

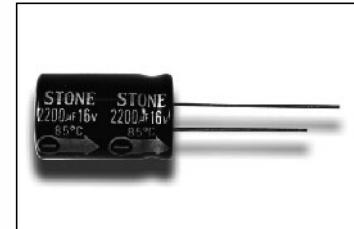


# *Aluminum Electrolytic Capacitors*

**GR** Series

## Features

- 85°C, Standard series for general purpose
- RoHS Compliance



## Specification

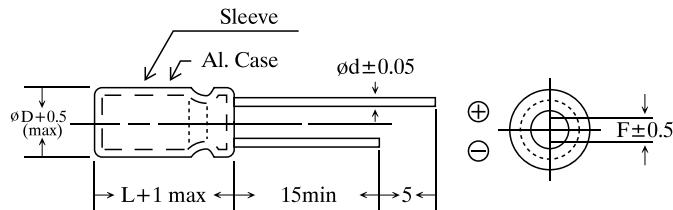
Items	Performance							
Capacitance Tolerance	$\pm 20\%$ (at 120Hz, 20°C)							
Rated Voltage Range	6.3 to 63 VDC							
Capacitance Range	220 to 15000 $\mu$ F							
Operating Temperature Range	-40 to + 85°C							
Leakage Current (at 20°C)	$I \leq 0.01 CV$ or $3 (\mu A)$ , whichever is greater. After 2 minutes application of working voltage. $I = \text{Leakage current } (\mu A), C = \text{Rated capacitance } (\mu F), V = \text{Rated voltage } (V)$							
Dissipation Factor (Tan δ at 120Hz, 20°C)	Rated Voltage	6.3	10	16	25	35	50	63
	Tan δ (max)	0.24	0.20	0.17	0.15	0.12	0.10	0.10
	For capacitance > 1000 $\mu$ F, add 0.02 per 1000 $\mu$ F increase.							
Low Temperature Characteristics (at 120Hz)	Impedance ratio max.							
	Rated Voltage	6.3	10	16	25	35	50	63
	Z-25°C / Z+20°C	4	3	2	2	2	2	2
	Z-40°C / Z+20°C	10	8	6	4	3	3	3
Load Life	After 2000 hours application of W.V. at 85°C, the capacitor shall meet the following limits.							
	Capacitance change	: $\leq \pm 25\%$ of initial value						
	Dissipation factor	: $\leq 200\%$ of initial specified value						
	Leakage Current	: $\leq$ Initial specified value						
Shelf Life	After storage for 1000 hours at 85°C, with no voltage applied and being stabilized at + 20°C, Capacitor shall meet the limit specified in load life.							
Ripple Current & Frequency Multiplier	Freq.(Hz) Cap. ( $\mu$ F)	60 (50)	120	500	1K	10K up		
	220 to 1000	0.80	1.00	1.15	1.25	1.30		
	1000 up above	0.80	1.00	1.10	1.15	1.20		
Ripple Current & Temperature Multiplier	Temperature(°C)	70		85				
	Multiplier	1.40		1.00				



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## DIAGRAM OF DIMENSIONS



## LEAD SPACING AND DIAMETER

Unit: mm

D	5	6.3	8	10	13	16	18	22	25
F	2.0	2.5	3.5	5.0		7.5	10.0	12.5	
d		0.5		0.6		0.8		1.0	

## DIMENSION & PERMISSIBLE RIPPLE CURRENT

Dimension :  $\phi D \times L$  (mm)

Ripple Current : mA/rms at 120Hz, 85°C

VDC μF	6.3V		10V		16V		25V		35V		50V		63V	
	ø DxL	mA	ø DxL	mA	ø DxL	mA	ø DxL	mA	ø DxL	mA	ø DxL	mA	ø DxL	mA
220											10x16	468	10x20	565
330											10x20	652	13x21	762
470									10x16	681	10x20 13x21	818 842	13x26	1011
1000					10x17	853	10x16 10x20	847 1028	13x21	1237	13x26	1468	16x26 16x32	1522 1685
2200			10x17 10x20	1052 1178	10x20 13x21	1098 1457	13x21	1535	16x26	1780	16x32	2290	18x36	2425
3300			13x21	1510	13x26	1840	16x26	1840	16x32	2325	18x36	2690	22x40	3020
4700			13x26	1950	16x26	2290	16x32	2580	18x36	2780	22x36	3050		
6800	16x26	2250	16x26	2435	16x32	2085	18x36	2905	22x41	3175	25x41	3240		
10000	16x32	2385	16x32	2385	18x36 18x41	2790 2980	22x36	3030	25x42	3400	30x46	3690		
15000	16x36 18x36	2730 2868	18x36	3010	22x36	3315								