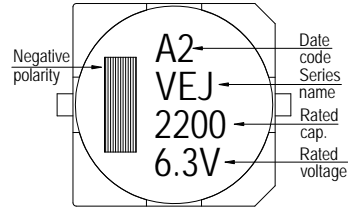
$\phi D \leq 6.3\text{mm}$



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



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



## Dimension & Permissible Ripple Current

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

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

V <sub>DC</sub> $\mu\text{F}$	Contents	6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)		100V (2A)	
		$\phi D \times L$	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	4×5.7	8		
2.2	2R2											4×5.7	12	4×5.7	12		
3.3	3R3											4×5.7	14	5×5.7	17		
4.7	4R7							4×5.7	17	4×5.7	17	5×5.7	20	6.3×5.7	22		
10	100					4×5.7	20	4×5.7	20	5×5.7	27	6.3×5.7	32	6.3×5.7	32		
22	220	4×5.7	22	4×5.7	22	5×5.7	30	5×5.7	30	6.3×5.7	44	6.3×5.7	38	6.3×7.7	58	8×10	100
33	330	5×5.7	34	5×5.7	34	5×5.7	34	6.3×5.7	46	6.3×5.7	46	6.3×7.7	65	8×10	140	10×10	150
47	470	5×5.7	38	5×5.7	38	6.3×5.7	48	6.3×5.7	48	6.3×7.7	80	6.3×7.7	70	8×10	170	12.5×13.5	250
100	101	6.3×5.7	69	6.3×5.7	69	6.3×5.7	69	6.3×7.7	100	8×10	240	8×10	210	10×10.3	310	12.5×13.5	380
220	221	6.3×7.7	120	6.3×7.7	120	6.3×7.7	120	8×10 10×7.7	270 270	8×10	270	10×10.3	330	12.5×13.5	470	16×16.5	450
330	331	8×10	290	8×10	290	8×10 10×7.7	290 290	8×10	290	10×10	370	12.5×13.5	490	16×16.5	650	18×16.5 16×21.5	590 750
470	471	8×10	320	8×10 10×7.7	320 320	10×10	380	10×10	380	12.5×13.5	520	12.5×16	550	16×16.5	700	18×21.5	980
1,000	102	10×10	410	10×10.3	410	12.5×13.5	550	12.5×16	550	16×16.5	800	18×16.5	990				
2,200	222	12.5×13.5	680	12.5×13.5	680	16×16.5	900	16×16.5	900	18×16.5	1,050						
3,300	332	12.5×16	850	16×16.5	950	16×16.5	950	18×16.5 16×21.5	1,150 1,200								
4,700	472	16×16.5	1,000	16×16.5	1,000	18×16.5 16×21.5	1,225 1,275	18×21.5	1,300								
6,800	682	18×16.5 16×21.5	1,290 1,350	18×16.5 16×21.5	1,290 1,350												
8,200	822	18×21.5	1,450	18×21.5	1,450												

V <sub>DC</sub> $\mu\text{F}$	Contents	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
3.3	3R3					12.5×13.5	60			12.5×13.5	40
4.7	4R7					12.5×13.5	65	12.5×13.5	45	12.5×13.5	45
10	100			12.5×13.5	80	12.5×13.5	70	12.5×13.5	50	12.5×16	75
22	220			12.5×16	110	12.5×13.5	105	16×16.5	85	16×16.5	85
33	330	12.5×13.5	95	12.5×16	120	16×16.5	180	18×16.5	100	18×16.5	100
47	470	16×16.5	240	16×16.5	220	16×16.5	220	18×21.5	130		
100	101	16×16.5	250	18×16.5	280	18×16.5	260				