



Lilon

LiFePO<sub>4</sub>

LTO

Na-ion

### PCM for 11S Battery Pack: Programmable for multiple chemistries

## SPECIFICATIONS

Item	Specification				Remark
	MIBMS-11S15A-LNMC-01	MIBMS-11S15A-LFP-01	MIBMS-11S15A-LTO-01	MIBMS-11S15A-NA-01	
<b>1. General</b>					
Stock Code	70000-011-LNMC	70000-011-LFP	70000-011-LTO	70000-011-NA	
Chemistry	Li-Ion NMC	LiFePO <sub>4</sub>	Lithium Titanate	Sodium ion	Programmed for 11S
Dimensions LxWxH	72 x 54 x 9.5mm				
Weight	20g				
PCB Material	FR4. 2oz Copper				
<b>2. IC &amp; Mosfet</b>					
Protection IC	BQ76952				
Gauge IC	N/A				
MosFET	BSC026N08NS5ATMA1(80V)				
Power consumption - active mode	<500µA				
Power consumption - sleep mode	<100µA				
<b>3. Voltage</b>					
Minimum battery pack voltage	27.5V	22V	16.5V	22V	
Nominal battery pack voltage	39.6V	35.2V	25.3V	33V	
Maximum battery pack voltage	46.2V	40.15V	31.9V	44V	
<b>4. Charge Characteristics</b>					
<b>4.1 Voltage</b>					
Cell nominal voltage	3.6V	3.2V	2.3V	3V	
Charge voltage	4.2V/cell	3.65V/cell	2.9V/cell	4V/cell	#
Charge over voltage threshold	4.25V/cell	3.7V/cell	2.95V/cell	4.05V/cell	#
Charge over voltage delay time	2s				#
Charge over voltage release	3.9V/cell	3.35V/cell	2.6V/cell	3.7V/cell	#
2nd charge over voltage	4.5V/cell	3.95V/cell	3.2V/cell	4.3V/cell	Permanent fail (blows chemfuse)
2nd charge over voltage delay time	30s				Permanent fail (blows chemfuse)
Balancing start voltage	3.9V/cell	3.35V/cell	2.6V/cell	3.7V/cell	#
Balancing start delta voltage	20mV				#
<b>4.2 Current</b>					
Charge over current threshold	15A				#
Charge over current delay time	426ms				#
Charge over current release	426ms				#
<b>4.3 Temperature</b>					
Charge over temperature threshold	50°C ± 3°C				#
Charge over temperature release	45°C ± 3°C				#
Charge under temperature threshold	0°C ± 3°C				#
Charge under temperature release	5°C ± 3°C				#
Temperature protection delay time	2s				#





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<b>5. Discharge Characteristics</b>					
<b>5.1 Voltage</b>					
Discharge under voltage threshold	2.5V/cell	2V/cell	1.5V/cell	2V/cell	#
Discharge under voltage delay time	2s				#
Discharge under voltage release	2.7V/cell	2.5V/cell	1.9V/cell	2.5V/cell	#
<b>5.2 Current</b>					
Discharge over current threshold	18A				#
Discharge over current delay time	10s				#
Discharge over current release	0A-10s				#
<b>5.3 Temperature</b>					
Discharge over temperature threshold	60°C ± 3°C				#
Discharge over temperature release	50°C ± 3°C				#
Discharge under temperature threshold	-10°C ± 3°C				#
Discharge under temperature release	0°C ± 3°C				#
Temperature protection delay time	2s				#
<b>6. Maximum Current</b>					
Max continuous charge / discharge current	At 25°C: 18A At 45°C: 15A				
<b>7. Short Circuit</b>					
Short Circuit threshold	20A				#
Short Circuit delay time	330µs ± 15µs				#
Short Circuit release	Load disconnect				#
<b>8. Maximum Temperature</b>					
Chemfuse max temperature	65°C				
<b>9. Polarity</b>					
Reverse polarity protection	No				

# indicates factory adjustable





# ENEPOWER

## MIBMS-11S15A series

### Protection Circuit Module (PCM)

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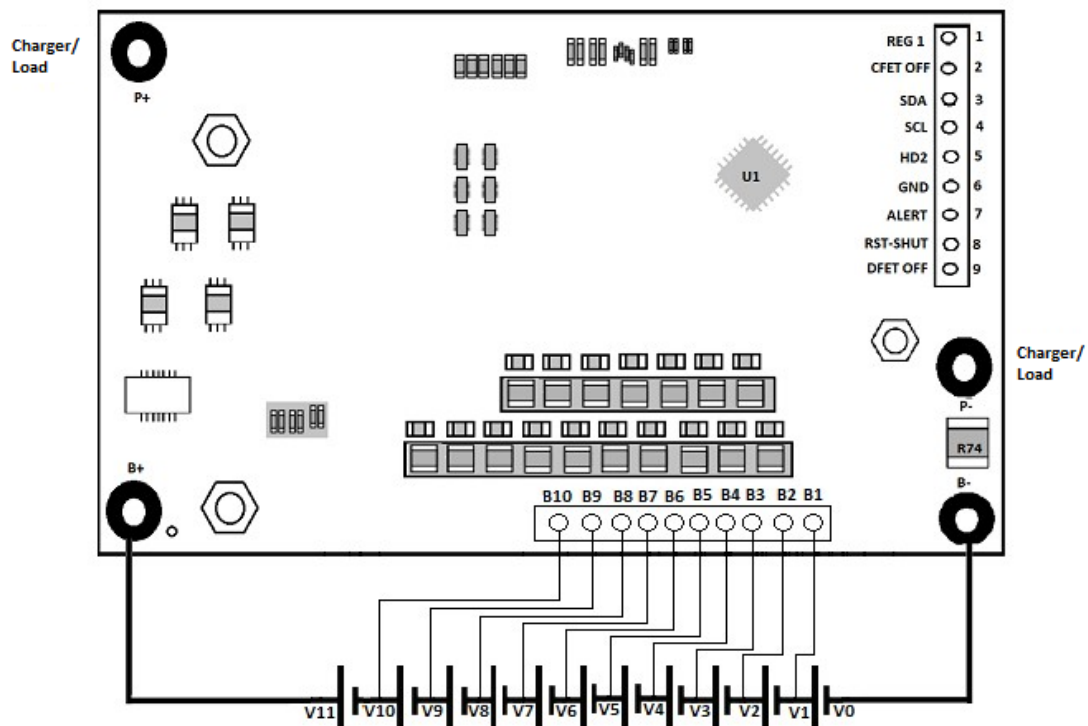
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*Programmable for multiple chemistries*

IMAGE

## CONNECTION DIAGRAM



**BQ76952 Connection Diagram**

