

# 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 50(±0.15mm)×W 7(±0.1mm)×T 3.5 mm(MAX)
- 2) PCB MATERIA/PCB: FR-4, 1.5 oz, 1.0±0.1mm
- 3) LAYER: 2Layers
- 4) Plating Method: HASL-LF
- 5) PSR INK: Green
- 6) SILK INK: White

### 2.5 Connecting description



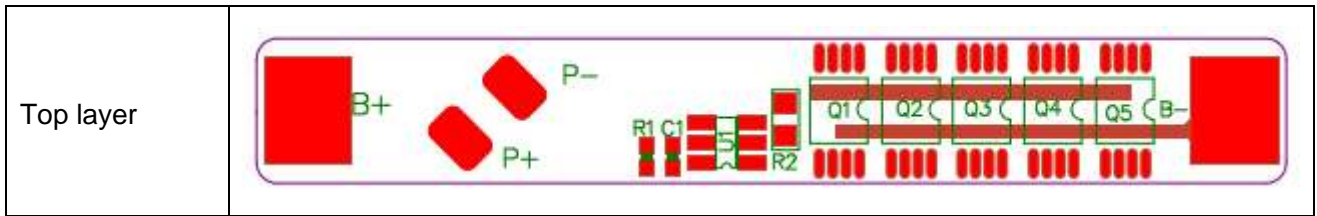
Symbol	Description	Symbol	Description
P+	Battery output/charging positive pole	B+	Cell positive pole
P-	Battery output/charging negative pole	B-	Cell negative pole

### 2.6 Electrical characteristic

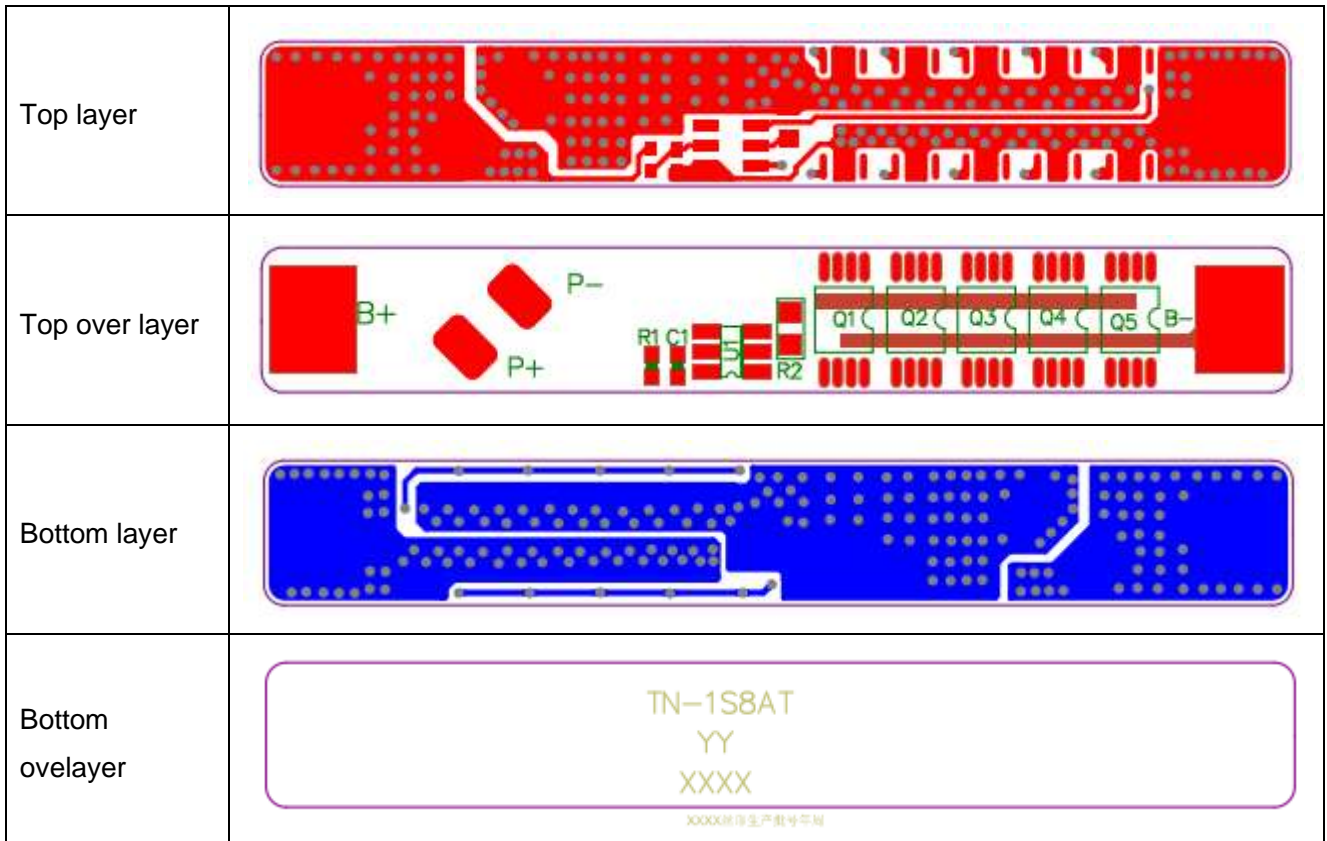
(Ta=25°C)

Contents	Min.	Type	Max.	Tolerance	Unit
<b>Absolute Maximum Rating</b>					
Input Charging Voltage		3.65			V
Input Charging Current			4		A
Output Discharging Voltage	2.10	3.20	3.75		V
Continuous Output Discharging Current			4		A
<b>Ambient Condition</b>					
Operating Temperature	-20		+65		°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)	3725	3750	3775	±25	mV
Over-Charge Voltage Protection Release	3550	3600	3650	±50	mV
Over-Charge Voltage Protection Delay Time	1000	1300	1600		mS
Over-Discharge Voltage Protection (UVP)	2050	2100	2150	±50	mV
Over-Discharge Voltage Protection Release	2250	2300	2350	±50	mV
Over-Discharge Voltage Protection Delay Time	115	145	175		mS
Over-Current Charge Protection Detection Voltage	-240	-200	-160		mV
Over-Current Charge Protection (OCC)	10	13	16		A
Over-Current Charge Protection Delay Time	6	8	20		mS
Over-Current Discharge Protection Detection Voltage	185	200	215		mV
Over-Current Discharge Protection (OCD)	10	13	16		A
Over-Current Discharge Protection Delay Time	9	12	20		ms
Short Circuit Protection Detection voltage (SCP)	550	850	1150		mV
Short Circuit Protection Delay Time	200	300	500		uS
Short Circuit Protection Release	Remove Load Or Connect Charger				
<b>Current Consumption</b>					
Normal Mode		3.0	6.0		uA
<b>Other Parameters</b>					
Impedance (B-&P-)	5	25	50		mΩ
Impedance (B+&P+)			5		mΩ
ID Resistor ID		/			KΩ
NTC Resistor NTC		/			KΩ
0V Battery Charge Function 0V	Yes				
ESD Protection Function ESD	/				

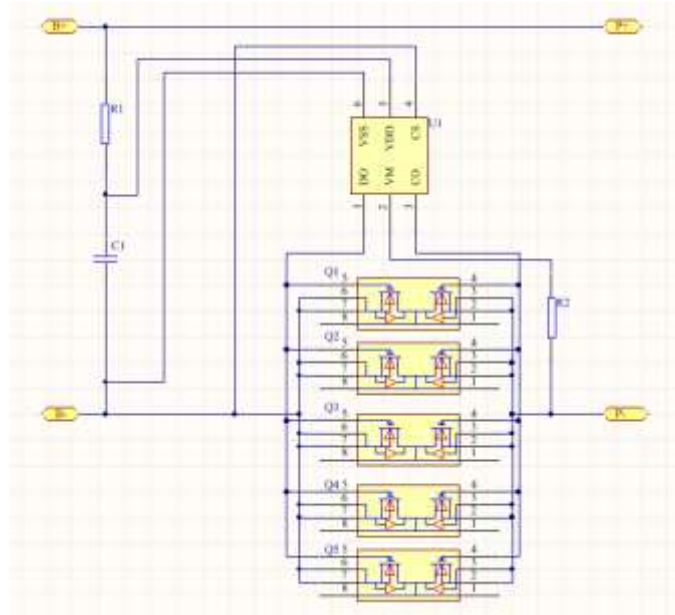
#### 4. SMT Diagram



### 5.PCB Layout / PCB



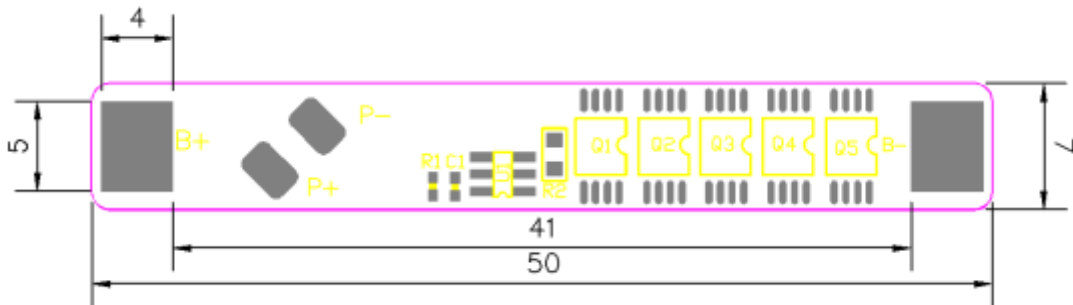
### 6.Electrical Schematic



### 7.Special Requirements

NO.		
1		
2		
3		

### 8.PCB diagram / PCB



### 9.2 Storage

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

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

9.2.3 Should pay attention to ESD

### 9.3 Transportation

9.3.1 Delivery to your storhouse by express or our deliveryman.

9.3.2 Should pay attention to moisture, moisture, avoid extrusion, impact, etc., to prevent damage to the

PCM during transportation.

## 10. Attachment

### 10.1 Sample test data

NO	Test Project	Test standard	Testing Value					Judgment
			1	2	3	4	5	
1	Overcharge protection voltage	3.75±0.25V	3.746	3.747	3.746	3.745	3.747	OK
2	Overcharge protection delay time	MAX 1600ms	1028	1030	1027	1035	1040	OK
3	Over discharge protection voltage	2.10±0.08V	2.098	2.097	2.099	2.098	2.099	OK
4	Over discharge protection delay time	MAX175ms	155	150	154	152	152	OK
5	Discharge overcurrent protection current	10-16A	12.5	12.6	12.7	12.5	12.8	OK
6	Over current discharge protection delay time	MAX20ms	12.4	13.5	12.7	12.6	12.5	OK
7	Static current	≤6.0 uA	3.5	3.6	3.5	3.6	3.5	OK
8	Impedance (B-&P-)	≤50mΩ	20	18	21	19	21	OK

### 10.2 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
镉(Cd)	<100	
铅(Pb)	<1000	
汞(Hg)	<1000	
六价铬(Cr6+)	<1000	
多溴联苯(PBBs)	<1000	

多溴二苯醚(PBDEs)	<1000	
邻苯二甲酸二丁酯(DBP)	<1000	
邻苯二甲酸丁苯酯 (BBP)	<1000	
邻苯二甲酸二异丁酯(DIBP)	<1000	
邻苯二甲酸 (2-乙基己基酯) (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.