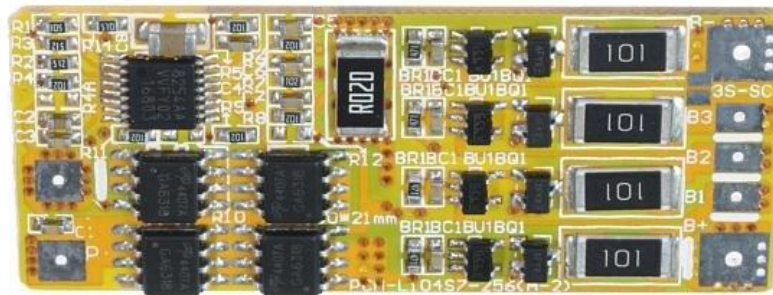


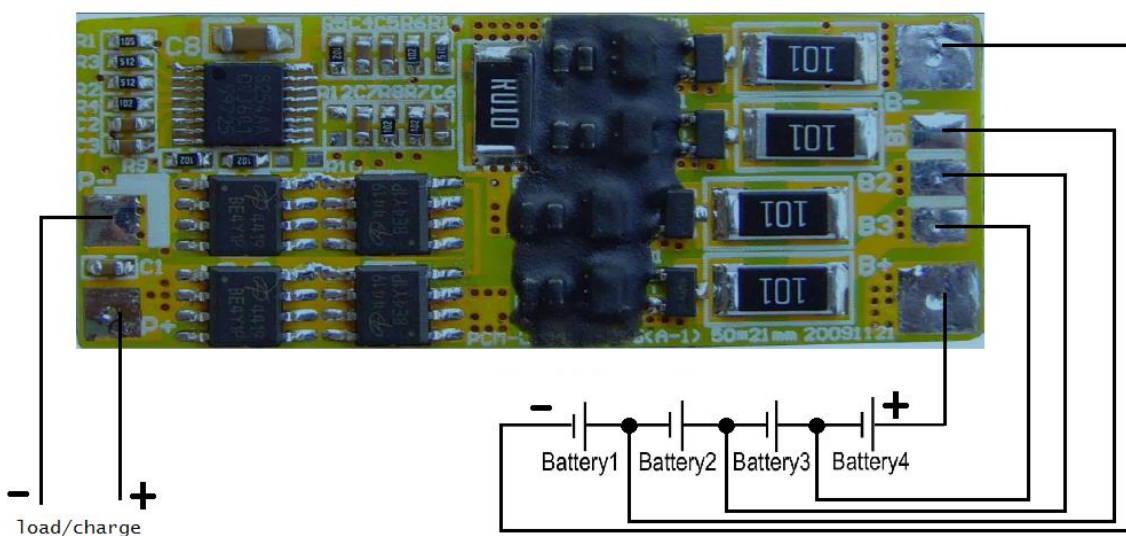
Technical specification

SBM modules for Li-Ion cells



SBM04/5I – 4pcs Li-Ion cells (12V/5A)

Item	Value
Charging voltage	DC:16.8V CC/CV
Balance voltage for singel cells	4.20.V +/- 0.025V
Balance current for singel cells	42+/-5mA
Current consumption	</= 50uA
Maximal continuous charging current	4A
Maximal continuous Dicharging current	4A
Over charge detection voltage	4.250 +/- 0.025V
Over charge detection delay time	0.5S – 1.5S
Over charge relase voltage	4.150+/- 0.05V
Over discharge detection voltage	2.70+/- 0.08V
Over discharge detection delay time	50mS – 150mS
Over discharge relase voltage	3.0 +/- 0.10V
Over current detection voltage	0.15 +/- 0.025V
Over current detection current	15A +/- 5A
Detection delay time	5mS – 15mS
Relase condition	Cut load
Detection condition	Exterior short circuit



SBM07/30I – 7pcs Li-Ion cells (24V/30A)

Item	Value
Charging voltage	DC:25.9V CC/CV
Balance voltage for singel cells	4.20.V +/- 0.025V
Balance current for singel cells	84+/-10mA
Current consumption	</= 20uA
Maximal continuous charging current	5A
Maximal continuous Dicharging current	30A
Over charge detection voltage	4.250 +/- 0.025V
Over charge detection delay time	0.5S – 2S
Over charge relase voltage	4.05+/- 0.05V
Over discharge detection voltage	2.80+/- 0.062V
Over discharge detection delay time	10mS – 200mS
Over discharge relase voltage	2.50 +/- 0.062V
Over current detection voltage	0.20 +/- 0.02V
Over current detection current	100 +/- 10A
Detection delay time	5mS – 20mS
Relase condition	Cut load
Detection condition	Exterior short circuit
Detection delay time	200-500uS
Relase condition	Cut load
Protection circuitry (MOSFET)	</= 20mOhm
Operating Temperature Range	-40 +85 C

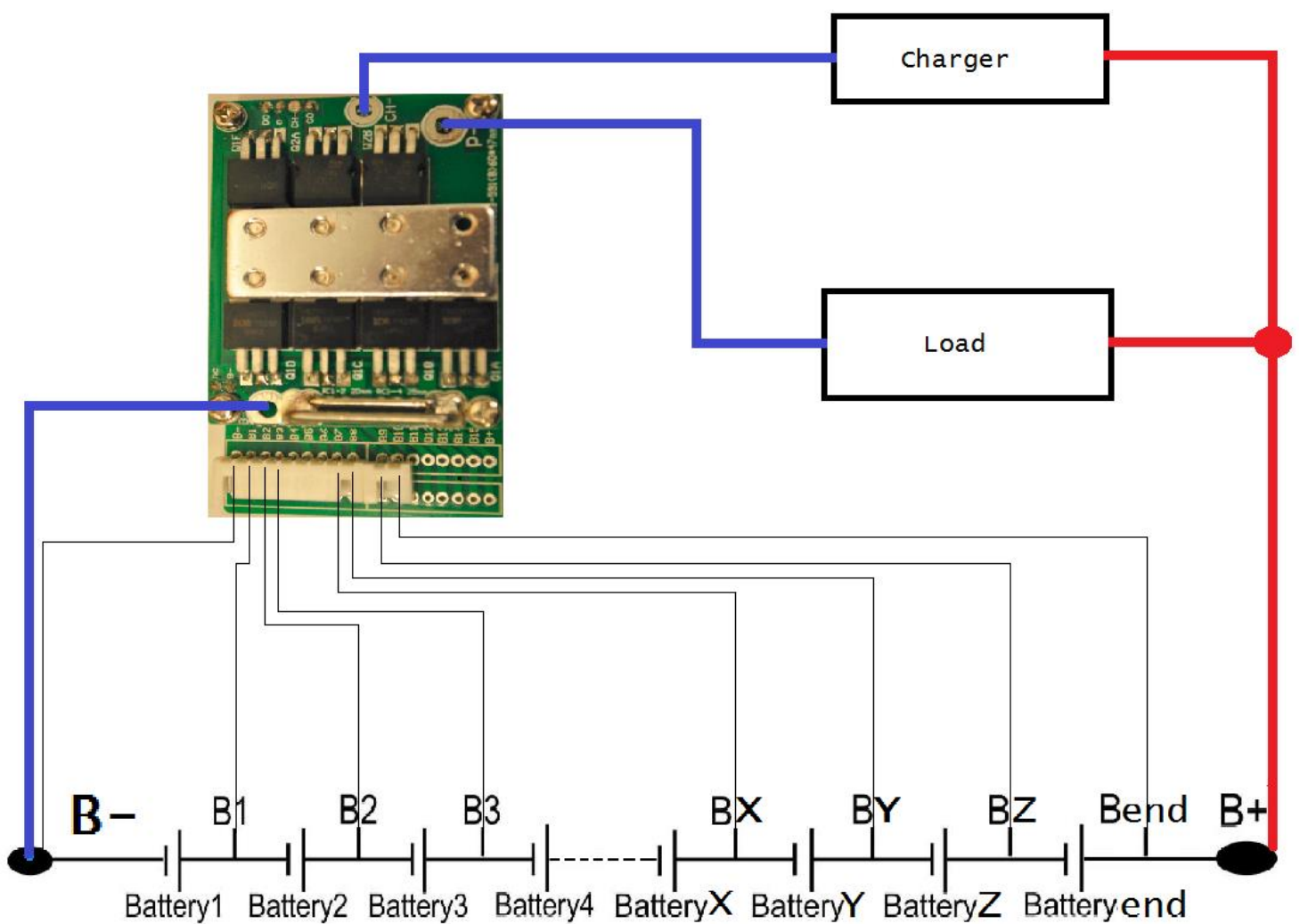
SBM10/30I – 10pcs Li-Ion cells (36V/30A)

Item	Value
Charging voltage	DC:42V CC/CV
Balance voltage for singel cells	4.20.V +/- 0.025V
Balance current for singel cells	84+/-10mA
Current consumption	</= 20uA
Maximal continuous charging current	5A
Maximal continuous Dicharging current	30A
Over charge detection voltage	4.250 +/- 0.025V
Over charge detection delay time	0.5S – 2S
Over charge relase voltage	4.05+/- 0.05V
Over discharge detection voltage	2.80+/- 0.062V
Over discharge detection delay time	10mS – 200mS
Over discharge relase voltage	2.50 +/- 0.062V
Over current detection voltage	0.20 +/- 0.02V
Over current detection current	100 +/- 10A
Detection delay time	5mS – 20mS
Relase condition	Cut load
Detection condition	Exterior short circuit
Detection delay time	200-500uS
Relase condition	Cut load
Protection circuitry (MOSFET)	</= 20mOhm
Operating Temperature Range	-40 +85 C

SBM13/30I – 13pcs Li-Ion cells (48V/30A)

Item	Value
Charging voltage	DC:54.6V CC/CV
Balance voltage for singel cells	4.20.V +/- 0.025V
Balance current for singel cells	84+/-10mA
Current consumption	</= 20uA
Maximal continuous charging current	5A
Maximal continuous Dicharging current	30A
Over charge detection voltage	4.250 +/- 0.025V
Over charge detection delay time	0.5S – 2S
Over charge relase voltage	4.05+/- 0.05V
Over discharge detection voltage	2.80+/- 0.062V
Over discharge detection delay time	10mS – 200mS
Over discharge relase voltage	2.50 +/- 0.062V
Over current detection voltage	0.20 +/- 0.02V
Over current detection current	100 +/- 10A
Detection delay time	5mS – 20mS
Relase condition	Cut load
Detection condition	Exterior short circuit
Detection delay time	200-500uS
Relase condition	Cut load
Protection circuitry (MOSFET)	</= 20mOhm
Operating Temperature Range	-40 +85 C

Connection diagram of SBMxx/30I



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