

# Lithium elements

## Product specification

History of revisions				
Version	Date	Description	Content	Made by
A0	2023-11-29	New		Lu Yong

### 一、Electrical characteristic (Ta=25°C)

Testing item	Min	Typ	Max	Unit
Overcharge detection voltage	4.255	4.280	4.305	V
Overcharge release voltage	4.030	4.080	4.130	V
Overcharge delay time	700	1000	1300	ms
Over discharge protection voltage	2.820	2.900	2.980	V
Over discharge release voltage	2.900	3.000	3.100	V
Over discharge delay time	70	110	150	ms
Over-Current Discharge Protection Detection Voltage	170	200	230	mV
Discharge Over current protection testing values	15	20	25	A
Delay time for discharge over current protection	6	10	14	ms
Over-Current Charge Protection Detection Voltage	-240	-210	-180	mV
Charge Over current protection testing values	16	21	26	A
Delay time for charge over current protection	4	7	10	ms
Current consumption(Operation)		5.0	10.0	uA
Impedance			60	mΩ
Short protection	Disconnect load			
Short protection delay time	150	250	400	us
0 V battery charge function V0	Unavailable			

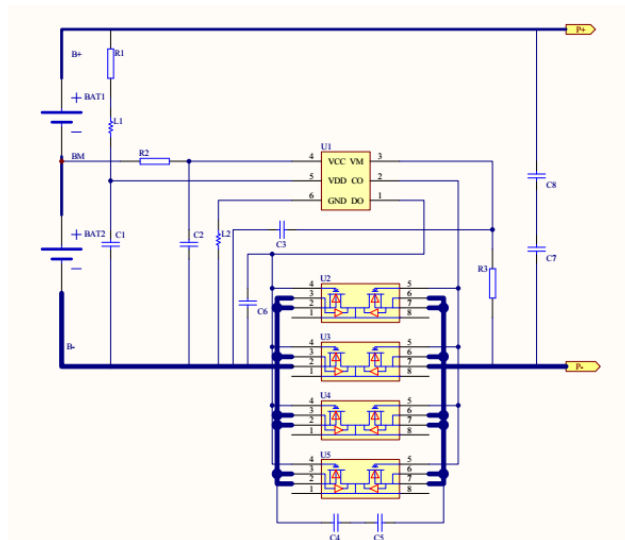
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Power down function	YES			
Continuous charging current	/	/	5	A
Continuous discharge current	/	/	5	A
ID Resistor ID	/	/	/	KΩ
NTC Resistor NTC	/	/	/	KΩ
PTC Impedance PTC	/	/	/	mΩ
Operating temperature	-20	25	65	°C

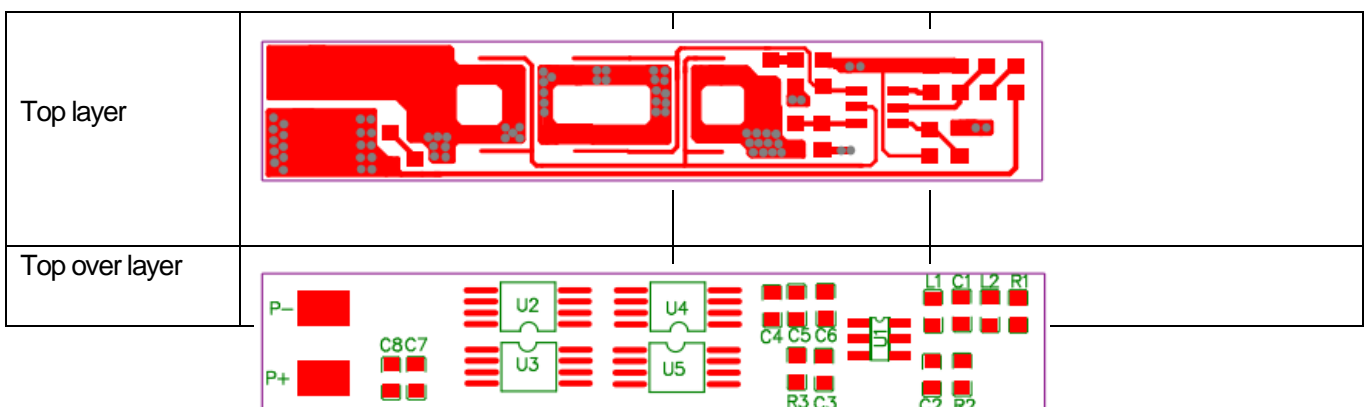
## 二、Connecting description

Symbol	Description	Symbol	Description
B+	1Cell positive pole	P+	Battery output/charging positive pole
B-	1Cell negative pole	P-	Battery output/charging negative pole

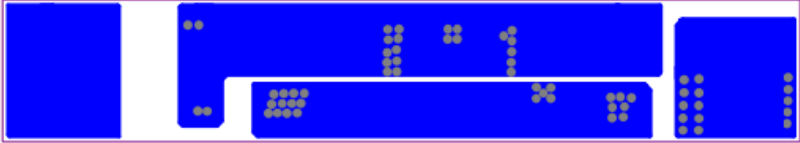
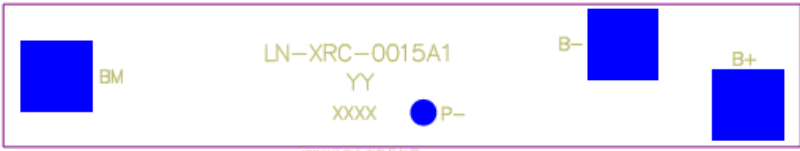
## 三、Diagram



## 五、PCB Layout

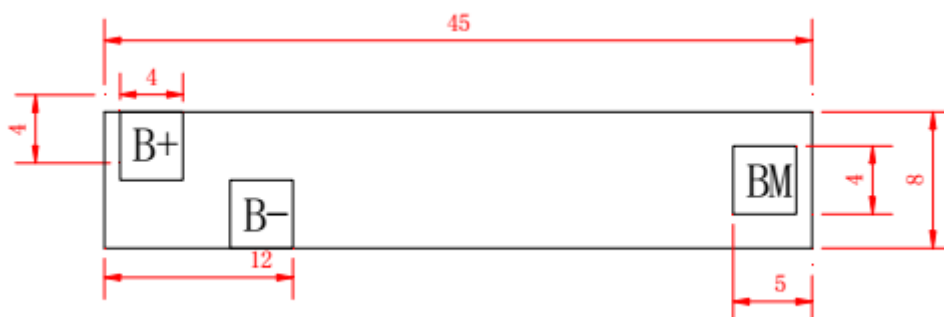


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Bottom layer			
Bottom over layer			

### 六、PCB diagram / PCB

PCB : Length  $\pm 0.15\text{mm}$ , Width  $\pm 0.15\text{mm}$ , Thickness  $\pm 0.1\text{mm}$ ,



### 七、Sample test data

NO.	Test Project	Testing Standard	Testing Value					Judgement
			1	2	3	4	5	
1	Overcharge protection voltage (V)	4.28 $\pm$ 0.025V	4.278	4.279	4.278	4.282	4.280	OK
2	Overcharge protection delay time (ms)	MAX1300ms	1088	1080	1078	1052	1065	OK

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3	Overdischarge protection voltage (V)	2.90±0.08V	2.910	2.908	2.905	2.902	2.900	OK
4	Overdischarge protection delay time (ms)	MAX150ms	120	121	118	119	119	
5	Discharge overcurrent protection current (A)	15-25A	21	20	21	21	20	OK
6	Over current protection delay time (ms)	MAX14ms	12.5	12.5	11.8	12.2	12.8	OK
7	Static current (uA)	≤10uA	5.0	4.8	5.0	5.0	4.9	OK
8	Impedance (mΩ)	≤60mΩ	22	24	22	22	22	OK
9	NTC	/						
10	ID	/						