

Protection Circuit Module Specifications For 11.1V Li-ion/Li-Po Battery Pack			
Model: SBS-LI-11.1 IC (BQ20z95) SBS 1.1-COMPLIANT GAS GAUGE			
No.	Test item (Test at normal temperature 25±2℃)		Criterion
1	Communication Interface		SMBus
2	Capacity	Designing battery capacity (PCM)	1000mAh
		Max capacity (Battery pack)	1500mAh
		Min capacity (Battery pack)	800mAh
		External capacity Indication	LED
		Gas gauge algorithm	Impedance Track
3	Voltage	Charging voltage	DC: 12.6V CC/CV (4.2v/Cell)
4	Supply Current	Firmware running	600 uA
		Sleep Mode	150 uA
		Shutdown Mode	1uA
		Maximal continuous charging current	7A
		Maximal continuous discharging current	7A
5	Over-charge Protection (single cell)	Over-charge detection voltage	4.300±0.025V
		Over-charge detection delay time	2s
		Over-charge release voltage	4.100±0.025V
6	Over-charge Protection (Battery pack)	Over-charge detection voltage (1st Level Safety)	13.200V±0.1V
		Over-charge detection delay time (1st Level Safety)	2s
		Over-charge release voltage (1st Level Safety)	12.300V±0.1V
7	Over-discharge protection (single cell)	Over-discharge detection voltage	2.600±0.05V
		Over-discharge detection delay time	1s
		Over-discharge release voltage	3.000±0.05V
8	Over-discharge protection (Battery pack)	Over-discharge detection voltage (1st Level Safety)	7.800V±0.1V
		Over-discharge detection delay time (1st Level Safety)	0s
		Over-discharge release voltage (1st Level Safety)	9.000V±0.1V
9	Current protection (Battery pack)	Charge over-current (1st Level Safety)	7A
		Charge over-current detection delay time (1st Level Safety)	1s
		Charge over-current (2nd Tier)	8A
		Charge over-current detection delay time (2nd Tier)	1s
		Discharging over-current (1st Level Safety)	12A
		Discharging over-current detection delay time (1st Level Safety)	1s
		Discharging over-current (2nd Tier)	15A
		Discharging over-current detection delay time (2nd Tier)	1s
Release condition	Cut load		
10	Short protection	Charge short-circuiting (2nd Level Safety)	10A
		Charge short-circuiting detection delay time (2nd Level Safety)	0S
		Discharge short-circuiting (2nd Level Safety)	10A
		Discharge short-circuiting detection delay time (2nd Level Safety)	0S
		Detection condition	Exterior short circuit
Release condition	Cut load		
11	Resistance	Protection circuitry	≤30mΩ
12	Temperature protection	Charge temperature (1st Level Safety)	60℃
		Charge temperature detection delay time (1st Level Safety)	1s
		Charge release temperature (1st Level Safety)	45℃
		Discharge temperature (1st Level Safety)	65℃
		Discharge temperature detection delay time (1st Level Safety)	1s
		Discharge release temperature (1st Level Safety)	55℃
		Charge temperature (2st Level Safety)	85℃
		Charge temperature detection delay time (2st Level Safety)	0s
Discharge temperature (2st Level Safety)	85℃		

Discharge temperature detection delay time (2st Level Safety)	8s
Operating free-air temperature range	-40~+85℃
Functional temperature	-40~+100℃
Storage temperature range	-65~+150℃

B+: Battery+

B-: Battery-

SMBD: SMBus data line

SMBC: SMBus clock line

P+: Charge+/discharge+

P-: Charge-/discharge-

NTC: Temperature detection

Connect: B+/B1/B2/B-

