

VEJ Series

Features

- 4 ϕ ~ 18 ϕ , 105°C, 2,000 hours assured
- Designed for surface mounting on high density PC board
- RoHS compliant
- AEC-Q200 compliant



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													
	Case size	4 ~ 10 ϕ	12.5 ~ 18 ϕ												
	Leakage Current	I = 0.01CV or 3 μ A, whichever is greater	I = 0.03CV or 4 μ A, whichever is greater	I = 0.04CV + 100 μ A											
Where, C = rated capacitance in μ F, V = rated DC working voltage in V															
Tan δ (at 120 Hz, 20°C)	Rated Voltage	6.3	10	16	25	35	50	63	100	160 ~ 250	400 ~ 450				
	Case size	4 ~ 10 ϕ	0.45	0.35	0.28	0.18	0.16	0.14	0.12	0.12	-	-			
When the capacitance exceeds 1,000 μ F, 0.02 shall be added every 1,000 μ F increase.															
Low Temperature Characteristics (at 120 Hz)	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	200	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	3	3	6
Z(-55/-40°C)		$\phi D < 12.5$	12	8	6	4	3	3	3	4	-	-	-	-	
		$\phi D \geq 12.5$	10	8	6	4	3	3	3	6	6	6	10	-	
Note: The ratio value with "*" is only available for 400V.															
Endurance	Test Time	2,000 Hrs													
	Capacitance Change	Within ±25% of initial value for $\phi D \leq 6.3$ mm; Within ±20% of initial value for $\phi D \geq 8$ mm													
	Tan δ	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 and Frequency Multipliers	Cap. (μ F)	Freq. (Hz)													
		50	120	1k	10k up										
		$\leq 1,000$	0.80	1.00	1.25	1.40									
	$1,000 < C \leq 8,200$	0.85	1.00	1.15	1.25										

Diagram of Dimensions

Fig. 1

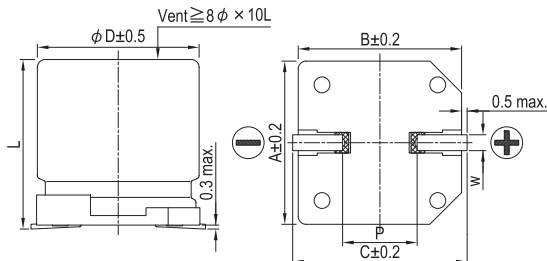
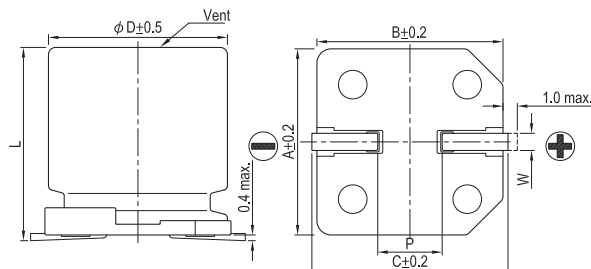


Fig. 2



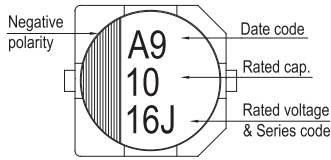
Lead Spacing and Diameter

Unit: mm

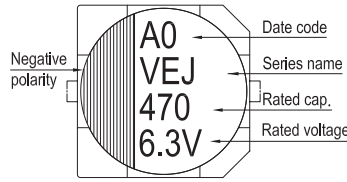
ϕD	L	A	B	C	W	P ± 0.2	Fig. No.
4	5.7 ± 0.3	4.3	4.3	5.1	0.5 ~ 0.8	1.0	1
5	5.7 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5	1
6.3	5.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
8	6.5 ± 0.3	8.3	8.3	9.0	0.5 ~ 0.8	2.3	1
8	10 ± 0.5	8.3	8.3	9.0	0.7 ~ 1.1	3.1	1
10	7.7 ± 0.3	10.3	10.3	11.0	0.7 ~ 1.3	4.7	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

Marking

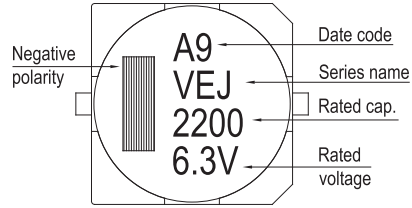
$\phi D \leq 6.3 \text{ mm}$



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



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



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)		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	8×6.5	51	
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	8×6.5	67	6.3×7.7	58	8×10
33	330	5×5.7	34	5×5.7	34	5×5.7	34	6.3×5.7	46	6.3×5.7	46	8×6.5	76	6.3×7.7	65	8×10	140	10×10
47	470	5×5.7	38	5×5.7	38	6.3×5.7	48	6.3×5.7	48	8×6.5	79	6.3×7.7	80	6.3×7.7	70	8×10	170	12.5×13.5
100	101	6.3×5.7	69	6.3×5.7	69	8×6.5	90	6.3×5.7	69	6.3×7.7	100	8×10	240	8×10	210	10×10	310	12.5×13.5
220	221	6.3×7.7	120	8×6.5	120	6.3×7.7	120	8×10	270	10×7.7	270	8×10	270	10×10	330	12.5×13.5	470	16×16.5
330	331	8×10	290	8×10	290	8×10	290	10×10	380	10×7.7	290	8×10	290	10×10	370	12.5×13.5	490	16×16.5
470	471	8×10	320	8×10	320	10×10	320	10×10	380	10×7.7	320	10×10	380	12.5×13.5	520	12.5×16	550	16×16.5
1,000	102	10×10	410	10×10	410	12.5×13.5	500	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	1,150	16×21.5	1,200							
4,700	472	16×16.5	1,000	16×16.5	1,000	18×16.5	1,225	16×21.5	1,275	18×21.5	1,300							
6,800	682	18×16.5	1,290	16×21.5	1,350	18×16.5	1,290	16×21.5	1,350									
8,200	822	18×21.5	1,450	18×21.5	1,450													

Rated Volt. (V _{DC})	Cap. (μF)	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
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	12.5×16	205	16×16.5	220	16×16.5	220	18×21.5	130			
100	101	16×16.5	250	18×16.5	280	18×21.5	290					

Part Numbering System

VEJ Series	470μF	±20%	6.3V	Carrier Tape	8φ×10L	General Purpose
VEJ	471	M	0J	TR	-	0810
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case Size

Note: For more details, please refer to "Part Numbering System - SMD Type" on page 106.

SMD