## LITHIUM IRON PHOSPHATE BATTERY

#### **SPECIFICATIONS**

Model : IFR26650(3.0)

Description : Lithium Iron Phosphate rechargeable battery (RoHS compliant)

Dimension : Max.  $26.5(\emptyset)$  x 66.7(H) mm

Nominal Capacity : 3.00Ah (Min. 2.90Ah) at 600mA rate discharge to 2.0V at 25°C

3 cycles allowed for incoming inspection

Discharge capacity varies with discharge current and temperature

Nominal Voltage : 3.2 Volt (after charge)

Cut-Off Voltage : 2.0Volt

Approximate Weight : 84g (bare cell)

Internal Impedance : <30m $\Omega$  (with 1KHz AC testing at full charge)

Cycle Life : 2,000 standard charge/discharge cycles > 70% (2.10Ah) capacity

Charging : Using dedicated CC/CV (3.65±0.03V) battery charger only

Charging with CC (Constant Current) to 3.65V, then

charge with CV (Constant Voltage) till charge current <150mA

Standard Charge Current 600mA at 25°C below 8 hours Max. Charge Current 1.5A at 25°C below 3 hours

Discharging : Standard Discharge Current 600mA at 25°C

Max. Discharge Current 9.0A at 25°C (Conditions apply)

Temperature Range : Charge  $0^{\circ}$ C to  $45^{\circ}$ C

Discharge -10°C to 60°C

Storage 10°C to 25°C (Recommended)

-10°C to 45°C (within 1 month) -10°C to 35°C (within 3 months)

Warranty : Limited warranty is provide against defects of poor workmanship

for 12 months from date of shipment. Problem caused by misuse, mishandling, malfunction of equipment, or mix-use of cell is not under this warranty. Replacement of cell is limited to 1-to-1 only

Storage Characteristic : Long term storage may cause loss of capacity. Capacity recoverable

related to time of storage. Cell is recommended to store with 45% capacity charged, temperature  $20\pm5^{\circ}$ C, and relative humidity 45%-75%. After max. 12 months storage, capacity recovery will be > 70% initial

capacity (~2.10Ah), after 5 recovery charge/discharge cycles.

Appearance : No scratch, rust, discoloration, leakage which may adversely affect

commercial value of the cell

Standard Test Condition : Unless otherwise specified, all test are conducted at temperature 20±5°C

and relative humidity 60±15%

The ammeter and voltmeter with accuracy grade 0.5 or higher

The slide caliper with scale 0.01mm

The impedance meter with AC 1kHz measurement

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### **SPECIFICATIONS**

Capacity Retention : Discharge measured after the cell is stored for 28 days after standard

charge. Capacity retention >= 85% initial capacity (~2.55Ah)

Maintenance Charging : Maintenance charging is required for storage over 3 months or when

battery open circuit voltage below 3.3V. Prolonged storage without maintenance may result is battery gassing and loss of performance.

Remarks: : Charging voltage shall be less than 3.65V/cell. It must never exceed

3.68V/cell.

Ex-Factory Condition : As per air shipment regulations, the battery must be shipped at a State of

Charge (SoC) <= 30%. We recommend customer to arrange supplementary

charging of the battery after receiving the batteries.

External Short Circuit Test : No fire, no explosion for short-circuiting of the positive and negative

terminals of a fully charged cell with a total external resistance of

 $80 \text{m}\Omega \pm 20 \text{m}\Omega$  at  $20 \pm 5$ °C.

Free Fall Test : No fire, no explosion for dropping a fully charged cell 3 times from a

height of 1m at random orientations onto a concrete floor at 20±5°C.

Thermal Abuse Test : No fire, no explosion for placing a fully charged cell in an oven with

temperature raised at a rate of 5°C/min±2°C/min to a temperature of

130°C±2°C.

Crush Test : No fire, no explosion for crushing a fully charged cell between two flat

surfaces with a force of 13kN±1kN at 20±5°C until maximum force has been applied, or an abrupt voltage drop of 1/3 of the original voltage has

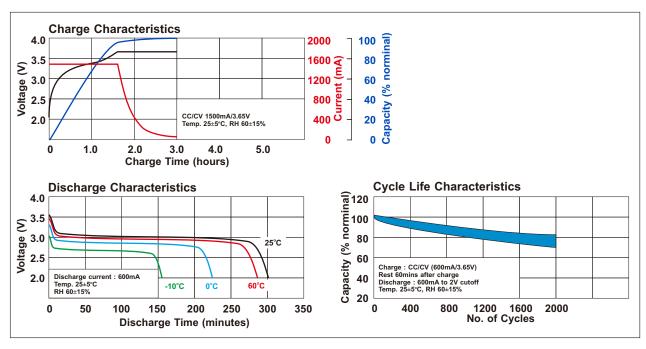
been obtained, or 10% of deformation has occurred.

Over-charging Test : No fire, no explosion for charging a fully discharged cell at a constant

current of 6.0A with a voltage limit of 4.8V for 8 hours.

Forced Discharge Test : No fire, no explosion for reverse charging a fully discharged cell at a

constant current of 3.0A for 90 min. at 20±5°C.



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## LITHIUM-ION POLYMER RECHARGEABLE BATTERY

#### **SPECIFICATIONS**

Customer of lithium iron phosphate battery should employ appropriate cautions in order to obtain optimum performance and safety.

Charging

 $: \ \, Charging \ current \ should \ less \ than \ the \ maximum \ charging \ current \ specified \\$ 

in the specification

Charging voltage must up to the voltage specified in the specification Do not charge battery over the specified time in the specification Charging temperature should be within the specified range in the

specification

Reverse charging should be strictly prohibited

Improper charging may generate heat, smoke, rupture or flame, and cause

damage to the battery

Discharging

: Discharging current should be less than the maximum discharging current

specified in the specification

Discharging temperature should be within the specified range in the

specification

Do not over discharge the battery below 2.5V/cell

Over discharge may occur by self-discharge if the battery is left for a very

long time without any use

Improper discharge may cause loss of performance

Storage

: Storage temperature should be within the specified range in the

specification

Storage is recommended in low humidity, nop corrosive gas atmosphere

Long term storage may cause loss of capacity

Cycle Life

: Cycle life differs by conditions of charging, discharging, operating

temperature and/or storage condition

Level of capacity differs by cycles of battery used

Product Design

: Do not solder directly on bare cell

Battery should be positioned far from heat source and heat components Appropriate shock absorber should be equipped to minimize shock on the

battery

Protection circuit against overcharge, over discharge, over current should

be equipped to insure safety in case of misuse

Battery should be designed to connect only to specified charger and

system

Reverse connection of battery should be avoided in system design Improper product and system design may cause loss of battery

performance

**Product Assembly** 

: Battery cell should be inspected visually before product assembly to avoid usage of damaged cell (for example, sleeve damage, battery distortion, or

leaking)

Excessive force on the battery terminals and battery surface should be

avoided

Precaution should be taken when battery is moved / transported to other

place

Do not disassembly, short-cutcuit, incinerate, immersion in water, and mix

use of battery

Battery should be disposed in discharged state

Improper handling may cause loss of battery performance

Warning

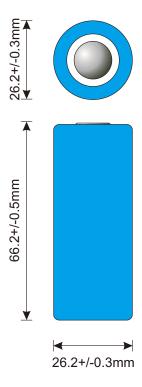
: The battery may present risk of fire and chemical burn if mistreated. Keep away battery from children.

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# LITHIUM-ION POLYMER RECHARGEABLE BATTERY

### **PRODUCT DRAWING**



Dimensions with PVC Jacket

### Ink Jet

HIR26650(3.0) LiFePO4 3.2V 3Ah 9.6Wh

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