Features

- 6.3φ ~ 18φ, 125℃, 1,000 ~ 2,000 hours assured
- Chip type high temperature range, for +125℃ use
- For automobile modules and other high temperature applications
- RoHS compliance
- AEC-Q200 qualified

Marking color: Black

Specifications

Items	Performance
Category Temperature Range	-40℃ ~ +125℃
Capacitance Tolerance	±20% (at 120 Hz, 20℃)
Leakage Current (at 20℃)	I = 0.03CV or 4 (μA) whichever is greater (after 1 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 Tanδ (max): 0.32 / 0.24 / 0.21 / 0.18 / 0.15 / 0.15 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 Impedance Ratio Z(-25℃)/Z(+20℃): 6 / 5 / 4 / 3 / 3 / 3 Impedance Ratio Z(-40℃)/Z(+20℃): 12 / 8 / 6 / 4 / 4 / 4
Endurance	Test Time: 1,000 Hrs for φD ≦ 8 × 6.5 mm; 2,000 Hrs for φD ≧ 8 × 10 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 1,000 / 2,000 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	Freq.(Hz) / Cap.(μF): 50 / 120 / 1k / 10k up ≦ 330: 0.80 / 1.0 / 1.25 / 1.40 330 < C ≦ 4,700: 0.85 / 1.0 / 1.20 / 1.30

Diagram of Dimensions

Fig. 1

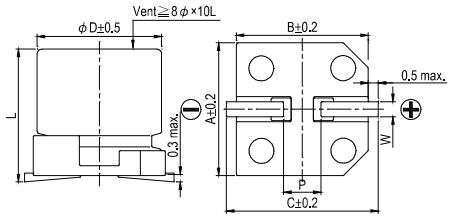
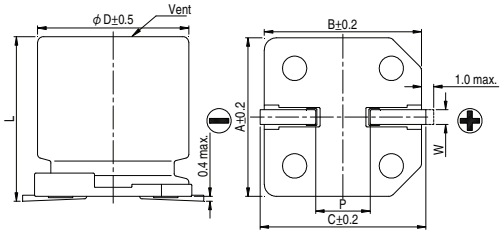


Fig. 2



Lead Spacing and Diameter Unit: mm

φD	L	A	B	C	W	P ± 0.2	Fig. No.
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	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
18	16.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2

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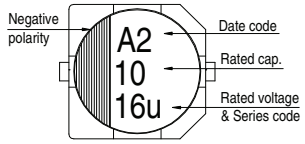
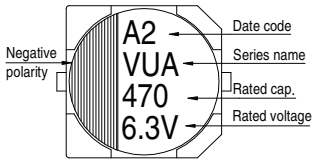
Marking

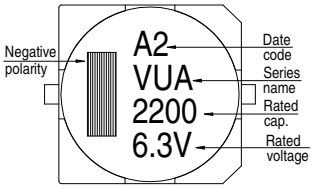
ϕD = 6.3 mm



ϕD = 8 ~ 10 mm



ϕD ≧ 12.5 mm



Dimension and Permissible Ripple Current

Dimension: ϕD × L(mm)

Ripple Current: mA/rms at 120 Hz, 125℃

Rated Volt. (VDC) / Cap. (μF)	Contents	10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)	
		ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA
10	100											8×6.5	60
22	220							6.3×5.7	50	8×6.5	75	8×10	100
33	330			6.3×5.7	50	6.3×5.7	50	6.3×7.7	70	8×10	130	10×10	150
47	470			6.3×7.7	70	6.3×7.7	70	8×6.5	75	8×10	130	10×10	150
68	680	6.3×5.7	50	8×6.5	75	8×6.5	75	8×10	130	10×10	180	10×10	150
100	101	8×6.5	75	8×6.5	75	8×10	130	10×10	180	12.5×13.5	357	12.5×13.5	300
220	221	8×10	130	10×10	180	10×10	180	12.5×13.5	357	12.5×16	400	16×16.5	600
330	331	8×10	130	12.5×13.5	480	12.5×13.5	480	16×16.5	650	16×16.5	650	16×16.5	600
470	471	12.5×13.5	480	12.5×13.5	480	12.5×13.5	480	16×16.5	650	16×16.5	650	18×16.5	800
680	681	12.5×13.5	480	12.5×13.5	480	12.5×16	585	16×16.5	650	18×16.5	855		
1,000	102	12.5×16	585	12.5×16	585	16×16.5	650	18×16.5	855				
1,500	152	12.5×16	585	16×16.5	650	18×16.5	855						
2,200	222	16×16.5	650	18×16.5	855								
3,300	332	18×16.5	855										
4,700	472	18×16.5	855										

Part Numbering System

VUA Series	33μF	±20%	16V	Carrier Tape		6.3ϕ×5.7L	
VUA	**330**	**M**	**1C**	**TR**	**-**	**0606**	**xx**
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case Size	

S = Standard
KS = AEC-Q200 Qualified, Safety Critical Application
LS = AEC-Q200 Qualified, Non-Safety Critical Application

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