Protected Cell

Reverse Polarity Protection

Overcurrent, OverVoltage, Undervoltage Protection

+BATT

4,2V Li-Ion
BT1

6A
F1

+BATT
U1
Comparator
RVDetect1
GND

R2
100
C1
0.1uF

U5 DW01A
VCC   CS
TD
GND OD OC

R4
1k

U7
FS8205
S1 G1 G2 S2
D12 D12

GND1

Phone wiring

+BATT

Protected Cell
GND1

Protected Cell
GND2

ChargingMode Detector

10k
R13
C5
0.1uF

R14
1M

+BATT
U13
Comparator
ChargingMode
GND

R17
100

R?
5mil

Discharge
Charge

J1
1 VBat
2 BSI
3 BTemp
4 GND

Phone Port

82k

NTC Thermistor

GND

U9 FS8205
Cell1Gate
G1 D12
G2 D12
S1
S2

↑ Discharge
↓ Charge

R6
1k

U10 FS8205
Cell2Gate
G1 D12
G2 D12
S1
S2

↑ Discharge
↓ Charge

Protected Cell

Reverse Polarity Protection

Overcurrent, OverVoltage, Undervoltage Protection

+BATT

4,2V Li-Ion
BT2

6A
F2

+BATT
U2
Comparator
RVDetect2
GND

R3
100
C2
0.1uF

U6 DW01A
VCC   CS
TD
GND OD OC

R5
1k

U8
FS8205
S1 G1 G2 S2
D12 D12

GND2

Cells Balancing Control

+BATT

1M
R7
15k
R8

GND2+
C3
0.1uF

R11
10k

+BATT
R15
1M
U11
Comparator
Comparator1
GND

Protected Cell GND2

Protected Cell GND1

GND1

GND2+ > GND1 -> Cell1 Fuller or balanced Cells
VC2- < VC1 -> Cell1 Fuller or balanced Cells

+BATT

1M
R9
15k
R10

GND1+
C4
0.1uF

R12
10k

+BATT
R16
1M
U12
Comparator
Comparator2
GND

GND2

The higher the potential
the lower is the Cell voltage ->

GND1+ > GND2 -> Cell2 Fuller or balanced Cells

Control Logic

ChargingMode

RVDetect1
RVDetect2

Comparator1
Comparator2

U?A
U?A
U?A
U?A

Cell1Gate

Cell2Gate