VUP Series

Features

- 6.3φ ~ 18φ, 125℃, 2,000 ~ 4,000 hours assured
- Low impedance capacitors
- Chip type high temperature range, for +125℃ use
- For automobile modules and other high temperature applications
- RoHS compliant, AEC-Q200 compliant

Marking color: Black

Specifications

Items	Performance
Category Temperature Range	-40℃ ~ +125℃
Capacitance Tolerance	± 20% (at 120 Hz, 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
Tanδ (at 120 Hz, 20℃)	Rated Voltage: 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Tanδ (max.): 0.30 / 0.23 / 0.18 / 0.16 / 0.16 / 0.12 / 0.12 / 0.10 When the capacitance exceeds 1,000 μF, 0.02 shall be added every 1,000μF increase.
Low Temperature Characteristics (at 120 Hz)	Impedance ratio shall not exceed the values given in the table below. Rated Voltage: 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Impedance Ratio Z(-40℃) / Z(+20℃): 12 / 8 / 6 / 4 / 4 / 3 / 3 / 3
Endurance	Test Time: 2,000 Hrs for φD = 6.3 mm; 3,000 Hrs for φD = 8 ~ 12.5 mm; 3,500 Hrs for 16 ~ 18φ × 16.5L; 4,000 Hrs for 16 ~ 18φ × 21.5L 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 2,000 ~ 4,000 hours at 125℃.
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 125℃ without voltage applied.
Ripple Current and Frequency Multipliers	Frequency (Hz): 50 / 120 / 300 / 1k / 10k up Multiplier: 0.35 / 0.50 / 0.64 / 0.83 / 1.0

Diagram of Dimensions

Fig. 1

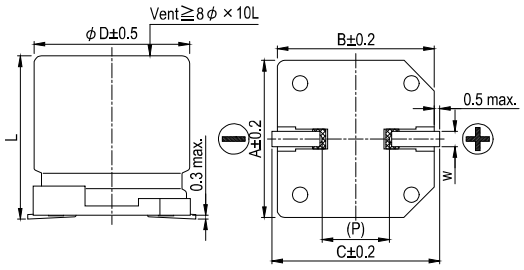
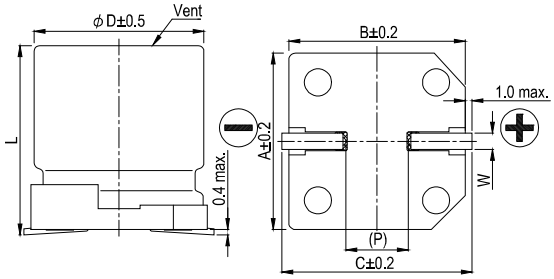


Fig. 2



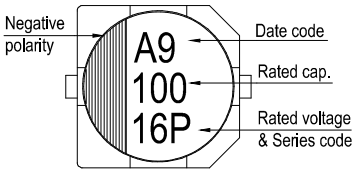
Lead Spacing and Diameter Unit: mm

φD	L	A	B	C	W	P	Fig. No.
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 ~ 1.1	4.7	1
12.5	13.5 ± 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

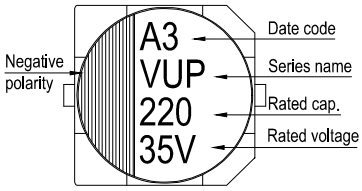
The diagram is marking " ( ) " for reference dimension.

Marking

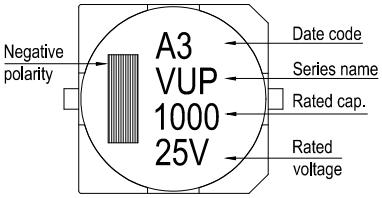
ϕD = 6.3 mm



ϕD = 8 ~ 10 mm



ϕD ≧ 12.5 mm



Dimension: ϕD × L(mm)
Ripple Current: mA/rms at 100k Hz, 125℃
Impedance: Ω/ at 100k Hz, 20℃

Dimension and Permissible Ripple Current

Rated Volt. (V_{DC}) / Cap. (μF)	Contents	10V (1A)			16V (1C)			25V (1E)			35V (1V)			50V (1H)			63V (1J)		
		ϕD×L	Imp.	mA	ϕD×L	Imp.	mA	ϕD×L	Imp.	mA	ϕD×L	Imp.	mA	ϕD×L	Imp.	mA	ϕD×L	Imp.	mA
10	100																6.3×7.7	2.0	60
22	220													6.3×7.7	0.5	197	8×10	0.7	100
33	330										6.3×7.7	0.5	197	6.3×7.7 8×10	0.5 0.25	197 270	8×10 10×10	0.7 0.5	100 170
47	470										6.3×7.7 8×10	0.5 0.2	197 270	8×10	0.25	270	8×10 10×10	0.7 0.5	100 170
82	820													10×10	0.2	500			
100	101				6.3×7.7 8×10	0.5 0.2	197 270	6.3×7.7 8×10	0.5 0.2	197 270	8×10	0.2	270						
150	151																12.5x13.5	0.2	1,000
180	181																12.5x13.5	0.2	1,000
220	221	8×10	0.2	270	8×10	0.2	270	8×10 10×10	0.2 0.15	270 500	10×10	0.15	500				12.5x13.5	0.2	1,000
330	331	8×10 10×10	0.2 0.15	270 500	10×10	0.15	500	10×10	0.15	500									
390	391																16×16.5	0.13	1,900
470	471	10×10	0.15	500	10×10	0.15	500				12.5x13.5	0.08	1700	16×16.5	0.08	2,000	18×16.5	0.11	2,000
560	561										12.5x13.5	0.08	1,700	16×16.5	0.08	2,000	16×21.5	0.07	2,500
680	681										12.5x13.5	0.08	1,700	18×16.5	0.078	2,100			
750	751																18×21.5	0.068	2,600
820	821							12.5x13.5	0.08	1,700	16×16.5	0.05	2,400	18×16.5	0.078	2,100			
1,000	102							12.5x13.5	0.08	1,700	16×16.5	0.05	2,400	16×21.5	0.04	2,800			
1,200	122							16×16.5	0.05	2,400	18×16.5	0.045	2,600	18×21.5	0.038	2,900			
1,400	142										18×16.5	0.045	2,600						
1,600	162							16×16.5	0.05	2,400	16×21.5	0.038	3,000						
2,200	222							18×16.5	0.045	2,600	18×21.5	0.032	3,250						
2,700	272							16×21.5	0.038	3,000									
3,300	332							18×21.5	0.032	3,250									

Rated Volt. (V_{DC}) / Cap. (μF)	Contents	80V (1K)			100V (2A)		
		ϕD×L	Imp.	mA	ϕD×L	Imp.	mA
10	100	8×10	0.75	70	8×10	0.75	70
22	22	8×10 10×10	0.75 0.55	70 115	8×10 10×10	0.75 0.55	70 115
33	330	8×10 10×10	0.75 0.55	70 115	10×10	0.55	115
47	470	10×10	0.55	115			
82	820				12.5x13.5	0.28	700
150	151	12.5x13.5	0.28	700	16×16.5	0.19	1,000
180	181				18×16.5	0.17	1,100
220	221				16×21.5	0.12	1,600
270	271	16×16.5	0.19	1,000			
300	301				18×21.5	0.11	1,700
330	331	18×16.5	0.17	1,100			
390	391	16×21.5	0.12	1,600			
520	521	18×21.5	0.11	1,700			

Part Numbering System

VUP series	100μF	± 20%	16V	Carrier Tape		6.3ϕ×7.7L	General Purpose
VUP	**101**	**M**	**1C**	**TR**	**-**	**0607**	
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case Size	Application

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