

## Lithium Elements

# Product specification

### 2.2 Environmental request

RoHS 2.0

HF 无卤素

REACH

其它

### 2.3 Functional description

- 1) Over-charge voltage protection
- 2) Over-discharge voltage protection
- 3) Over current protection
- 4) Short circuit protection

### 2.4 Mechanical characteristics

- 1) PCM Size: L 63( $\pm 0.15$ mm) $\times$ W 7( $\pm 0.1$ mm) $\times$ T 2.0 mm(MAX)
- 2) PCB Material/PCB: FR-4, 1 oz, 0.8 $\pm$ 0.1mm
- 3) Layer: 2Layers
- 4) Plating Method: HASL LF
- 5) PSR INK: Green
- 6) SILK INK: White

### 2.5 Connecting description



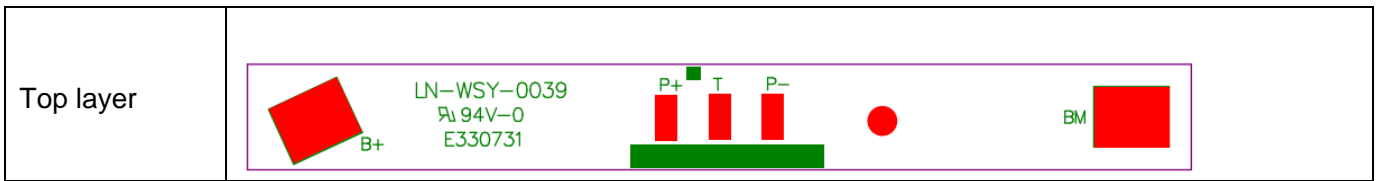
Symbol	Description	Symbol	Description
P+	Battery output/charging positive pole	B+	Cell positive pole
P-	Battery output/charging negative pole	B-	Cell negative pole
BM	Connect Cell 1 negative, connect Cell 2 positive		

## 2.6 Electrical characteristic

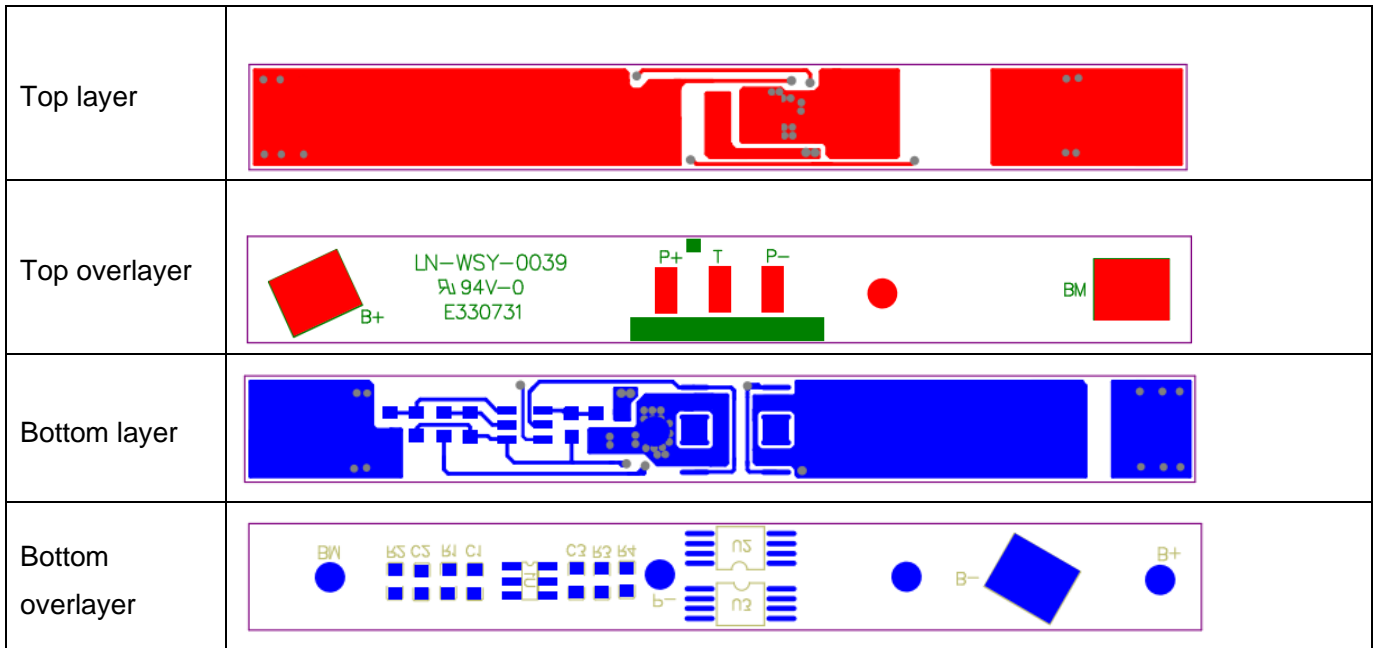
(Ta=25°C)

Contents	Min.	Type	Max.	Tolerance	Unit
<b>Absolute Maximum Rating</b>					
Input Charging Voltage		8.40			V
Input Charging Current			3		A
Output Discharging Voltage	5.80	7.40	8.56		V
Continuous Output Discharging Current			3		A
<b>Ambient Condition</b>					
Operating Temperature	-20		+85		°C
Humidity (No Water-Drop)	0%		80%		RH
<b>PCM Storage Condition/PCM</b>					
PCM Storage Temperature PCM	-55		+125		°C
Humidity (No Water-Drop)	45%		85%		RH
<b>Protection Parameters</b>					
Over-Charge Voltage Protection (OVP)	4225	4280	4305	±25	mV
Over-Charge Voltage Protection Release	4030	4080	4130	±50	mV
Over-Charge Voltage Protection Delay Time	700	1000	1300		mS
Over-Discharge Voltage Protection (UVP)	2820	2900	2980	±50	mV
Over-Discharge Voltage Protection Release	2900	3000	3100	±100	mV
Over-Discharge Voltage Protection Delay Time	70	110	150		ms
Over-Current Charge Protection Detection Voltage	-240	-210	-180	±30	mV
Over-Current Charge Protection (OCC)	8	11	14		A
Over-Current Charge Protection Delay Time	4	7	10		ms
Over-Current Discharge Protection Detection Voltage	185	200	215	±15	mV
Over-Current Discharge Protection (OCD)	7	10	13		A
Over-Current Discharge Protection Delay Time	8	12	16		ms
Short Circuit Protection (SCP)	Protected, No Exceptions				
Short Circuit Protection Delay Time	150	300	500		uS
Short Circuit Protection Release	Remove Load Or Connect Charger				
<b>Current Consumption</b>					
Normal Mode		4.0	8.0		uA
<b>Other Parameters</b>					
Impedance (B-&P-)		30	68		mΩ
Impedance (B+&P+)		-			mΩ
ID Resistor ID		-			KΩ
NTC Resistor NTC		-			KΩ
PTC Impedance PTC		-			mΩ
0V Battery Charge Function 0V	Yes				
ESD Protection Function ESD	no				

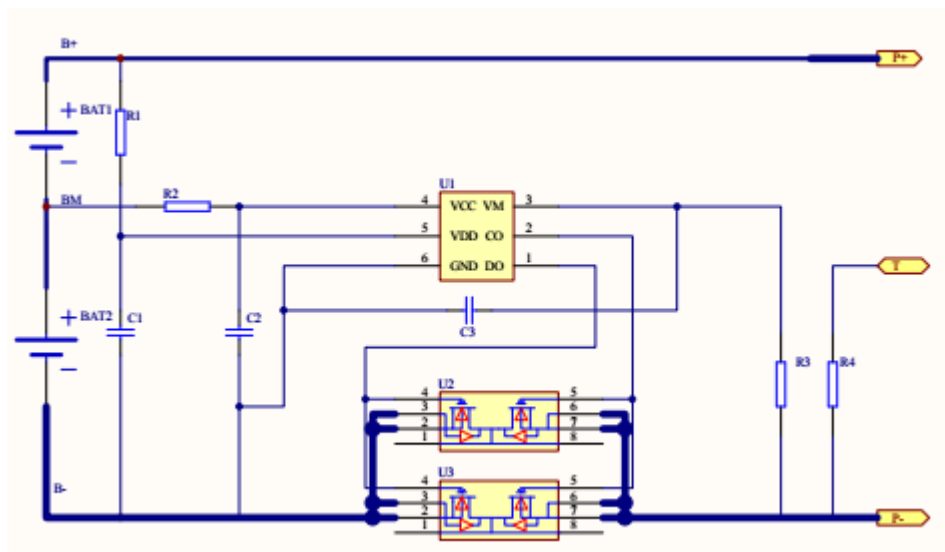
#### 4. SMT Diagram



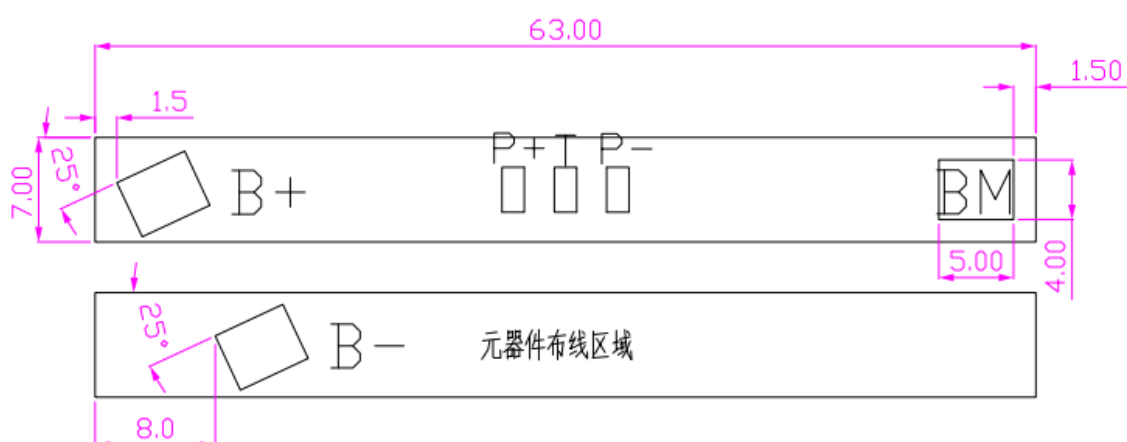
#### 5. PCB Layout / PCB



#### 6. Electrical Schematic



## 7. PCB diagram / PCB



## 8.2 Storage

8.2.1 Storage Temperature :  $23\pm 5^{\circ}\text{C}$

8.2.2 Storage Humidity :  $45\pm 15\% \text{ RH}$

8.2.3 Should pay attention to ESD

## 8.3 Transportation

8.3.1 Delivery to your storhouse by express or our deliveryman.

8.3.2 Should pay attention to moisture, moisture, avoid extrusion, impact, etc., to prevent damage to the PCM during transportation.

## 9. Attachment

### 9.1 Sample test data

NO.	Test Project	Test standard	Testing Value					Judg eme nt
			1	2	3	4	5	
1	Overcharge protection voltage	$4.28\pm 0.025\text{V}$	4.267	4.270	4.272	4.270	4.277	OK
2	Overcharge protection delay time	MAX 1300ms	1080	1068	1082	1078	1055	OK
3	Overdischarge protection voltage	$2.90\pm 0.08\text{V}$	2.897	2.895	2.901	2.899	2.897	OK
4	Overdischarge protection delay time	MAX150ms	129	124	125	127	125	OK

5	Discharge overcurrent protection current	7-13A	9.73	9.70	9.80	9.88	9.85	OK
6	Static current	≤8.0 uA	4.4	4.5	4.6	4.5	4.5	OK
7	Impedance (B-&P-)	≤68mΩ	23	24	23	24	25	OK

## 9.2 Environmental Requirements

The specification subjects to the EU Directive about RoHS 2.0, and the hazardous substance conforms to the following standard.

Hazardous substance	Standard (mg/KG)	Remarks
(Cd)	<100	
(Pb)	<1000	
(Hg)	<1000	
(Cr6+)	<1000	
(PBBs)	<1000	
(PBDEs)	<1000	
(DBP)	<1000	
(BBP)	<1000	
(DIBP)	<1000	
(DEHP)	<1000	

Declaration: the above standard is the requirements of EU RoHS 2.0 Directive, we will base on the customer's requirements when it is stricter than the EU standard.