Test Report issued under the responsibility of:

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TEST REPORT
IEC 62133-2
Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems

Report Number. ..... :	EFSH24070036-IE-01-L01-M1
Date of issue ..... :	2025-02-17 Modification1:2026-07-20
Total number of pages ..... :	33 Pages
Name of Testing Laboratory preparing the Report ..... :	Eurofins Electrical Testing Service (Shanghai) Co., Ltd.
Applicant's name ..... :	GlobTek, Inc.
Address ..... :	186 Veterans Dr. Northvale, NJ 07647 USA
Test specification:	
Standard ..... :	IEC 62133-2:2017, IEC 62133-2:2017/AMD1:2021
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2024, Ed.1.7
Test Report Form No. ..... :	IEC62133_2C
Test Report Form(s) Originator .... :	DEKRA Certification B.V.
Master TRF ..... :	Dated 2025-09-26

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Test item description	Lithium-Ion Battery Pack
Trade Mark(s)	GlobTek, Inc.
Manufacturer	GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA
Model/Type reference.....	BL5000C2170*F*(the 1st*part denotes for battery packs configuration, which may be 1S1P,1S2P,1S3P,1S4P,2S1P,2S2P,2S3P,2S4P,3S1P,3S2P,3S3P,3S4P,4S1P,4S2P ,4S3P,4S4P , the 2nd*part denotes the IC type which can be T or S,T - Texas Instruments S - Sinowealth)
Ratings.....	P.8 Table 1

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	Eurofins Electrical Testing Service (Shanghai) Co., Ltd.	
Testing location/ address		Room 102/501/502, Building 18, No.2168, Chenhang Highway, Minhang District, Shanghai, China	
Tested by (name, function, signature)		Pengcheng Wang / Project Engineer	Pengcheng WANG
Approved by (name, function, signature)		Jackie Zhao / Project Engineer	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address			
Tested by (name, function, signature)			
Approved by (name, function, signature)			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address			
Tested by (name + signature)....			
Witnessed by (name, function, signature)			
Approved by (name, function, signature)			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address			

Tested by (name, function, signature)		
Witnessed by (name, function, signature)		
Approved by (name, function, signature)		
Supervised by (name, function, signature)		

List of Attachments (including a total number of pages in each attachment):

N/A

Summary of testing:

From the result of our inspection and tests on the submitted samples, we conclude they comply with requirements of the standard.

Tests performed (name of test and test clause):	**Testing location:**
☒ Clause 7.3.2 External short-circuit (battery) ☒ Clause 7.3.6 Over-charging of battery	Eurofins Electrical Testing Service (Shanghai) Co., Ltd. Building 18, No. 2168 Chenhang Highway, Minhang District, Shanghai, China

Summary of compliance with National Differences (List of countries addressed):

IECEE Member countries that are also CENELEC members

Compliance with Group Differences evaluated ☐ **yes** ☐ **No** ☒ N/A

IECEE Member countries with published National Differences which were evaluated:

Republic of Korea (KR)

IECEE Member countries that did not publish any National Differences:

N/A

Use of uncertainty of measurement for decisions on conformity (decision rule):

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

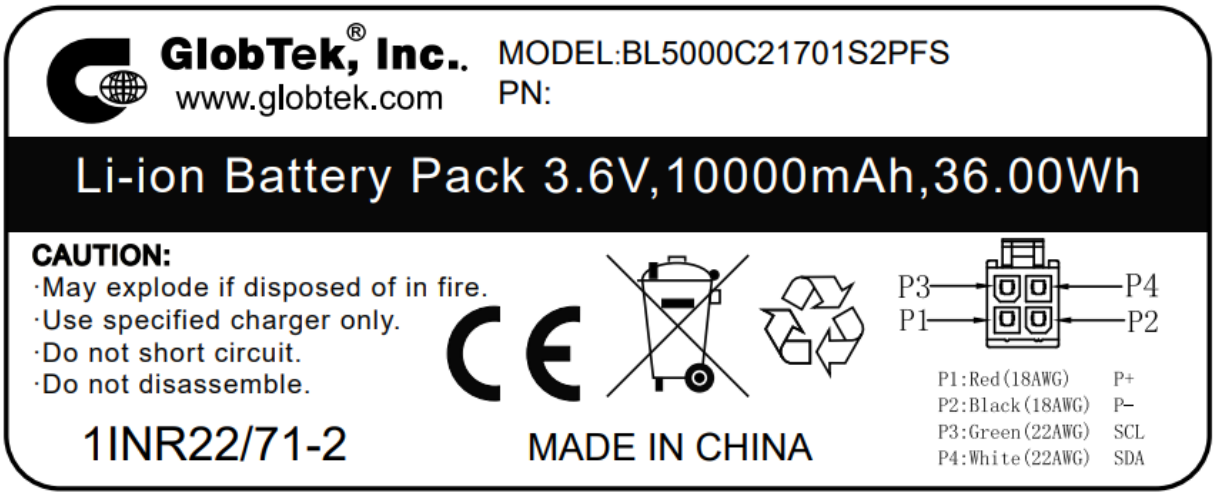
☐ Other:… (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.
IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



The above examplenameplate for BL5000C21701S2PFS represents the basic format used by all models in this report.

Nameplate differences for models covered in this report：

1. MODEL：BL5000C2170*F*(the 1st*part denotes for battery packs configuration, which may be 1S1P,1S2P,1S3P,1S4P,2S1P,2S2P,2S3P,2S4P,3S1P,3S2P,3S3P,3S4P,4S1P,4S2P,4S3P,4S4P , the 2nd*part denotes the IC type which can be T or S,T - Texas Instruments S - Sinowealth)

2. Ratings：Refer to P.8 Table 1

3. The number of connector pins, which can be 4, 6, 8 or others, and the corresponding pinout.

4. When cell= LR2170SD, battery designation=*INR22/72-*; When cell= LR2170SZ, battery designation=*INR22/71-*; The 1st*part denote the number of series connected cells in the battery;The 2nd*part denote the number of parallel connected cells if 2 or greater (-*not shown if value is 1).

Test item particulars.....:	Lithium-Ion Battery Pack
Classification of installation and use.....:	To be defined in final product
Supply Connection.....:	DC connector
Recommend charging method declared by the manufacturer.....:	CC/CV
Discharge current (0,2 It A).....:	P.8 Table 1
Specified final voltage.....:	3.0V
Upper limit charging voltage per cell.....:	LR2170SD, 03BCEA5：4.25V LR2170SZ：4.2V
Maximum charging current.....:	P.8 Table 1
Charging temperature upper limit.....:	45°C
Charging temperature lower limit.....:	0°C
Polymer cell electrolyte type.....:	☐ gel polymer ☐ solid polymer ☒ N/A
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item.....:	2026-04-03
Date (s) of performance of tests.....:	2026-04-03 to 2026.05.22

General remarks:

The test results presented in this report relate only to the object tested.

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"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

CTL decisions considered

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies).....:	GlobTek (Suzhou) Co., Ltd. Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, JiangSu, 215021, China

General product information and other remarks:

This battery pack is constructed with rechargeable Li-ion cell(s) and a PCB containing over-charge, over-discharge, and short- circuit protection circuits.

Table 1：

Model	PCB	Ratings	Discharge current (0,2 It A)/mA	Specified final voltage/ V	Maximum charging current/A	Config uration	Plastic Housing Type
BL5000C21701S1PFT	PCB1	3.6V，5000mA，18Wh	1000	3	1	1S1P	A
BL5000C21701S2PFT	PCB1	3.6V，10000mA，36Wh	2000	3	2	1S2P	B
BL5000C21701S3PFT	PCB1	3.6V，15000mA，54Wh	3000	3	3	1S3P	C
BL5000C21701S1PFS	PCB2	3.6V，5000mA，18Wh	1000	3	1	1S1P	A
BL5000C21701S2PFS	PCB2	3.6V，10000mA，36Wh	2000	3	2	1S2P	B
BL5000C21701S3PFS	PCB2	3.6V，15000mA，54Wh	3000	3	3	1S3P	C
BL5000C21701S4PFS	PCB2	3.6V，20000mA，72Wh	4000	3	4	1S4P	D
BL5000C21701S4PFT	PCB3	3.6V，20000mA，72Wh	4000	3	4	1S4P	D
BL5000C21702S1PFT	PCB3	7.2V，5000mA，36Wh	1000	6	1	2S1P	B
BL5000C21702S2PFT	PCB3	7.2V，10000mA，72Wh	2000	6	2	2S2P	D
BL5000C21702S3PFT	PCB3	7.2V，15000mA，108Wh	3000	6	3	2S3P	E
BL5000C21702S4PFT	PCB3	7.2V，20000mA，144Wh	4000	6	4	2S4P	F
BL5000C21703S1PFT	PCB3	10.8V，5000mA，54Wh	1000	9	1	3S1P	C
BL5000C21703S2PFT	PCB3	10.8V，10000mA，108Wh	2000	9	2	3S2P	E
BL5000C21703S3PFT	PCB3	10.8V，15000mA，162Wh	3000	9	3	3S3P	G
BL5000C21703S4PFT	PCB3	10.8V，20000mA，216Wh	4000	9	4	3S4P	H
BL5000C21704S1PFT	PCB3	14.4V，5000mA，72Wh	1000	12	1	4S1P	D
BL5000C21704S2PFT	PCB3	14.4V，10000mA，144Wh	2000	12	2	4S2P	F
BL5000C21704S3PFT	PCB3	14.4V，15000mA，216Wh	3000	12	3	4S3P	H
BL5000C21704S4PFT	PCB3	14.4V，20000mA，288Wh	4000	12	4	4S4P	I
BL5000C21702S1PFS	PCB4	7.2V，5000mA，36Wh	1000	6	1	2S1P	B
BL5000C21702S2PFS	PCB4	7.2V，10000mA，72Wh	2000	6	2	2S2P	D
BL5000C21702S3PFS	PCB4	7.2V，15000mA，108Wh	3000	6	3	2S3P	E
BL5000C21702S4PFS	PCB4	7.2V，20000mA，144Wh	4000	6	4	2S4P	F
BL5000C21703S1PFS	PCB4	10.8V，5000mA，54Wh	1000	9	1	3S1P	C
BL5000C21703S2PFS	PCB4	10.8V，10000mA，108Wh	2000	9	2	3S2P	E
BL5000C21703S3PFS	PCB4	10.8V，15000mA，162Wh	3000	9	3	3S3P	G
BL5000C21703S4PFS	PCB4	10.8V，20000mA，216Wh	4000	9	4	3S4P	H
BL5000C21704S1PFS	PCB4	14.4V，5000mA，72Wh	1000	12	1	4S1P	D
BL5000C21704S2PFS	PCB4	14.4V，10000mA，144Wh	2000	12	2	4S2P	F
BL5000C21704S3PFS	PCB4	14.4V，15000mA，216Wh	3000	12	3	4S3P	H
BL5000C21704S4PFS	PCB4	14.4V，20000mA，288Wh	4000	12	4	4S4P	I

Plastic Housing Differences:

Plastic housings A through G have similar designs and use the same materials, but are different in size.

Parameters:

Product name	Lithium-Ion Battery Pack			
Type/model	BL5000C21701S1PFT	BL5000C21701S2PFT	BL5000C21701S3PFT	BL5000C21701S1PFS
Nominal capacity/mAh	5000	10000	15000	5000
Nominal voltage/V	3.6	3.6	3.6	3.6
Nominal charge current/A	0.375A（0℃~10℃） 1A（10℃~45℃）	0.75A（0℃~10℃） 2A（10℃~45℃）	1.125A（0℃~10℃） 3A（10℃~45℃）	0.375A（0℃~10℃） 1A（10℃~45℃）
Nominal discharge current/A	1	2	3	1
Maximum charge current/A	1	2	3	1
Maximum discharge	5	5	5	5

current/A				
Limited Charging Voltage/V	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4（0℃~5℃） 4.125（5℃~35℃） 4（35℃~45℃）
Upper limit charging voltage/V	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4（0℃~5℃） 4.125（5℃~35℃） 4（35℃~45℃）
Cut-off voltage/V	3	3	3	3
Charging temperature/℃	0~45	0~45	0~45	0~45

Product name	Lithium-Ion Battery Pack			
Type/model	BL5000C21701S2PFS	BL5000C21701S3PFS	BL5000C21701S4PFS	BL5000C21701S4PFT
Nominal capacity/mAh	10000	15000	20000	20000
Nominal voltage/V	3.6	3.6	3.6	3.6
Nominal charge current/A	0.75A（0℃~10℃） 2A（10℃~45℃）	1.125A（0℃~10℃） 3A（10℃~45℃）	1.5A（0℃~10℃） 4A（10℃~45℃）	1.5A（0℃~5℃） 3A（5℃~10℃） 4A(10℃~45℃））
Nominal discharge current/A	2	3	4	4
Maximum charge current/A	2	3	4	4
Maximum discharge current/A	5	5	5	8
Limited Charging Voltage/V	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）
Upper limit charging voltage/V	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）	4V（0℃~5℃） 4.125V（5℃~35℃） 4V（35℃~45℃）
Cut-off voltage/V	3	3	3	3
Charging temperature/℃	0~45	0~45	0~45	0~45

Product name	Lithium-Ion Battery Pack			
Type/model	BL5000C21702S1PFT	BL5000C21702S2PFT	BL5000C21702S3PFT	BL5000C21702S4PFT
Nominal capacity/mAh	5000	10000	15000	20000
Nominal voltage/V	7.2	7.2	7.2	7.2
Nominal charge current/A	0.375A（0℃~5℃） 0.75A（5℃~10℃） 1A(10℃~45℃）	0.75A（0℃~5℃） 1.5A（5℃~10℃） 2A(10℃~45℃）	1.125A（0℃~5℃） 2.25A（5℃~10℃） 3A(10℃~45℃）	1.5A（0℃~5℃） 3A（5℃~10℃） 4A(10℃~45℃）
Nominal discharge current/A	1	2	3	4
Maximum charge current/A	1	2	3	4
Maximum discharge current/A	5	8	8	8
Limited Charging Voltage/V	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）
Upper limit charging voltage/V	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）
Cut-off voltage/V	6	6	6	6
Charging temperature/℃	0~45	0~45	0~45	0~45

Product name	Lithium-Ion Battery Pack			
Type/model	BL5000C21703S1PFT	BL5000C21703S2PFT	BL5000C21703S3PFT	BL5000C21703S4PFT
Nominal capacity/mAh	5000	10000	15000	20000

Nominal voltage/V	10.8	10.8	10.8	10.8
Nominal charge current/A	0.375A（0℃~5℃） 0.75A（5℃~10℃） 1A(10℃~45℃)	0.75A（0℃~5℃） 1.5A（5℃~10℃） 2A(10℃~45℃)	1.125A（0℃~5℃） 2.25A（5℃~10℃） 3A(10℃~45℃)	1.5A（0℃~5℃） 3A（5℃~10℃） 4A(10℃~45℃)
Nominal discharge current/A	1	2	3	4
Maximum charge current/A	1	2	3	4
Maximum discharge current/A	5	8	8	8
Limited Charging Voltage/V	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）
Upper limit charging voltage/V	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）
Cut-off voltage/V	9	9	9	9
Charging temperature/℃	0~45	0~45	0~45	0~45

Product name	Lithium-Ion Battery Pack			
Type/model	BL5000C21704S1PFT	BL5000C21704S2PFT	BL5000C21704S3PFT	BL5000C21704S4PFT
Nominal capacity/mAh	5000	10000	15000	20000
Nominal voltage/V	14.4	14.4	14.4	14.4
Nominal charge current/A	0.375A（0℃~5℃） 0.75A（5℃~10℃） 1A(10℃~45℃)	0.75A（0℃~5℃） 1.5A（5℃~10℃） 2A(10℃~45℃)	1.125A（0℃~5℃） 2.25A（5℃~10℃） 3A(10℃~45℃)	1.5A（0℃~5℃） 3A（5℃~10℃） 4A(10℃~45℃)
Nominal discharge current/A	1	2	3	4
Maximum charge current/A	1	2	3	4
Maximum discharge current/A	5	8	8	8
Limited Charging Voltage/V	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）
Upper limit charging voltage/V	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）
Cut-off voltage/V	12	12	12	12
Charging temperature/℃	0~45	0~45	0~45	0~45

Product name	Lithium-Ion Battery Pack			
Type/model	BL5000C21702S1PFS	BL5000C21702S2PFS	BL5000C21702S3PFS	BL5000C21702S4PFS
Nominal capacity/mAh	5000	10000	15000	20000
Nominal voltage/V	7.2	7.2	7.2	7.2
Nominal charge current/A	0.375A（0℃~5℃） 0.75A（5℃~10℃） 1A(10℃~45℃)	0.75A（0℃~5℃） 1.5A（5℃~10℃） 2A(10℃~45℃)	1.125A（0℃~5℃） 2.25A（5℃~10℃） 3A(10℃~45℃)	1.5A（0℃~5℃） 3A（5℃~10℃） 4A(10℃~45℃)
Nominal discharge current/A	1	2	3	4
Maximum charge current/A	1	2	3	4
Maximum discharge current/A	5	8	8	8
Limited Charging Voltage/V	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）
Upper limit charging voltage/V	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）	8V（0℃~5℃） 8.25V（5℃~35℃） 8V（35℃~45℃）

Cut-off voltage/V	6	6	6	6
Charging temperature/℃	0~45	0~45	0~45	0~45

Product name	Lithium-Ion Battery Pack			
Type/model	BL5000C21703S1PFS	BL5000C21703S2PFS	BL5000C21703S3PFS	BL5000C21703S4PFS
Nominal capacity/mAh	5000	10000	15000	20000
Nominal voltage/V	10.8	10.8	10.8	10.8
Nominal charge current/A	0.375A（0℃~5℃） 0.75A（5℃~10℃） 1A(10℃~45℃)	0.75A（0℃~5℃） 1.5A（5℃~10℃） 2A(10℃~45℃)	1.125A（0℃~5℃） 2.25A（5℃~10℃） 3A(10℃~45℃)	1.5A（0℃~5℃） 3A（5℃~10℃） 4A(10℃~45℃)
Nominal discharge current/A	1	2	3	4
Maximum charge current/A	1	2	3	4
Maximum discharge current/A	5	8	8	8
Limited Charging Voltage/V	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）
Upper limit charging voltage/V	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）	12V（0℃~5℃） 12.375V（5℃~35℃） 12V（35℃~45℃）
Cut-off voltage/V	9	9	9	9
Charging temperature/℃	0~45	0~45	0~45	0~45

Product name	Lithium-Ion Battery Pack			
Type/model	BL5000C21704S1PFS	BL5000C21704S2PFS	BL5000C21704S3PFS	BL5000C21704S4PFS
Nominal capacity/mAh	5000	10000	15000	20000
Nominal voltage/V	14.4	14.4	14.4	14.4
Nominal charge current/A	0.375A（0℃~5℃） 0.75A（5℃~10℃） 1A(10℃~45℃)	0.75A（0℃~5℃） 1.5A（5℃~10℃） 2A(10℃~45℃)	1.125A（0℃~5℃） 2.25A（5℃~10℃） 3A(10℃~45℃)	1.5A（0℃~5℃） 3A（5℃~10℃） 4A(10℃~45℃)
Nominal discharge current/A	1	2	3	4
Maximum charge current/A	1	2	3	4
Maximum discharge current/A	5	8	8	8
Limited Charging Voltage/V	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）
Upper limit charging voltage/V	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）	16V（0℃~5℃） 16.5V（5℃~35℃） 16V（35℃~45℃）
Cut-off voltage/V	12	12	12	12
Charging temperature/℃	0~45	0~45	0~45	0~45

Test List（Cell: LR2170SD, 03BCEA5）：

There are 32 models covered by this report. All models are constructed in a similar manner and with similar materials. The models differ according to their series and parallel cell connections and corresponding protection PCB.Tested items are recorded below:

Model	With shrink wrap plastic film				
	Clause 7.3.6	Clause 7.3.2	Clause 7.3.8.1	Clause 7.3.8.2	Clause 7.3.3
BL5000C21701S1PFT	•	•			
BL5000C21701S2PFT					
BL5000C21701S3PFT	•	•			
BL5000C21701S1PFS	•	•	•	•	•
BL5000C21701S2PFS					

BL5000C21701S3PFS			•	•	•
BL5000C21701S4PFS	•	•			
BL5000C21701S4PFT	•	•			
BL5000C21702S1PFT	•	•	•	•	•
BL5000C21702S2PFT					
BL5000C21702S3PFT			•	•	•
BL5000C21702S4PFT	•	•			
BL5000C21703S1PFT	•	•			
BL5000C21703S2PFT					
BL5000C21703S3PFT					
BL5000C21703S4PFT	•	•			
BL5000C21704S1PFT	•	•			
BL5000C21704S2PFT			•	•	•
BL5000C21704S3PFT			•	•	•
BL5000C21704S4PFT	•	•			
BL5000C21702S1PFS	•	•			
BL5000C21702S2PFS			•	•	•
BL5000C21702S3PFS					
BL5000C21702S4PFS	•	•			
BL5000C21703S1PFS	•	•			
BL5000C21703S2PFS					
BL5000C21703S3PFS			•	•	•
BL5000C21703S4PFS	•	•			
BL5000C21704S1PFS	•	•			
BL5000C21704S2PFS					
BL5000C21704S3PFS					
BL5000C21704S4PFS	•	•	•	•	•

Products a total of 9 kinds of shells from A ~ I, shells in addition to inconsistent size other than the same, the same 1S1P products a product with buttons without shells, specific tests are as follows:

Model	With Plastic housing					Shrink wrap plastic with positive button top		
	Clause 7.2.2	Clause 7.3.8.1	Clause 7.3.8.2	Clause 7.3.3	Types of housings	Clause 7.3.8.1	Clause 7.3.8.2	Clause 7.3.3
BL5000C21701S1PFT					A	•	•	•
BL5000C21701S2PFT					B			
BL5000C21701S3PFT					C			
BL5000C21701S1PFS	•	•	•	•	A	•	•	•
BL5000C21701S2PFS	•	•	•	•	B			
BL5000C21701S3PFS	•	•	•	•	C			
BL5000C21701S4PFS					D			
BL5000C21701S4PFT	•	•	•	•	D			
BL5000C21702S1PFT					B			
BL5000C21702S2PFT					D			
BL5000C21702S3PFT	•	•	•	•	E			
BL5000C21702S4PFT					F			
BL5000C21703S1PFT					C			
BL5000C21703S2PFT					E			
BL5000C21703S3PFT					G			
BL5000C21703S4PFT					H			
BL5000C21704S1PFT					D			
BL5000C21704S2PFT	•	•	•	•	F			
BL5000C21704S3PFT	•	•	•	•	H			
BL5000C21704S4PFT					I			
BL5000C21702S1PFS					B			
BL5000C21702S2PFS					D			
BL5000C21702S3PFS					E			

BL5000C21702S4PFS					F			
BL5000C21703S1PFS					C			
BL5000C21703S2PFS					E			
BL5000C21703S3PFS	•	•	•	•	G			
BL5000C21703S4PFS					H			
BL5000C21704S1PFS					D			
BL5000C21704S2PFS					F			
BL5000C21704S3PFS					H			
BL5000C21704S4PFS	•	•	•	•	I			

Test List（Alternative Cell: LR2170SZ）:

For the cell model cell LR2170SZ products, the cell has a certificate and the cell model LR2170SD, 03BCEA5 products Clause 7.3.2 and Clause 7.3.6 test current is 0A other are the same, the test content is as follows:

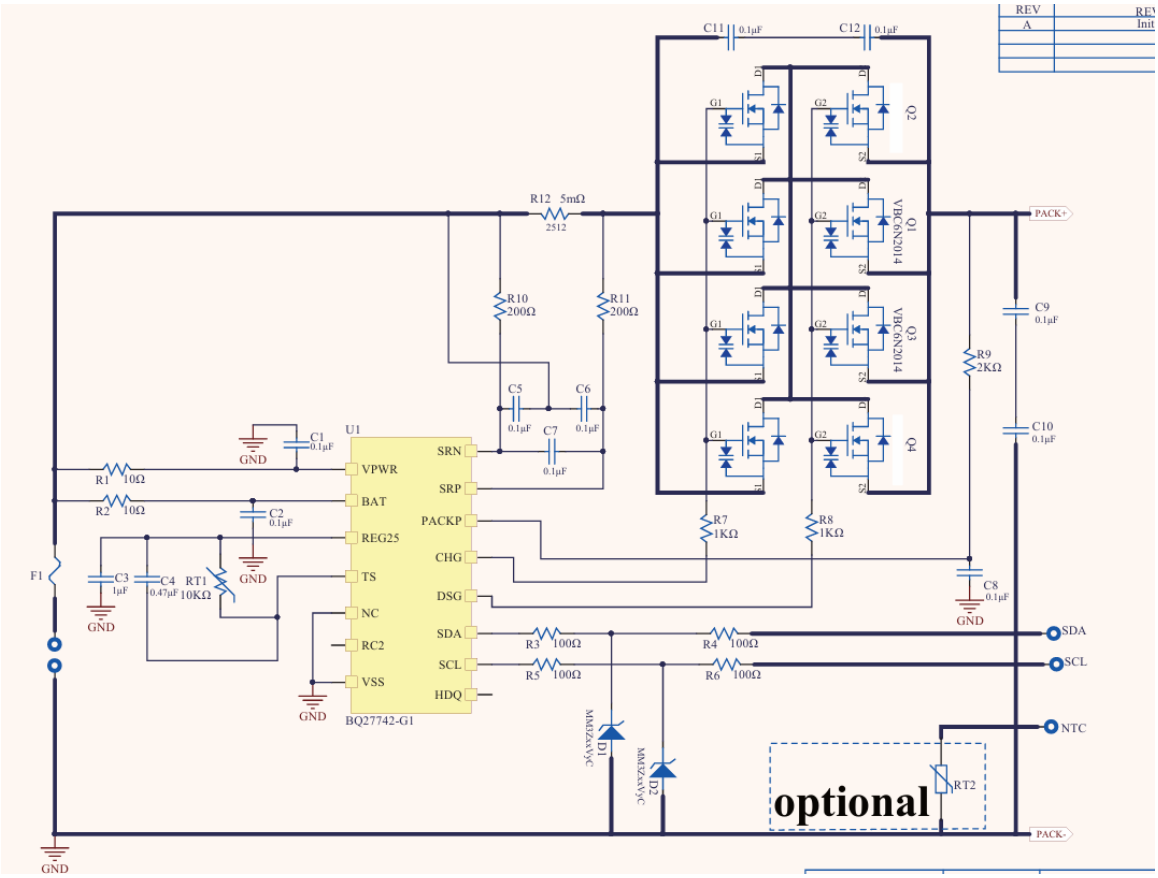
Model	With plastic shrink wrap film					
	Clause 7.2.2	Clause 7.3.6	Clause 7.3.2	Clause 7.3.8.1	Clause 7.3.8.2	Clause 7.3.3
BL5000C21701S3PFT		•	•			
BL5000C21701S4PFS		•	•			
BL5000C21704S4PFT		•	•			
BL5000C21704S4PFS		•	•			

One sample each of Clause 7.3.6 and Clause 7.3.2 was tested in this report model.

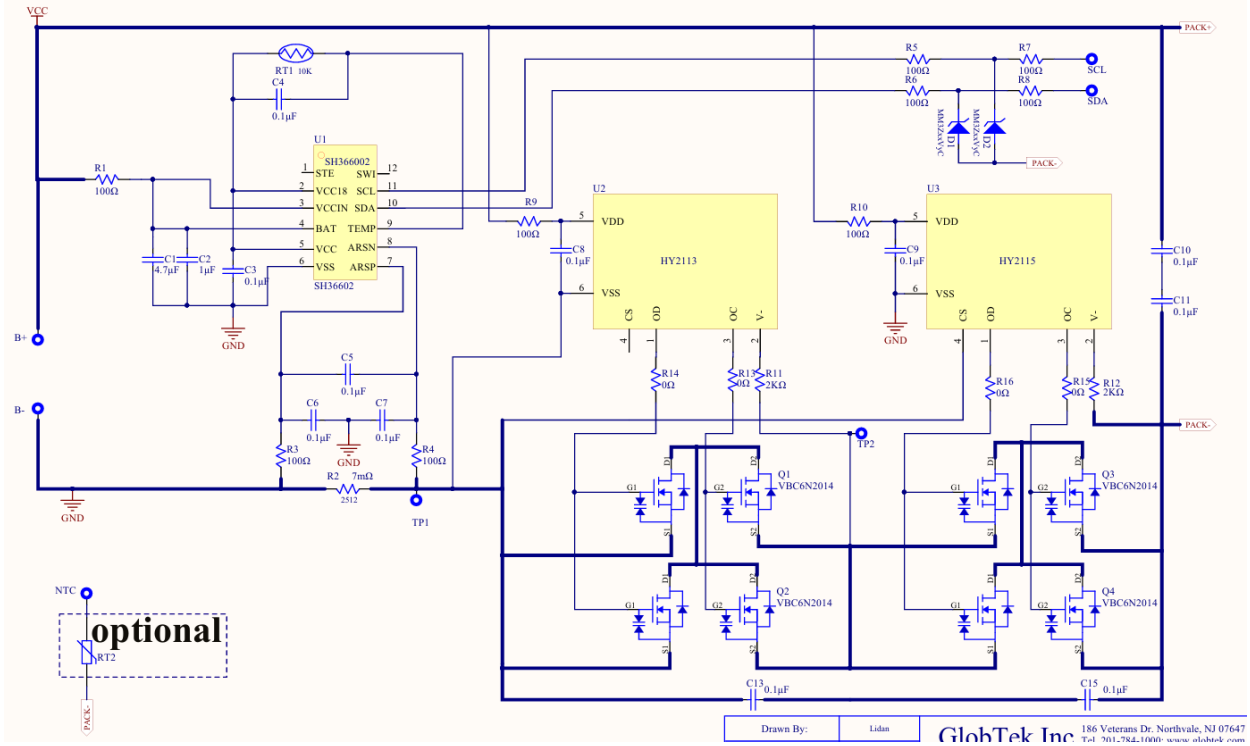
Circuit diagram:

In the below circuit diagrams, an optional NTC is shown with the intent of providing an analog temperature signal for external reading . The NTC does not contribute to the functionality of the battery pack. The samples tested in this report did not include the optional NTC. Since the NTC does not impact the testing performed, samples with the NTC included do not need additional testing.

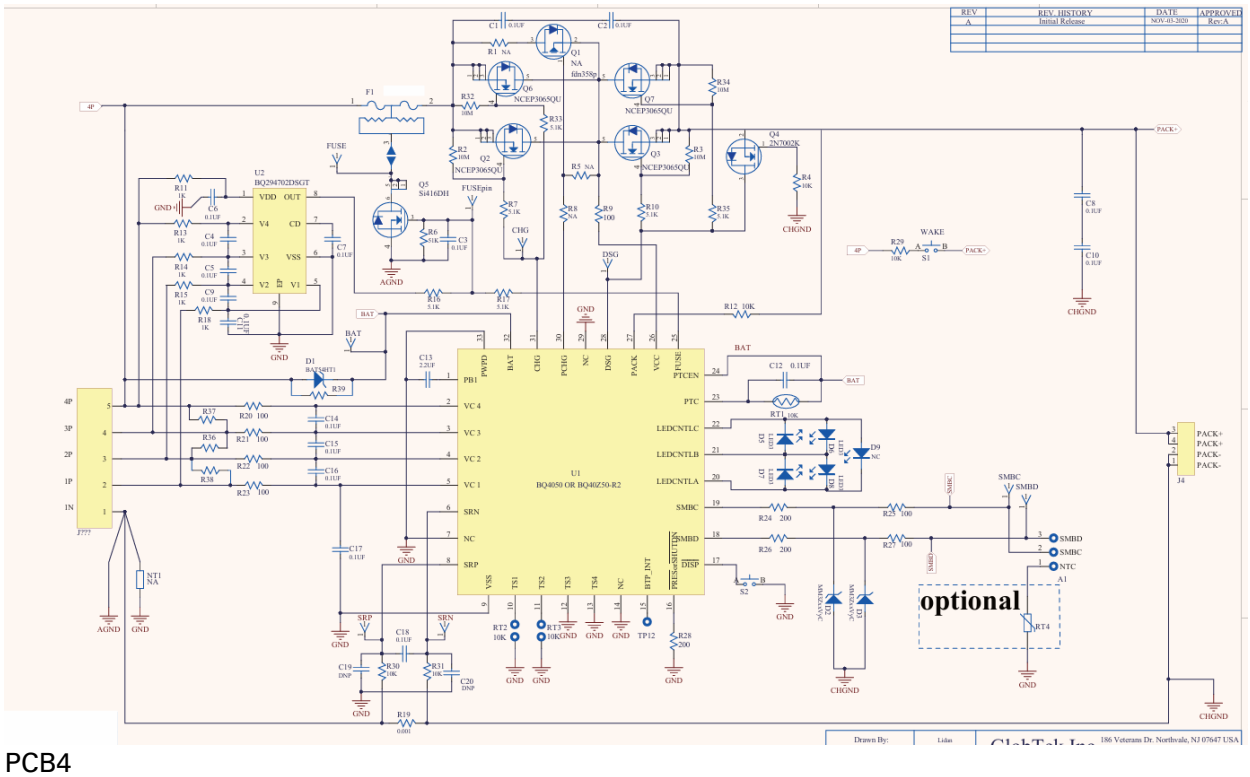
PCB1



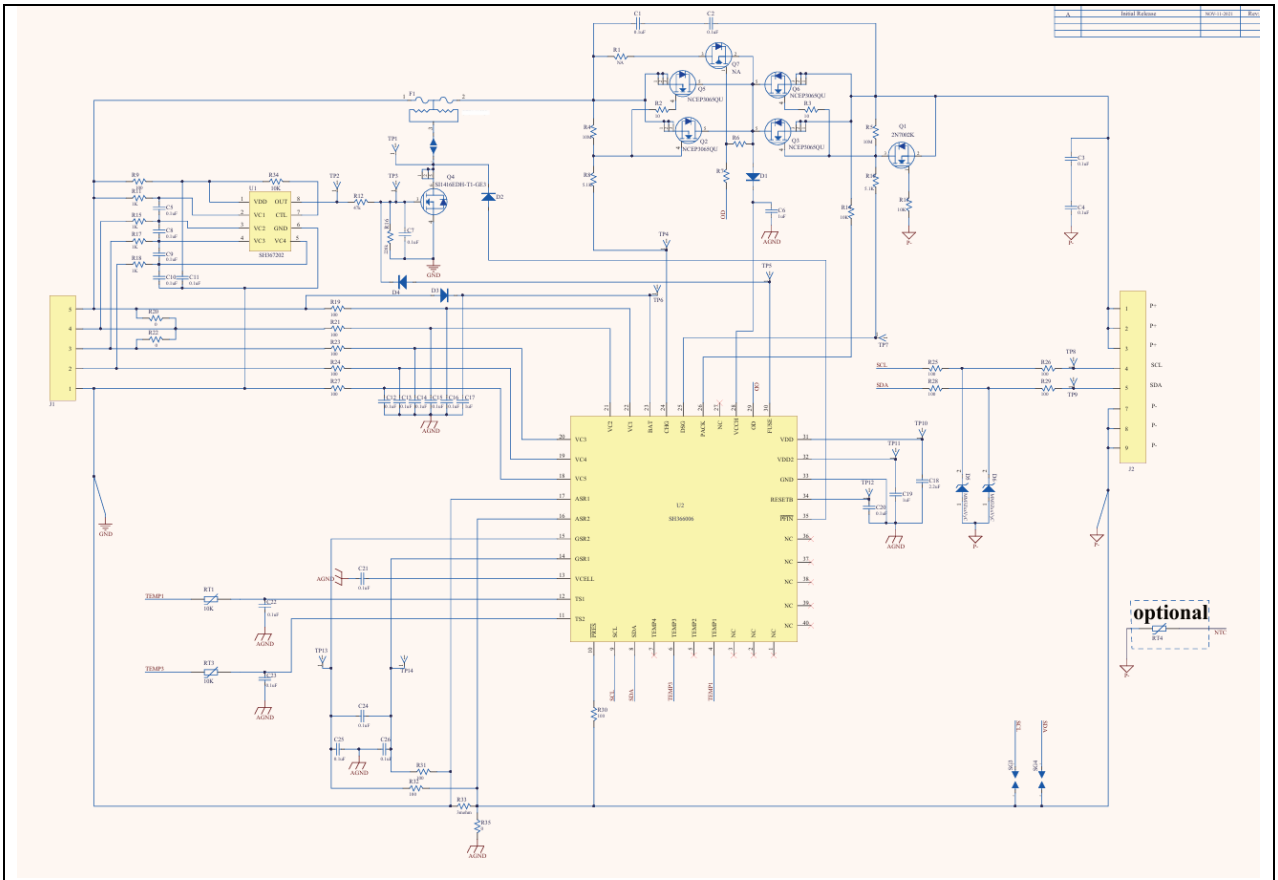
PCB2


VCC
PACK+
PACK-
SCL
SDA
U1
SH366002
SH36602
U2
HY2113
U3
HY2115
B+
B-
GND
NTC
optional
RT2
TP1
TP2
Q1 VBC6N2014
Q2 VBC6N2014
Q3 VBC6N2014
Q4 VBC6N2014
Drawn By:
Lidan
GlobTek Inc
186 Veterans Dr. Northvale, NJ 07647

PCB3


REV
REV. HISTORY
DATE
APPROVED
Initial Release
NOV-03-2020
U1
BQ4050 OR BQ40Z50-R2
U2
BQ294702DSGT
Q1
NCEP3065QU
Q2
NCEP3065QU
Q3
NCEP3065QU
Q4
2N7002K
Q5
Si416DH
Q6
NCEP3065QU
Q7
NCEP3065QU
optional
RT4
WAKE
PACK+
PACK-
SMBD
SMBC
NTC
CHGND
AGND
GND
Drawn By:
Lidan
186 Veterans Dr. Northvale, NJ 07647 USA

PCB4



Modification 1:

The original test No. EFSH24070036-IE-01-L01, issued on 2025-02-17, were modified on 2026-07-20 to add the following changes and/or additions:
1. PCB3 Added an alternative MOSFET(Q4) see page 32 for details.
2. PCB4 Added an alternative MOSFET(Q1) see page 33 for details.
3. The circuit diagram has been corrected.
After review, Conduct verification against Clause 7.3.2 and Clause 7.3.6 for products related to PCB3 and PCB4 in the report.

The report shall be read in conjunction with test report No. EFSH24070036-IE-01-L01.

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
7	**SPECIFIC REQUIREMENTS AND TESTS**		P
7.1	Charging procedure for test purposes		P
7.1.1	First procedure		P
	This charging procedure applies to subclauses other than those specified in 7.1.2		P
	Unless otherwise stated in this document, the charging procedure for test purposes is carried out in an ambient temperature of 20 °C ± 5 °C, using the method declared by the manufacturer		P
	Prior to charging, the battery have been discharged at 20 °C ± 5 °C at a constant current of 0,2 It A down to a specified final voltage		P
7.3	**Reasonably foreseeable misuse**		P
7.3.2	External short-circuit (battery)	Tested complied.	P
	The batteries were tested until one of the following occurred:		P
	- 24 hours elapsed; or		N/A
	- The case temperature declined by 20 % of the maximum temperature rise		P
	In case of rapid decline in short circuit current, the battery pack remained on test for an additional one hour after the current reached a low end steady state condition		P
	A single fault in the discharge protection circuit is conducted on one to four (depending upon the protection circuit) of the five samples before conducting the short-circuit test		P
	A single fault applies to protective component parts such as MOSFET (metal oxide semiconductor field-effect transistor), fuse, thermostat or positive temperature coefficient (PTC) thermistor		P
	Results: no fire, no explosion ..... :	(See appended table7.3.2)	P
7.3.6	Over-charging of battery	Tested complied.	P
	The supply voltage which is:		—
	- 1,4 times the upper limit charging voltage presented in Table A.1 (but not to exceed 6,0 V) for single cell/cell block batteries or		P
	- 1,2 times the upper limit charging voltage resented in Table A.1 per cell for series connected multi-cell batteries, and		P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- Sufficient to maintain a current of 2,0 It A throughout the duration of the test or until the supply voltage is reached		P
	Test was continued until the temperature of the outer casing:		P
	- Reached steady state conditions (less than 10 °C change in 30-minute period); or		P
	- Returned to ambient		N/A
	Results: no fire, no explosion ..... :	(See appended table7.3.6)	P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

7.3.2	TABLE: External short circuit (battery)					P
Sample No.	**Ambient T (°C)**	**OCV before test (Vdc)**	**Resistance of circuit (mΩ)**	**Maximum case temperature rise ΔT (°C)**	**Component single fault condition**	**Results**
BL5000C21701S4PFT #001	22.3	4.09	80	1.5	F1	No fire or explosion
BL5000C21701S4PFT #002	22.3	4.10	80	1.6	Q3	No fire or explosion
BL5000C21701S4PFT #003	22.3	4.10	80	0.9	--	No fire or explosion
BL5000C21701S4PFT #004	22.3	4.10	80	0.8	--	No fire or explosion
BL5000C21701S1PFT #5	22.5	4.10	80	0.7	--	No fire or explosion
BL5000C21702S1PFT #011	22.2	8.23	80	1.2	F1	No fire or explosion
BL5000C21702S1PFT #012	22.1	8.22	80	1.1	Q3	No fire or explosion
BL5000C21702S1PFT #013	22.2	8.21	80	0.8	--	No fire or explosion
BL5000C21702S1PFT #014	22.3	8.21	80	0.8	--	No fire or explosion
BL5000C21702S1PFT #015	22.3	8.22	80	0.8	--	No fire or explosion
BL5000C21702S4PFT #021	21.9	8.18	80	1.4	F1	No fire or explosion
BL5000C21702S4PFT #022	21.9	8.18	80	0.8	Q3	No fire or explosion
BL5000C21702S4PFT #023	22.1	8.19	80	0.6	--	No fire or explosion
BL5000C21702S4PFT #024	21.9	8.18	80	0.8	--	No fire or explosion
BL5000C21702S4PFT #025	21.9	8.19	80	0.7	--	No fire or explosion
BL5000C21703S1PFT #031	22.2	12.29	80	1.2	F1	No fire or explosion
BL5000C21703S1PFT #032	22.3	12.29	80	0.9	Q3	No fire or explosion
BL5000C21703S1PFT #033	22.5	12.28	80	0.7	--	No fire or explosion

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

BL5000C21703S1PFT #034	22.1	12.28	80	0.8	--	No fire or explosion
BL5000C21703S1PFT #035	22.2	12.29	80	0.7	--	No fire or explosion
BL5000C21703S4PFT #041	22.1	12.27	80	1.5	F1	No fire or explosion
BL5000C21703S4PFT #042	22.1	12.27	80	0.8	Q3	No fire or explosion
BL5000C21703S4PFT #043	22.3	12.26	80	0.7	--	No fire or explosion
BL5000C21703S4PFT #044	22.1	12.26	80	0.9	--	No fire or explosion
BL5000C21703S4PFT #045	22.4	12.27	80	0.8	--	No fire or explosion
BL5000C21704S1PFT #051	23.3	16.42	80	0.9	F1	No fire or explosion
BL5000C21704S1PFT #052	23.4	16.42	80	0.9	Q3	No fire or explosion
BL5000C21704S1PFT #053	22.1	16.43	80	0.7	--	No fire or explosion
BL5000C21704S1PFT #054	22.5	16.42	80	0.8	--	No fire or explosion
BL5000C21704S1PFT #055	22.6	16.43	80	0.9	--	No fire or explosion
BL5000C21704S4PFT #061	22.3	16.34	80	0.9	F1	No fire or explosion
BL5000C21704S4PFT #062	22.3	16.34	80	0.8	Q3	No fire or explosion
BL5000C21704S4PFT #063	22.3	16.35	80	0.8	--	No fire or explosion
BL5000C21704S4PFT #064	22.4	16.34	80	0.8	--	No fire or explosion
BL5000C21704S4PFT #065	22.3	16.34	80	0.8	--	No fire or explosion
BL5000C21702S1PFT #071	22.3	8.19	80	1.2	F1	No fire or explosion
BL5000C21702S1PFT #072	22.5	8.19	80	0.9	Q3	No fire or explosion
BL5000C21702S1PFT #073	22.1	8.20	80	0.7	--	No fire or explosion
BL5000C21702S1PFT #074	22.6	8.20	80	0.9	--	No fire or explosion

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

BL5000C21702S1PFT #075	22.3	8.19	80	0.8	--	No fire or explosion
BL5000C21702S4PFS #081	22.5	8.19	80	1.4	F1	No fire or explosion
BL5000C21702S4PFS #082	22.5	8.18	80	0.9	Q3	No fire or explosion
BL5000C21702S4PFS #083	22.4	8.18	80	0.8	--	No fire or explosion
BL5000C21702S4PFS #084	22.5	8.19	80	0.8	--	No fire or explosion
BL5000C21702S4PFS #085	22.7	8.19	80	0.8	--	No fire or explosion
BL5000C21703S1PFS #091	22.2	11.87	80	1.2	F1	No fire or explosion
BL5000C21703S1PFS #092	22.1	11.88	80	0.8	Q3	No fire or explosion
BL5000C21703S1PFS #093	22.5	11.89	80	0.8	--	No fire or explosion
BL5000C21703S1PFS #094	22.6	11.87	80	0.7	--	No fire or explosion
BL5000C21703S1PFS #095	22.7	11.87	80	0.7	--	No fire or explosion
BL5000C21703S4PFS #101	22.7	12.27	80	0.8	F1	No fire or explosion
BL5000C21703S4PFS #102	22.4	12.27	80	0.9	Q3	No fire or explosion
BL5000C21703S4PFS #103	22.3	12.26	80	0.6	--	No fire or explosion
BL5000C21703S4PFS #104	22.5	12.26	80	0.5	--	No fire or explosion
BL5000C21703S4PFS #105	22.6	12.27	80	0.7	--	No fire or explosion
BL5000C21704S1PFS #111	22.5	16.34	80	1.1	F1	No fire or explosion
BL5000C21704S1PFS #112	22.4	16.34	80	0.9	Q3	No fire or explosion
BL5000C21704S1PFS #113	22.6	16.34	80	0.8	--	No fire or explosion
BL5000C21704S1PFS #114	22.5	16.34	80	0.7	--	No fire or explosion
BL5000C21704S1PFS #115	22.6	16.34	80	0.9	--	No fire or explosion

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

BL5000C21704S4PFS #121	22.4	16.37	80	1.5	F1	No fire or explosion
BL5000C21704S4PFS #122	22.5	16.34	80	0.9	Q3	No fire or explosion
BL5000C21704S4PFS #123	22.5	16.34	80	0.9	--	No fire or explosion
BL5000C21704S4PFS #124	22.7	16.34	80	0.9	--	No fire or explosion
BL5000C21704S4PFS #125	22.3	16.34	80	0.9	--	No fire or explosion

Supplementary information: The batteries remain on test until the surface temperature declines by 20 % of the maximum temperature rise.

- No fire or explosion

- Others (please explain)

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

7.3.6	TABLE: Over-charging of battery- BL5000C21701S4PFT				P
Constant charging current (A) .....:		**40**			—
Supply voltage (Vdc) .....:		**5.88**			—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**	
BL5000C21701S4PFT #006	3.26	60	22.6	No fire or explosion	
BL5000C21701S4PFT #007	3.26	60	23.1	No fire or explosion	
BL5000C21701S4PFT #008	3.26	60	23.4	No fire or explosion	
BL5000C21701S4PFT #009	3.26	60	24.2	No fire or explosion	
BL5000C21701S4PFT #010	3.26	60	23.2	No fire or explosion	
Supplementary information: The temperature of the outer case reached steady state conditions - No fire or explosion - Others (please explain): Charging current turned to be 0 A in 1 min					

7.3.6	TABLE: Over-charging of battery- BL5000C21702S1PFT				P
Constant charging current (A) .....:		**10**			—
Supply voltage (Vdc) .....:		**10.08**			—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**	
BL5000C21702S1PFT #016	6.41	60	23.1	No fire or explosion	
BL5000C21702S1PFT #017	6.43	60	23.2	No fire or explosion	
BL5000C21702S1PFT #018	6.41	60	23.1	No fire or explosion	
BL5000C21702S1PFT #019	6.43	60	24.4	No fire or explosion	
BL5000C21702S1PFT #020	6.41	60	23.2	No fire or explosion	
Supplementary information: The temperature of the outer case reached steady state conditions - No fire or explosion - Others (please explain) : Charging current turned to be 0 A in 2 min					

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

7.3.6	TABLE: Over-charging of battery- BL5000C21702S4PFT				P
Constant charging current (A) .....:		**40**			—
Supply voltage (Vdc) .....:		**10.08**			—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**	
BL5000C21702S4PFT #026	6.47	60	22.4	No fire or explosion	
BL5000C21702S4PFT #027	6.50	60	23.2	No fire or explosion	
BL5000C21702S4PFT #028	6.50	60	23.3	No fire or explosion	
BL5000C21702S4PFT #029	6.50	60	24.7	No fire or explosion	
BL5000C21702S4PFT #030	6.50	60	22.2	No fire or explosion	
Supplementary information: The temperature of the outer case reached steady state conditions - No fire or explosion - Others (please explain) : Charging current turned to be 0 A in 1 min					

7.3.6	TABLE: Over-charging of battery- BL5000C21703S1PFT				P
Constant charging current (A) .....:		**10**			—
Supply voltage (Vdc) .....:		**15.12**			—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**	
BL5000C21703S1PFT #036	9.63	60	24.1	No fire or explosion	
BL5000C21703S1PFT #037	9.65	60	23.4	No fire or explosion	
BL5000C21703S1PFT #038	9.65	60	23.8	No fire or explosion	
BL5000C21703S1PFT #039	9.68	60	23.7	No fire or explosion	
BL5000C21703S1PFT #040	9.68	60	22.9	No fire or explosion	
Supplementary information: The temperature of the outer case reached steady state conditions - No fire or explosion - Others (please explain) : Charging current turned to be 0 A in 1 min					

7.3.6	TABLE: Over-charging of battery- BL5000C21703S4PFT		P
Constant charging current (A) .....:		**40**	—

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

Supply voltage (Vdc) ..... :		**15.12**		—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**
BL5000C21703S4PFT #046	9.59	60	23.5	No fire or explosion
BL5000C21703S4PFT #047	9.59	60	23.7	No fire or explosion
BL5000C21703S4PFT #048	9.60	60	23.8	No fire or explosion
BL5000C21703S4PFT #049	9.60	60	23.8	No fire or explosion
BL5000C21703S4PFT #050	9.59	60	23.9	No fire or explosion
Supplementary information: The temperature of the outer case reached steady state conditions - No fire or explosion - Others (please explain) : Charging current turned to be 0 A in 1 min				

7.3.6	**TABLE: Over-charging of battery- BL5000C21704S1PFT**			P
Constant charging current (A) ..... :		**10**		—
Supply voltage (Vdc) ..... :		**20.16**		—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**
BL5000C21704S1PFT #056	12.77	60	23.4	No fire or explosion
BL5000C21704S1PFT #057	12.77	60	23.3	No fire or explosion
BL5000C21704S1PFT #058	12.77	60	23.6	No fire or explosion
BL5000C21704S1PFT #059	12.77	60	23.8	No fire or explosion
BL5000C21704S1PFT #060	12.77	60	23.4	No fire or explosion
Supplementary information: The temperature of the outer case reached steady state conditions - No fire or explosion - Others (please explain) : Charging current turned to be 0 A in 1 min				

7.3.6	**TABLE: Over-charging of battery- BL5000C21703S4PFT**			P
Constant charging current (A) ..... :		**40**		—
Supply voltage (Vdc) ..... :		**20.16**		—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**

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BL5000C21704S4PFT #066	12.85	60	23.5	No fire or explosion
BL5000C21704S4PFT #067	12.85	60	23.3	No fire or explosion
BL5000C21704S4PFT #068	12.85	60	23.4	No fire or explosion
BL5000C21704S4PFT #069	12.85	60	23.7	No fire or explosion
BL5000C21704S4PFT #070	12.85	60	23.4	No fire or explosion

Supplementary information: The temperature of the outer case reached steady state conditions
- No fire or explosion
- Others (please explain) : Charging current turned to be 0 A in 1 min

7.3.6	**TABLE: Over-charging of battery- BL5000C21702S1PFS**			P
Constant charging current (A) ..... :		**10**		—
Supply voltage (Vdc) ..... :		**10.08**		—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**
BL5000C21702S1PFS #076	6.40	60	23.2	No fire or explosion
BL5000C21702S1PFS #077	6.40	60	23.1	No fire or explosion
BL5000C21702S1PFS #078	6.41	60	22.9	No fire or explosion
BL5000C21702S1PFS #079	6.43	60	23.6	No fire or explosion
BL5000C21702S1PFS #080	6.40	60	23.2	No fire or explosion

Supplementary information: The temperature of the outer case reached steady state conditions
- No fire or explosion
- Others (please explain) : Charging current turned to be 0 A in 1 min

7.3.6	**TABLE: Over-charging of battery- BL5000C21702S4PFS**			P
Constant charging current (A) ..... :		**40**		—
Supply voltage (Vdc) ..... :		**10.08**		—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**
BL5000C21702S4PFS #086	6.52	60	23.5	No fire or explosion

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Clause	Requirement + Test	Result - Remark	Verdict

BL5000C21702S4PFS #087	6.53	60	23.6	No fire or explosion
BL5000C21702S4PFS #088	6.52	60	23.6	No fire or explosion
BL5000C21702S4PFS #089	6.54	60	23.7	No fire or explosion
BL5000C21702S4PFS #090	6.52	60	23.4	No fire or explosion

Supplementary information: The temperature of the outer case reached steady state conditions

- No fire or explosion
- Others (please explain) : Charging current turned to be 0 A in 1 min

7.3.6	**TABLE: Over-charging of battery- BL5000C21701S1PFS**			P
Constant charging current (A) .....:		**10**		—
Supply voltage (Vdc) .....:		**15.12**		—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**
BL5000C21703S1PFS #096	9.46	60	23.5	No fire or explosion
BL5000C21703S1PFS #097	9.46	60	23.5	No fire or explosion
BL5000C21703S1PFS #098	9.47	60	23.6	No fire or explosion
BL5000C21703S1PFS #099	9.46	60	23.7	No fire or explosion
BL5000C21703S1PFS #100	9.46	60	23.5	No fire or explosion

Supplementary information: The temperature of the outer case reached steady state conditions

- No fire or explosion
- Others (please explain) : Charging current turned to be 0 A in 1 min

7.3.6	**TABLE: Over-charging of battery- BL5000C21703S4PFS**			P
Constant charging current (A) .....:		**40**		—
Supply voltage (Vdc) .....:		**15.12**		—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**
BL5000C21703S4PFS #106	9.51	60	22.9	No fire or explosion
BL5000C21703S4PFS #107	9.51	60	23.7	No fire or explosion
BL5000C21703S4PFS	9.50	60	23.3	No fire or

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#108				explosion
BL5000C21703S4PFS #109	9.50	60	23.5	No fire or explosion
BL5000C21703S4PFS #110	9.51	60	23.1	No fire or explosion

Supplementary information: The temperature of the outer case reached steady state conditions
- No fire or explosion
- Others (please explain) : Charging current turned to be 0 A in 1 min

7.3.6	**TABLE: Over-charging of battery- BL5000C21702S1PFS**			P
Constant charging current (A) .....:		**10**		—
Supply voltage (Vdc) .....:		**20.16**		—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**
BL5000C21704S1PFS #116	12.63	60	23.4	No fire or explosion
BL5000C21704S1PFS #117	12.64	60	23.5	No fire or explosion
BL5000C21704S1PFS #118	12.62	60	23.3	No fire or explosion
BL5000C21704S1PFS #119	12.65	60	23.5	No fire or explosion
BL5000C21704S1PFS #120	12.62	60	23.4	No fire or explosion

Supplementary information: The temperature of the outer case reached steady state conditions
- No fire or explosion
- Others (please explain) : Charging current turned to be 0 A in 1 min

7.3.6	**TABLE: Over-charging of battery- BL5000C21704S4PFS**			P
Constant charging current (A) .....:		**40**		—
Supply voltage (Vdc) .....:		**20.16**		—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**
BL5000C21704S4PFS #126	12.66	60	23.5	No fire or explosion
BL5000C21704S4PFS #127	12.66	60	23.6	No fire or explosion
BL5000C21704S4PFS #128	12.44	60	23.7	No fire or explosion
BL5000C21704S4PFS #129	12.37	60	23.8	No fire or explosion

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Clause	Requirement + Test	Result - Remark	Verdict

BL5000C21704S4PFS #130	12.66	60	23.4	No fire or explosion

Supplementary information: The temperature of the outer case reached steady state conditions

- No fire or explosion
- Others (please explain) : Charging current turned to be 0 A in 1 min

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Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: Critical components information				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard[2)]**	**Mark(s) of conformity[1)]**
Cell	LISHEN	LR2170SD, 03BCEA5	Ratings: 3,6 Vdc, Rated capacity: 4900 mAh, nominal capacity: 5000 mAh	IEC 62133-2:2017/AMD1:2021	BE-44800
Alternative Cell	LISHEN	LR2170SZ	Rated Voltage: 3,6 V Rated Capacity: 4900 mAh Nominal Capacity: 5000 mAh	IEC 62133-2:2017/AMD1:2021	NL-100631
Connector (Optional)	Molex L L C	39-01-2040	Min.V-2	IEC 62133-2:2017/AMD1:2021	Tested with battery
Alternative Connector (Optional)	Molex L L C	39-01-2060	Min.V-2	IEC 62133-2:2017/AMD1:2021	Tested with battery
Alternative Connector (Optional)	Interchangeable	Interchangea ble	Min.V-2	IEC 62133-2:2017/AMD1:2021	Tested with battery
Alternative Connector (Optional)	Molex L L C	39-01-2080	Min.V-2	IEC 62133-2:2017/AMD1:2021	Tested with battery
Plastic housing (Optional)	SABIC INNOVATIVE PLASTICS B V	945（GG ）	Min. V-0, Min. 120°C, Min. 2.0mm thickness	UL 764	UL E45329
Alternative Plastic housing (Optional)	SABIC JAPAN L L C	945（GG）	Min. V-0, Min. 120°C, Min. 2.0mm thickness	UL 764	UL E207780
Alternative Plastic housing (Optional)	SABIC INNOVATIVE PLASTICS B V	C2950	Min. V-0, Min. 75°C Min. 2.0mm thickness	UL 764	UL E45329
Alternative Plastic housing (Optional)	SABIC JAPAN L L C	C2950	Min. V-0, Min. 75°C Min. 2.0mm thickness	UL 764	UL E207780
Internal Wire	Interchangeable	Interchangea ble	Min. 24AWG, Min.300V, Min.80°C	UL 758	UL approved

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positve tip cap	Suzhou Industrial Park ZTNY New Energy Technology Co.,Ltd.	Positive Button/tip	diameter 4.8mm，height 2.25mm，	IEC 62133-2：2017/AMD1:2021	Tested with battery
PCB1					
PCB	SHUANG MING INDUSTRY CO LTD	T005V0	V-0, 130 ºC	UL 796	UL E78017
Alternative PCB	Interchange able	Interchange able	V-0, 130 ºC	UL 796	UL approved
F1	WAYON	S20059F-LP600F	6A/20V	IEC 62133-2:2017/AMD1:2021	Tested with battery
IC (U1)	TEXAS INSTRUMENTS	BQ27742-G1	V_{VPWR}：-0.3~20V T_A：-40~85℃	IEC 62133-2:2017/AMD1:2021	Tested with battery
MOSFET Q1Q3	VBsemi	VBC6N2014	VDS：20V VGS：±12V TJ：-55~150℃ ID：0~6.2A（25℃）	IEC 62133-2:2017/AMD1:2021	Tested with battery
PCB2					
PCB	Shenzhen Jia Li Chuang Technology Developmen t Co LTD	JLC-2	V-0, 130 ºC	UL 796	UL E479892
Alternative PCB	Interchange able	Interchange able	V-0, 130 ºC	UL 796	UL approved
IC (U1)	Sino Wealth	SH366002	Vcc：1.7~2V VBAT：2.5~5.5V	IEC 62133-2:2017/AMD1:2021	Tested with battery
IC (U2)	HYCON	HY2113-FB2B	VDD-VSS：1.5~8V VDD-VCS：1.5~20V	IEC 62133-2:2017/AMD1:2021	Tested with battery
IC (U3)	HYCON	HY2115-OB9D	VDSOP1：1.5~8V VDSOP2：1.5~20V	IEC 62133-2:2017/AMD1:2021	Tested with battery

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Clause	Requirement + Test	Result - Remark	Verdict

MOSFET Q1,Q2，Q3，Q4	VBsemi	VBC6N2014	VDS：20V VGS：±12V TJ：-55~150℃ ID：0~6.2A（25℃）	IEC 62133-2:2017/AMD1:2021	Tested with battery
PCB3					
PCB	GUANGDE BOYA XINXING ELECTRONICTECHNOLOGY CO LTD	BY-1	V-0, 130 ℃	UL 796	UL E475783
Alternative PCB	Interchange able	Interchange able	V-0, 130 ℃	UL 796	UL approved
IC (U1)	TEXAS INSTRUMENTS	BQ40Z50-R2	Vcc：2.2~26V Topr：-40~85℃	IEC 62133-2:2017/AMD1:2021	Tested with battery
IC (U2)	TEXAS INSTRUMENTS	BQ294702	Vcc：2.2~26V Topr：-40~85℃	IEC 62133-2:2017/AMD1:2021	Tested with battery
F1（1S4P)	WAYON	WPF12A1J	12A/3.0V-4 .5V	IEC 62133-2:2017/AMD1:2021	Tested with battery
F1 (2S(1-4)P)	Dexerials	SFJ-0812U	12A/4.0V-9 .0V	IEC 62133-2:2017/AMD1:2021	Tested with battery
F1 (3S(1-4)P)	Dexerials	SFJ-1212U	12A/7.4V-1 3.8V	IEC 62133-2:2017/AMD1:2021	Tested with battery
F1 (4S(1-4)P)	Dexerials	SFJ-1412U	12A/10.5V-19.6V	IEC 62133-2:2017/AMD1:2021	Tested with battery
MOSFET Q2,Q3，Q6，Q7 (1S4P&(2-4)S（2-4）P)	NCEPOWER	NCEP3065QU	65A 30V 2mΩ	IEC 62133-2：2017/AMD1:2021	Tested with battery
MOSFET Q2,Q3，((2-4)S1P)	NCEPOWER	NCEP3065QU	65A 30V 2mΩ	IEC 62133-2：2017/AMD1:2021	Tested with battery

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MOSFET Q5	vishay	SI1416EDH-T1-GE3	3.9A 30V 58mΩ	IEC 62133-2：2017/AMD1:2021	Tested with battery
MOSFET Q4	KEC	2N7002A	115mA/60V	IEC 62133-2：2017/AMD1:2021	Tested with battery
Alternative	**PANJIT International Inc.**	**2N7002K**	**300mA/60V**	**IEC 62133-2：2017/AMD 1:2021**	**Tested with battery**
PCB4					
PCB	Shenzhen Jia Li Chuang Technology Developmen t Co LTD	JLC-2	V-0, 130 ℃	UL 796	UL E479892
Alternative PCB	Interchange able	Interchange able	V-0, 130 ℃	UL 796	UL approved
IC (U1)	SinoWealth	SH367202I/008IY-ACA00	VDD：2.5~30V ICC:7μA	IEC 62133-2:2017/AMD1:2021	Tested with battery
IC (U2)	SinoWealth	SH366006	VDD:-0.3~7V VBAT：5~25V	IEC 62133-2:2017/AMD1:2021	Tested with battery
F1 (2S(1-4)P)	Dexerials	SFJ-0812U	12A/4.0V-9 .0V	IEC 62133-2:2017/AMD1:2021	Tested with battery
F1 (3S(1-4)P)	Dexerials	SFJ-1212U	12A/7.4V-1 3.8V	IEC 62133-2:2017/AMD1:2021	Tested with battery
F1 (4S(1-4)P)	Dexerials	SFJ-1412U	12A/10.5V-19.6V	IEC 62133-2:2017/AMD1:2021	Tested with battery
MOSFET Q2,Q3，Q5 ,Q6 ((2-4)S（2-4）P)	NCEPOWER	NCEP3065QU	65A 30V 2mΩ	IEC 62133-2：2017/AMD1:2021	Tested with battery

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Clause	Requirement + Test	Result - Remark	Verdict

MOSFET Q2,Q3, ((2-4)S1P)	NCEPOWER	NCEP3065QU	65A 30V 2mΩ	IEC 62133-2：2017/AMD1:2021	Tested with battery
MOSFET Q4	vishay	SI1416EDH-T1-GE3	3.9A 30V 58mΩ	IEC 62133-2：2017/AMD1:2021	Tested with battery
MOSFET Q1	KEC	2N7002A	115mA/60V	IEC 62133-2：2017/AMD1:2021	Tested with battery
Alternative	**PANJIT International Inc.**	**2N7002K**	**300mA/60V**	**IEC 62133-2：2017/AMD1:2021**	**Tested with battery**
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) License available upon request.					

----- End of Report -----