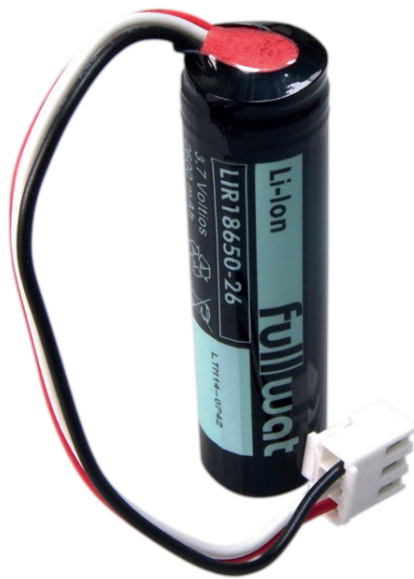


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LIR18650-26-CI • High discharge battery

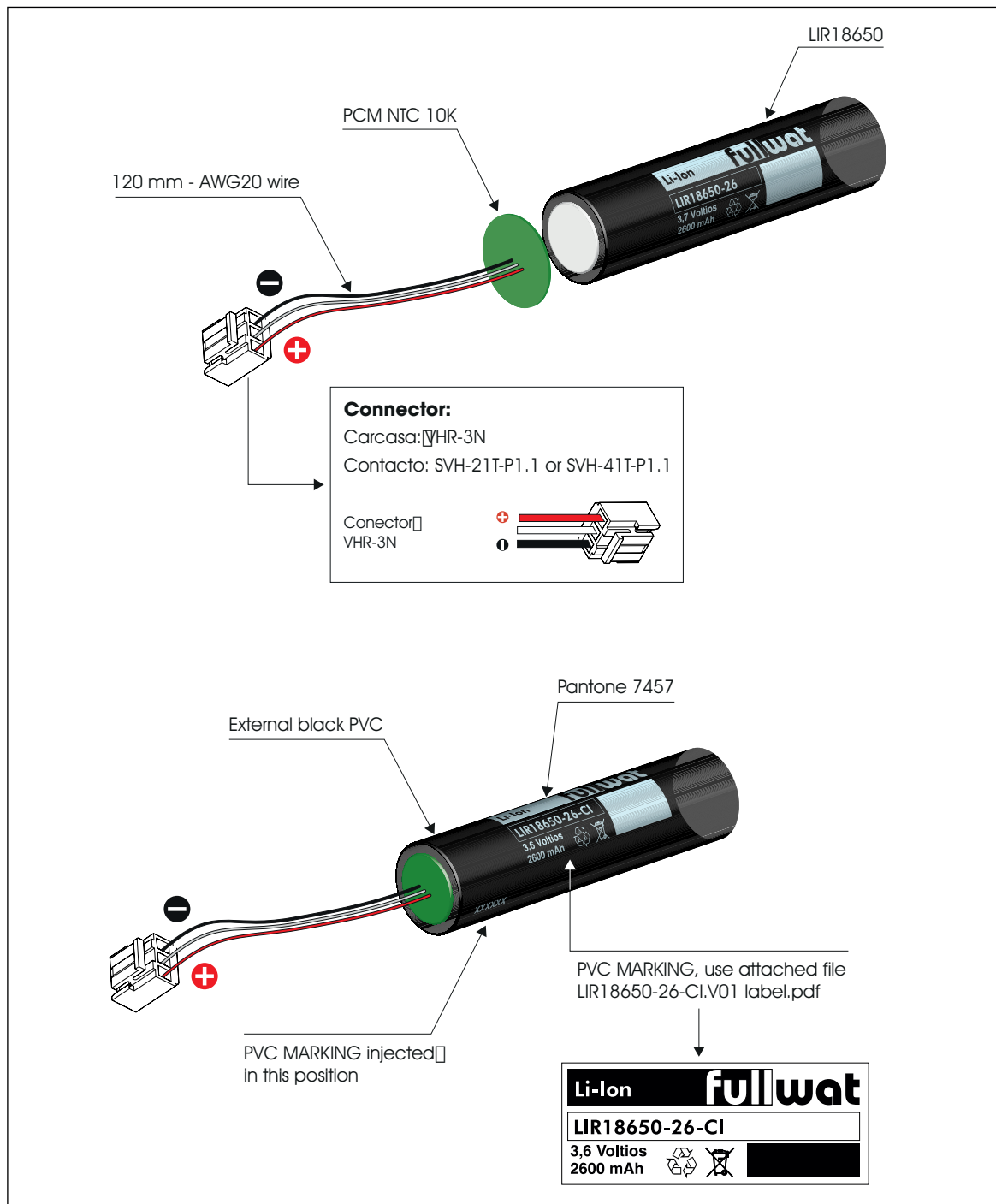


LIR18650-26-CI • High discharge battery

1. Scope

This specification describes the basic performance, technical requirement, testing method, warning and caution of the Li-Ion cylindrical rechargeable battery. The specification only applies to FULLWAT.

2. Initial dimension

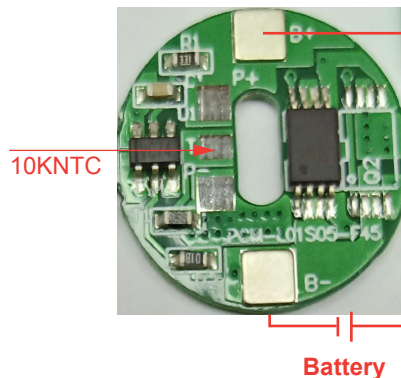


3. Battery specification

NO.	Item	Specifications		
3.1	Nominal capacity	2600mAh		
	Min. capacity	2550mAh		
3.2	Nominal Voltage	3.6V		
3.3	Charge current	Standard Charge: 780mA Rapid charge: 1300mA		
3.4	Standard charging method	780mA (constant current) charge to 4.2V, then CV (constant voltage 4.2V) charge till charge current decline to $\leq 26\text{mA}$		
3.5	Charging time	Standard Charging: Approx 5 hours Rapid charge: Approx 2.5hours		
3.6	Max. charge current	Constant Current 1300mA Constant Voltage 4.2V 26mA cut-off		
3.7	Max. discharge current	8000mA pulse<5s at $25\pm 3^{\circ}\text{C}$		
3.8	Discharge current	Standard 1300mA Fast 2600mA Max. Continuous 5200		
3.9	Discharge lower limit voltage	Constant current 8000mA end voltage 2.75V		
3.10	Charge upper limit voltage	$4.20\text{V}\pm 0.05\text{V}$		
3.11	Working temperature	Charge: $0^{\circ}\text{C}\sim 55^{\circ}\text{C}$; Discharge: $-20^{\circ}\text{C}\sim 60^{\circ}\text{C}$		
3.12	Weight	Approx. $45\pm 2\text{g}$		
3.13	Cycle characteristic	1000 times (100%DOD) 1500 times (80%DOD) 2000 times (50%DOD)		
3.14	Storage temperature	$-20^{\circ}\text{C}\sim 60^{\circ}\text{C}$	≤ 1 month	Percentage of recoverable capacity no less than 380% of the initial capacities
		$-20^{\circ}\text{C}\sim 45^{\circ}\text{C}$	≤ 3 month	
		$-20^{\circ}\text{C}\sim 20^{\circ}\text{C}$	≤ 1 year	
3.15	Recoverable capacity	Constant current 1000 charge to 4.2V, then constant voltage charge to current declines to 100mA, rest for 10min. constant current 400 discharge to 2.75V, rest for 10min. Repeat above steps 3 times, recording the maximum capacity.		
3.16	Storage humidity	$\leq 75\%$ RH		
3.17	Appearance	Without scratch, distortion, contamination and leakage		
3.18	Standard environmental condition	Temperature: $23\pm 5^{\circ}\text{C}$ Humidity: $65\pm 20\%$ RH Atmospheric Pressure: 86-106 Kpa		

4. PCM specification - Ref. model: PCM-L01S05-F45 (1S)

NO.	Item	Condition	Specification
1	Voltage	Charging voltage (CC/CV)-	DC4.2V CC/CV
		Cell-balance voltage	---
2	Current	Cell-balance current	---
		Current consumption on operation for single cell	≤10μA
		Maximal continuous charging current	3A
		Maximal continuous discharging current	3A
3	Overcharge (single cell)	Overcharge detection voltage	4.25±0.05V
		Overcharge delay time	0.5—2S
		Overcharge release voltage	4.15±0.05V
4	Overdischarge (single cell)	Over discharge detection voltage	2.50±0.1V
		Over discharge delay time	10—200mS
		Over discharge release voltage	2.50±0.1V
5	Discharge overcurrent	Discharge overcurrent protection	5.5±1A
		Discharge overcurrent delay time	5ms—60ms
		Release condition	Cut-off-load,reset automatically
6	Short-circuiting protection	Detection condition	Exterior short circuit
		Load short-circuiting detection delay time	200-800us
		Release condition	Cut-off-load, reset automatically
7	Internal resistance	Proection circuit (MOSFET)	≤50mΩ
8	Temperature	Wide range of operation temperature	-40~+85°C
		Storage Temperature Range	-40~+125°C



P+ = B+ = Charge+/Discharge+
P- = Charge-/Discharge-
Size: 117*17*2 mm (L*W*T)

5. General performance

NO.	Item	Test Methods and Condition	Criteria
5.1	0.2C Capacity	After standard charging, rest battery for 10min, then discharging at 400mA to voltage 2.75V, recording the discharging time.	≥300min
5.2	1C Capacity	After standard charging, rest battery for 10min, then discharging at 2000mA to voltage 2.75V, recording the discharging time.	≥54min
5.3	Cycle Life	Constant current 1000mA charge to 4.2V, then constant voltage charge to current declines to 100mA, rest 10min, constant current 2000mA discharge to 2.75V, rest 10min. Repeat above steps till continuously discharging capacity higher than 80% of the initial capacities of the cells.	≥300 times
5.4	Capability of keeping electricity	20±3°C, After standard charging, rest the battery 30days, discharging at 400mA to voltage 2.75V, recording the discharging time.	≥240min

6. Environment performance

NO.	Item	Test Methods and Condition	Criteria
6.1	Discharge at high temperature	After standard charging, rest the cells 4h at 60 ±2 °C, then discharging at 2000mA to voltage 2.75V, recording the discharging time.	≥54min
6.2	Discharge at low temperature	After standard charging, rest the cells for 16h at -100±2°C, then discharging at 400mA to voltage 2.75V, recording the discharging time.	≥210min
6.3	Thermal shock	Put the cells in the oven. The temperature of the oven is to be raised at 5±2°C per minute to a temperature of 130±2°C and remains 30 minutes.	No fire No explosion

7. Safe characteristic

NO.	Item	Test Methods and Condition	Criteria
7.1	Over charge testing	Cell fully discharged. Then overcharge with 6000mA to 10V/cell. Monitor cell temperature during testing. Stop the test when cell temperature decays to room temperature.	No explosion No fire
7.2	Over discharge testing	Standard charge first, then discharge battery with 400mA to 250% of capacity.	No explosion No fire No leakage

Note: Above testing of safe characteristic must be with protective equipment.

8. Battery protection

The battery shall be with the over-charging prevention, over-discharging prevention, and over-current prevention during use. Protective circuit shall have protective functions as follows:

1. Over-charging protection

Overcharging prevention stops charging if any cell of the battery pack reaches 4.25V.

2. Over-discharging protection

The Over-discharging protection monitors the voltage of every cell in the pack and works to avoid a drop in the cell voltage to 2.8V or less.

3. Over-current protection

The cell shall be discharged at less than the maximum discharge current specified in the Specification Approval Sheet. A high discharging current may reduce the discharge capacity significantly or cause overheating.

9. Caution in use

To ensure proper use of the battery please read the manual carefully before using it. Handling.

Handling

- Do not expose to, dispose of the battery in fire.
- Do not put the battery in a charger or equipment with wrong terminals connected.
- Avoid shorting the battery
- Avoid excessive physical shock or vibration.
- Do not disassemble or deform the battery.
- Do not immerse in water.
- Do not use the battery mixed with other different make, type, or model batteries.
- Keep out of the reach of children.

Charge and discharge

- Battery must be charged in appropriate charger only.
- Never use a modified or damaged charger.
- Do not leave battery in charger over 24 hours.

Storage

- Store the battery in a cool, dry and well-ventilated area.

Disposal

- Regulations vary for different countries. Dispose of in accordance with local regulations.

10. Battery operation instruction

Charging

Charging current: Cannot surpass the biggest charging current stipulate in this Datasheet.

Charging voltage: Cannot to surpass the maximun voltage which in this specification book stipulate in this datasheet.

Charge temperature: The battery must be charged in the ambient temperature with temperature range stipulate in this datasheet.

Uses a constant current and the constant voltage way charge. Do not reverse polarity . If the anode and cathode of the touch the battery, can be damaged.

Discharging current

The discharging current does not have to surpass the maximun current stipulated in this datasheet. A higger discharge current can reduce battery capacity and also can heat the battery.

Discharge temperature

The battery must be discharged in the ambient temperature within temperature range stipulated in this datasheet.

Over-discharges

A single short time overdischarge cannot affect battery performance, but a long time overdischarge or serveral short time overdischarges can affect battery performance. A battery long time store due to selfdischarge feature of batteries, can also be overdischarged. To avoid this battery should be maintaind with a certain charge level.

Storing the batteries

The battery should store in the temperature range stipulated in this datasheet. If storage time is above six month we suggest you carry on a battery charging process.

11. Warranty

The warranty is specified in our warranties section of *Terms of Sales*. If the product is to be stored for more than three months it is necessary to perform the appropriate maintenance to ensure the good condition of the batteries. Consult our annex to the *Terms of Sales* on the recommended maintenance.

12. Other the chemical reaction

Because batteries utilize a chemical reaction, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, if various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage. If the batteries cannot maintain a charge for long periods of time, even when they are charged correctly, this may indicate it is time to change the battery.

13. Note

Any other items which are not covered in this specification shall be agreed by both parties.