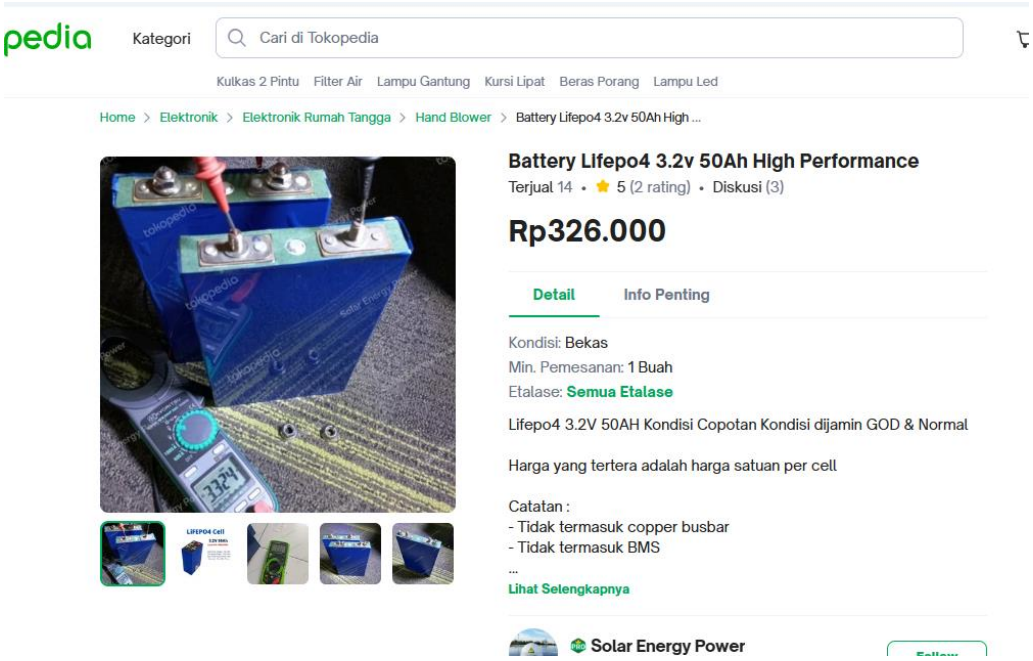
BMS DESIGN



Spek :

Battery type: lithium iron phosphate
Product name: LiFePo4 battery cell
Model Number: 3.2V 50ah 160Wh/VAh
Nominal Voltage: 3.2V
Rated Capacity: 50Ah
Minimum Capacity: 50ah
Brand Name: Narada
Class: Class A +
Quality: 100% Good
Housing material: aluminum
Internal Resistance: less than 0.8mΩ
Recommended constant current: 25A (0.5c)
Releasing cutting voltage: 2.5V
Maximum charging voltage: 3.65V
Maximum continuous discharge current: 150A (3C)
Constant current: 25A (0.5c)
Charging method: CC/CV
Charging voltage: 3.65V
Charging temperature: 0~55 °C
Discharge temperature: -20~55 °C

Jika Ingin 12 Jam Backup

BMS 4s = 12.8 V/50 ah = 640 Wh , Beban Max = 53 W

BMS 8s = 25.6 V/50 ah = 1,280 Wh, Beban Max = 106 W

BMS 16s = 51.2 V/50 ah = 2,560 Wh, Beban Max = 213 W

BMS Current = 25 A

BMS Prototype 2 Opsi :

1.Pakai IC Khusus BMS

IC dari Texas Instrument

IC BQ76952

5 Device Comparison Table

BQ76952 Device Family			
PART NUMBER	Communications Interface	CRC Enabled	REG1 LDO Default
BQ76952	I²C	N	Disabled
BQ7695201	SPI	Y	Disabled
BQ7695202	I²C	Y	Enabled, set to 3.3 V
BQ7695203	SPI	Y	Enabled, set to 5 V
BQ7695204	SPI	Y	Enabled, set to 3.3 V

3S - 16S

BQ76942 Device Family			
PART NUMBER	Communications Interface	CRC Enabled	REG1 LDO Default
BQ76942	I²C	N	Disabled
BQ7694201	SPI	Y	Disabled
BQ7694202	I²C	Y	Enabled, set to 3.3 V
BQ7694203	SPI	Y	Enabled, set to 5 V
BQ7694204	SPI	Y	Enabled, set to 3.3 V

3S - 10S

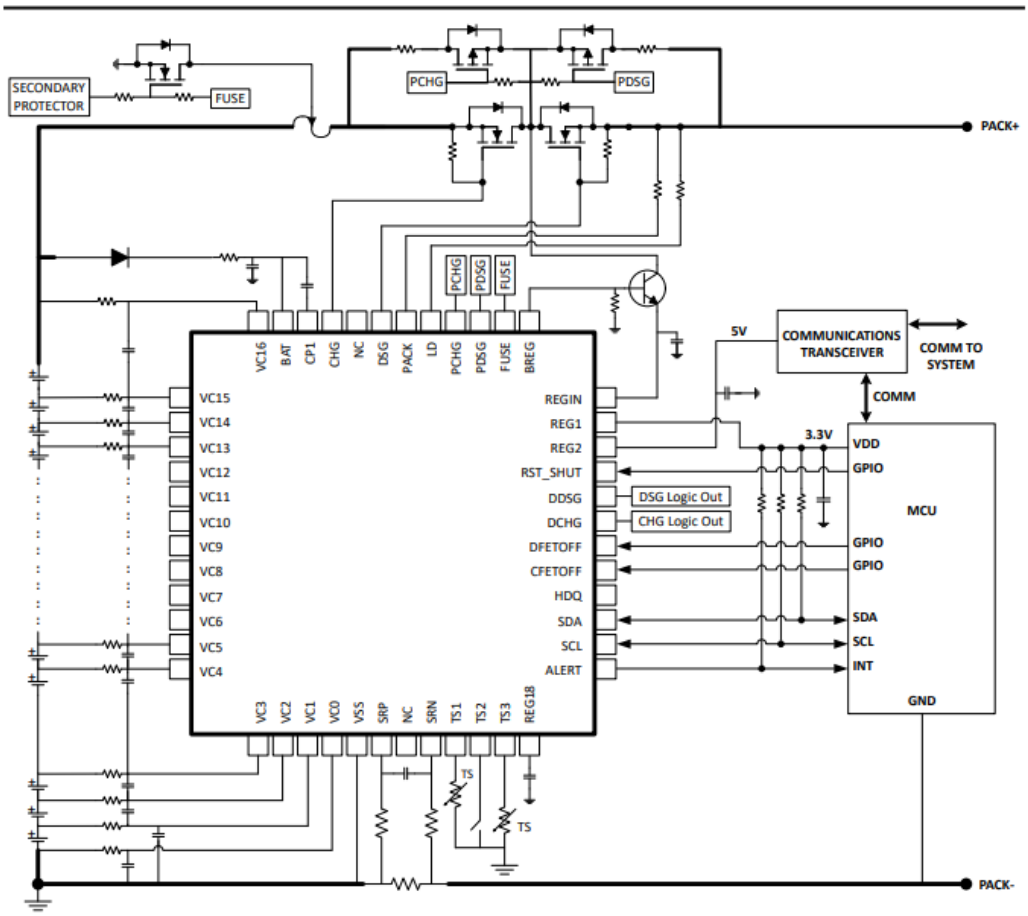


Figure 16-1. BQ76952 16-Series Cell Typical Implementation (Simplified Schematic)

A full schematic of a basic monitor circuit based on the BQ76952 for a 16-series battery pack is shown below. Section 18.2 shows the board layout for this design.

Pros:

-Up to 16S

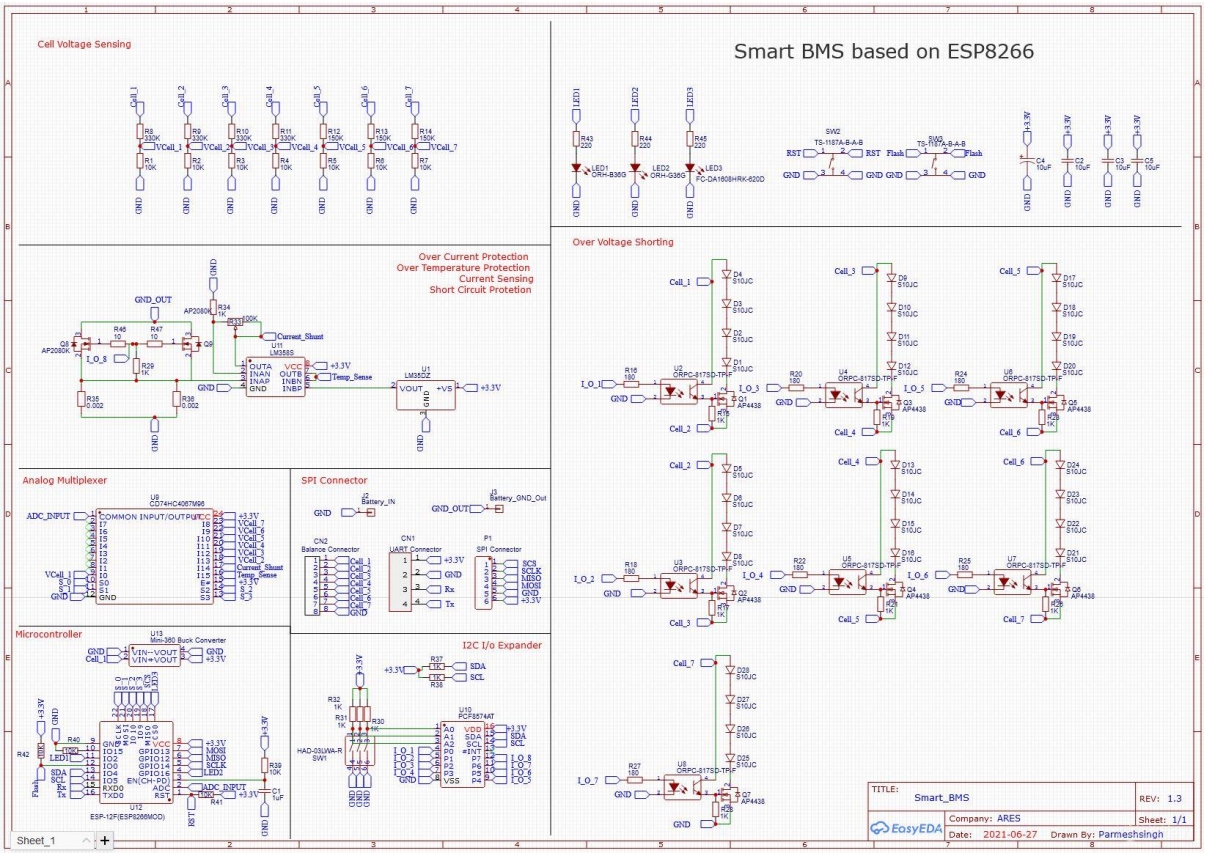
-Dokumentasi Hardware dan Software Lengkap langsung dari official

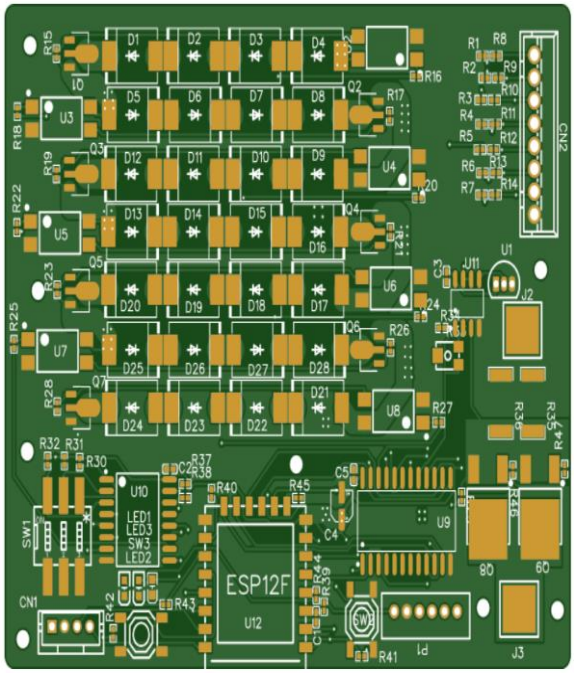
Cons :

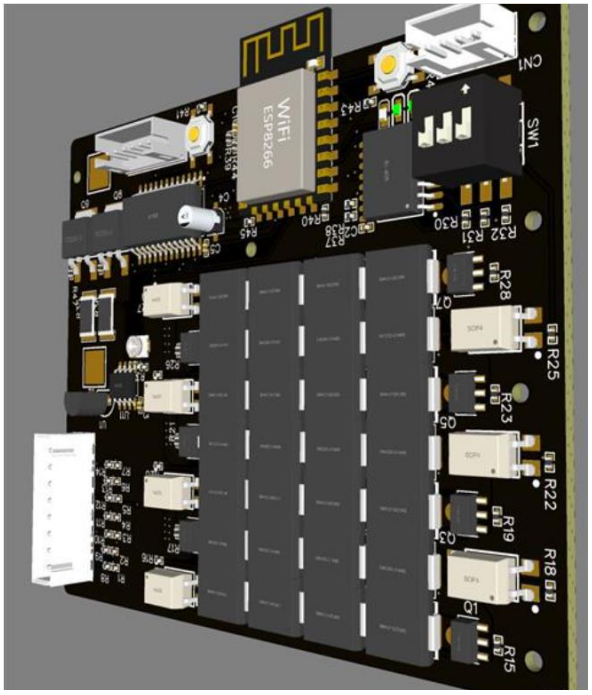
-IC dan Komponen pendukung lainnya relative sulit di jual belikan di Indonesia

2.Tidak Pakai IC

Contoh 7s







Reference : [Smart BMS V2 - Share Project - PCBWay]

Pros :

-Komponen mudah ditemukan di Indonesia

Cons :

-Dokumentasi tidak Lengkap, perlu di pelajari lebih lanjut bagian software