



Lilon

LiFePO₄

LTO

Na-ion

PCM for 16S Battery Pack: Programmable for multiple chemistries

SPECIFICATIONS

| Item | Specification | | | | Remark |
|------------------------------------|--------------------|---------------------|------------------|-----------------|---------------------------------|
| | MIBMS-16S50A-LNMC | MIBMS-16S50A-LFP | MIBMS-16S50A-LTO | MIBMS-16S50A-NA | |
| 1. General | | | | | |
| Stock Code | 67003-050A16 | 67003-050A16-LFP | 67003-050A16-LTO | 67003-050A16-NA | |
| Chemistry | Li-Ion NMC | LiFePO ₄ | Lithium Titanate | Sodium ion | Programmed for 16S |
| Dimensions LxWxH | 105 x 65.5 x 1.6mm | | | | |
| PCB Material | FR4 | | | | |
| 2. IC & Mosfet | | | | | |
| Protection IC | BQ76952 | | | | |
| MosFET | LM1A013NHX8A | | | | |
| Fuse | CLM3820P5045C | | | | |
| Power consumption - active mode | 10mA | | | | |
| Power consumption - sleep mode | ≤300µA | | | | |
| 3. Voltage | | | | | |
| Minimum battery pack voltage | 40V | 32V | 24V | 32V | |
| Nominal battery pack voltage | 57.6V | 51.2V | 36.8V | 48V | |
| Maximum battery pack voltage | 67.2V | 58.4V | 46.4V | 64V | |
| 4. Charge Characteristics | | | | | |
| 4.1 Voltage | | | | | |
| 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 | | | | # |
| 4.2 Current | | | | | |
| Charge over current threshold | 15A | | | | # |
| Charge over current delay time | 426ms | | | | # |
| Charge over current release | 426ms | | | | # |
| 4.3 Temperature | | | | | |
| 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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| 5. Discharge Characteristics | | | | | |
| 5.1 Voltage | | | | | |
| Discharge under voltage threshold | 2.5V/cell | 2V/cell | 1.5V/cell | 2V/cell | # |
| Discharge under voltage delay time | 2s | | | | # |
| Discharge under voltage release | 3.05V/cell | 2.6V/cell | 1.9V/cell | 2.5V/cell | # |
| 5.2 Current | | | | | |
| Discharge over current threshold | 60A ± 2A | | | | # |
| Discharge over current delay time | 10s | | | | # |
| Discharge over current release | 0A-10s | | | | # |
| 5.3 Temperature | | | | | |
| 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 | | | | # |
| 6. Maximum Current | | | | | |
| Max continuous charge / discharge current | At 25°C: 50A At 45°C: 40A | | | | |
| 7. Short Circuit | | | | | |
| Short Circuit threshold | 200A ± 1% | | | | # |
| Short Circuit delay time | 330µs ± 15µs | | | | # |
| Short Circuit release | Load disconnect | | | | # |
| 8. Maximum Temperature | | | | | |
| Chemfuse max temperature | 65°C | | | | |
| 9. Polarity | | | | | |
| Reverse polarity protection | No | | | | |

indicates factory adjustable





ENEPOWER

MIBMS-16S50A series

Protection Circuit Module (PCM)

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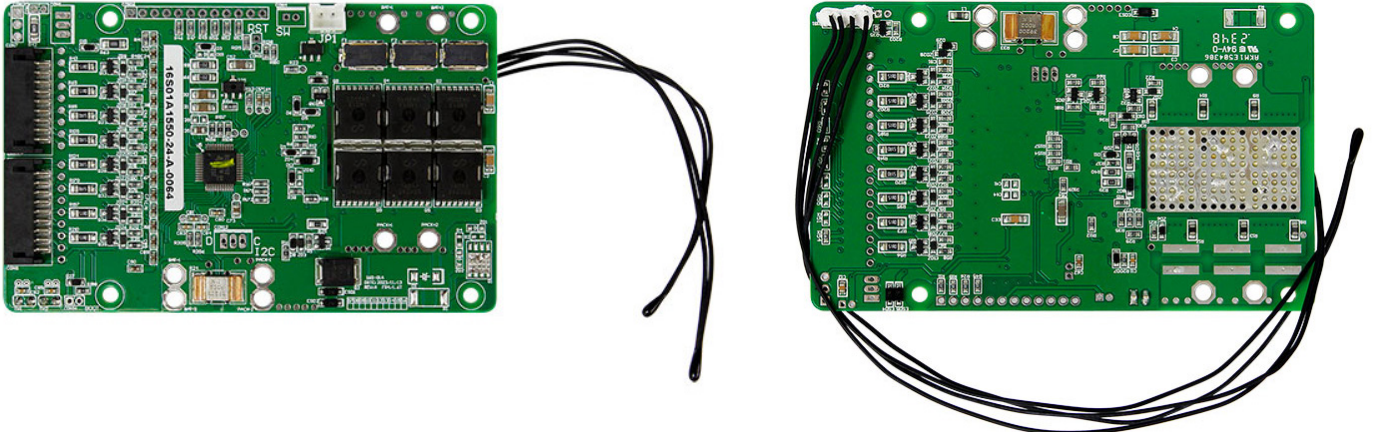
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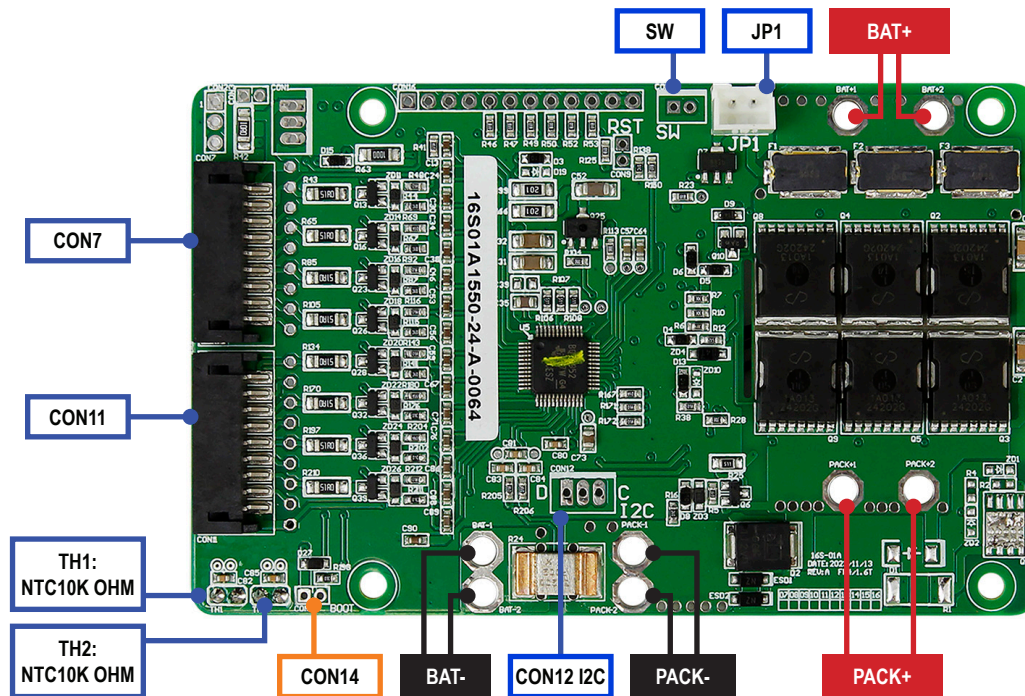
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IMAGE



CONNECTION DIAGRAM



| | |
|-----------------|---|
| PACK - / PACK + | BATTERY EXTERNAL INPUT / OUTPUT |
| BAT - / BAT + | CONNECTION TO CELL PACK NEGATIVE AND POSITIVE |
| CON7 | 9 PIN (8 WIRE) CELL VOLTAGE SENSE / BALANCE LEADS. Refer FIG 2. CONTACT MI FOR CONNECTION |
| CON 11 | 9 PIN (9 WIRE) CELL VOLTAGE SENSE / BALANCE LEADS. Refer FIG 2. CONTACT MI FOR CONNECTION |
| CON 14 | BOOT |
| JP1 | 2ND OVERCHARGE VOLTAGE PROTECTION. CONTACT MI |
| CON12 | I2C. (□-DATA, ○-GND, ○-CLOCK) |
| SW | TO ACTIVATE SWITCH FUNCTION AFTER REMOVAL OF R157 RESISTOR AND PROGRAMMING. CONTACT MI |

