

FEATURES

- Low Self Discharge/Up to 8 times energy density compared to standard supercapacitors
- High Capacitance
- High Operating Voltage
- No Explosion Safety

APPLICATIONS

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

MANUAL SOLDER ONLY

- +350°C (4-5 seconds by soldering)

MANUAL SOLDER ONLY

- no clean soldering recommended.
- do not wash the supercapacitors.



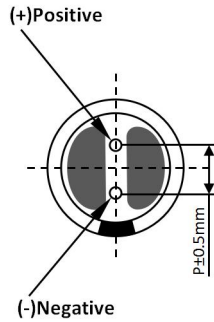
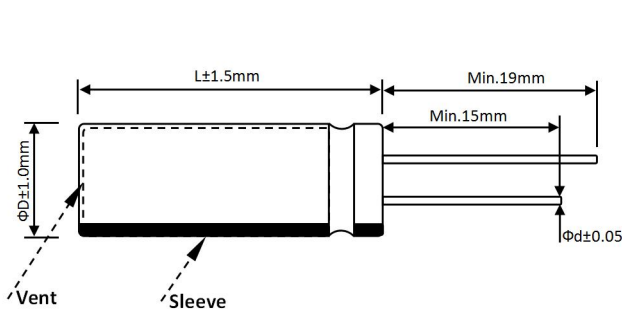
PART NUMBER SYSTEM

<u>LIB</u>	<u>1840</u>	<u>Q</u>	<u>4R0</u>	<u>257</u>	<u>*</u>
Series	Size	Winding	Rated Voltage	Capacity	Special Code

GENERAL SPECIFICATIONS

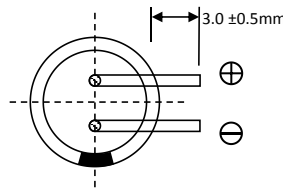
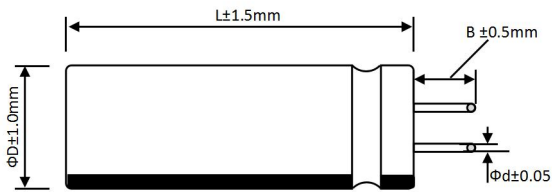
Item	Performance
Operating temperature	-20°C to +65°C @ 4.0V
Storage temperature	-40°C to +85°C
Capacitance range	220F to 1100F
Capacitance tolerance	-10%~+30%(+25°C); -20%~+80%(+25°C)
Rated voltage	4.0 VDC
Minimum rated voltage	2.5 VDC
Surge voltage	4.2 VDC
Temperature characteristics	Capacitance change: Within ±50% of initial measured value at +25°C (-20°C to +65°C) Internal resistance: Within ±800% of initial measured value at +25°C (at -20°C)
Endurance (At rated voltage & max. operating temp)	After 65°C 1000 hours: Capacitance change: ±30% of initial rated value Internal resistance: Within 4 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.

DIMENSIONS



Size(mm)		
ΦD	P	Φd
13	5.0	0.6
16	7.5	0.8
18	7.5	0.8

RADIAL BENT LEAD TYPE



Style	B(mm)
A1	4.0
C1	2.0

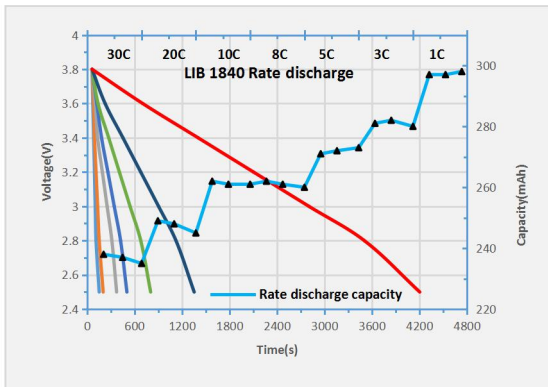
STANDARD PRODUCTS

Part Number	Dimensions (mm)		Rated Cap. (F)	4.0V-2.5V Battery Cap. (mAh)	ESRAC (mΩ) (1 KHz)	Leakage Current (72hrs/mA)	Rated Current (A)	Max Current (A)	Weight/Unit (grams)
	D	L							
LIB1320Q4R0227	13	20	220	100	100	0.003	1.0	5.0	5.0
LIB1330Q4R0357	13	30	350	150	90	0.004	1.5	20.0	8.0
LIB1340Q4R0507	13	40	500	200	50	0.005	4.0	28.0	8.0
LIB1620Q4R0407	16	20	400	160	50	0.015	2.0	15.0	8.5
LIB1840Q4R0118	18	40	1100	450	25	0.023	6.0	40.0	20.0

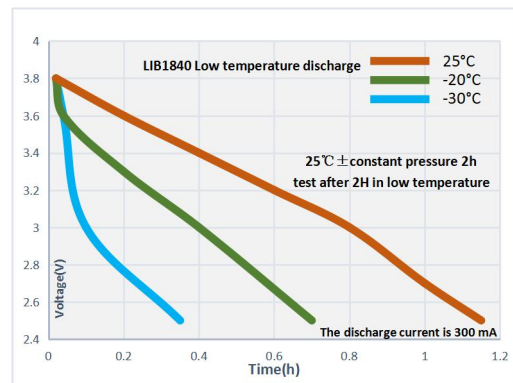
*with appropriate voltage derating operating temperature can be extended to 85°C

THE FEATURE DIAGRAM

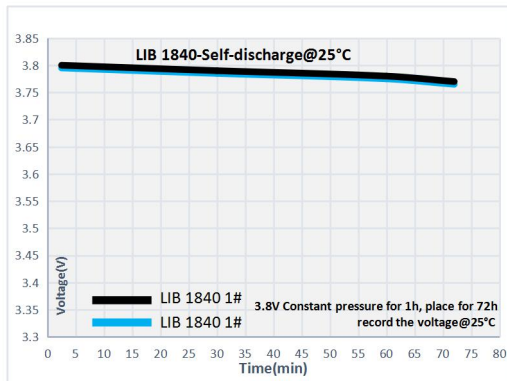
● Discharge multiplier characteristics



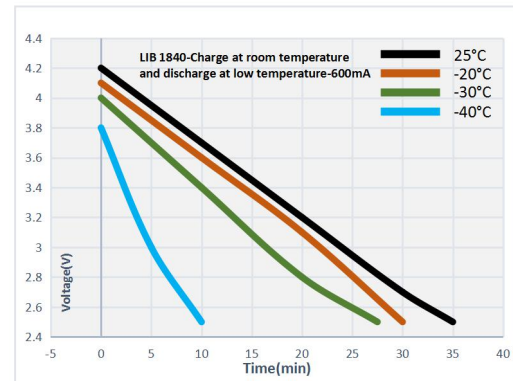
● Low temperature discharge characteristics



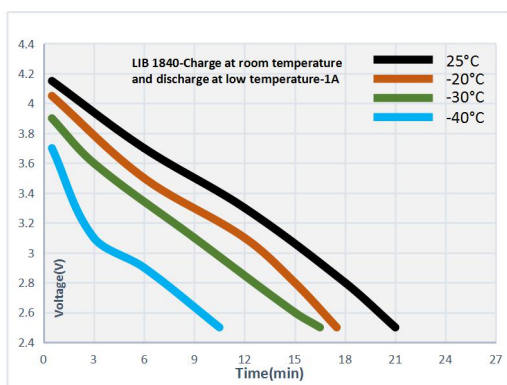
● Self-discharge characteristics



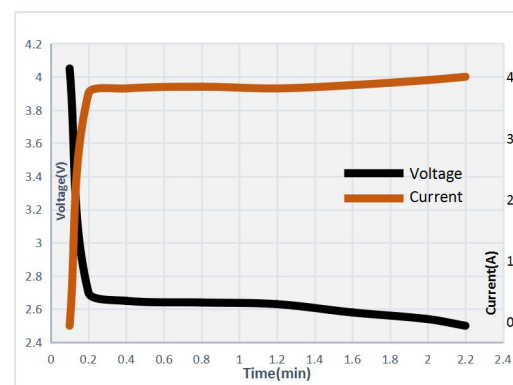
● Low internal resistance discharge characteristics-600mA



● Low internal resistance discharge characteristics-1A



● -40°C 10W Constant power discharge



Test the temperature	At room temperature charge low temperature-600mA		At room temperature charge low temperature-1A	
	Capacity(mAh)	Resistance(mΩ)	Capacity(mAh)	Resistance(mΩ)
25°C	343.2	33.9	344.4	38.2
-20°C	298.3	173.0	292.8	165.4
-30°C	274.6	363.8	272.6	276.6
-40°C	175.0	457.2	168.5	454.9

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 Overvoltage, 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) = $\frac{0.5 \times (V^2_{min1} - V^2_{min2}) \times C}{3600} \times 1000$
- Peak power (W) = $\frac{V^2}{4 \times ESR}$
- Pulse current for 1 second from full rate voltage to minimum rated voltage.(A) = $\frac{(V^{min1} - V^{min2}) \times C}{(1 + ESR \times C)}$

- Continuous current with a 15 °C temperature rise. Continuous current (A) = $\sqrt{\frac{\Delta T}{ESR \times R_{th}}}$
 - 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 during use

