



SMD Aluminum Electrolytic Capacitors

VGA

Features

- 4 ~ 16 ϕ , 105°C, 2,000 hours assured.
- Designed for surface mounting on high density PC board.
- RoHS Compliance



SPECIFICATIONS

Items	Performance												
Operating Temperature Range	-40°C ~ +105°C												
Capacitance Tolerance	±20% (at 120Hz, 20°C)												
Leakage Current (at 20°C)	Rated voltage	6.3 ~ 100V											
	Time	after 2 minutes											
	Case size	4 ~ 10 ϕ 12.5 ~ 16 ϕ 12.5 ~ 16 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													
Dissipation Factor (Tan δ at 120Hz, 20°C)	Rated Voltage	6.3 10 16 25 35 50 63 100 160 ~ 250 400 ~ 450											
	4 ~ 10 ϕ 12.5 ~ 16 ϕ	0.45 0.35 0.28 0.18 0.16 0.14 0.12 0.12 - - 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 μ F, 0.02 shall be added every 1,000 μ F 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	100	160 ~ 250	400 ~ 450	
	Impedance Ratio	Z(-25°C) / Z(+20°C)	ϕ D < 12.5	4	4	3	2	2	2	2	3	-	-
		ϕ D \geq 12.5	5	4	3	2	2	2	2	2	3	6	
Z(-40°C) / Z(+20°C)	ϕ D < 12.5	12	8	6	4	3	3	3	4	-	-		
	ϕ D \geq 12.5	10	8	6	4	3	3	3	3	6	10		
Load Life Test	Test Time		2,000 hrs										
	Capacitance Change	4 ~ 6.3 ϕ	Within ±25% of initial value										
		8 ~ 16 ϕ	Within ±20% of initial value										
	Dissipation Factor		Less than 200% of specified value										
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 hrs at 105°C.													
Shelf Life Test	Test time: 1,000 hrs; other items are the same as those for the load life test. The rated voltage shall be applied to the capacitors before the measurements for 160 ~ 450V(Refer to JIS C 5101-4 4.1).												

DIAGRAM OF DIMENSIONS

Fig. 1

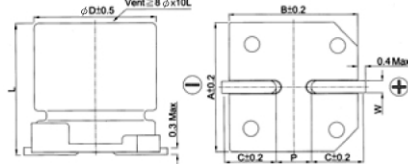
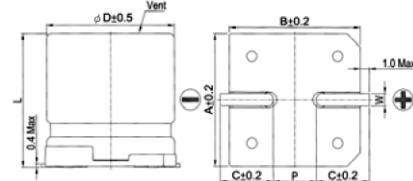
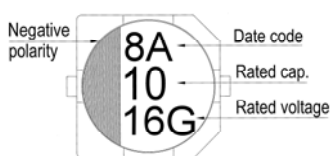


Fig. 2

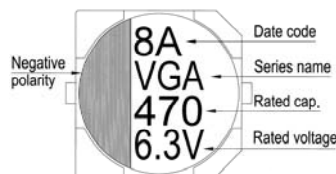


MARKING

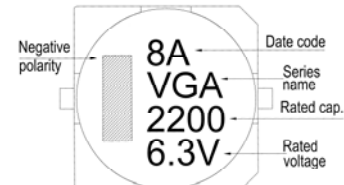
ϕ D \leq 6.3mm



ϕ D = 8 ~ 10 mm



ϕ D \geq 12.5mm



LEAD SPACING AND DIAMETER

Unit: mm

ϕ D	L	A	B	C	W	P \pm 0.2	Fig. No.
4	5.7 \pm 0.3	4.3	4.3	2.0	0.5 ~ 0.8	1.0	1
5	5.7 \pm 0.3	5.3	5.3	2.3	0.5 ~ 0.8	1.5	1
6.3	5.7 \pm 0.3	6.6	6.6	2.7	0.5 ~ 0.8	2.0	1
6.3	7.7 \pm 0.3	6.6	6.6	2.7	0.5 ~ 0.8	2.0	1
8	10 \pm 0.5	8.4	8.4	3.0	0.7 ~ 1.1	3.1	1
10	10 \pm 0.5	10.4	10.4	3.3	0.7 ~ 1.1	4.7	1
10	10.3 \pm 0.5	10.4	10.4	3.3	0.7 ~ 1.1	4.7	1
12.5	13.5 \pm 0.5	13.0	13.0	4.8	1.1 ~ 1.4	4.4	2
12.5	16 \pm 0.5	13.0	13.0	4.8	1.1 ~ 1.4	4.4	2
16	16.5 \pm 0.5	17.0	17.0	5.8	1.1 ~ 1.4	6.4	2



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

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

DIMENSION & PERMISSIBLE RIPPLE CURRENT

μF	V. DC Contents	4V (0G)		6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)	
		$\phi D \times L$	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
0.1	0R1											4×5.7	2				
0.22	R22											4×5.7	3				
0.33	R33											4×5.7	4				
0.47	R47											4×5.7	5	4×5.7	5		
1	010											4×5.7	10	4×5.7	8		
2.2	2R2											4×5.7	16	4×5.7	12		
3.3	3R3											4×5.7	18	5×5.7	17		
4.7	4R7							4×5.7	13	4×5.7	16	5×5.7	20	6.3×5.7	22		
10	100					4×5.7	17	5×5.7	23	5×5.7	27	6.3×5.7	32	6.3×5.7	32		
22	220					5×5.7	30	6.3×5.7	38	6.3×5.7	44	6.3×5.7	47	6.3×7.7	58	8×10	100
33	330			5×5.7	30	6.3×5.7	45	6.3×5.7	50	6.3×5.7	54	6.3×7.7	65	8×10	140	10×10	150
47	470	5×5.7	30	6.3×5.7	48	6.3×5.7	48	6.3×5.7	60	6.3×7.7	80	6.3×7.7	80	8×10	170	12.5×13.5	250
														10×10	310		
100	101	6.3×5.7	69	6.3×5.7	69	6.3×5.7	69	6.3×7.7	100	8×10	150	8×10	270	10×10.3	310	12.5×13.5	380
														10×10	375		
220	221	6.3×7.7	120	6.3×7.7	120	6.3×7.7	120	8×10	320	10×10	375	10×10.3	375	12.5×13.5	470	16×16.5	450
330	331	8×10	290	8×10	290	8×10	290	10×10	375	10×10.3	410	12.5×13.5	500	16×16.5	700	16×16.5	500
470	471	8×10	320	8×10	320	8×10	320	10×10	410	12.5×13.5	520	12.5×16	550	16×16.5	700		
				10×10	410												
1,000	102	10×10	410	10×10.3	410	12.5×13.5	510	12.5×16	550	16×16.5	750						
2,200	222	12.5×13.5	680	12.5×16	750	16×16.5	950	16×16.5	950								
3,300	332	12.5×16	850	16×16.5	1,000	16×16.5	1,090										
4,700	472	16×16.5	1,000	16×16.5	1,000												
6,800	682	16×16.5	1,000														

μF	V. DC 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	65			12.5×13.5	40
4.7	4R7					12.5×13.5	68	12.5×13.5	50	12.5×13.5	50
10	100			12.5×13.5	80	12.5×13.5	80	12.5×13.5	65	12.5×16	75
22	220			12.5×13.5	115	12.5×13.5	115	16×16.5	85	16×16.5	85
33	330	12.5×13.5	115	12.5×16	150	16×16.5	180				
47	470	12.5×16	140	16×16.5	220	16×16.5	220				
100	101	16×16.5	250								