

**BMS battery management system for lithium rechargeable battery pack**

Model: LIBRA5S3P150LP LOW POWER

**Electrical Characteristics**

No.	Test item		Criterion
1	Type of cells	Type	All rechargeable lithium
		Number of cells	3*(3÷5)
		Range voltage for single cell	1,5÷4,5 VDC
		Cells in series	yes -5-
		Cells in parallel	yes -3-
2	Voltage	Range min/max	7÷24 VDC
		Minimum voltage measured	1 mV
3	Current	Low Current consumption for single cell with auxiliary charger	≤50 nA
		Maximal continuous charging current	15 A
		Maximal continuous Discharging current	50 A
		Minimum measured current	10 mA
4	Balance	Type of Balance	Passive
		Number of balance	three type (A,B,C)
		Minimum balance voltage for single cell	1 mV
		Balance current for single cell	100 mA
5	Over charge Protection	Over charge detection voltage	settable ±1mV
		Over charge release voltage	settable ±1mV
6	Over discharge protection	Over discharge detection voltage	settable ±1mV
		Over discharge release voltage	settable ±1mV
7	Over current protection	Over discharge detection current	settable ±1A
		Detection delay time	settable ±1s
8	Temperature	Battery temperature misure	settable ±1°C
		PCB temperature misure	settable ±1°C
9	Time	Real time clock with back-up battery	yes
		auto powe off	settable ≥1min
10	Comunication	USB	yes
		I2C	yes
		PWM opto isolated	no
		TX opto isolated	yes
11	Parameters of the BMS	Settable by PC	yes
12	Software of comunication	windows support	yes

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**Memory internal of the BMS**

No.	Test item		Criterion
1	Time	Day last charge	yes
		Data of last charge	yes
		Charge cycles	yes
2	Current	Register of Amper/hours	yes
3	Operation data	Internal register	10 parameters
4	Production data	Internal register	4 parameters
5	Historical log data	Register fifo	64 events

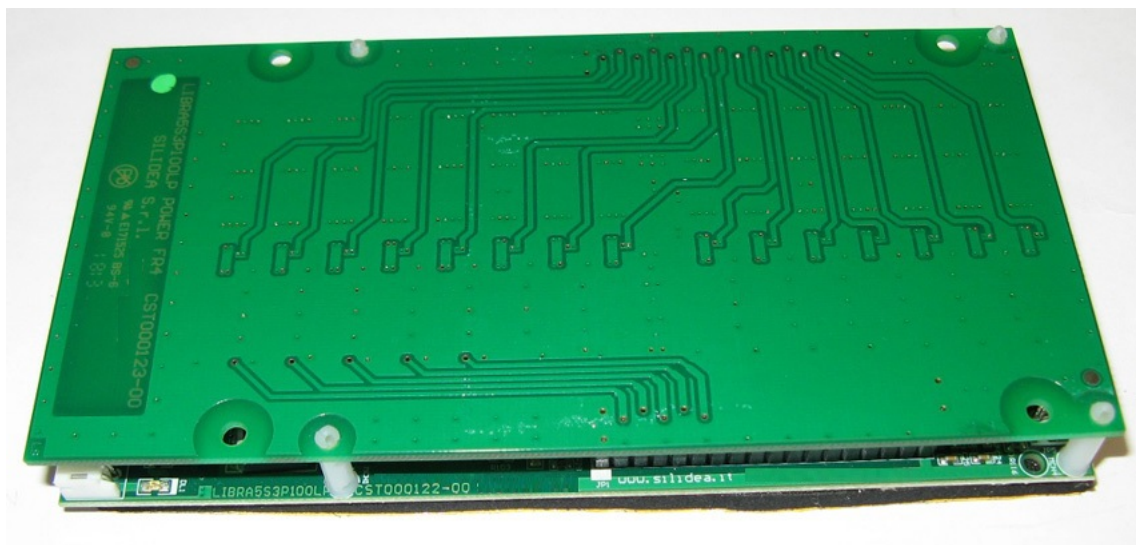
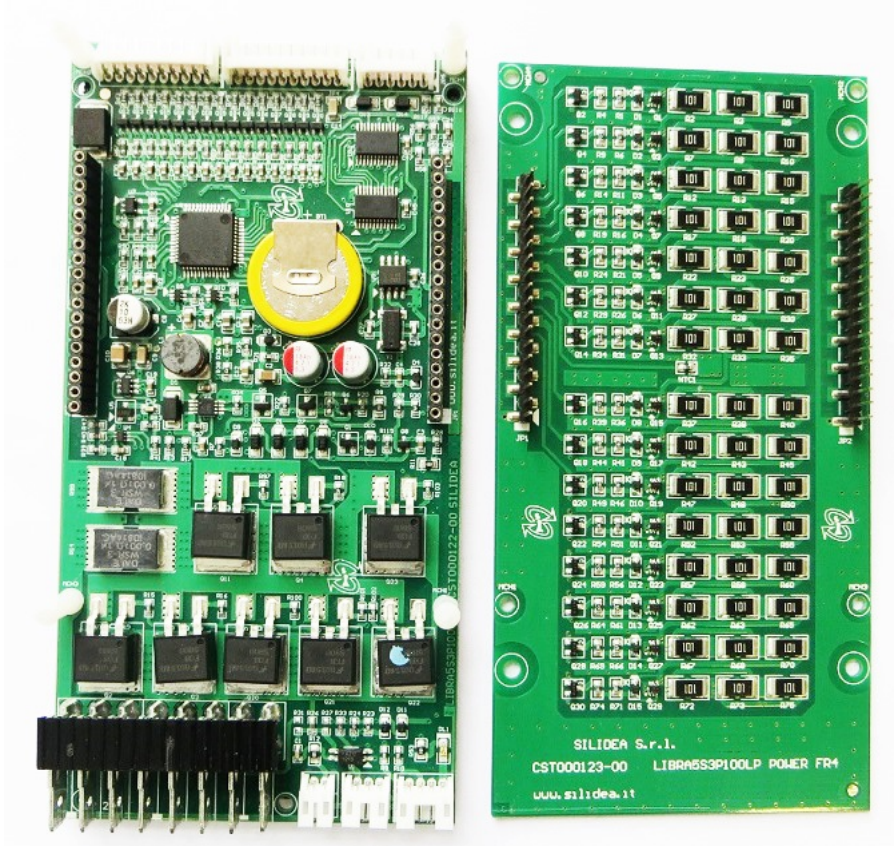
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**Electrical and Mechanical Characteristics**

No.	Test item		Criterion
1	Type of core	Micro Controller	16 bit
2	Misure current	Analog-to-Digital Converters	16 bit
3	Misure Voltage	Analog-to-Digital Converters	16 bit
4	Power regulator	Switching Regulators	higt efficenze
5	ON/OFF	Double push button	yes
6	Efficiency	At maximun power	99,98%
7	Led	State views	discharge/charge
8	Power consumption	Stand By State	≤50 nA
9	Power consumption	ON State	≤10 mA
10	PCB 1	Command	FR4
11	PCB 2	Power	FR4
12	Weight	Measure	120 gr
13	Dimension	Measure	140*72*18 mm
14	Temperature	Operating Temperature Range	-20, +70 °C
		Storage Temperature Range	-20, +85 °C

Photo of the product:



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