



EUROPA BATTERIES

ZI Rue Marc SANGNIER
45300 PITHIVIERS

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www.europa-batteries.com

Lithium Ion Rechargeable Cell

High Energy Cylindrical Cell

Cell Type: EU18650F-2000mAh



1. Basic characteristics

Capacity (25±5°C)	Nominal Capacity: 2000mAh (1.0A Discharge) Minimum Capacity: 1980mAh (1.0A Discharge)
Nominal Voltage	3.7V
Internal Impedance	≤ 70mΩ
Discharge Cut-off Voltage	3.0V
Max Charge Voltage	4.20±0.05V
Standard Charge Current	1.0A
Rapid Charge Current	2.0A
Standard Discharge Current	1.0A
Rapid Discharge Current	2.0A
Max Pulse Discharge Current	4.0A
Weight	43±1g
Max. Dimension	Diameter(Ø): 18.4mm Height (H): 65.2mm
Operating Temperature	Charge: 0 ~ 45°C Discharge: -20 ~ 60°C
Storage Temperature	During 1 month: -5 ~ 35°C During 6 months: 0 ~ 35°C

2. Standard conditions for test

All the tests need to be done within one month after the delivery date under the following conditions :

Ambient Temperature: 25±5°C; Relative Humidity: 65±20%

Standard Charge	Constant Current and Constant Voltage (CC/CV) Current = 1.0A Final charge voltage = 4.2V Final charge Current = 0.040A
Standard Discharge	Constant Current (CC) Current = 1.0A End Voltage = 3.0V

3. Appearance

All surfaces must be clean, without damages, leakage and corrosion. Each product will have a product label identifying the model.

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4. Characteristics

4.1 Electrical Performances

Items	Test procedure	Requirements
Nominal Voltage	The average value of the working voltage during the whole discharge process.	3.7V
Discharge Performance	The discharge capacity of the cell, measured with 2.0 A down to 3.0V within 1 hour after a completed charge.	≥57min
Capacity Retention	After 28 days storage at 25±5°C, after having been completely charged and discharged at 0.40A, discharge to 3.0V, the residual capacity is above 90%	Capacity≥1800mAh
Cycle Life	After 300 cycles at 100% DOD. Charge and discharge at 1.0A, the residual discharge capacity is above 80% of nominal capacity.	≥300 cycles
Storage	(Within 3 months after manufactured) The cells is charged with 1.0A to 40-50% capacity and stored at ambient temperature 25±5°C, 65±20%RH for 12 months. After the 12 months storage period the cell is fully charged and discharged to 3.0V with 0.40A	Discharge time≥4h

4.2 Safety

Items	Test procedure	Requirements
Short Circuit	The cell is to be short-circuited by connecting the positive and negative terminals of the cell directly with copper wire with a resistance of less than 0.05Ω.	No fire no explosion.
Impact Test	A test sample battery is to be placed on a flat surface. A 5/8 inch (15.8mm) diameter bar is to be placed across the center of the sample. A 20 pound (9.1kg) weight is to be dropped from a height of 24 ±1 inch (610±25mm) onto the sample.	No fire no explosion.
Overcharge (3C/10V)	The cell is connected with a thermocouple and put in a fume hood. The positive and negative terminals are connected to a DC power supply set at 6.0A and 10V until the cell reaches 10V and the current drops to approximately 0A. Monitor the temperature of cell. When the temperature of the cell is approximately 10°C less than the peak value, the test is completed.	No fire, no explosion.
Thermal shock	After standard charging, heat the cell to 150±2°C at a rate of 5±2°C /min and keep it at this temperature during 10 minutes.	No fire, no explosion.

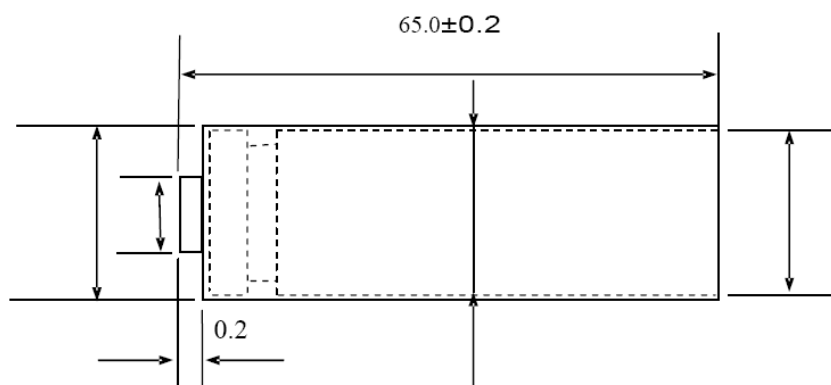
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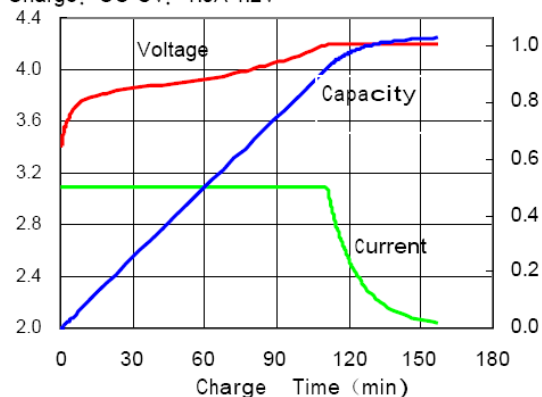
External Dimensions (mm)



Charge Characteristics

Measurement temperature: 25°C

Charge: CC-CV: 1.0A-4.2V

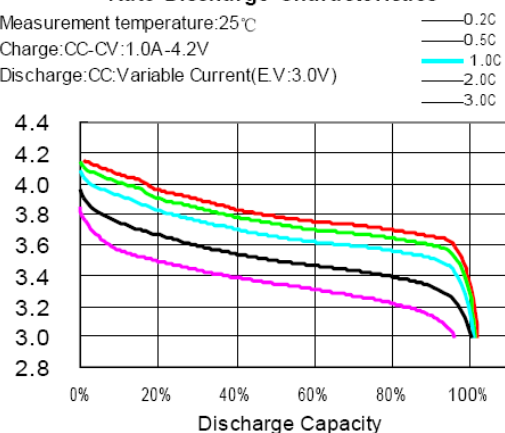


Rate Discharge Characteristics

Measurement temperature: 25°C

Charge: CC-CV: 1.0A-4.2V

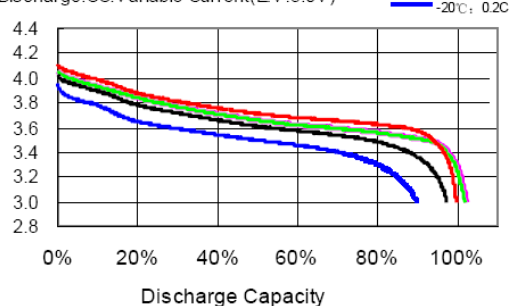
Discharge: CC: Variable Current (E.V.: 3.0V)



Discharge Temperature Characteristics

Charge: CC-CV: 1.0A-4.2V, 25°C

Discharge: CC: Variable Current (E.V.: 3.0V)

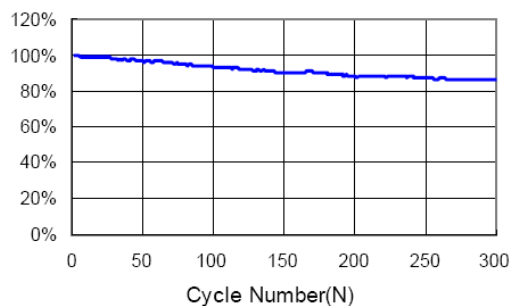


Cycle Characteristics

Measurement temperature: 25°C

Charge: CC-CV: 1.1A-4.2V

Discharge: CC: 1.1A (E.V.: 3.0V)



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