ENEPOWER

MIBMS-4S4A-LI-01
Protection Circuit Module (PCM)

Lilon

PCM for 14.4/14.8V Lilon Battery Pack

SPECIFICATIONS

Characteristics				Specification
1	Electrical Characteristics	Charging Voltage (P+, P-)		14.4V
		Continuous Charging Current (P+, P-)		4A
		Continuous Discharging Current (P+, P-)		4A
		Input Voltage for Terminals		5V (B1, B2, B3, B+)
		Impedance (B-, P-)		≤5mΩ
		Current Consumption (+25°C)	Working	≤600μA
			Communicating	≤2000μA
			Sleeping average	≤350μA
			Bluetooth	≤50μA
		Temperature	Operating	-40~+85°C
			Storage	-40~+125°C
		Humidity	Operating	<75%RH
			Storage	<85%RH

Test Item *Test at normal temperature 25±2°C and relative humidity ≤90%.*				Criterion		
				Parameter	Delay Time	Mode
2	Over Voltage Protection	Activate		4250mV	2s	Turn OFF charging FET
		Release		4050mV	0s	Turn ON charging FET
3	Under Voltage Protection	Activate		2500mV	2s	Turn OFF discharging FET
		Release		3000mV	0s	Turn ON discharging FET
4	Over Current Protection	Charge	Activate (1st Level)	15A	2s	Turn OFF charging FET
			Release (1st Level)	0A	10s	Turn ON charging FET
			Activate (2nd Level)	20A	1s	Turn OFF charging FET
			Release (2nd Level)	0A	10s	Turn ON charging FET
		Discharge	Activate (1st Level)	15A	2s	Turn OFF discharging FET
			Release (1st Level)	0A	10s	Cut load, auto release
			Activate (2nd Level)	20A	2s	Turn OFF discharging FET
			Release (2nd Level)	0A	10s	Cut load, auto release
			Activate (3rd Level)	25A	31s	Turn OFF discharging FET
			Release (3rd Level)	0A	15s	Cut load, auto release
5	Short Circuit Protection	Activate (1st Level)		15A	≤500μs	Turn OFF discharging FET
		Release (1st Level)		0A	≤15s-	Short circuit release, auto recovery
		Activate (2nd Level)		20A	≤250μs	Turn OFF discharging FET
		Release (2nd Level)		0A	≤15s-	Short circuit release, auto recovery
6	Over Temperature Protection - CHARGING	Battery	Activate	55°C	2.0s	Turn OFF charging FET
			Release	45°C	0	Turn ON charging FET
		FET	Activate	80°C	2.0s	Turn OFF charging FET
			Release	65°C	0	Turn ON charging FET
7	Under Temperature Protection - CHARGING		Activate	-20°C	2.0s	Turn OFF discharging FET
			Release	-5°C	0	Turn ON charging FET
8	Over Temperature Protection - DISCHARGING	Battery	Activate	65°C	2.0s	Turn OFF discharging FET
			Release	55°C	0	Turn ON discharging FET
		FET	Activate	80°C	2.0s	Turn OFF discharging FET
			Release	65°C	0	Turn ON discharging FET
9	Under Temperature Protection - DISCHARGING		Activate	-20°C	2.0s	Turn OFF discharging FET
			Release	-5°C	5.0s	Turn ON charging FET
10	Cell Balancing			Voltage ≥ 3600mV		
11	Dimensions			L 65mm x W 18mm		

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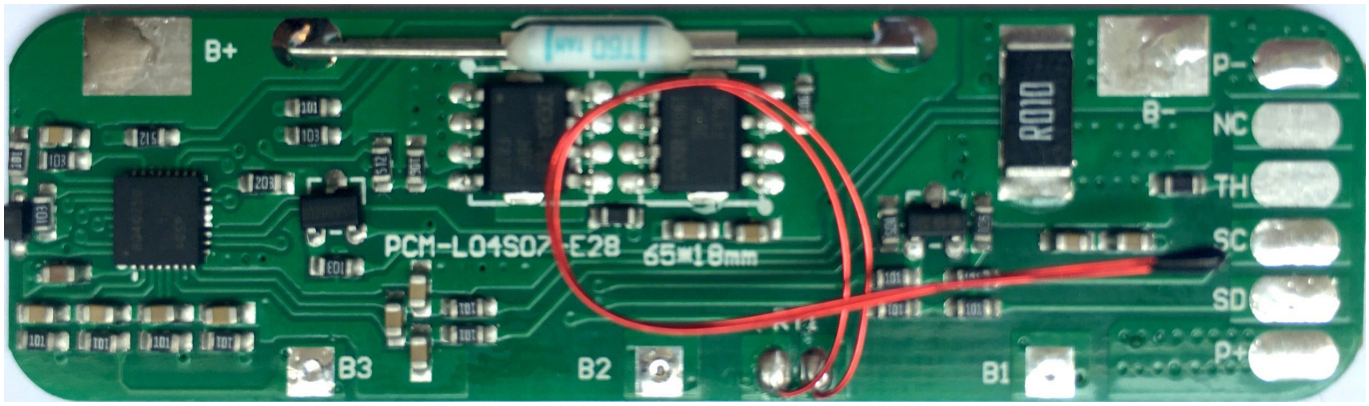
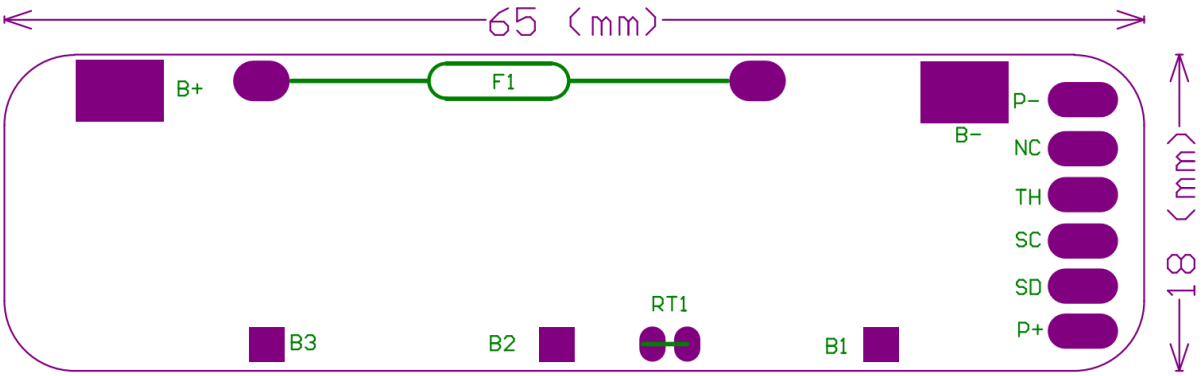
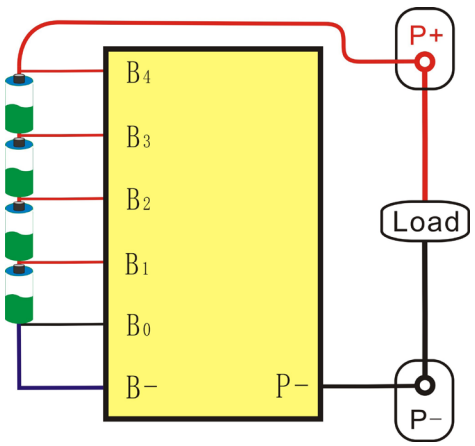
IMAGE



CONNECTION DIAGRAM





Terminal	Description
B−	Negative pole for main circuit to be connected with negative pole of Cell 1
B−	Negative terminal for Cell 1
B1	Positive terminal for Cell 1 and negative terminal for Cell 2
B2	Positive terminal for Cell 2 and negative terminal for Cell 3
B3	Positive terminal for Cell 3 and negative terminal for Cell 4
B+	Output positive terminal
P+	Output positive terminal
P−	Negative terminals for charge/discharge and I2C communication
SCL	Terminal for clock of I2C communication
SDA	Terminal for data of I2C communication
RT1	Terminal for temperature detection of NTC

Note: the connection between cells and PCB should be followed this order:
B-→B1→B2→B3→B+, or it will cause potential damage to the BMS if not followed in this connection order.