	MAP ELECTRONICS CO., LTD.	P/N:	4-MD076L
		Rev.	01
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1. Scope :

This product specification shall be applied to rechargeable Lithium-ion battery pack.

2. Descriptions and Model Number :


- | | |
|--------------------------------|---------------------------------------|
| (1) Descriptions | Rechargeable Lithium-ion battery pack |
| (2) Battery Cell Configuration | 1S1P |
| (3) Model Number | MAP Original III (7018S11P110A) |

3. Composition :

Lithium-ion battery and Protection circuit module (PCM).

4. Product Specification :

Cell model(Nominal)	Maxell ICP652761SRU, 1100mAh
Battery pack capacity	1100mAh(0.2CA discharge at 25°C)
Battery pack Nominal Voltage	3.7V
End voltage	2.8V
Optimum charge current	≤ 1100mA
Max charge voltage	4.20±0.05V
Max continue discharge current	≤1.65A, Continue
	Peak : 1.65A,TBD
Internal Resistance	TBD
Charging method	CC/CV (Constant current/ voltage)
Operation temperature(cell surface)	Charge : 0 ~ 45°C
	Discharge : -20 ~ 60°C
Storage Temperature	-20 ~ +50°C (≤ 1 month)
※ Percentage of recoverable capacity 80%	-20 ~ +35°C (≤ 3 month)
Weight	TBD
Battery pack to be ROHS compatible	
Battery pack shall be shipped less than 30 % (by Air) charged state.	

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5. Battery pack protection function :

*Over charge and over discharge detection voltage per cell(for 25 degree)

5-1

Overcharge detection voltage	4.28±0.025V
Overcharge delay time	0.96~1.4S
Overcharge release voltage	4.08±0.025V

5-2

Over discharge detection voltage	2.30±0.05V
Over discharge release voltage	2.30±0.05V
Over discharge delay time	115~173msec

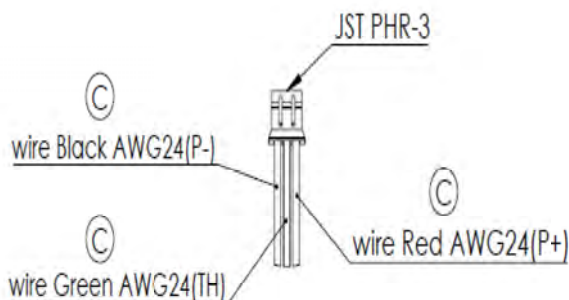
5-3


Overcurrent detection current	3.25~5.0A(Vcell=3.6V)
Overcurrent 1 detection delay time	7.2~11msec
Overcurrent 2 detection delay time	1.8~2.7 msec
Load short-circuiting detection delay time	220~380µsec
Over current release	Reset by load release

6. Terminal Definitions :

6-1. Descriptions

Pack+ (P+)	: Charger + / Output +
Pack- (P-)	: Charger - / Output -
TH	: Thermistor



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7. Performance and Test : TBD

8. Handling Warning :


- 8-1. Do not immerse the battery in water or seawater, and keep the battery in a cool dry surrounding if it stands by.
- 8-2. Do not use or leave the battery near a heat source as fire or heater
- 8-3. When recharging, use the battery charger specifically for that purpose
- 8-4. Do not reverse the position (+) and negative (-) terminals
- 8-5. Do not connect the battery to an electrical outlet
- 8-6. Do not discard the battery in fire or heat it
- 8-7. Do not short-circuit the battery by directly connecting the positive (+) and negative (-) terminal with metal objects such as wire.
- 8-8. Do not transport or store the battery together with metal objects such as necklaces, hairpins etc.
- 8-9. Do not strike or throw the battery
- 8-10. Do not directly solder the battery and pierce the battery with a nail or other sharp object
- 8-11. If the battery is stored over 1 months, it should be checked again about the remaining capacity and charge the battery.
- 8-12. We suggest that the voltage of battery should not be lower than 2.80V/Cell when working and storing, or it may cause unrecoverable decay in its capacity.

9. Warranty :

The product is warranted against defects in materials and workmanship for a period of one (1) year from the date of shipment ("warranty period") This warranty does not cover any damages caused by abuse or misuse, including but not limited to the failure to use the product for its normal purposes and operations or in accordance with this Technical Specification and /or Handling Warning.

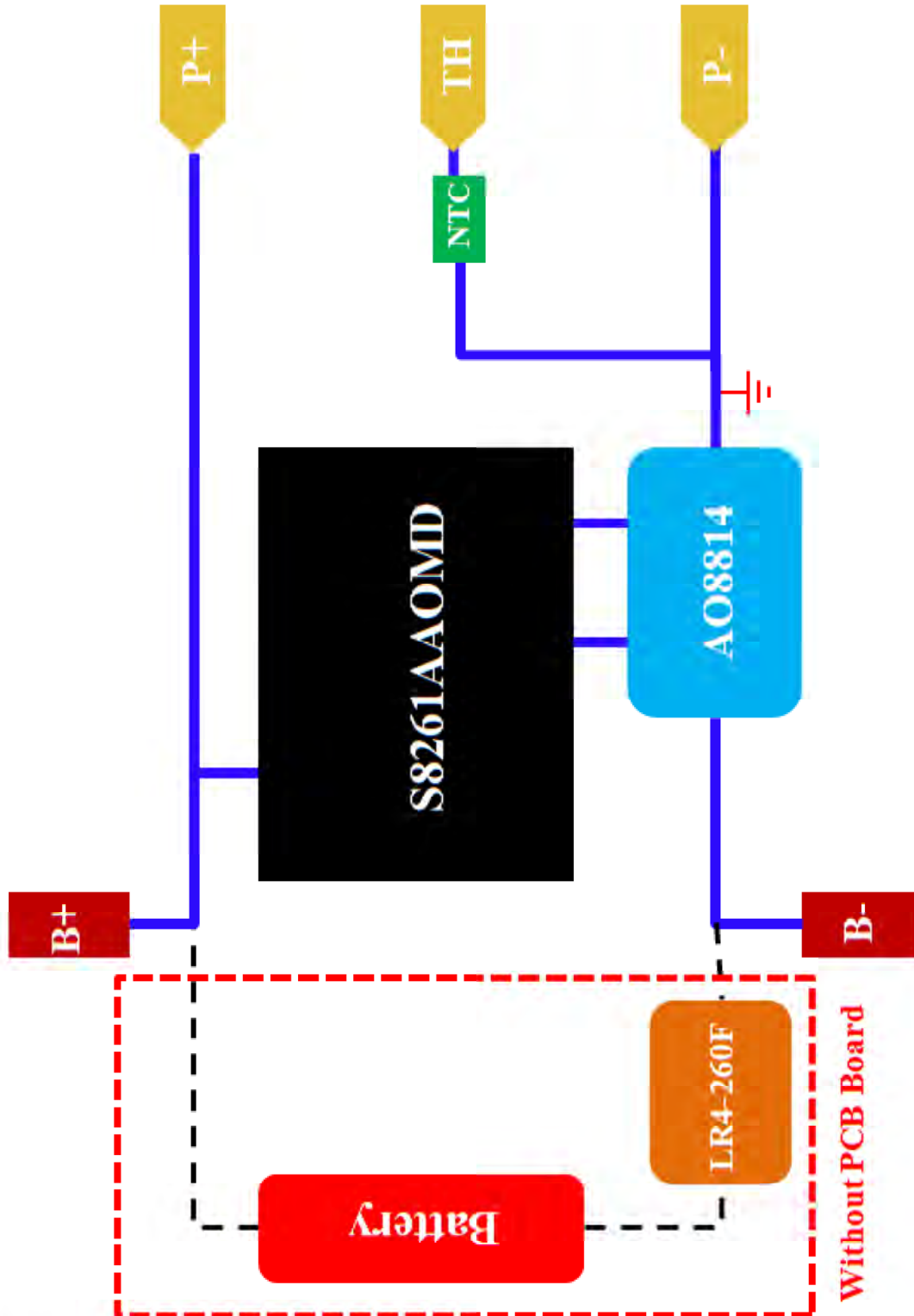
10. PCM SPEC : TBD

11. Assembly Parts List : TBD

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12. Drawings :

12-1. Schematic Diagram :

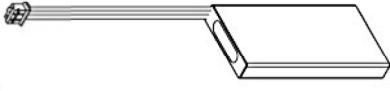


12-2. BMU Board Dimension : TBD

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12-3. Battery Pack Dimension :


Rev.	DESCRIPTION	DATE
00	NEW DESIGN	2016/10/24



APPROVED	CHECKED	DESIGN	MATERIAL	REVISION	UNIT	MM	SCALE	12	DATE	2016/10/24	SHEET	1/1
MAP electronics co., ltd.	MAP electronics co., ltd.	Kevin	Jhengyan	00	MM							

Descriptions

Pack+(P+) : Pin1, Red wire UL1061 AWG24
 TH : Pin2, Green wire UL1061 AWG24
 Pack- (P-) : Pin3, Black wire UL1061 AWG24



細部放大圖 A
比例 1:1

RANGE	COMMON TOLERANCE (MM)			
	A	B	C	D
LESS THAN 6	0.05	0.1	0.2	0.4
6 ~ 25	0.06	0.15	0.3	0.6
25 ~ 60	0.12	0.25	0.5	1.0
60 ~ 120	0.15	0.3	0.6	1.2
120 ~ 250	0.2	0.4	0.8	1.6
250 ~ 500	0.25	0.5	1.0	2.0
500 ~ 1000	0.3	0.6	1.2	2.5
1000 ~ 2500	0.4	0.8	1.6	3.0
2500 ~ 5000	0.5	1.0	2.0	4.0
5000 ~ 10000	0.6	1.2	2.5	5.0
10000 ~ 25000	0.8	1.5	3.0	6.0
25000 ~ 50000	1.0	1.8	3.5	7.0
50000 ~ 100000	1.2	2.0	4.0	8.0
100000 ~ 250000	1.5	2.5	5.0	10.0
250000 ~ 500000	2.0	3.0	6.0	12.0
500000 ~ 1000000	2.5	3.5	7.0	15.0
1000000 ~ 2500000	3.0	4.0	8.0	18.0
2500000 ~ 5000000	3.5	4.5	9.0	20.0
5000000 ~ 10000000	4.0	5.0	10.0	22.0
10000000 ~ 25000000	4.5	5.5	11.0	24.0
25000000 ~ 50000000	5.0	6.0	12.0	26.0
50000000 ~ 100000000	5.5	6.5	13.0	28.0
100000000 ~ 250000000	6.0	7.0	14.0	30.0
250000000 ~ 500000000	6.5	7.5	15.0	32.0
500000000 ~ 1000000000	7.0	8.0	16.0	34.0
1000000000 ~ 2500000000	7.5	8.5	17.0	36.0
2500000000 ~ 5000000000	8.0	9.0	18.0	38.0
5000000000 ~ 10000000000	8.5	9.5	19.0	40.0
10000000000 ~ 25000000000	9.0	10.0	20.0	42.0
25000000000 ~ 50000000000	9.5	10.5	21.0	44.0
50000000000 ~ 100000000000	10.0	11.0	22.0	46.0
100000000000 ~ 250000000000	10.5	11.5	23.0	48.0
250000000000 ~ 500000000000	11.0	12.0	24.0	50.0
500000000000 ~ 1000000000000	11.5	12.5	25.0	52.0
1000000000000 ~ 2500000000000	12.0	13.0	26.0	54.0
2500000000000 ~ 5000000000000	12.5	13.5	27.0	56.0
5000000000000 ~ 10000000000000	13.0	14.0	28.0	58.0
10000000000000 ~ 25000000000000	13.5	14.5	29.0	60.0
25000000000000 ~ 50000000000000	14.0	15.0	30.0	62.0
50000000000000 ~ 100000000000000	14.5	15.5	31.0	64.0
100000000000000 ~ 250000000000000	15.0	16.0	32.0	66.0
250000000000000 ~ 500000000000000	15.5	16.5	33.0	68.0
500000000000000 ~ 1000000000000000	16.0	17.0	34.0	70.0
1000000000000000 ~ 2500000000000000	16.5	17.5	35.0	72.0
2500000000000000 ~ 5000000000000000	17.0	18.0	36.0	74.0
5000000000000000 ~ 10000000000000000	17.5	18.5	37.0	76.0
10000000000000000 ~ 25000000000000000	18.0	19.0	38.0	78.0
25000000000000000 ~ 50000000000000000	18.5	19.5	39.0	80.0
50000000000000000 ~ 100000000000000000	19.0	20.0	40.0	82.0
100000000000000000 ~ 250000000000000000	19.5	20.5	41.0	84.0
250000000000000000 ~ 500000000000000000	20.0	21.0	42.0	86.0
500000000000000000 ~ 1000000000000000000	20.5	21.5	43.0	88.0
1000000000000000000 ~ 2500000000000000000	21.0	22.0	44.0	90.0
2500000000000000000 ~ 5000000000000000000	21.5	22.5	45.0	92.0
5000000000000000000 ~ 10000000000000000000	22.0	23.0	46.0	94.0
10000000000000000000 ~ 25000000000000000000	22.5	23.5	47.0	96.0
25000000000000000000 ~ 50000000000000000000	23.0	24.0	48.0	98.0
50000000000000000000 ~ 100000000000000000000	23.5	24.5	49.0	100.0
100000000000000000000 ~ 250000000000000000000	24.0	25.0	50.0	102.0
250000000000000000000 ~ 500000000000000000000	24.5	25.5	51.0	104.0
500000000000000000000 ~ 1000000000000000000000	25.0	26.0	52.0	106.0
1000000000000000000000 ~ 2500000000000000000000	25.5	26.5	53.0	108.0
2500000000000000000000 ~ 5000000000000000000000	26.0	27.0	54.0	110.0
5000000000000000000000 ~ 10000000000000000000000	26.5	27.5	55.0	112.0
10000000000000000000000 ~ 25000000000000000000000	27.0	28.0	56.0	114.0
25000000000000000000000 ~ 50000000000000000000000	27.5	28.5	57.0	116.0
50000000000000000000000 ~ 100000000000000000000000	28.0	29.0	58.0	118.0
100000000000000000000000 ~ 250000000000000000000000	28.5	29.5	59.0	120.0
250000000000000000000000 ~ 500000000000000000000000	29.0	30.0	60.0	122.0
500000000000000000000000 ~ 1000000000000000000000000	29.5	30.5	61.0	124.0
1000000000000000000000000 ~ 2500000000000000000000000	30.0	31.0	62.0	126.0
2500000000000000000000000 ~ 5000000000000000000000000	30.5	31.5	63.0	128.0
5000000000000000000000000 ~ 10000000000000000000000000	31.0	32.0	64.0	130.0
10000000000000000000000000 ~ 25000000000000000000000000	31.5	32.5	65.0	132.0
25000000000000000000000000 ~ 50000000000000000000000000	32.0	33.0	66.0	134.0
50000000000000000000000000 ~ 100000000000000000000000000	32.5	33.5	67.0	136.0
100000000000000000000000000 ~ 250000000000000000000000000	33.0	34.0	68.0	138.0
250000000000000000000000000 ~ 500000000000000000000000000	33.5	34.5	69.0	140.0
500000000000000000000000000 ~ 1000000000000000000000000000	34.0	35.0	70.0	142.0
1000000000000000000000000000 ~ 2500000000000000000000000000	34.5	35.5	71.0	144.0
2500000000000000000000000000 ~ 5000000000000000000000000000	35.0	36.0	72.0	146.0
5000000000000000000000000000 ~ 10000000000000000000000000000	35.5	36.5	73.0	148.0
10000000000000000000000000000 ~ 25000000000000000000000000000	36.0	37.0	74.0	150.0
25000000000000000000000000000 ~ 50000000000000000000000000000	36.5	37.5	75.0	152.0
50000000000000000000000000000 ~ 100000000000000000000000000000	37.0	38.0	76.0	154.0
100000000000000000000000000000 ~ 250000000000000000000000000000	37.5	38.5	77.0	156.0
250000000000000000000000000000 ~ 500000000000000000000000000000	38.0	39.0	78.0	158.0
500000000000000000000000000000 ~ 1000000000000000000000000000000	38.5	39.5	79.0	160.0
1000000000000000000000000000000 ~ 2500000000000000000000000000000	39.0	40.0	80.0	162.0
2500000000000000000000000000000 ~ 5000000000000000000000000000000	39.5	40.5	81.0	164.0
5000000000000000000000000000000 ~ 10000000000000000000000000000000	40.0	41.0	82.0	166.0
10000000000000000000000000000000 ~ 25000000000000000000000000000000	40.5	41.5	83.0	168.0
25000000000000000000000000000000 ~ 50000000000000000000000000000000	41.0	42.0	84.0	170.0
50000000000000000000000000000000 ~ 100000000000000000000000000000000	41.5	42.5	85.0	172.0
100000000000000000000000000000000 ~ 250000000000000000000000000000000	42.0	43.0	86.0	174.0
250000000000000000000000000000000 ~ 500000000000000000000000000000000	42.5	43.5	87.0	176.0
500000000000000000000000000000000 ~ 1000000000000000000000000000000000	43.0	44.0	88.0	178.0
1000000000000000000000000000000000 ~ 2500000000000000000000000000000000	43.5	44.5	89.0	180.0
2500000000000000000000000000000000 ~ 5000000000000000000000000000000000	44.0	45.0	90.0	182.0
5000000000000000000000000000000000 ~ 10000000000000000000000000000000000	44.5	45.5	91.0	184.0
10000000000000000000000000000000000 ~ 25000000000000000000000000000000000	45.0	46.0	92.0	186.0
25000000000000000000000000000000000 ~ 50000000000000000000000000000000000	45.5	46.5	93.0	188.0
50000000000000000000000000000000000 ~ 100000000000000000000000000000000000	46.0	47.0	94.0	190.0
100000000000000000000000000000000000 ~ 250000000000000000000000000000000000	46.5	47.5	95.0	192.0
250000000000000000000000000000000000 ~ 500000000000000000000000000000000000	47.0	48.0	96.0	194.0
500000000000000000000000000000000000 ~ 1000000000000000000000000000000000000	47.5	48.5	97.0	196.0
1000000000000000000000000000000000000 ~ 2500000000000000000000000000000000000	48.0	49.0	98.0	198.0
2500000000000000000000000000000000000 ~ 5000000000000000000000000000000000000	48.5	49.5	99.0	200.0
5000000000000000000000000000000000000 ~ 10000000000000000000000000000000000000	49.0	50.0	100.0	202.0
10000000000000000000000000000000000000 ~ 25000000000000000000000000000000000000	49.5	50.5	101.0	204.0
25000000000000000000000000000000000000 ~ 50000000000000000000000000000000000000	50.0	51.0	102.0	206.0
50000000000000000000000000000000000000 ~ 100000000000000000000000000000000000000	50.5	51.5	103.0	208.0
100000000000000000000000000000000000000 ~ 250000000000000000000000000000000000000	51.0	52.0	104.0	210.0
250000000000000000000000000000000000000 ~ 500000000000000000000000000000000000000	51.5	52.5	105.0	212.0
500000000000000000000000000000000000000 ~ 1000000000000000000000000000000000000000	52.0	53.0	106.0	214.0
1000000000000000000000000000000000000000 ~ 2500000000000000000000000000000000000000	52.5	53.5	107.0	216.0
2500000000000000000000000000000000000000 ~ 5000000000000000000000000000000000000000	53.0	54.0	108.0	218.0
5000000000000000000000000000000000000000 ~ 10000000000				