



## **SAMSUNG SDI**

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**Date : 2010/01/14**  
**To : SHENZHEN BLAZERPOWER BATTERY CO.,LTD**  
**From : Samsung SDI Business Team**  
**Page : 3 (Including this Page)**  
**Title : Test Report & Approval Sheet**

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**Dear SHENZHEN BLAZERPOWER BATTERY CO.,LTD**

**As a results of Samsung SDI test, We approve that your set can apply  
Samsung SDI Li ion battery**

**End Customer : Best buy & BenQ**  
**Application : Net Book NPC**  
**Set Maker : Best buy & BenQ**  
**Pack Maker : SHENZHEN BLAZERPOWER BATTERY CO.,LTD**  
**Array Type : 3S1P Hard Pack (Smart Battery Pack)**  
**Cell Type : ICR18650 22F (2200mAh)**  
**Biz Type : Cell or Pack**  
**Biz Route : EDEN FORCE TEC. CO., LTD**  
**Cell FCST : Over 20K/M**  
**Conclusion : Can apply Samsung SDI Li ion Battery**

## Detail Test Sheet

Items	Detail Items	Test Results	Judgment	Remark
Charge	o. Charging Method	CC-CV	PASS	
	o. Charging Mode	Floating Charge	PASS	
	o. Charging Voltage	12.60V	PASS	
	o. Charging Current	1540mA	PASS	
	o. Full Charging Cell Voltage	4.16V/Cell	PASS	
	o. Full Charging Limit Current	200mA	PASS	
	o. Re-Charging (Floating) Condition	RSOC 95%	PASS	
	o. Charging Operating Temperature	0 ~ 45℃	PASS	
	o. Charging Over Temperature Protection	55±3℃	PASS	
	o. Charging Over Temperature Protection Release	45℃	PASS	
	o. 1st Over Voltage Protection	4.25±0.025V/Cell	PASS	
	o. 1st Over Voltage Protection Release	4.15±0.025V/Cell	PASS	
	o. 2nd Over Voltage Protection	13.20±0.025V/Pack 3sec	PASS	
	o. 2nd Over Voltage Protection Release	Fuse Blow	PASS	
	o. Charge Over Current Protection	2.2±0.05A	PASS	
	o. Charge Over Current Detection Delay Time	2 sec±0.5sec	PASS	
	o. Charge Over Current Protection Release	100mA for 5 sec	PASS	
	o. Pre Charging Voltage	2800mV ↓	PASS	
	o. Pre Charging Voltage Release	3000mV ↑	PASS	
	o. Pre Charging Temperature	0 ~ 50℃	PASS	
	o. Pre Charging Current	250mA	PASS	
o. Pre Charging Time	60min	PASS		
o. Pre Charging Failure Mode	Failure Mode :>250mA,>1.0Hrs	PASS		
	Failure Mode : Charger Stop			
o. Charging Imbalance Voltage Control (Failure Mode)	500mV (Fuse Blow)	PASS		
Discharge	o. System Power Off Voltage	9.0 V	PASS	
	o. Discharge Average Current	0.5C Discharge	PASS	
	o. Continuance Max Discharge Current	23.76 W	PASS	
	o. Discharge Over Current Protection 1	5.0±0.05A	PASS	
	o. Discharge Over Current Detection Delay Time 1	2sec±0.5sec	PASS	
	o. Discharge Over Current Detection Release	-100mA for 5 sec	PASS	
	o. Discharge Over Current Protection 2	6.0±0.05A	*	
	o. Discharge Over Current Detection Delay Time 2		*	
	o. Discharge Over Current Protection 3	N.A	*	
	o. Discharge Over Current Detection Delay Time 3	N.A	*	

Items	Detail Items	Test Results	Judgment	Remark
Discharge	o. Under Voltage Protection	2.50±0.025V/Cell	PASS	
	o. Release Under Voltage Protection	3.00±0.025V/Cell	PASS	
	o. Discharge Operating Temperature	-20 ~60 ℃	PASS	
	o. Discharge Over Temperature Protection	65±3 ℃	*	
	o. Discharge Over Temperature Protection Release	60 ℃	*	
	o. External Terminal Short (SAR) Operation		PASS	
	o. External Terminal Short (SAR) Current Release	100mA for 5sec/Charge	PASS	
	o. Operation Mode Leak Current	650μA	PASS	
	o. Sleep Mode Condition	10mA ↓	PASS	
	o. Sleep Mode Leak Current	150μA	PASS	
	o. Shut Down Voltage	2.50V/Cell	PASS	
	o. Shut Down Mode Leak Current	Max 1 μA	PASS	
	o. System Leak Current (8.40V ~6.0V)	1mA (External Battery Pack)	PASS	
	Balancing	o. Cell Balancing ON Condition (Voltage, Imbalance)	N.A	
o. Cell Balancing OFF Condition (Voltage, Imbalance)		N.A	*	
o. Cell Balancing Current		N.A	*	
o. Cell Balancing Imbalance Voltage Control		N.A	*	
Accuracy	o. Voltage	± 1 % ↓	PASS	
	o. Current	± 1 % ↓	PASS	
	o. Temperature	± 3 ℃	PASS	
	o. Impedance	N.A	*	
	o. SOC (State of Charge)	± 5 % ↓	PASS	
Mechanical	o. Cell vs Cell Gap	N.A	*	
	o. Insulation Design Check	Normal	PASS	
	o. Swelling Design Concept Check	N.A	*	

**Seller : Samsung SDI Battery Business team**

*Son Taek Kim*  
SAMSUNG SDI CO., LTD.