

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
- REACH, 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°C(4-5 seconds by soldering)
- No clean soldering recommended.
- Do not wash the super capacitors.



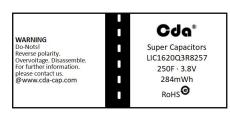
GENERAL SPECIFICATIONS

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					
Tomporature oberesteristics	Capacitance change: Within ±50% of initial measured value at +25°C (-20°C to +70°C)					
Temperature characteristics	Internal resistance: Within ±800% of initial measured value at +25°C (at -20°C)					
	After 1000 hours:					
High temperature load time	Capacitance change: ±30% of initial rated value					
	Internal resistance: Within 2 times of initial specified value					
Projected cycle life	After 50,000 cycles:					
(From rated voltage to 1/2 rated	Capacitance change: Within ±30 % of initial rated value					
voltage at 25°C)	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	<u>1840</u>	Q	<u>3R8</u>	<u>507</u>	***	
Series	Size Code	Cylindrical Code	Rated Voltage	Nominal Capacity	Special Code	

Casing Display:



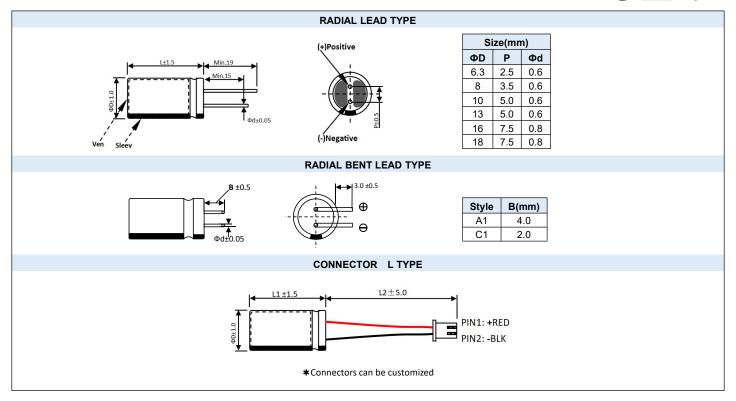


DIMENSIONS









STANDARD PRODUCTS

Part Number	Dimensions (mm)	Rated Cap.	Capacitance	·	ESRAC (mΩ)	Leakage Current	Rated Current	Max Current	Weight/Unit	Energy Storage	
	D	L	(F)	Tolerance	Cap. (mAh)	(1 KHz)	(72hrs/mA)	(A)	(A)	(grams)	(mWh)
LIC0613Q3R8106	6.3	13	10	-0%~+100%	3.6	1500	0.001	0.05	0.3	0.8	11
LIC0813Q3R8106	8	13	10	-0%~+100%	3.6	600	0.001	0.05	0.5	1.5	11
LIC0813Q3R8206	8	13	20	-0%~+100%	10	600	0.001	0.10	0.5	1.5	23
LIC1013Q3R8256	10	13	25	-0%~+100%	12	400	0.001	0.15	1.0	2.65	28
LIC0820Q3R8256	8	20	25	-0%~+100%	12	300	0.002	0.20	1.5	2.0	28
LIC1013Q3R8306	10	13	30	-0%~+100%	13.5	300	0.001	0.15	1.0	2.65	34
LIC0825Q3R8306	8	25	30	-0%~+100%	18	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
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
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

 $[\]ensuremath{^*\text{operating}}$ temperature can be extended to 85°C with appropriate voltage



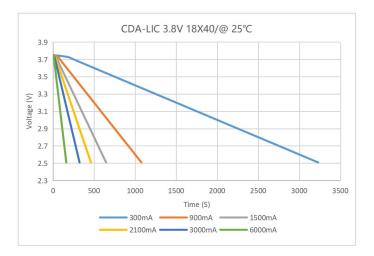
THE FEATURE DIAGRAM



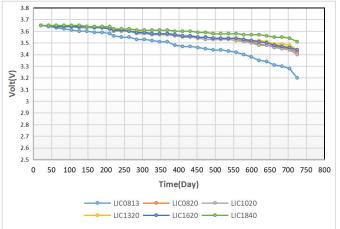




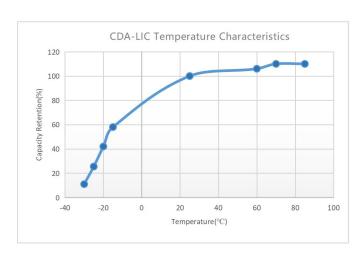
Discharge multiplier characteristics

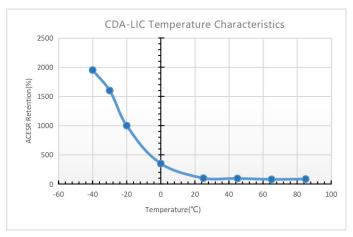


LIC two-year self-discharge data

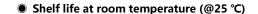


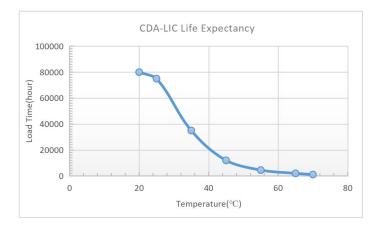
Representative average temperature characteristics of capacitance and ESR.

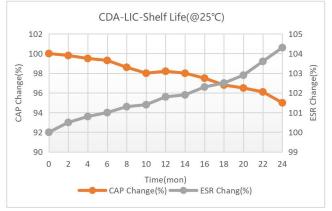




Lifetime estimation at different temperatures.













WARNINGS

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

SAFETY RECOMMENDATIONS 1

- 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
- Reach 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) = $\frac{0.5 \times (V^{2 \min 1} V^{2 \min 2}) \times C}{2 \times 1000} \times 1000$
- Peak power (W) = $\frac{v^-}{4 \times ESR}$
- 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 1



