VZH Series

Features
- 4φ ~ 18φ, 105℃, 2,000 ~ 5,000 hours assured
- Large capacitance with ultra low impedance capacitors
- Designed for surface mounting on high density PC board
- RoHS Compliance

Marking color: Black

Specifications

Items	Performance
Category Temperature Range	-55℃ ~ +105℃
Capacitance Tolerance	±20% (at 120Hz, 20℃)
Leakage Current (at 20℃)	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
Dissipation Factor (Tanδ at 120Hz, 20℃)	Rated Voltage: 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Tanδ (max): 0.30 / 0.26 / 0.22 / 0.16 / 0.13 / 0.10 / 0.08 / 0.08 / 0.07 When the capacitance exceeds 1,000μF, 0.02 shall be added every 1,000μF increase.
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below. Rated Voltage: 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Impedance Ratio Z(-25℃)/Z(+20℃): 4 / 3 / 2 / 2 / 2 / 2 / 2 / 2 / 2 Impedance Ratio Z(-55℃)/Z(+20℃): 8 / 5 / 4 / 3 / 3 / 3 / 3 / 3 / 3
Endurance	Test Time: 2,000 Hrs for φD ≦ 6.3mm & 10φ×7.7L; 5,000 Hrs for φD ≧ 8mm Capacitance Change: Within ±30% of initial value Dissipation Factor: 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 2,000 ~ 5,000 hours at 105℃.
Shelf Life Test	Test Time: 1,000 Hrs Capacitance Change: Within ±30% of initial value Dissipation Factor: 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 & Frequency Multipliers	Frequency(Hz): 50, 60 / 120 / 1k / 10k up Multiplier: 0.60 / 0.70 / 0.85 / 1.0

Diagram of Dimensions

Fig. 1

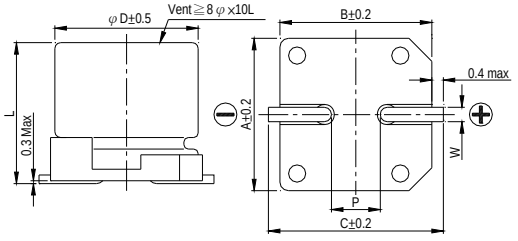
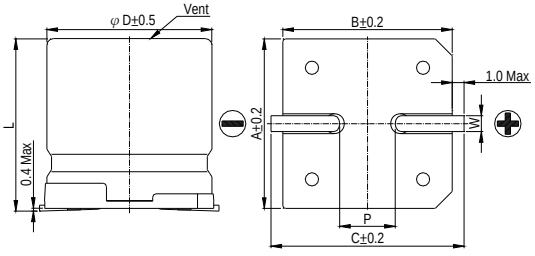


Fig. 2

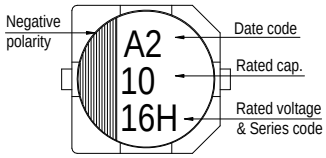


Lead Spacing and Diameter Unit: mm

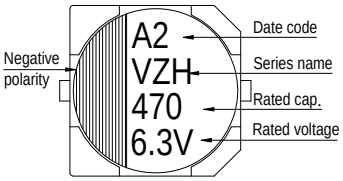
φD	L	A	B	C	W	P ± 0.2	Fig. No.
4	5.7 ± 0.3	4.3	4.3	5.1	0.5 ~ 0.8	1.0	1
5	5.7 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5	1
6.3	5.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
8	10 ± 0.5	8.4	8.4	9.0	0.7 ~ 1.1	3.1	1
8	10.3 ± 0.5	8.4	8.4	9.0	0.7 ~ 1.1	3.1	1
10	7.7 ± 0.3	10.4	10.4	11.0	0.7 ~ 1.3	4.7	1
10	10 ± 0.5	10.4	10.4	11.0	0.7 ~ 1.3	4.7	1
10	10.3 ± 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
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

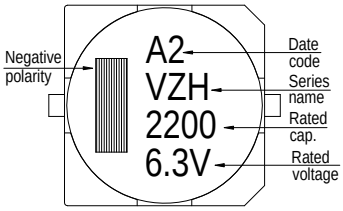
φD ≦ 6.3mm



φD = 8 ~ 10 mm



φD ≧ 12.5mm



Dimension: φD × L(mm)
Ripple Current: mA/rms at 100k Hz, 105℃
Impedance: Ω/ at 100k Hz, 20℃

Dimension & Permissible Ripple Current

V. DC / μF / Contents	6.3V (0J)			10V (1A)			16V (1C)			25V (1E)			35V (1V)			50V (1H)		
	φD×L	Imp.	mA	φD×L	Imp.	mA	φD×L	Imp.	mA	φD×L	Imp.	mA	φD×L	Imp.	mA	φD×L	Imp.	mA
1 010																4×5.7	2.9	60
2.2 2R2																4×5.7	2.9	60
3.3 3R3																4×5.7	2.9	60
4.7 4R7													4×5.7	1.35	80	5×5.7	1.52	85
10 100							4×5.7	1.35	80	4×5.7	1.35	80	5×5.7	0.80	150	6.3×5.7	0.88	165
22 220	4×5.7	1.35	80	4×5.7	1.35	80	5×5.7	0.80	150	5×5.7	0.80	150	6.3×5.7	0.44	230	6.3×5.7	0.88	165
33 330	4×5.7	1.35	80	5×5.7	0.80	150	6.3×5.7	0.44	230	6.3×5.7	0.44	230	6.3×5.7	0.44	230	6.3×7.7	0.68	185
47 470	5×5.7	0.80	150	6.3×5.7	0.44	230	6.3×5.7	0.44	230	6.3×5.7	0.44	230	6.3×5.7	0.44	230	6.3×7.7	0.68	185
68 680																8×10	0.34	369
100 101	6.3×5.7	0.44	230	6.3×5.7	0.44	230	6.3×5.7	0.44	230	6.3×7.7	0.36	280	8×10	0.17	450	8×10 10×10	0.34 0.18	369 553
150 151	6.3×5.7	0.44	230	6.3×5.7	0.44	230	6.3×7.7	0.36	280	8×10	0.17	450	8×10 10×7.7	0.17 0.17	450 450	10×10.3	0.18	553
220 221	6.3×7.7	0.36	280	6.3×7.7	0.36	280	6.3×7.7	0.36	280	8×10 10×7.7	0.17 0.17	450 450	10×10	0.09	670	10×10.3	0.18	553
330 331	8×10	0.17	450	8×10 10×7.7	0.17 0.17	450 450	8×10 10×7.7	0.17 0.17	450 450	8×10.3	0.17	450	12.5×13.5	0.070	820	12.5×13.5	0.12	650
470 471	8×10 10×7.7	0.17 0.17	450 450	8×10 10×7.7	0.17 0.17	450 450	8×10 10×10	0.17 0.09	450 670	10×10	0.09	670	12.5×16	0.060	950	16×16.5	0.073	1,000
680 681	8×10.3 10×7.7	0.17 0.17	450 450	10×10	0.09	670	10×10.3	0.09	670	12.5×13.5	0.070	820	12.5×16	0.060	950	16×16.5	0.073	1,000
1,000 102	8×10.3	0.17	450	10×10	0.09	670	12.5×13.5	0.070	820	12.5×16	0.060	950	16×16.5	0.054	1,260	18×16.5	0.066	1,500
1,500 152	10×10.3	0.09	670	12.5×13.5	0.070	820	12.5×16	0.060	950	16×16.5	0.054	1,260	18×16.5 16×21.5	0.048 0.038	1,500 1,630	18×21.5	0.05	1,620
2,200 222	12.5×13.5	0.070	820	12.5×16	0.060	950	16×16.5	0.054	1,260	16×16.5	0.054	1,260	18×21.5	0.038	1,750			
3,300 332	12.5×16	0.060	950	16×16.5	0.054	1,260	16×16.5 16×21.5	0.054 0.038	1,260 1,630	18×16.5 16×21.5 18×21.5	0.048 0.038 0.038	1,500 1,630 1,750						
4,700 472	16×16.5	0.054	1,260	16×16.5	0.054	1,260	18×16.5 16×21.5	0.048 0.038	1,500 1,630									
6,800 682	18×16.5 16×21.5	0.048 0.038	1,500 1,630	18×16.5 16×21.5	0.048 0.038	1,500 1,630												
8,200 822	18×16.5 16×21.5	0.048 0.038	1,500 1,630	18×21.5	0.038	1,750												

V. DC / μF / Contents	63V (1J)			80V (1K)			100V (2A)		
	φD×L	Imp.	mA	φD×L	Imp.	mA	φD×L	Imp.	mA
4.7 4R7	5×5.7	1.90	70						
10 100	6.3×5.7	1.20	130						
22 220	6.3×7.7	0.90	150	8×10	1.3	130	8×10	1.3	130
33 330	8×10	0.50	280	8×10	1.3	130	10×10	0.7	200
47 470	8×10	0.50	280	10×10	0.7	200	10×10	0.7	200
100 101	10×10	0.25	450	10×10.3	0.7	200	12.5×13.5	0.32	450
150 151	12.5×13.5	0.15	700	12.5×13.5	0.32	450	12.5×16	0.26	550
220 221	12.5×13.5	0.15	700	12.5×16	0.26	550	16×16.5 18×21.5	0.17 0.15	650 950
330 331	16×16.5	0.082	900	16×16.5	0.17	650	18×16.5 16×21.5	0.15 0.15	850 900
470 471	16×16.5	0.082	900	18×16.5 16×21.5	0.15 0.15	850 900	18×21.5	0.15	950
680 681	18×16.5 16×21.5	0.080 0.080	1,150 1,150	18×21.5	0.15	950			
1,000 102	18×21.5	0.06	1,250						