



# LARGE SIZED ALUMINUM ELECTROLYTIC CAPACITORS

## TGA(KMH) Series

• 105°C 2,000Hrs assured.

- Non-solvent proof.
- Wide temperature range.
- For UPS
- RoHS compliant.
- Halogen-free capacitors are also available.



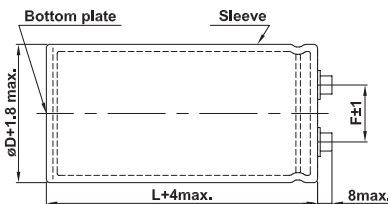
### SPECIFICATIONS

Item	Characteristics										
Rated Voltage Range	10 ~ 100 V <sub>DC</sub>	160 ~ 400 V <sub>DC</sub>									
Operating Temperature Range	-40 ~ +105°C	-25 ~ +105°C									
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)										
Leakage Current	I=0.02CV or 5mA, whichever is smaller. Where, I: Leakage current (µA) C: Nominal capacitance (µF) V: Rated voltage (V <sub>DC</sub> ) (at 20°C, 5 minutes)										
Dissipation Factor (tanδ)	Tanδ shall not exceed the values shown in the RATINGS. (at 20°C, 120Hz)										
Temperature Characteristics (Capacitance change ratio)	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Rated Voltage(V<sub>DC</sub>)</th> <th>10~100</th> <th>160~400</th> </tr> </thead> <tbody> <tr> <td>C(-25°C)/C(20°C)</td> <td>-</td> <td>≥0.7</td> </tr> <tr> <td>C(-40°C)/C(20°C)</td> <td>≥0.6</td> <td>-</td> </tr> </tbody> </table> (at 120Hz)		Rated Voltage(V <sub>DC</sub> )	10~100	160~400	C(-25°C)/C(20°C)	-	≥0.7	C(-40°C)/C(20°C)	≥0.6	-
Rated Voltage(V <sub>DC</sub> )	10~100	160~400									
C(-25°C)/C(20°C)	-	≥0.7									
C(-40°C)/C(20°C)	≥0.6	-									
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the ripple duplicated voltage(≤WV) applied for 2,000 hours at 105°C.  Capacitance change ≤ ±20% of the initial value Tanδ ≤ 200% of the initial specified value Leakage current ≤ The initial specified value										
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 105°C for 500 hours without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements.  Capacitance change ≤ ±20% of the initial value Tanδ ≤ 200% of the initial specified value Leakage current ≤ The initial specified value										
Others	Satisfied characteristics KS C IEC 60384-4										

### DIMENSIONS OF TGA(KMH) Series

Unit(mm)

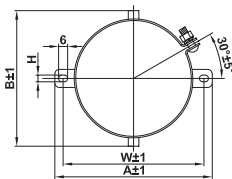
Marking : BROWN SLEEVE, SILVER INK



<Screw specifications>

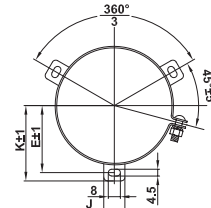
- Plus hexagon-headed screw: M5 × 0.8 × 12
- Maximum screw tightening torque: 3.23N·m (33kg·cm)

#### B type mounting clamp



øD	A	B	W	H	F
35	58	44	48	3.5	12.7
50	78	64	68	4.5	22.4
63.5	90	75	80	4.5	28.0
76.5	104.5	90	93.5	4.5	31.5

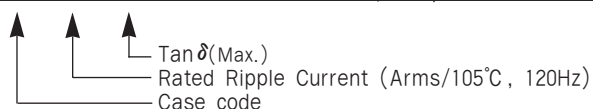
#### C type mounting clamp



øD	E	K	J	F
50	32.5	37.0	14	22.4
63.5	38.1	43.5	14	28.0
76.5	44.5	50.0	14	31.5
89	50.8	56.5	16	31.5

## RATINGS OF TGA(KMH) Series

$\mu\text{F}$ \ VDC	10			16			25			35			50			63			80		
2,200																		A5	2.4	0.15	
2,700																		A5	2.3	0.20	
3,300																		A5	2.5	0.20	
3,900													A5	2.8	0.20			A5	2.8	0.20	
4,700													A5	3.1	0.20			A5	3.1	0.20	
5,600													A5	3.3	0.20			A6	3.5	0.20	
6,800													A5	3.5	0.25			A6	3.9	0.20	
8,200										A5	3.3	0.30	A6	3.8	0.25			A8	4.7	0.20	
10,000										A5	3.6	0.30	A8	4.6	0.25			A8	4.9	0.25	
12,000							A5	3.7	0.35	A6	4.2	0.30	A8	5.1	0.25			A10	5.5	0.25	
15,000							A5	4.1	0.35	A6	4.7	0.30	A8	5.7	0.25			A12	6.6	0.25	
18,000				A5	4.2	0.45	A6	4.8	0.35	A8	5.7	0.30	A8	6.0	0.25			A12	6.9	0.25	
22,000	A5	4.9	0.70	A5	4.7	0.45	A6	5.3	0.35	A8	6.8	0.30	A10	6.7	0.25			C8	7.4	0.25	
27,000	A5	5.1	0.70	A6	5.5	0.45	A8	6.4	0.35	A10	7.5	0.30	C8	9.1	0.25			C12	10.9	0.25	
33,000	A6	5.9	0.70	A6	5.7	0.45	A8	6.7	0.40	A12	9.0	0.30	C10	11.1	0.25			C12	12.0	0.25	
39,000	A8	6.3	0.70	A8	6.8	0.45	A10	7.8	0.40	C8	9.2	0.35	C12	13.1	0.25			D10	12.5	0.30	
47,000	A8	6.9	0.70	A8	7.1	0.50	A12	9.3	0.40	C10	11.2	0.35	C12	13.9	0.30			D12	14.9	0.30	
56,000	A8	7.4	0.70	A10	8.4	0.50	C8	9.7	0.45	C10	11.4	0.40	D10	14.9	0.35			D12	16.3	0.30	
68,000	A10	8.5	0.70	A10	8.8	0.55	C10	10.7	0.45	C12	13.6	0.40	D12	16.6	0.35			E12	18.4	0.35	
82,000	A10	8.9	0.70	C8	10.7	0.55	C10	11.2	0.50	D10	14.8	0.45	E12	18.9	0.40			E14	20.0	0.40	
100,000	A12	10.7	0.70	C8	10.8	0.65	C12	14.8	0.50	D12	16.5	0.45	E12	19.5	0.45			E14	20.5	0.50	
120,000	C8	11.0	0.75	C10	13.1	0.65	D10	14.9	0.65	D12	17.6	0.55	E12	21.0	0.55			F14	21.8	0.60	
150,000	C10	13.2	0.80	C12	15.3	0.70	D12	17.9	0.65	E12	18.5	0.65	F14	23.9	0.60						
180,000	C12	15.7	0.80	C12	15.7	0.80	D12	18.9	0.80	E12	19.8	0.80	F14	23.9	0.75						
220,000	C12	16.8	0.85	D12	19.2	0.85	E12	21.3	0.85	E14	23.4	0.80									
270,000	D12	19.6	1.00	D12	19.6	1.00	E12	21.7	1.00	F14	25.5	1.00									
330,000	D12	19.7	1.20	E12	21.1	1.30	E14	23.1	1.20												
390,000	E12	21.3	1.50	E12	21.3	1.50	F14	24.9	1.50												
470,000	E12	21.4	1.80	E14	24.2	1.60															
560,000	E14	23.6	2.00	F14	28.1	2.00															
680,000	F14	26.0	2.40	F14	28.5	2.40															



### CASE CODE

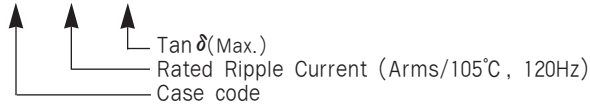
Case Code	∅D (mm)	L (mm)	Case Code	∅D (mm)	L (mm)
A5	35	50	D10	63.5	100
A6	35	60	D12	63.5	120
A8	35	80	E10	76.5	100
A10	35	100	E12	76.5	120
A12	35	120	E13	76.5	130
C8	50	80	E14	76.5	140
C10	50	100	F13	89	130
C12	50	120	F14	89	140



# LARGE SIZED ALUMINUM ELECTROLYTIC CAPACITORS

## RATINGS OF TGA(KMH) Series

μF	VDC	100			160			200			250			315			350			400		
180													A5	0.8	0.10	A5	0.8	0.10	A5	0.8	0.10	
220													A5	0.9	0.10	A5	0.9	0.10	A5	0.9	0.10	
270												A5	0.8	0.15	A5	1.0	0.10	A5	1.0	0.10		
330								A5	0.9	0.15	A5	0.9	0.15	A5	1.1	0.10	A5	1.1	0.10	A6	1.2	0.10
390								A5	1.0	0.15	A5	1.0	0.15	A5	1.2	0.10	A5	1.1	0.10	A6	1.2	0.10
470								A5	1.1	0.15	A5	1.1	0.15	A6	1.4	0.10	A6	1.4	0.10	A8	1.4	0.10
560					A5	1.2	0.15	A5	1.2	0.15	A5	1.2	0.15	A6	1.5	0.10	A8	1.6	0.10	A8	1.4	0.15
680					A5	1.3	0.15	A5	1.3	0.15	A6	1.4	0.15	A8	1.7	0.10	A8	1.6	0.15	A10	1.7	0.15
820					A5	1.4	0.15	A5	1.4	0.15	A8	1.6	0.15	A8	1.7	0.15	A10	1.8	0.15	A12	2.0	0.15
1,000					A5	1.6	0.15	A6	1.7	0.15	A8	1.6	0.20	A10	2.0	0.15	A12	2.2	0.15	C8	2.2	0.15
1,200					A6	1.9	0.15	A6	1.9	0.15	A8	1.8	0.20	A12	2.4	0.15	C8	2.4	0.15	C10	2.7	0.15
1,500					A6	2.1	0.15	A8	2.3	0.15	A10	2.1	0.20	C8	2.7	0.15	C10	3.0	0.15	C12	3.3	0.15
1,800	A5	2.7	0.10		A8	2.5	0.15	A8	2.5	0.15	A12	2.5	0.20	C10	3.3	0.15	C12	3.6	0.15			
2,200	A5	3.0	0.10		A8	2.8	0.15	A10	2.7	0.15	A12	2.8	0.20	C10	4.0	0.15	C12	4.0	0.15	D10	4.2	0.15
2,700	A6	3.5	0.10		A10	3.3	0.15	A12	3.6	0.15	C10	3.5	0.20	C12	4.4	0.15	D10	4.6	0.15			
3,300	A8	4.2	0.10		A12	3.8	0.15	C8	4.1	0.15	C12	4.2	0.20	D10	5.1	0.15				D12	5.5	0.15
3,900	A8	4.5	0.12		C8	3.9	0.20	C10	4.9	0.15	C12	4.6	0.20	D12	6.0	0.15	E12	6.7	0.15			
4,700	A10	5.0	0.12		C10	4.6	0.20	D10	5.3	0.20	D12	5.7	0.20	E10	6.8	0.15				E13	7.6	0.15
5,600	A10	5.4	0.12		C10	5.1	0.20	D10	5.8	0.20	D12	6.3	0.20	E12	8.0	0.15	E13	8.3	0.15	F14	9.4	0.15
6,800	A12	5.8	0.15		C12	6.1	0.20	D12	6.9	0.20	E12	7.7	0.20	F13	9.2	0.15	E14	9.5	0.15	F14	10.4	0.15
8,200	C8	6.4	0.15		D10	7.0	0.20	D12	7.6	0.20	E12	8.4	0.20	F14	11.4	0.15	F14	11.4	0.15			
10,000	C10	7.8	0.15		D12	8.4	0.20	E12	9.3	0.20	E14	10.0	0.20	F14	12.6	0.15						
12,000	C12	9.3	0.15		E10	9.4	0.20	E12	10.2	0.20	F14	11.9	0.20									
15,000	C12	10.4	0.15		E12	11.4	0.20	E12	11.2	0.20	F14	12.2	0.20									
18,000	D10	11.0	0.20		E14	13.4	0.20	F14	13.1	0.25												
22,000	D12	12.5	0.20		F14	14.5	0.25															
27,000	E12	13.7	0.25		F14	16.0	0.25															
33,000	E12	15.2	0.25																			
39,000	E14	16.1	0.30																			
47,000	F14	19.3	0.30																			
56,000	F14	21.1	0.30																			



## RATED RIPPLE CURRENT

### Frequency Multiplying Factor

Rated voltage (Vdc)	øD(mm)	Frequency (Hz)				
		60	120	300	1k	10k~
10~50	ø35~ø89	0.95	1.00	1.03	1.05	1.09
63~80	ø35	0.90	1.00	1.06	1.10	1.08
	ø50~ø89	0.95	1.00	1.03	1.05	1.09
100	ø35	0.82	1.00	1.12	1.22	1.30
	ø50	0.90	1.00	1.06	1.10	1.18
	ø63.5~ø89	0.95	1.00	1.03	1.05	1.09
160~250	ø35	0.80	1.00	1.19	1.34	1.46
	ø50~ø63.5	0.81	1.00	1.14	1.26	1.36
	ø76.5~ø89	0.82	1.00	1.12	1.22	1.30
315~400	ø35~ø89	0.80	1.00	1.19	1.34	1.46