

ALUMINUM ELECTROLYTIC CAPACITORS



GM Series

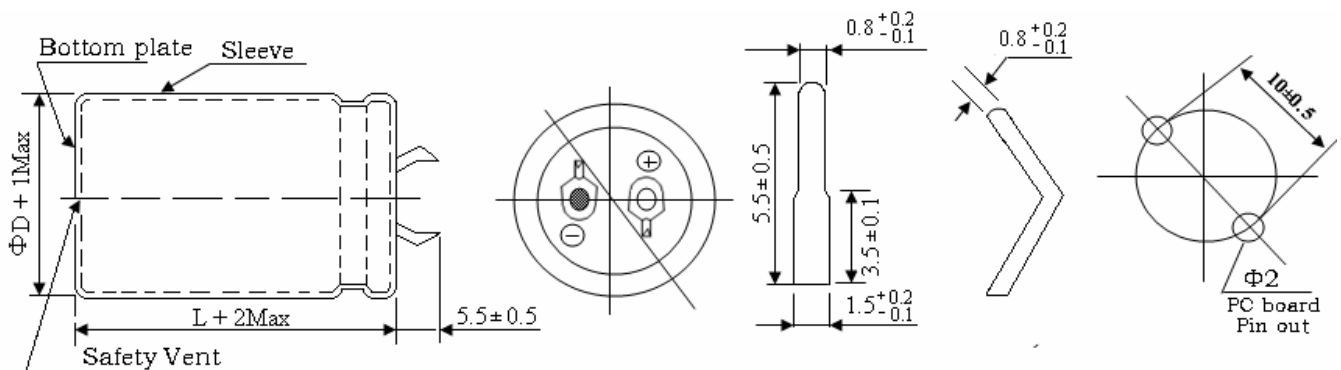
Large size for PCB board mounting hole type.



SPECIFICATIONS

Item	Performance Characteristics	
Category Temperature Range	-40 ~ +85°C	-25 ~ +85°C
Working Voltage Range	16 ~ 100Vdc	160 ~ 450Vdc
Capacitance Range	820 ~ 68,000µF	56 ~ 2,700 µF
Capacitance Tolerance	±20% (at 25°C and 120Hz)	
Dissipation Factor (tanδ) (at 25°C, 120Hz)	Rated Voltage (V)	16 25 35 50 63 80 ~ 100 160 ~ 250 350 ~ 450
	tanδ(Max)	0.35 0.35 0.25 0.25 0.25 0.20 0.15 0.15
The above values should be increased by 0.02 for every additional 1000µF		
Leakage Current	I=0.02CV or 3000µA, whichever is smaller I : Leakage current (µA) C : Rated capacitance (µF) V : Rated voltage (V) Impress the rated voltage for 5 minutes.	
Endurance	The following requirements shall be satisfied when the capacitor are restored to 25°C after the rated voltage applied for 2,000 hours at 85°C.	
	Capacitance change	≒ ±20% of the initial value
	Dissipation factor(tanδ)	≒ 200% of the specified value
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 25°C after exposing them for 1,000 hours at 85°C without voltage applied.	
	Capacitance change	≒ ±20% of the initial value
	Dissipation factor(tanδ)	≒ 200% of the specified value
Others	Leakage current	
	≒ 200% of the specified value	
Conforms to JIS-C-5101-4 (1998), characteristic W.		

DIMENSIONS (mm)



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Case size & Permissible rated ripple current (mA rms) at 85°C / 120Hz:

Vdc ΦD uF	16								Vdc ΦD uF	25							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
8200	22×25	2455							4700								
10000	22×25	2710							5600	22×25	2165						
12000	22×31	2890	25×25	2890					6800	22×31	2500	25×25	2500				
15000	22×35	3390	25×31	3390	30×25	3390			8200	22×35	2740	25×25	2740				
18000	22×41	3900	25×35	3900	30×25	3900			10000	22×41	3055	25×31	3055	30×25	3055		
22000	22×51	4170	25×41	4170	30×31	4170	35×25	4170	12000	22×45	3410	25×35	3410	30×31	3410	35×25	3410
27000			25×45	4625	30×35	4625	35×31	4625	15000	22×51	3920	25×41	3920	30×31	3920	35×25	3920
33000			25×51	5250	30×41	5250	35×31	5250	18000			25×45	4370	30×35	4370	35×31	4370
39000					30×45	5885	35×35	5885	22000			25×51	5050	30×45	5050	35×35	5050
47000					30×51	6650	35×41	6650	27000					30×51	5820	35×41	5820
56000							35×45	7465	33000							35×45	6615
68000							35×51	8455	39000							35×51	7400

Vdc ΦD uF	35								Vdc ΦD uF	50							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
3900	22×25	2175							2200	22×25	1870						
4700	22×31	2370	25×25	2370					3300	22×31	2330	25×25	2330				
5600	22×35	2695	25×25	2695					3900	22×35	2595	25×31	2595	30×25	2595		
6800	22×41	2740	25×31	2740	30×25	2740			4700	22×41	2750	25×35	2750	30×25	2750		
8200	22×45	3065	25×35	3065	30×31	3065	35×25	3065	5600	22×45	3300	25×35	3300	30×31	3300	35×25	3300
10000	22×51	3495	25×41	3495	30×31	3495	35×25	3495	6800	22×51	3730	25×41	3730	30×35	3730	35×31	3730
12000			25×45	3925	30×35	3925	35×31	3925	8200			25×51	4270	30×41	4270	35×31	4270
15000			25×51	4445	30×41	4445	35×35	4445	10000					30×45	4870	35×35	4870
18000					30×45	5425	35×41	5425	12000					30×51	5485	35×41	5485
22000					30×51	5915	35×45	5915	15000							35×45	6310
27000							35×51	6750	18000							35×51	6575

Vdc ΦD uF	63								Vdc ΦD uF	80							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
1500									1200	22×25	1655						
1800	22×25	1780							1500	22×25	1840						
2200	22×31	2260	25×25	2260					1800	22×31	2210	25×25	2210				
2700	22×35	2350	25×25	2350					2200	22×35	2410	25×31	2410	30×25	2410		
3300	22×35	2585	25×31	2585	30×25	2585			2700	22×41	2720	25×35	2720	30×25	2720		
3900	22×41	2940	25×35	2940	30×31	2940	35×25	2940	3300	22×45	3145	25×41	3145	30×31	3145	35×25	3145
4700	22×51	3290	25×41	3290	30×31	3290	35×25	3290	3900	22×51	3430	25×45	3430	30×35	3430	35×25	3430
5600			25×45	3690	30×35	3690	35×31	3690	4700			25×51	3965	30×41	3965	35×31	3965
6800			25×51	4180	30×41	4180	35×31	4180	5600					30×45	4455	35×35	4455
8200					30×45	4730	35×35	4730	6800					30×51	5050	35×41	5050
10000					30×51	5280	35×41	5280	8200							35×45	5710
12000							35×45	6065	10000							35×51	6495

ALUMINUM ELECTROLYTIC CAPACITORS



GM Series

Case size & Permissible rated ripple current (mA rms) at 85°C / 120Hz:

Vdc ΦD uF	100								Vdc ΦD uF	160							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
820	22×25	1650							330	22×25	1050						
1200	22×31	1890	25×25	1890					390	22×25	1310						
1500	22×35	2080	25×31	2080	30×25	2080			470	22×31	1600	25×25	1600				
1800	22×41	2470	25×35	2470	30×25	2470			560	22×35	1810	25×25	1810				
2200	22×45	2850	25×41	2850	30×31	2850	35×25	2850	680	22×41	2250	25×31	2250	30×25	2250		
2700	22×51	3180	25×45	3180	30×35	3180	35×31	3180	820	22×45	2510	25×35	2510	30×31	2510	35×25	2510
3300			25×51	3650	30×41	3650	35×31	3650	1000	22×51	2780	25×41	2780	30×31	2780	35×25	2780
3900					30×45	4050	35×35	4050	1200			25×45	3050	30×35	3050	35×31	3050
4700					30×51	4300	35×41	4300	1500			25×51	3210	30×45	3210	35×35	3210
5600							35×45	4650	1800					30×51	3800	35×41	3800
6800								5150	2200							35×45	4150
8200									2700							35×51	4780

Vdc ΦD uF	200								Vdc ΦD uF	250							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
270	22×25	1180							180	22×25	1050						
330	22×31	1350	25×25	1350					220	22×25	1160						
390	22×31	1410	25×25	1410					270	22×31	1240	25×25	1240				
470	22×35	1650	25×31	1650	30×25	1650			330	22×35	1580	25×31	1580	30×25	1580		
560	22×41	1980	25×35	1980	30×25	1980			390	22×41	1760	25×35	1760	30×25	1760		
680	22×51	2450	25×41	2450	30×31	2450	35×25	2450	470	22×45	1910	25×35	1910	30×31	1910	35×25	1910
820			25×45	2690	30×35	2690	35×25	2690	560	22×51	2080	25×41	2080	30×35	2080	35×25	2080
1000			25×51	2900	30×41	2900	35×31	2900	680			25×51	2260	30×41	2260	35×31	2260
1200					30×45	3200	35×35	3200	820					30×45	2480	35×35	2480
1500					30×51	3650	35×41	3650	1000					30×51	2780	35×41	2780
1800							35×45	3870	1200							35×45	3150
2200							35×51	4100	1500							35×51	3980

Vdc ΦD uF	400								Vdc ΦD uF	450							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
82	22×25	750							56	22×25	450						
100	22×31	880	25×25	880					68	22×25	580						
120	22×35	1050	25×25	1050					82	22×31	760	25×25	760				
150	22×41	1150	25×31	1150	30×25	1150			100	22×35	810	25×25	810				
180	22×45	1400	25×35	1400	30×31	1400	35×25	1400	120	22×41	890	25×31	890	30×25	890		
220	22×45	1530	25×41	1530	30×31	1530	35×25	1530	150	22×45	1210	25×35	1210	30×31	1210	35×25	1210
270	22×51	1650	25×45	1650	30×35	1650	35×31	1650	180	22×51	1360	25×41	1360	30×35	1360	35×25	1360
330			25×51	1850	30×41	1850	35×31	1850	220			25×51	1580	30×41	1580	35×31	1580
390					30×45	2100	35×35	2100	270					30×45	1760	35×35	1760
470					30×51	2350	35×41	2350	330					30×51	1930	35×41	1930
560							35×45	2500	390							35×45	2060
680							35×51	2860	470							35×51	2410

RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Vdc	Frequency (Hz)				
	50/60	120	1K	10K	100K
0.47 ~ 68	0.75	1.00	1.57	1.75	2.00
100 ~ 680	0.80	1.00	1.34	1.40	1.50
1000 ~ 4700	0.85	1.00	1.13	1.13	1.13

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Downsize

High current.

Rated Voltage Range: 200~450V

Case size & Permissible rated ripple current (mA rms) at 85°C/ 120Hz

Vdc DΦ μF	200										Vdc DΦ μF	250									
	Φ20		Φ22		Φ25		Φ30		Φ35			Φ20		Φ22		Φ25		Φ30		Φ35	
	ΦDxL	RC	ΦDxL	RC	ΦDxL	RC	ΦDxL	RC	ΦDxL	RC		ΦDxL	RC	ΦDxL	RC	ΦDxL	RC	ΦDxL	RC	ΦDxL	RC
220	20x25	930									220	20x25	1000								
330	20x25	1235									330	20x31	1325	22x31	1325						
390	20x31	1510	22x25	1510							390	20x41	1715	22x31	1715	25x25	1715				
470	20x35	1725	22x31	1725	25x25	1725					470			22x35	1980	25x31	1980	30x25	1980		
560	20x41	1895	22x31	1895	25x25	1895					560			22x41	2090	25x35	2090	30x25	2090		
680			22x35	2000	25x31	2000	30x25	2000			680			22x45	2260	25x41	2260	30x31	2260	35x25	2260
820			22x41	2360	25x35	2360	30x25	2360			820			22x51	2485	25x45	2485	30x35	2485	35x31	2485
1000					25x41	3000	30x31	3000	35x25	3000	1000					25x51	2845	30x41	2845	35x31	2845

Vdc DΦ μF	400										Vdc DΦ μF	450									
	Φ20		Φ22		Φ25		Φ30		Φ35			Φ20		Φ22		Φ25		Φ30		Φ35	
	ΦDxL	RC	ΦDxL	RC	ΦDxL	RC	ΦDxL	RC	ΦDxL	RC		ΦDxL	RC	ΦDxL	RC	ΦDxL	RC	ΦDxL	RC	ΦDxL	RC
100	20x25	845									82	20x25	680								
120	20x31	970	22x25	970							100	20x31	700	22x25	700						
150	20x35	1000	22x31	1000	25x25	1000					120	20x35	850	22x31	850	25x25	850				
180	20x41	1260	22x35	1260	25x31	1260					150	20x41	1015	22x35	1015	25x31	1015				
220	20x51	1355	22x41	1355	25x35	1355	30x25	1355			180			22x41	1250	25x31	1250	30x25	1250		
270			22x45	1560	25x35	1560	30x31	1560			220			22x45	1450	25x35	1450	30x31	1450		
330			22x51	1690	25x41	1690	30x35	1690	35x25	1690	270			22x51	1600	25x41	1600	30x35	1600	35x25	1600
390					25x51	1870	30x35	1870	35x31	1870	330					25x51	1785	30x41	1785	35x31	1785
470							30x41	2185	35x35	2185	390							30x45	2000	35x35	2000

RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Vdc	Frequency (Hz)				
	50/60	120	1K	10K	100K
16 ~ 100	0.90	1.00	1.15	1.15	1.15
160 ~ 250	0.80	1.00	1.15	1.17	1.20
350 ~ 450	0.90	1.00	1.10	1.12	1.15