HEADQUARTERS: 914 WEST PATAPSCO AVENUE • BALTIMORE, MARYLAND 21230 • PHONE (410) 354-3300 • FAX (410) 354-3313

Lithium-Ion Battery Pack, BL0950CAA652S1P****, BL0950C146502S1P****(* May be A~Z or 0~9 or blank for marketing purposes),

Tested under

CSA C22.2 No. 62133-2:20 UL 62133-2, First Edition, 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

File: #E115461

MET Report: 131330

Approved: March 29, 2023

Applicant:
GlobTek, Inc.
186 Veterans Drive Northvale,
NJ 07647
USA

Prepared By:
Eurofins Product Testing Service (Shanghai) Co., Ltd.
Building 18, No. 2168 Chenhang Highway, Minhang District,
Shanghai
P. R. China

For:

Eurofins Electrical and Electronic Testing North America, Inc.
914 West Patapsco Avenue
Baltimore, Maryland 21230-3432
(410) 949-1802

☐ NRTL Listing
☐ MET Listing
☒ MET Recognition
☐ MET Classification

☐ MET-C Listing
☐ MET Listing for Canada
☒ MET-C Recognition
☐ MET-C Classification

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Change Record

Change Number	Description	Approval Date	Project Number	Amendment Engineer	Engineer Initials
None	--	--	--	--	--

Description

Product(s) Covered:

- Lithium-Ion Battery Pack, BL0950CAA652S1P****, BL0950C146502S1P****(* May be A~Z or 0~9 or blank for marketing purposes),

Product Description:

This battery is constructed with two rechargeable Li-ion cells in 2S1P, and PCB circuit, provides with overcharge, over-discharge, short-circuits proof circuit as part of protection effect.
BL0950CAA652S1P**** and BL0950C146502S1P**** are identical except for different printed circuit board. After review,
BL0950CAA652S1P**** was subjected to all applicable tests and the most unfavourable data was recorded.
BL0950C146502S1P**** was subjected to the test of Cl.7.3.2, Cl.7.3.6.

Model Differences:

- BL0950CAA652S1P**** and BL0950C146502S1P**** are identical except for different printed circuit board

Electrical Rating:

7.4 V, 950 mAh, 7.03 Wh

Engineering Considerations (Not For Field Representative's Use):

- Lithium-Ion Battery Pack, Model BL0950CAA652S1P****, BL0950C146502S1P****(* may be A~Z or 0~9 or blank for marketing purposes) has been investigated in accordance with CSA C22.2 No. 62133-2:20 / UL 62133-2, First Edition, 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.

- This product must be installed in accordance with all codes applicable to the location of the installation and in accordance with its instructions for use.

- This equipment is for use only in an end-product where the acceptability of the combination is determined by a Nationally Recognized Testing Laboratory.

Description (Continued)

Note to Field Representative:

- A sample of each component listed below and a purchase order for the work described below at the current hourly rate shall be submitted to:*

  Eurofins E&E NA, Inc.
  914 West Patapsco Avenue
  Baltimore, Maryland 21230-3432

  for reassessment processed under job NRTLC # 131330 for verification of construction against the associated drawings also listed below. The component(s) shall be subjected to an annual audit for continued compliance. The annual re-verification is a client incurred expense to be assessed at the current hourly rate at the time of the test. The estimated time for re-verification is also listed below.

Figure/ Item #	Component	Controlled Document Number	Re-Verification Type	Re-verification Maximum Estimated time (hours)
--	None	--	--	--

*Alternatively: If the evaluation is performed by the Eurofins E&E NA representative's lab other than the location above or by the MET representative during the Follow-up inspection, all data shall be returned to the Baltimore office listed above for surveillance tracking under the assigned job number mentioned above.

- The above inspections are a client incurred cost and will be billed at the hourly rate in place at the time of the inspection.

General Requirements

Scope of Requirements: The requirements contained within this section apply to all products contained within this Follow-Up Service Report File where applicable.

Definitions: *(as defined or used in the context of the standard)*

Term	Definitions
SELV:	Safety Extra Low Voltage
PCB:	Printed Circuit Board
TNV:	Telecommunications Network Voltage
Listed/Recognized Component:	A component evaluated to the applicable U.S. standards by a Nationally Recognized Testing Laboratory (NRTL).
Certified Component:	A component evaluated to the applicable Canadian standards by a Certification Organization (CO).
Listee:	Applicant

Measurements: All dimensions indicated in the body of this report are approximations unless otherwise indicated.

Corrosion Protection: All corrosive metals shall be provided with a means to protect from corrosion. Acceptable methods include painting, plating and galvanizing. Dissimilar metals shall not be employed where reliable continuity is required.

Soldered Connections: All soldered connections shall be made mechanically secure before soldering. Tack soldering is not acceptable. Acceptable forms of mechanical securement include:

A) Lead is inserted through an eyelet or opening of a terminal block prior to soldering.
B) Lead is inserted into a U or V shaped slot in the terminal prior to soldering.
C) Lead is wrapped around a terminal post prior to soldering.
D) Lead is tied to adjacent lead with wire tie-wrap near termination point.

Electrical Connections: All electrical connections other than soldering shall be provided with positive detent, crimp type insulated Recognized Component connectors suitable for the voltage and temperatures involved. They shall be sized for the wire and mounting terminations. Where hazardous voltage or energy is involved, all wire connections to connectors shall employ a recognized method of double securement. Where fork-type lugs are used, they shall be snap-on or up-turned lug type.

Mechanical Assembly: All parts shall be secured by welding, bolts/nuts with lock or star washers, or thread forming screws.

Creepage and Clearances: Shall be in accordance with the evaluated product standards.

General Requirements (Continued)

Where present, the following items are required.

Internal Plastics: Shall be a Recognized/Certified Component, Plastic, rated minimum 94V-1.

PCB: Shall be a Recognized Component, rated minimum 94V-2 and 105°C.

Tubing and Sleeving: Shall be a Listed/Recognized/Certified Component, rated minimum 300V, 80°C minimum, 94V-2, unless otherwise noted.

Wire Connectors: (Various crimp-type) Shall be Listed/Recognized/Certified Components sized for the wire and mounting terminations. Both the wire insulation and the conductor shall be crimped.

Fuseholder: Operator accessible fuseholders, when provided, are connected to the ungrounded conductor(s) of the primary circuit.

Internal Wiring: All internal wiring and connections are properly jacketed or enclosed within the equipment. Wiring is routed and secured to reduce the possibility of stress being transmitted to electrical connections, as necessary. All internal conductors in the secondary circuits are routed away from primary circuit conductors and from uninsulated live parts. There is no internal wiring subject to contact by the user when the product is employed as intended. The internal wiring is acceptable for conditions of service to which it will be subjected. Internal conductors consist of Recognized Component AWM insulated individual conductors; sized in accordance with the National Electric code and Canadian Electrical code, as may be applicable for the current expected in the conductor, rated VW-1, 300V, 90°C, and signal level ribbon wiring of flammability rating VW-1.

Interconnecting Cords and Cables: Flexible telecommunication cord and cable assemblies employed for interconnection between components are to be rated for and comply with temperatures, exposure to oil or grease and other conditions of service within the environment the product is to be utilized.
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Markings

Etching, molding, die-stamping, silk-screening, stamped-, or etched-metal labels secured by rivets or screws are considered permanent. Recognized/Certified Component, Marking and Labeling Systems, and/or labels tested and deemed suitable for the surface to which it is applied is also considered permanent. Each product is to be permanently marked with the following information, Per the Canadian Electrical Code described in CSA C22.2 No. 0 General Requirements, Canadian product certification requires warning/cautionary markings in both English and French languages. It is the Applicant's responsibility to provide the listed Bilingual Markings shown below in accordance with the Canadian regulatory requirements

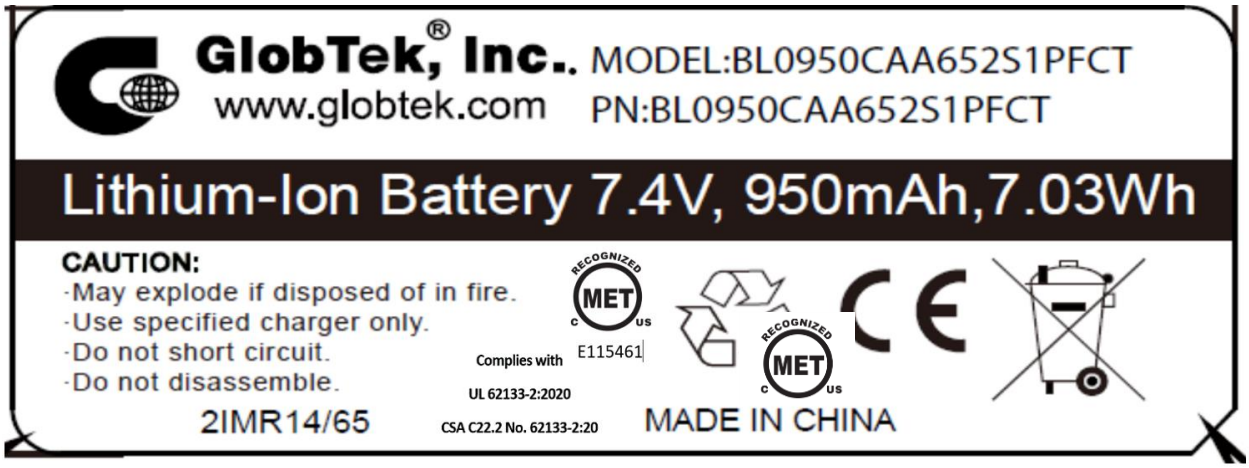
a. The MET Mark, with the applicant/listee name or alternate listee name as identified within this report, trade name or trade mark, product model number, and a date of manufacture or serial number. If the date of manufacture is in a code, it shall not repeat in less than 10 years and it shall not require reference to the manufacturer's records to determine when the product was manufactured.

b. Method of applying the MET Mark:
☒ Direct Imprinting
☐ Purchasing Labels from Eurofins E&E NA
Approved MET Recognition Mark:

RECOGNIZED MET C US	**Complies with UL 62133-2:2020 CSA C22.2 No. 62133-2:20**

c. For DC Equipment, fuse ratings, and fuse rupturing speed is required.

d. Signal words such as "CAUTION" or "WARNING" shall be legible, or size as required in the standard(s) and applied in accordance with the standard.



Manual/Service Instructions

- Operations and Service instructions are provided with the equipment.
- See illustration 1 to illustration 2.

Alternate Listee Information

Alternate listees and product names or model numbers: None

Applicant's Responsibilities

Product Modifications:

Minor product modifications by the manufacturer may be allowed using the following guidelines:

1. Components identified in this report as "Listed, Recognized, or Certified" and **NOT** identified with a manufacturer name or part number may be exchanged with an alternate "Listed, Recognized, or Certified" component of equivalent value.

   Example: Appliance Inlet Connector - Listed/Certified Component, IEC 320 style male connector, rated 250 volts and 20 amperes. Mechanically secured to the front panel with screws and locking washers.

   - This inlet connector may be replaced with any Listed/Certified inlet connector with the same ratings as stated and where mechanical securement is maintained.

2. Components identified by a manufacturer name, part number, or with specific comments, (such as AC only, indoor use only, approved for use in this product only), may **NOT** be replaced or modified without prior approval from MET Laboratories.

   Example: Circuit Breaker - Recognized/Certified Component, ABCD Co. P/N XYZ123, rated 250 volts maximum, 50/60 Hz, 25 full-load amperes, 31.3 trip amperes. Toggle handle marked with IEC on/off symbols. Mechanically secured to the front panel with screws and locking washers.

   - This circuit breaker can **NOT** be modified or changed without prior approval by Eurofins E&E NA, Inc.

Applicant's Responsibilities (Continued)

Project Amendments:

For any changes related to product construction, manufacturing locations, if the product is intended to be marketed/sold under an alternate name or model number than that originally listed, or any issues which would require notification or change in the status of this file, please complete the form and return to Eurofins E&E NA following the instructions provided on the form.

For your convenience a Project Amendment Request (PAR) form is available for download at http://corp.metlabs.com/safetyreq/ Alternatively, please provide it to your local Eurofins office or Eurofins Partner Representative.

If you are terminating or temporarily suspending production of this product for an extended period, please send a letter on company letterhead to:

Eurofins E&E NA, Inc.
Attn: Follow Up Services Department
914 West Patapsco Avenue
Baltimore, Maryland 21230
USA
Fax: (410) 354-3313

Applicant's Responsibilities (Continued)

Manufacturing and Production-Line Tests and Documentation

This product is exempt from production line testing.

Conditions of Acceptability

When installed in the end product, consideration shall be given to the following:

1. This component has been judged on the basis of the required spacings in the Standard for Safety of Information Technology Equipment, UL60950, Third Edition, and CSA C22.2 No 60950, Third Edition, which would cover the component itself if submitted for listing.
2. The Secondary output circuits are SELV and are not hazardous energy levels.
3. The equipment has been evaluated for use in a Pollution Degree 2 environment.
4. A suitable fire enclosure shall be provided in the end product.

Critical Components

Figure/ item No.	Object/ Parts No.	Manufacturer/Trademark	Type/ Model	Technical Data	Standard (Edition / year)	Mark(s) of Conformity	Secured Method
9/1	2 Cells for BL0950CAA652S1P*****	GlobTek, Inc.	IMR14650	3,7 V 950 mAh 3,52 Wh	IEC 62133-2:2017	Certificate No: JPTUV-120479	--
8/2	PCB	SHENZHEN JIA LI CHUANG TECHNOLOGY DEVELOPMENT CO LTD	JLC-1	min. V-0, 130 °C	UL 796	UL E78017	Soldered With PCB
8/2	Alternative	Interchangeable	Interchangeable	min. V-0, 130 °C	UL 796	UL approved	Alternative
8/3	IC (U1)	HYCON TECHNOLOGY	HY2120	4,25 V	--	--	Soldered With PCB
8/4	Mosfet (U2)	NCEPOWER	NCE2010E	7 A 20 V	--	--	Soldered With PCB
8/5	IC (U3)	HYCON TECHNOLOGY	HY4231	High Temperature Operating Life: 125 °C, 1000 hrs.	--	--	Soldered With PCB
17/6	2 Cells for BL0950C146502S1P******	GlobTek, Inc.	IMR14650	3,7 V 950 mAh 3,52 Wh	IEC 62133-2:2017	Certificate No: JPTUV-120479	--
18/7	PCB	SHENZHEN JIA LI CHUANG TECHNOLOGY DEVELOPMENT CO LTD	JLC-1	min. V-0, 130 °C	UL 796	UL E78017	Soldered With PCB
18/7	Alternative	Interchangeable	Interchangeable	min. V-0, 130 °C	UL 796	UL approved	Alternative
18/8	IC (U1)	HYCON TECHNOLOGY	HY2120	4,25 V	--	--	Soldered With PCB
18/9	Mosfet (U2)	NCEPOWER	NCE2010E	7 A 20 V	--	--	Soldered With PCB
10/10	Wire (Optional)	Interchangeable	Interchangeable	Min. 24 AWG, min.300 V, min. 80 °C	UL 758	--	Soldered With PCB
10/11	Connector (Optional)	Interchangeable	Interchangeable	Min.V-2	--	--	Soldered With PCB

Figures

Figure 1

Product view for BL0950CAA652S1PFCT

Figure 2

Product view for BL0950CAA652S1PFCT

Figure 3

Product view for BL0950CAA652S1PFCT

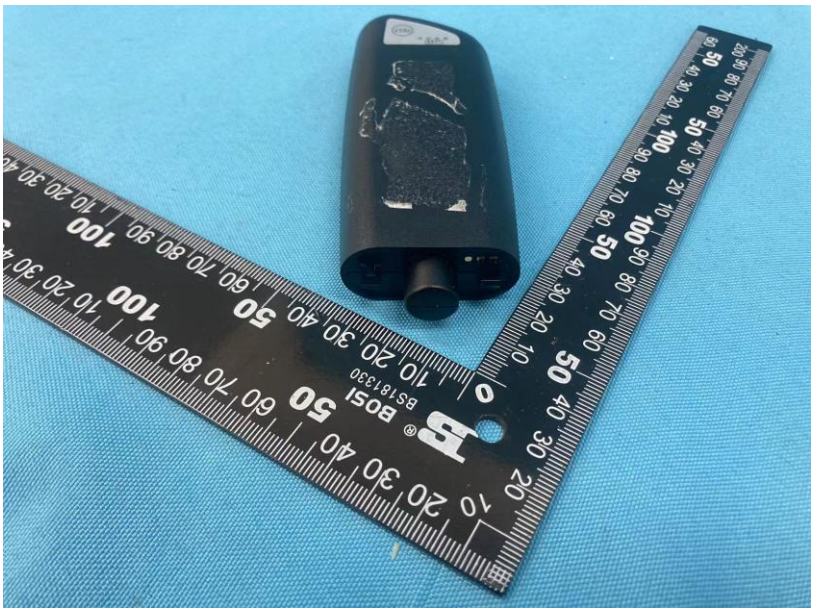


Figure 4

Product view for BL0950CAA652S1PFCT

Figure 5

Product view for BL0950CAA652S1PFCT

Figure 6

Product view for BL0950CAA652S1PFCT

Figure 7

PCB view for BL0950CAA652S1PFCT

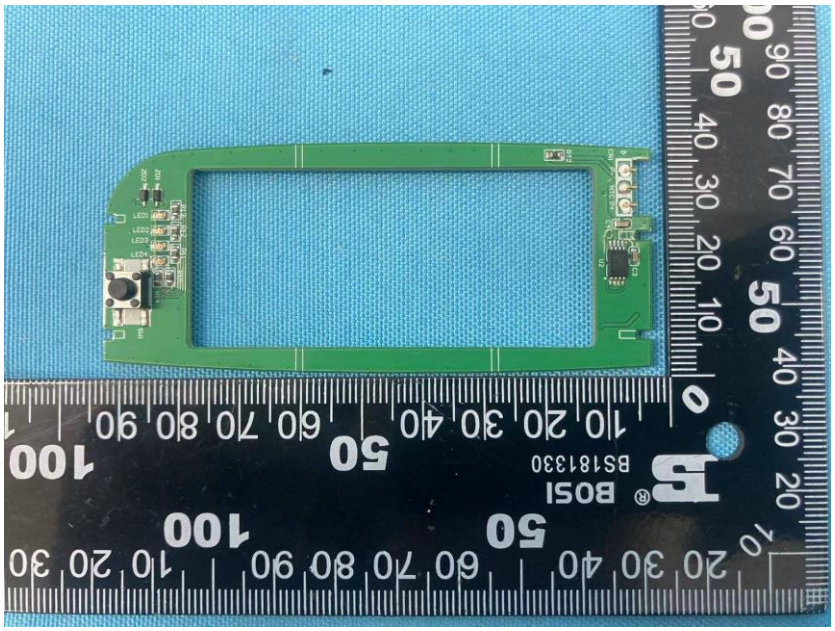


Figure 8

PCB view for BL0950CAA652S1PFCT

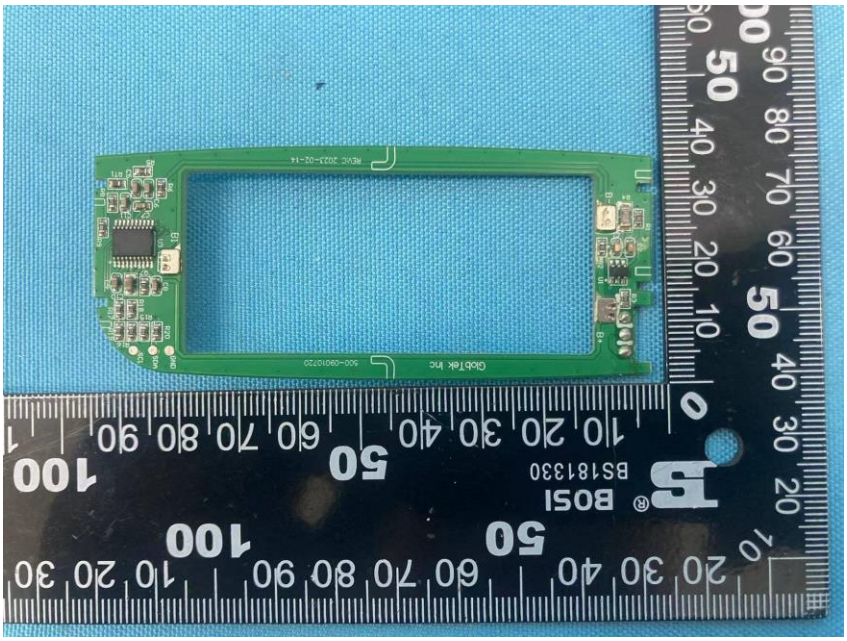


Figure 9

Cell view for BL0950CAA652S1PFCT

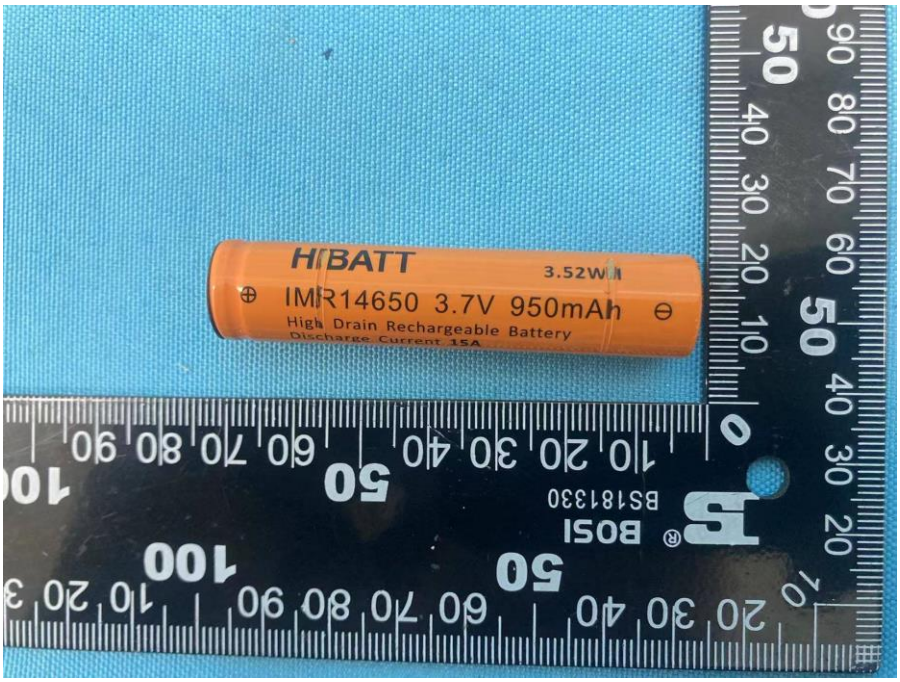


Figure 10.

Battery view for BL0950C146502S1PGKT

Figure 11

Battery internal view for BL0950C146502S1PGKT

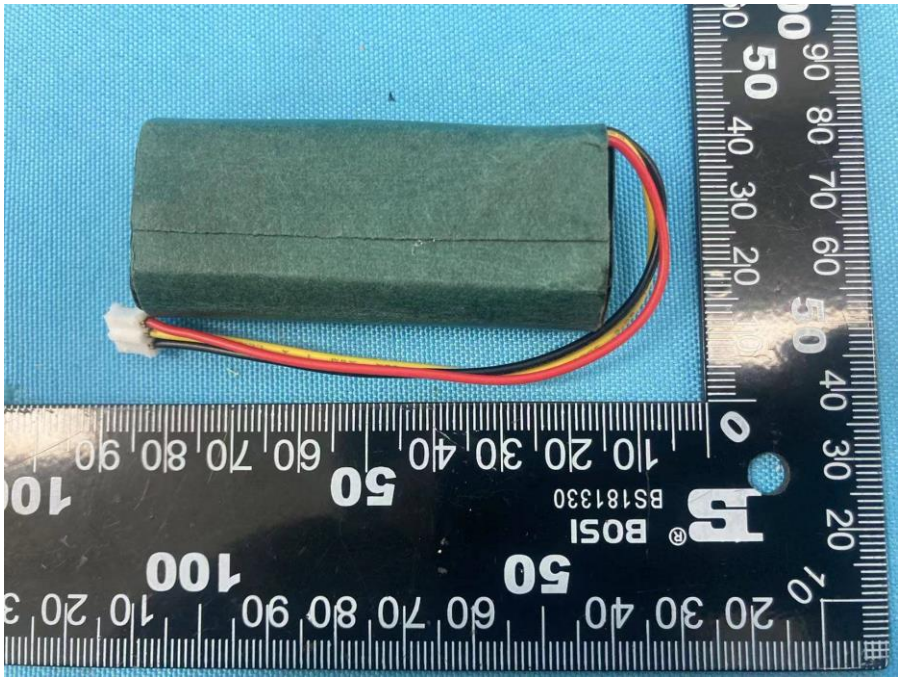


Figure 12

Battery internal view for BL0950C146502S1PGKT

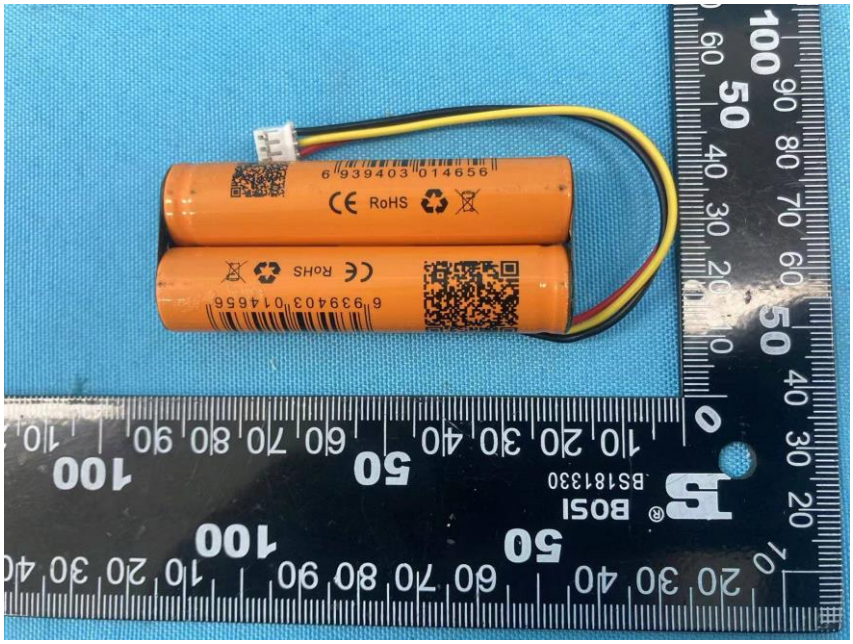


Figure 13

Battery internal view for BL0950C146502S1PGKT

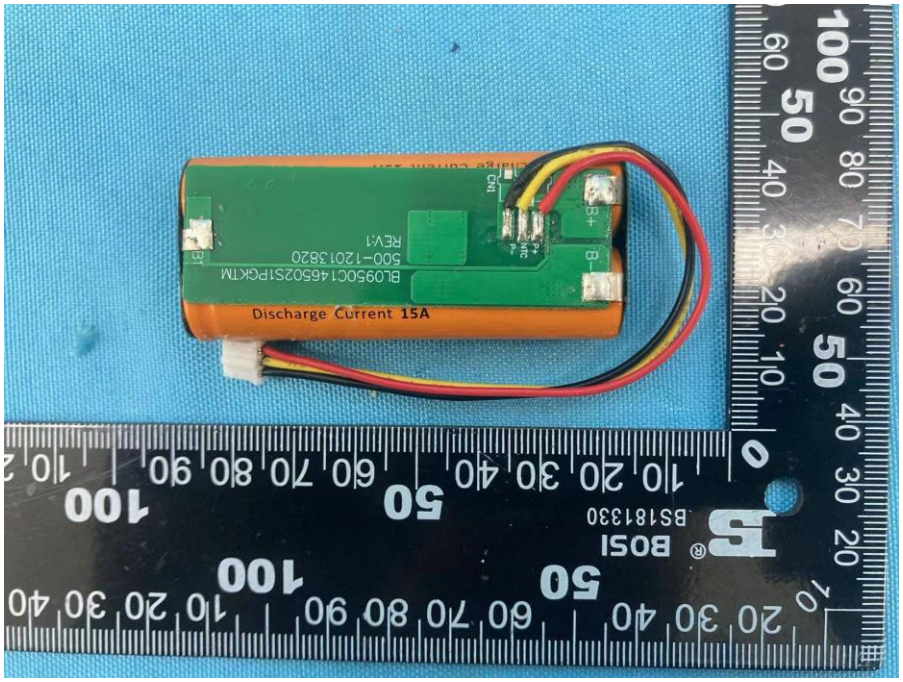


Figure 14

Battery view for BL0950C146502S1PGKTM

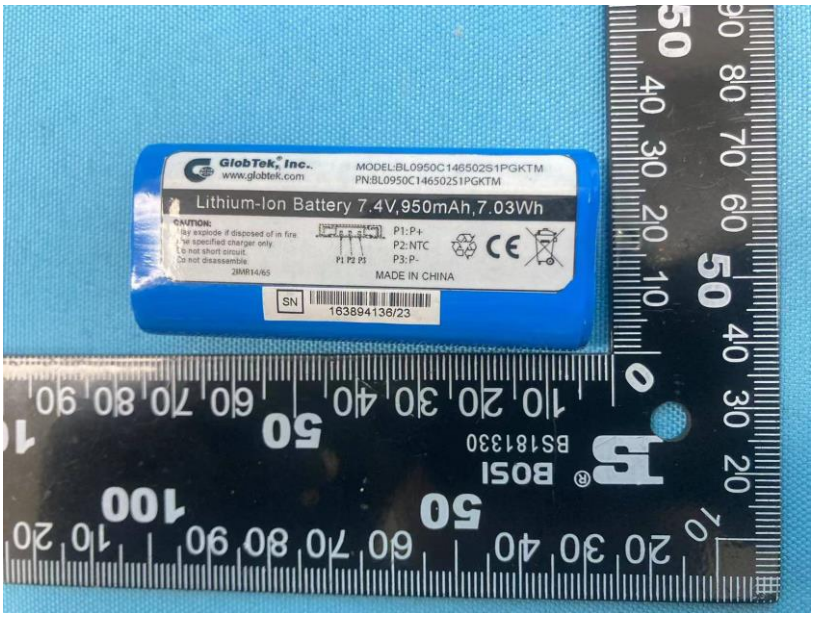


Figure 15

Battery view for BL0950C146502S1PGKTM

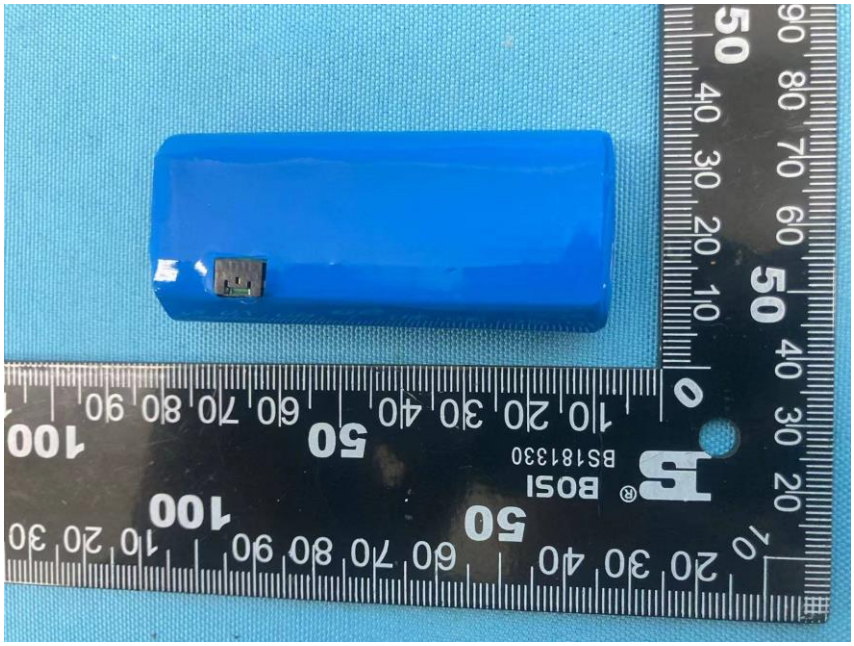


Figure 16

Battery internal view for BL0950C146502S1PGKTM

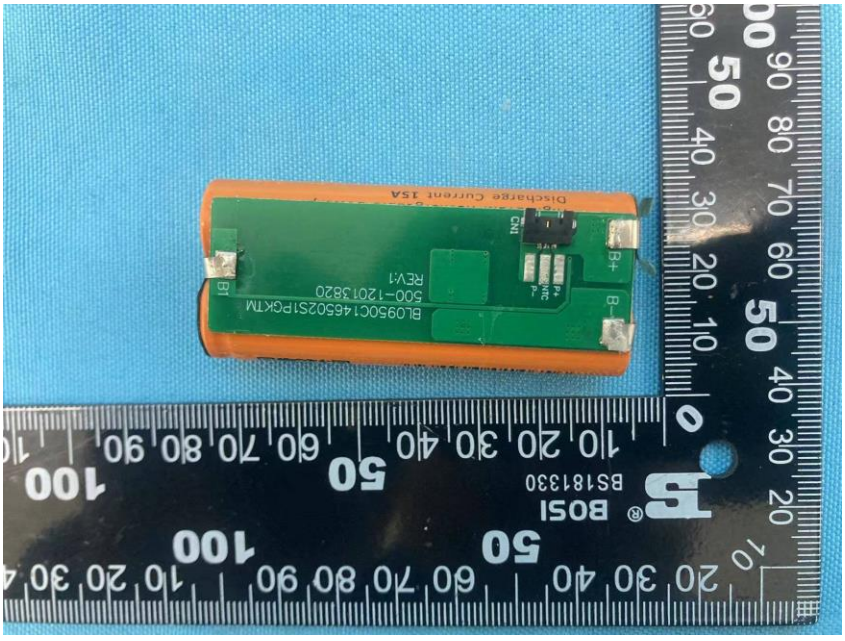


Figure 17

Battery internal view for BL0950C146502S1PGKTM

Figure 18

PCB view for BL0950C146502S1PGKTM

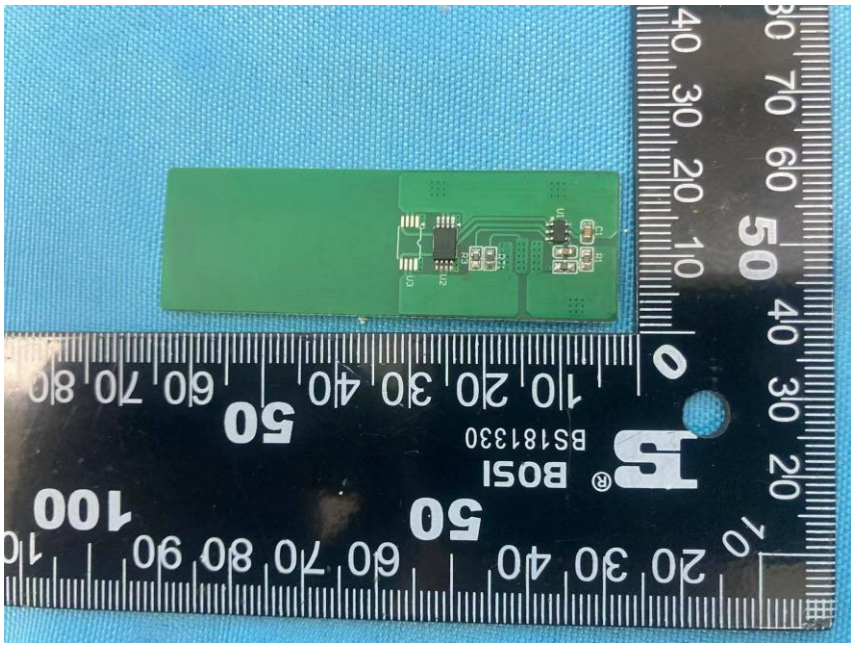


Figure 19

PCB view for BL0950C146502S1PGKTM

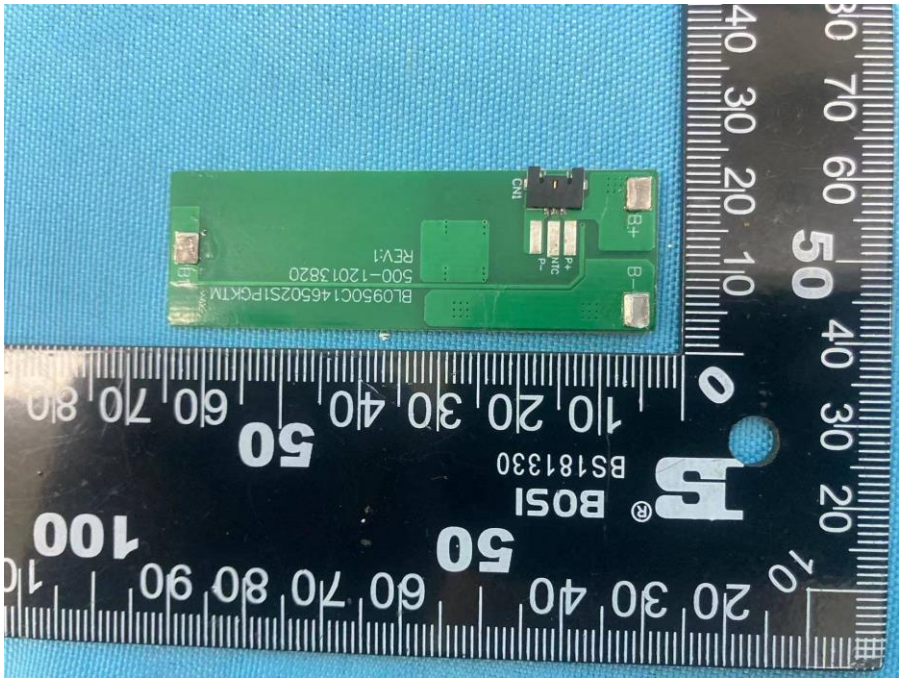


Figure 20

Cell view for BL0950C146502S1PGKTM

Illustrations

Illustration 1.

Nominal capacity	950 mAh
Nominal voltage	7,4 V
Nominal charge current	190 mA
Nominal discharge current	190 mA
Maximum charge current	950 mA
Maximum discharge current	950 mA
Upper limit charging voltage	8,4 V
Cut-off voltage	6 V
Operating temperature	0-45 °C

Illustrations (Continued)

Illustration 2.

Caution

(1) Risk of Fire and Burns. Do Not Open, Crush, Heat Above (manufacturer's specified maximum temperature) or Incinerate. Follow Manufacter's Instructions.

(2)Do not dismantle , open or shred secondary cells or batteries.

(3)Do not expose cells or batteries to heat or fire. Avoid storage in direct sunlight.

(4)Do not short-circuit a cell or a battery. Do not store cells or batteries haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.

(5)Do not remove a cell or battery from its original packaging until required for use.

(6)Do not subject cells or batteries to mechanical shock.

(7)In the event of a cell leaking, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with copious amounts of water and seek medical advice.

(8)Do not use any charger other than that specifically provided for use with the equipment.

(9)Observe the plus (+) and minus (–) marks on the cell, battery and equipment and ensure correct use.

(10)Do not use any cell or battery which is not designed for use with the equipment.

(11)Do not mix cells of different manufacture, capacity, size or type within a device.

(12)Battery usage by children should be supervised.

(13)Seek medical advice immediately if a cell or a battery has been swallowed.

(14)Always purchase the battery recommended by the device manufacturer for the equipment.

(15)Keep cells and batteries clean and dry.

(16)Wipe the cell or battery terminals with a clean dry cloth if they become dirty.

(17)Secondary cells and batteries need to be charged before use. Always use the correct charger and refer to the manufacturer's instructions or equipment manual for proper charging instructions.

(18)Do not leave a battery on prolonged charge when not in use.

(19)After extended periods of storage, it may be necessary to charge and discharge the cells or batteries several times to obtain maximum performance.

(20)Retain the original product literature for future reference.

(21)Use only the cell or battery in the application for which it was intended.

(22)When possible, remove the battery from the equipment when not in use.

(23)Battery should be disposed according to the local laws.

(24)Battery should be stored in a cool, dry and well-ventilated area

Testing Considerations

The samples of the BL0950CAA652S1P****, BL0950C146502S1P****(* May be A~Z or 0~9 or blank for marketing purposes) were subjected to the following test program with satisfactory results. All tests were conducted in accordance with CSA C22.2 No. 62133-2:20 / UL 62133-2, First Edition, 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. Only these tests were considered necessary due to engineering considerations.

Detailed test results are on file at MET Laboratories under project number NRTLC 131330.

TESTS CONDUCTED:

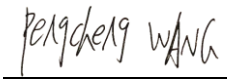
UL62133-2:2020 Tests Conducted:

Clause 7.2.2	Case stress at high ambient temperature (battery)
Clause 7.3.2	External short circuit (batteries)
Clause 7.3.3	Free fall
Clause 7.3.6	Over-charging of battery
Clause 7.3.8.1	Vibration (battery)
Clause 7.3.8.2	Mechanical shock (battery)

Conclusion

The product covered by this report have been tested, examined, and found to comply with the applicable requirements of CSA C22.2 No. 62133-2:20 / UL 62133-2, First Edition, 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. This certification has been granted under a System 3 program as defined in ISO/IEC 17067.

Prepared By:



Pengcheng Wang
Project Engineer,
Eurofins Electrical Testing Service (Shanghai) Co., Ltd.

Reviewed By:

Jackie Zhao
Project Engineer,
Eurofins Electrical Testing Service (Shanghai) Co., Ltd.

