Lithium elements

Product specification

2.2 Environmental request

☑ RoHS 2.0 ☐ HF 无卤素 ☐ REACH ☐ 其它

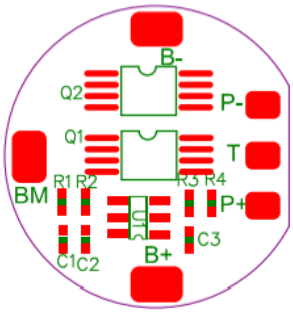
2.3 Functional description

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 17.3(±0.15mm)×W 16.3(±0.1mm)×T 2.5 mm(MAX)
2） PCB Material/PCB：FR-4, 1 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



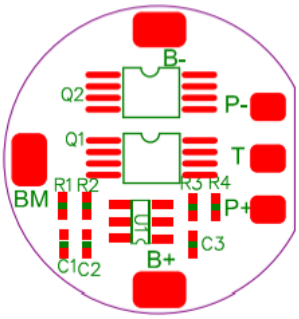
Symbol	Description	Symbol	Description
P+	Battery output/charging positive pole	B+	Cell positive pole
P-	Battery output/charging negative pole	B-	Cell negative pole
BM	Connect Cell 1 negative, connect Cell 2 positive		

2.6 Electrical characteristic (Ta=25℃)

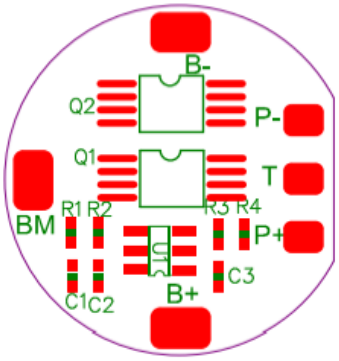
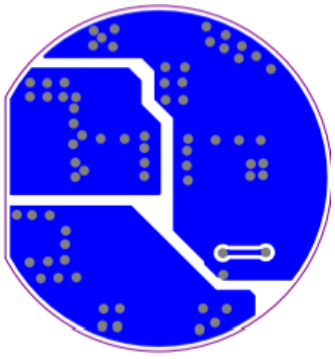
Contents	Min.	Type	Max.	Tolerance	Unit

Absolute Maximum Rating					
Input Charging Voltage		8.40			V
Input Charging Current			4		A
Output Discharging Voltage	5.80	7.40	8.56		V
Continuous Output Discharging Current			4		A
Ambient Condition					
Operating Temperature	-20		+85		℃
Humidity (No Water-Drop)	0%		80%		RH
PCM Storage Condition/PCM					
PCM Storage Temperature PCM	-55		+125		℃
Humidity (No Water-Drop)	45%		85%		RH
Protection Parameters					
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				
Current Consumption					
Normal Mode		4.0	8.0		uA
Other Parameters					
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

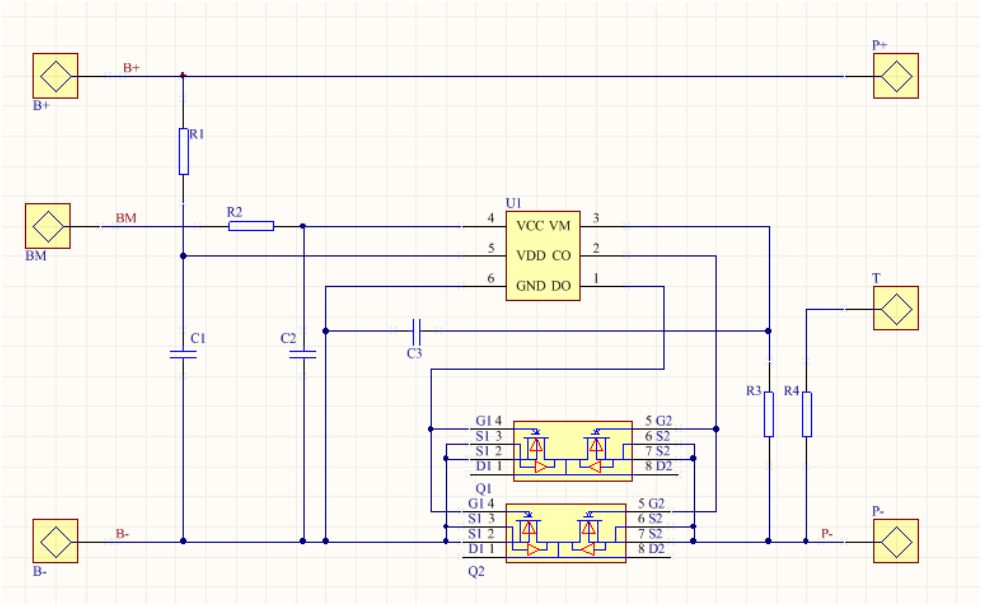
Top layout	

5.PCB Layout / PCB

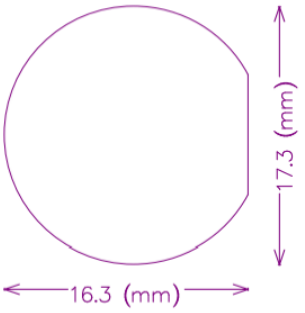
Top layer	
Top overlayer	
Bottom layer	

Bottom overlayer	

6.Electrical Schematic



7.PCB diagram / PCB



8.2.1 Storage Temperature ： 23±5℃

8.2.2 Storage Humidity ： 45±15% 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	Test Value					Judgment
			1	2	3	4	5	
1	Overcharge protection voltage	4.28±0.025V	4.275	4.269	4.273	4.275	4.269	OK
2	Overcharge protection delay time	MAX 1300ms	1088	1080	1055	1078	1068	OK
3	Overdischarge protection voltage	2.90±0.08V	2.893	2.899	2.895	2.894	2.895	OK
4	Overdischarge protection delay time	MAX150ms	124	122	124	127	128	OK
5	Discharge overcurrent protection current	7-13A	10.3	10.8	10.8	10.2	9.9	OK
6	Static current	≤8.0 uA	4.5	4.5	4.5	4.6	4.5	OK
7	Impedance（B-&P-）	≤68mΩ	36	35	34	35	35	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.