

1. SCOPE

This specification describes the electrical, mechanical and environmental parameters for this battery pack consisting of a Lithium Ion cell 3.7V/ 1960 mAh, with protection safety circuit.

2. Dimensions:

- Thickness = 11.5 mm
- Width = 36 mm
- Length = 54 mm

3. Weight: 0.1 lb

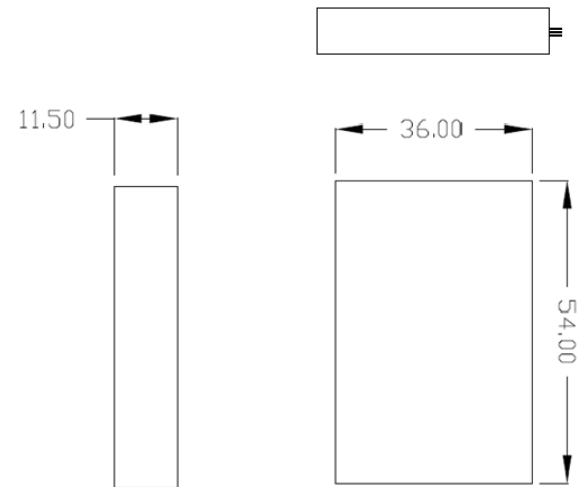
4. Cell specification: Li- Ion battery, 1S1P

4.1 Nominal voltage: 3.7V

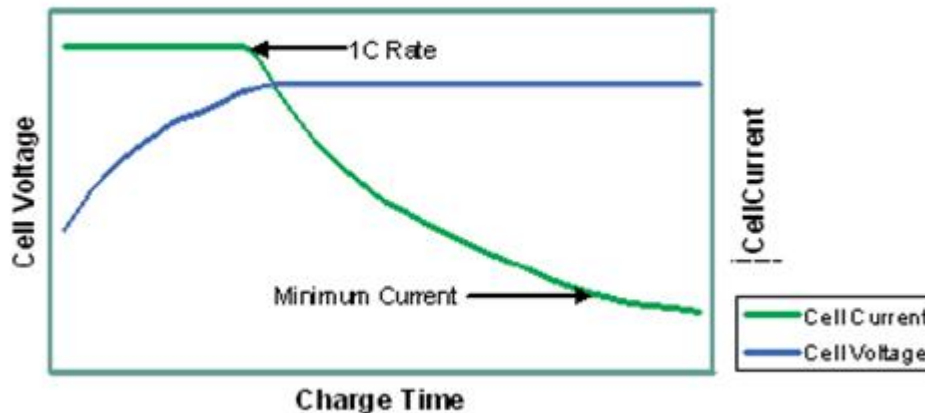
4.2 Capacity: Nominal 1960mAh at 23°C using:

- Charge profile of 4.2V
- Recommended charge current of 1330mA (~0.7C)
- Charging time of 3 hrs or a taper current of 98mA (C/20),
- Discharge profile with a maximum current of 3800mA (C/5) to 3.0V

4.3 Charging Battery:



Lithium Ion Charging Characteristics



4.3.1 Charging Condition:

- CV of 4.2V max

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| <u>DOCUMENT NUMBER:</u> 950015D | | <u>CREATED/REVISED BY:</u> AIE | <u>CHECKED BY:</u> MJS <u>APPROVED BY:</u> MJS |

- CC of 1900mA max.

4.3.2 To charge lithium-ion battery packs please follow the charging instruction stated below:

Charging instructions

- **Charge Voltage:** Limit the maximum charge voltage to 4.2V times the number of cells connected in series. This charging voltage is noted on the product specification sheet.
- **Charge current:** Packs should be charged at C rate for lithium-ion cells. C is the nominal capacity of the pack. (Example: for a 2400 mAh cell, charge at 2.4A).
- **Pre-charge:** If the cells are deeply depleted (less than 2.9V per cell), packs should be charged at 10% of their capacity (Example: for a 2400 mAh cell, charge at 240 mA) until reaching 3.0V per cell when charging can be continued as stated above.
- **Charge temperature:** Do not charge lithium ion cells at less than 0°C or more than 45°C.
- **Reverse polarity:** When connecting the cells to a charger, verify proper polarity.
- **Charge method:** Lithium ion cells should be charged using a constant current/constant voltage (CC/CV) method. Apply the charge current as stipulated above in step 2 until the pack reaches the voltage measured in step 1. Then, hold the voltage constant until the current tapers down to about 5% of nominal capacity (Example: for a 2400 mAh cell, charge until current is 120 mA).

4.4 Discharge condition:

- Cutoff voltage of 3.0V
- Maximum discharge current of 1800mA.

4.5 Cycle life: 80% of initial minimum capacity after 500 cycles at 0.2C, 23°C

4.6 Temperature:

- Charge 0~45°C
- Discharge -20~60°C
- Storage -20~20°C

4.7 Products shipped have 40% state of charge typical

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5. Protection Safety Circuit

- 3.1 Main IC controller is Mitsumi MM3099EYRE
- 3.2 Overcharge cutoff voltage: 4.275v +/-20mv
- 3.3 Overdischarge cutoff voltage: 2.30v +/- 35mv
- 3.4 Overcurrent detection will not occur below 1.8A and will occur above 4.2A
- 3.5 Thermistor 10k ,5%
- 3.6 Gold-Plated Contacts

6. Additional component

- Label
- Nomex, Kapton Tape, PVC Heat Shrink, or similar insulators

7. Storage temperature and Humidity range

- 5.1 -20~20°C,45-85%RH (within 1year)
- -20~45°C,45-85%RH (within 3 month)
- -20~60°C,45-85%RH (within 1 month)

8. Storage cautions

- Do not store packs in places of high temperature or under direct sunlight
- For long term storage, store packs in 30% charge state.
- Do not store packs in place which may expose them to rain, water or high humidity.

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