FEATURES

- Low Self Discharge/Up to 8 times energy density compared to standard Super Capacitors
- High Capacitance, Power type
- 3.8V High Operating Voltage
- No Explosion Safety
- RoHS Directive Compliant

APPLICATIONS

- Continuous power support,Back up power,Stand alone or augment existing ,Medical backup power/alarm,Water and gas smart meters.

OPERATING TEMPERATURE RANGE

- +350℃(4-5seconds by soldering)
- No clean soldering recommended.
- Do not wash the super capacitors.

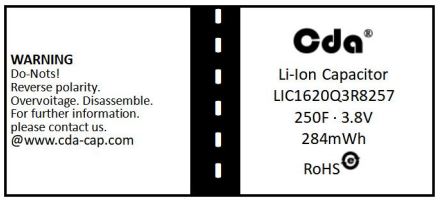
GENERAL SPECIFICATIONS

Item	Performance
Operating temperature	-20°C to +65°C @ 3.8V -20°C to +85°C @ 3.5V
Storage temperature	-40°C to +85°C
Capacitance range	10F to 750F
Rated voltage	3.8 VDC
Minimum rated voltage	2.5 VDC
Surge voltage	4.2 VDC
Temperature characteristics	Capacitance change: Within ±50% of initial measured value at +25°C (-20°C to +70°C) Internal resistance: Within ±800% of initial measured value at +25°C (at -20°C)
High temperature load time	After 1000 hours: Capacitance change: ±30% of initial rated value Internal resistance: Within 2 times of initial specified value
Projected cycle life (From rated voltage to 1/2 rated voltage at 25°C)	After 50,000 cycles: Capacitance change: Within ±30 % of initial rated value Internal resistance: Within 2 times of initial specified value
Shelf life	After 2 years at 25°C without load, the capacitor shall meet the specified endurance limits.

PART NUMBER SYSTEM

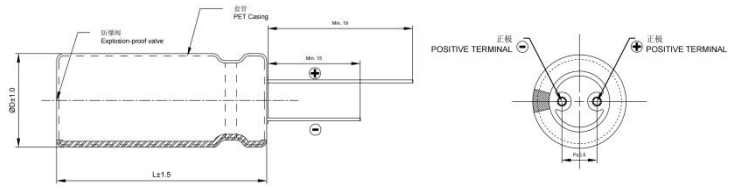
LIC	1840	Q	3R8	507	***
Series	Size Code	Cylindrical Code	Rated Voltage	Nominal Capacity	Special Code

Casing Display:



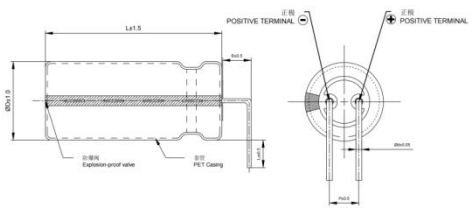
DIMENSIONS

RADIAL LEAD TYPE

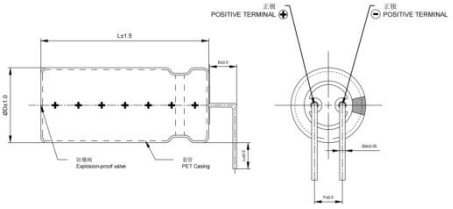


Size (mm)	ΦD	6.3	8	10	13	16	18
	P	2.5	3.5	5.0	5.0	7.5	7.5
	Φd	0.6	0.6	0.6	0.6	0.8	0.8

RADIAL BENT LEAD TYPE



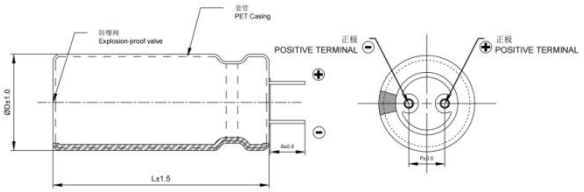
Code：C1/A1



Code：C1-F/A1-F (Reverse)

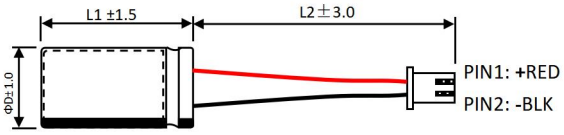
Size (mm)					
ΦD	P	Φd	B		L_2
			C1/F	A1/F	
6.3	2.5	0.6	2.0	4.0	4.0
8	3.5	0.6	2.0	4.0	4.0
10	5.0	0.6	2.0	4.0	4.0
13	5.0	0.6	2.0	4.0	4.0
16	7.5	0.8	2.0	4.0	4.0
18	7.5	0.8	2.0	4.0	4.0

PIN CUTTING: C TYPE



Size (mm)	ΦD	6.3	8	10	13	16	18
	P	2.5	3.5	5.0	5.0	7.5	7.5
	Φd	0.6	0.6	0.6	0.6	0.8	0.8
	B	4.0	4.0	4.0	4.0	4.0	4.0

CONNECTOR: L TYPE



✱Connectors can be customized

①Module type specification Applies to D: 6.3mm & 8mm	
Wire	UL3239 AWG26
Terminals	JST ZHR-2
Wire length	50mm

②Module type specification Applies to D: 10mm & 13mm	
Wire	UL3239 AWG24
Terminals	JST PHR-2P
Wire length	50mm

③Module type specification Applies to D: 16mm & 18mm	
Wire	UL3239 AWG22/AWG20
Terminals	HY2.0-2P
Wire length	50mm

STANDARD PRODUCTS

Part Number	Dimensions (mm)		Rated Cap. (F)	Capacitance Tolerance	3.8V-2.5V Battery Cap. (mAh)	ESRAC (mΩ) (1 KHz)	Leakage Current (72hrs/mA)	Rated Current (A)	Max Current (A)	Weight/Unit (grams)	Energy Storage (mWh)
	D	L									
LIC0613Q3R8106	6.3	13	10	-20%～+20%	3.6	1500	0.001	0.05	0.3	1.0	11
LIC0622Q3R8256	6.3	22	25	-20%～+20%	9	180	0.002	0.25	0.6	2.0	28
LIC0813Q3R8106	8	13	10	-0%～+100%	3.6	600	0.001	0.05	0.5	1.5	11
LIC0813Q3R8206	8	13	20	-20%～+20%	7.2	600	0.001	0.10	0.6	1.5	23
LIC0816Q3R8306	8	16	30	-20%～+20%	10	350	0.003	0.30	0.7	2.0	34
LIC1013Q3R8256	10	13	25	-20%～+20%	9	400	0.001	0.15	1.0	2.65	28
LIC0820Q3R8256	8	20	25	-0%～+100%	9	300	0.002	0.20	1.5	2.0	28
LIC1013Q3R8306	10	13	30	-20%～+80%	10	300	0.001	0.15	1.0	2.65	34
LIC0825Q3R8306	8	25	30	-20%～+20%	10	200	0.002	0.3	2.0	3.5	34
LIC0820Q3R8406	8	20	40	-20%～+80%	15	200	0.002	0.22	1.7	2.0	46
LIC0825Q3R8506	8	25	50	-20%～+80%	18	180	0.002	0.2	1.0	2.7	57
LIC1313Q3R8706	13	13	70	-20%～+80%	27	200	0.002	0.30	2.0	3.5	80
LIC1020Q3R8806	10	20	80	-20%～+80%	30	120	0.002	0.35	3.0	3.0	91
LIC0825Q3R8906	8	25	90	-20%～+80%	27	300	0.002	0.30	2.0	2.5	102
LIC0825Q3R8107	8	25	100	-20%～+20%	36	350	0.003	0.60	3.0	2.7	114
LIC1030Q3R8107	10	30	100	-20%～+80%	36	110	0.003	0.60	5.0	6.0	114
LIC1030Q3R8127	10	30	120	-20%～+80%	45	100	0.003	0.60	5.0	5.0	137
LIC1320Q3R8127	13	20	120	-20%～+80%	45	220	0.003	0.60	5.0	5.0	137
LIC1325Q3R8157	13	25	150	-20%～+80%	54	100	0.006	0.65	7.0	6.5	170
LIC1335Q3R8257	13	35	250	-20%～+80%	80	150	0.005	1.10	10.0	8.0	284
LIC1620Q3R8257	16	20	250	-20%～+80%	80	70	0.005	1.10	10.0	8.0	284
LIC1620Q3R8277	16	20	270	-20%～+80%	85	70	0.013	2.0	10.0	8.5	307
LIC1635Q3R8457	16	35	450	-20%～+80%	170	40	0.010	1.70	15.0	15.0	511
LIC1640Q3R8507	16	40	500	-20%～+80%	200	80	0.015	2.25	25.0	15.0	569
LIC1840Q3R8507	18	40	500	-20%～+80%	200	80	0.015	2.25	30.0	16.0	569
LIC1840Q3R8757	18	40	750	-20%～+80%	300	60	0.023	3.00	30.0	20.0	853

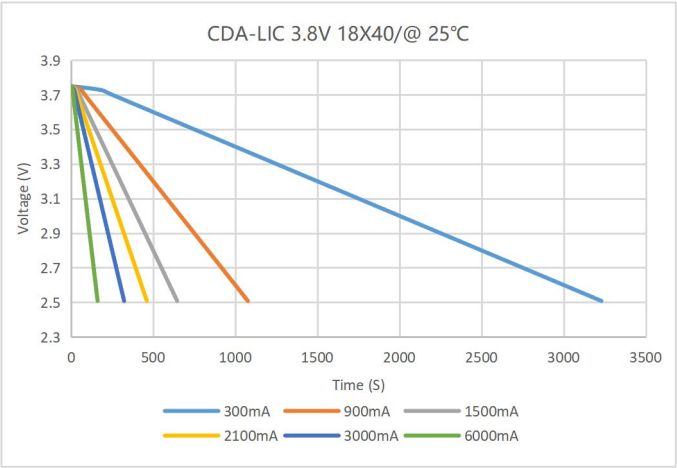
***operating temperature can be extended to 85°C with appropriate voltage**

No. 4, Jifeng Road, Wufeng District, Taichung City, Taiwan. TEL:+86-852-51245795 www.cda-cap.com E-MAIL: zfw@cda-cap.tw

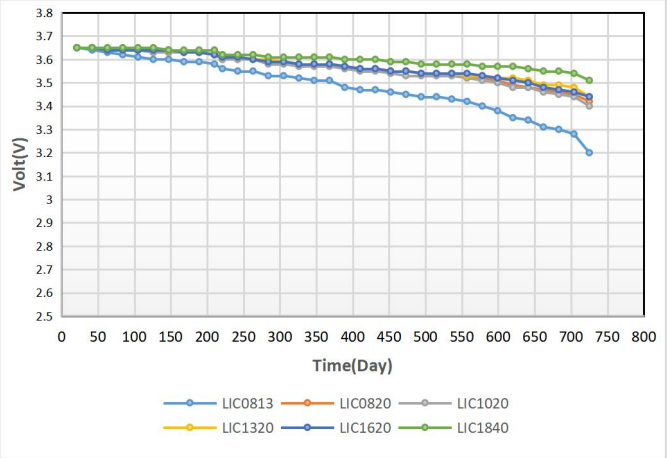
Spec. Date:2025-02-22

THE FEATURE DIAGRAM

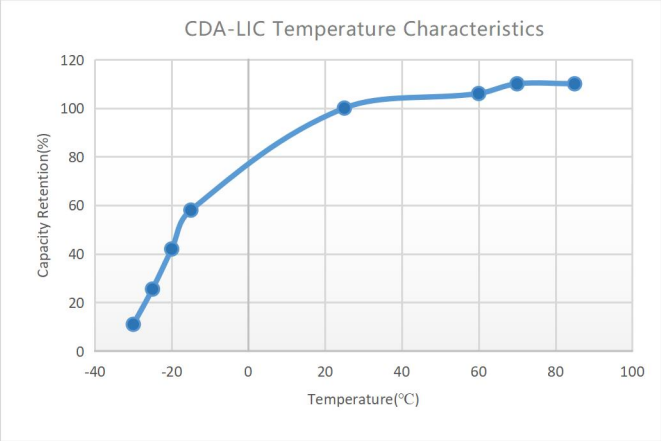
◉ **Discharge multiplier characteristics**

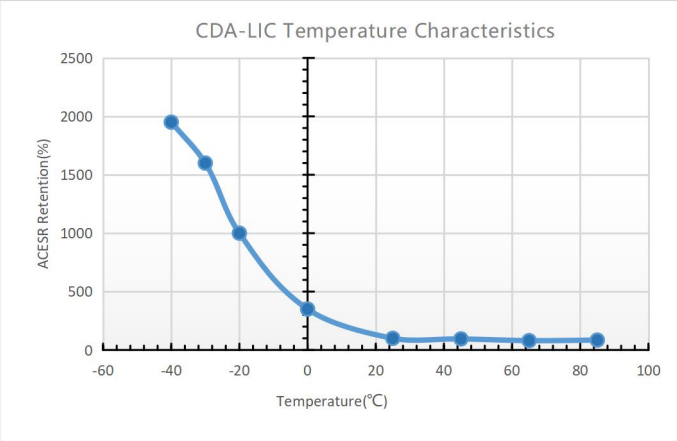


◉ **LIC two-year self-discharge data**

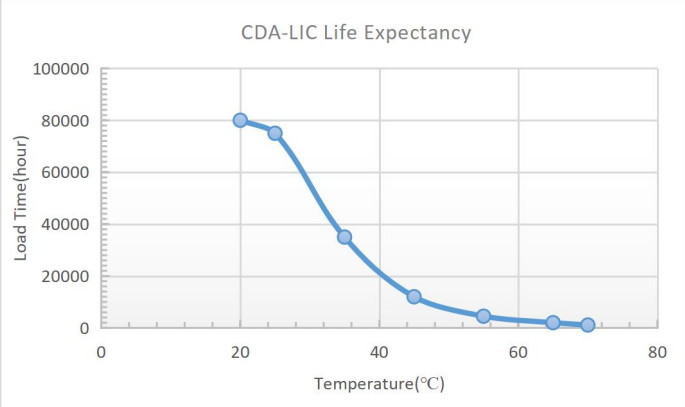


◉ **Representative average temperature characteristics of capacitance and ESR.**

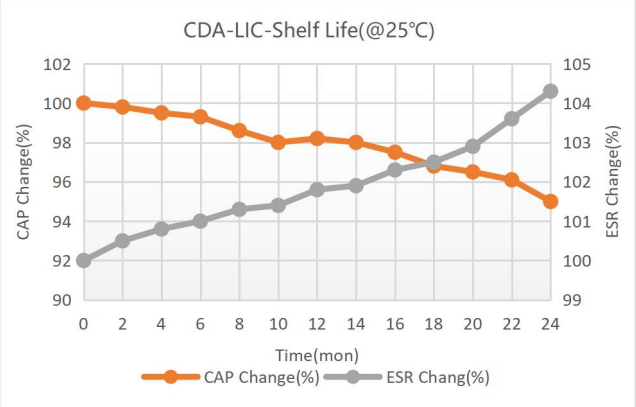




◉ **Lifetime estimation at different temperatures.**



◉ **Shelf life at room temperature (@25 ℃)**



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Spec. Date:2025-02-22

SAFETY RECOMMENDATIONS ⚠

WARNINGS

• To Avoid Short Circuit, after usage or test, Lithium Ion Capacitor voltage needs to discharge to ＞ 2.5V (Not lower than 2.5V)

• Do not Apply Over-voltage, Reverse Charge, Burn or Heat Higher than 150°C, explosion-proof valve may break open.

• Do not Press, Damage or disassemble the Lithium Ion Capacitor, housing could heat to high temperature causing Burns.

• If you observe Overheating or Burning Smell from the capacitor disconnect Power immediately, and do not touch.

REGULATORY

• MSDS,UN38.3

• RoHS Compliant

TRANSPORTATION

Not subjected to US DOT or IATA regulations

UN3508, <0.3Wh, Non-Hazardous Goods

International shipping description –

“Electronic Products –Capacitor”

Measuring

• Capacitance, Equivalent series resistance (ESR) and Leakage current are measured

• Leakage current at +20 °C after 72 hour charge and hold.

• Stored energy (mWh) = $\frac{0.5\times(V^{2\,\min 1}-V^{2\,\min 2})\times C}{3600}\times 1000$

• Peak power (W) = $\frac{V^2}{4\times ESR}$

• Pulse current for 1 second from full rate voltage to minimum rated voltage.(A) = $\frac{(V^{\min 1}-V^{\min 2})\times C}{(1+ESR\times C)}$

• Continuous current with a 15 °C temperature rise. Continuous current (A) = $\sqrt{\frac{\Delta T}{ESR\times Rth}}$

•Short circuit current is for safety information only. Do not use as operating current.

• Cycling between rated voltage and 2.5 V, 3 second rest at +20 °C.

Note: Do not discharge Lithium Ion Capacitor below minimum working voltage.

PRECAUTIONS DURINGUSE ⚠