



Aluminum Electrolytic Capacitors

Radial Lead Type

GA-A (Bi-polar) series

Features

- Endurance : 105 °C 1000 h to 2000 h
- RoHS compliant

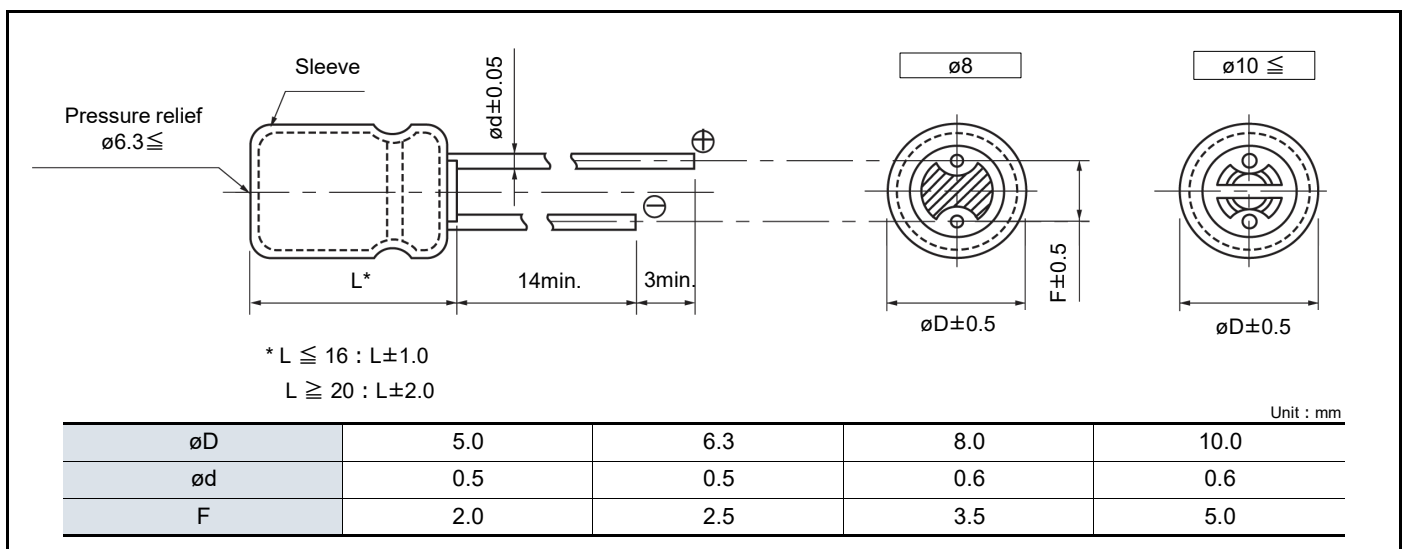
Specifications

Category temp. range	-40 °C to +105 °C	
Rated voltage range	6.3 V to 50 V	
Capacitance range	2.2 µF to 330 µF	
Capacitance tolerance	±20 % (120 Hz / +20°C)	
Leakage current	$I \leq 0.03 CV + 3 (\mu A)$ After 2 minutes or $I \leq 0.03 CV$ or $3 (\mu A)$ After 5 minutes (Whichever is greater)	
Dissipation factor (tan δ)	Please see the attached characteristics list	
Endurance	After following life test of DC working voltage at +105 °C±2 °C when the capacitors are restored to 20 °C, the capacitors shall meet the following limits. Duration ø5 to ø8 : 1000 h (500 h for each polarity) ø10 : 2000 h (1000 h for each polarity)	
	Capacitance change	Within ±20 % of the initial value
	Dissipation factor (tan δ)	≤ 200 % of the initial limit
	DC leakage current	Within the initial limit
Shelf life	After storage for 1000 h at +105 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in endurance. (With voltage treatment)	

Frequency correction factor for ripple current

Freq.(Hz)	50, 60	120	1 k	10 k to
Capacitance (µF)				
2.2 to 330	0.70	1.00	1.30	1.70

Dimensions



Characteristics list

Endurance : 105 °C 1000 h / ø5 to ø8 (500 h for each polarity), 105 °C 2000 h / ø10 (1000 h for each polarity)

Rated voltage (V)	Capacitance (±20 %) (μF)	Case size (mm)		Specification		Lead length (mm)				Part No.	Min. Packaging Q'ty (PCS)	
		øD	L	Ripple current *1 (mA rms)	tan δ*2	Lead dia. (ød)	Lead space				Strai- ght leads	Taping
							Straight	Taping *B	Taping *i			
6.3	100	6.3	11.2	130	0.30	0.5	2.5	5.0	2.5	ECA0JEN101()	200	2000
	330	8.0	11.5	250	0.30	0.6	3.5	5.0	—	ECA0JEN331()	200	1000
10	47	5.0	11.0	90	0.24	0.5	2.0	5.0	2.5	ECA1AEN470()	200	2000
16	10	5.0	11.0	40	0.20	0.5	2.0	5.0	2.5	ECA1CEN100()	200	2000
	22	5.0	11.0	60	0.20	0.5	2.0	5.0	2.5	ECA1CEN220()	200	2000
	33	5.0	11.0	80	0.20	0.5	2.0	5.0	2.5	ECA1CEN330()	200	2000
	47	6.3	11.2	100	0.20	0.5	2.5	5.0	2.5	ECA1CEN470()	200	2000
25	10	5.0	11.0	45	0.15	0.5	2.0	5.0	2.5	ECA1EEN100()	200	2000
	22	6.3	11.2	60	0.15	0.5	2.5	5.0	2.5	ECA1EEN220()	200	2000
	33	6.3	11.2	90	0.15	0.5	2.5	5.0	2.5	ECA1EEN330()	200	2000
	47	6.3	11.2	110	0.15	0.5	2.5	5.0	2.5	ECA1EEN470()	200	2000
	100	8.0	11.5	180	0.15	0.6	3.5	5.0	—	ECA1EEN101()	200	1000
35	33	8.0	11.5	100	0.15	0.6	3.5	5.0	—	ECA1VEN330()	200	1000
	100	10.0	16.0	230	0.15	0.6	5.0	5.0	—	ECA1VEN101()	200	500
50	2.2	5.0	11.0	18	0.15	0.5	2.0	5.0	2.5	ECA1HEN2R2()	200	2000
	3.3	5.0	11.0	25	0.15	0.5	2.0	5.0	2.5	ECA1HEN3R3()	200	2000
	4.7	5.0	11.0	30	0.15	0.5	2.0	5.0	2.5	ECA1HEN4R7()	200	2000
	10	6.3	11.2	50	0.15	0.5	2.5	5.0	2.5	ECA1HEN100()	200	2000
	22	8.0	11.5	90	0.15	0.6	3.5	5.0	—	ECA1HEN220()	200	1000
	33	8.0	11.5	110	0.15	0.6	3.5	5.0	—	ECA1HEN330()	200	1000
	47	10.0	12.5	140	0.15	0.6	5.0	5.0	—	ECA1HEN470()	200	500
	100	10.0	20.0	250	0.15	0.6	5.0	5.0	—	ECA1HEN101()	200	500

*1: Ripple current (120 Hz / +105 °C)

*2: tan δ (120 Hz / +20 °C)

• When requesting taped product, please put the letter "B" or "i" between the "()".

Lead wire pitch *B=5 mm, i=2.5mm.

• Please refer to the page of "Taping dimensions".