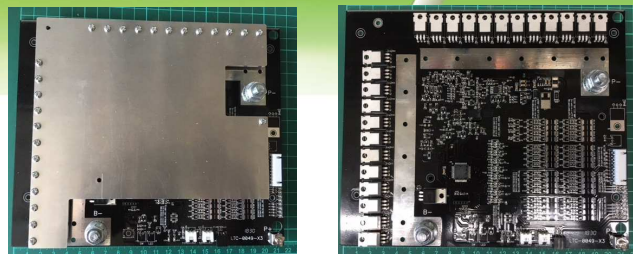


12-12 BMS Board-8s



The BMS Board provides full protection function for Start-up LFP(LiFePO₄) Battery applications. 12-12 back to back MOSFET switch which can handle up-to 110A continuously charging/discharging current.

Features & Benefits:

- Rated continuously charging/discharging current : 110A, peak 2000A with 10ms
- Gradient Current Management : OCP triggering time depends on gradient current
- Load short circuit protection : Short circuit latch mode protection and auto-recovery within 60sec
- Dynamic battery charging balance : 4 gradient balance(Max. 400mA) ability depends on battery voltage difference.
- Shutdown-Sleep & Wake up by self-recognition : Idle counting > 120 hours then goes into Shutdown-Sleep mode, and auto Wake up by self-recognition
- Low Voltage Start-up Energy Reserve(LVSE) : <8A/5sec(30sec period) allowable loading while battery voltage < 2.9V
- Battery cell UVP & OVP protection and auto-recovery
- Two point Battery temperature monitoring and protection
- Reversed Electromotive Force protection

Dimension & Weight

Dimension	210x175x17mm
Materials	
Top Metal Plat	Aluminum Alloy 6061, 2mm thickness
PCB	FR4, 1.6mm thickness, Black
Bottom Plat	Bakelite, 3mm thickness, Orange
Weight	620g

Operation Specification

Item	Conditions		Unit	Spec	Note	Allowable Parameter Range
Charge OCP	Max. Continuously Charge Current		A	110		
	Charge OCP and Trigger Time ±10% @ 25°C	5 sec	A	120~150		
		2.5 sec	A	151~200		
		1 sec	A	>200		
	Charge OCP Recovery Time		Sec	5		
Charge OVP	Single-Cell OVP		V	4.05	*	3.80~4.20
	Single-Cell OVP Recovery		V	3.45	*	3.30~3.60
	Total Cell String Charge OVP		V	31.6		
	OVP Delay Time		Sec	0.2	*	0.1~10.0
Discharge OCP	Max. Continuously Discharge Current		A	110	*	90~110
	Discharge OCP and Trigger Time ±10% @ 25°C	1 sec	A	1300~1999		
		5 sec	A	700~1299		
		10 sec	A	400~699		
		120 sec	A	200~399		
		800 sec	A	111~199		Max. Current+1~
	Load Short-Circuit Protection(SCP)		A	>2000		
	OCP/SCP Recovery Time		Sec	50	*	30~60
Discharge UVP	Single-Cell UVP		V	2.4	*	2.3~2.5
	Single-Cell UVP Recovery		V	2.8	*	2.7~2.9
	Total Cell String Discharge UVP		V	20		
	UVP Delay Time		Sec	3	*	1~10
LVSER Mode	LVSER Mode Cell Start Voltage		V	≤2.9	*	2.7~3.1
	LVSER Allowable Load Current		A	≤8	*	5~8
	LVSER Mode Operation Current		mA	≤32		
	LVSER Mode Sleeping Current		mA	≤15		
	LVSER Mode Sleeping Time(working 5sec)		Sec	30	*	20~60
No Load Deep Sleeping (NLDS)Mode	NLDS Mode Entry Counting Time		Hour	120	*	24~240
	NLDS Mode Sleeping Current		uA	<100		
	NLDS Wake-up Time		Sec	5	*	5~240
	External Switch Full Cutting Power			J2		
Battery Balance	Battery Balance Start-up Voltage		V	>3.5	*	3.3~3.6
	Trigger Voltage Difference(VH-VL)		mV	45	*	30~45
	Gradient Balancing Ability	100%	mA	400±10%		
		75%	mA	300±10%		
		50%	mA	200±10%		
		25%	mA	100±10%		
	Balancing Status Display		LED	Light-up		
OTP/UTP	Maximum Charging Terperature		°C	70	*	60~70
	OTP Recovery Terperature		°C	≤60	*	50~60
	Minimum Charging Terperature		°C	0	*	-10~0
	OTP Recovery Terperature		°C	≥5	*	0~10
	Maximum Discharging Terperature		°C	75	*	65~75
	OTP Recovery Terperature		°C	≤65	*	55~65
	Minimum Charging Terperature		°C	-20	*	-10~0
	OTP Recovery Terperature		°C	≥-10	*	
Reversed Electromotive Force Protection	Reversed Electromotive Force Energy Releasing			Hardware		
Communication Interface	Key parameter modification			USB/UART		