

| TEST REPORT IEC 62619 Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications | |
|---|--|
| Report Number..... | TSZ22020059-P02-R01 |
| Date of issue..... | 2022-04-20 |
| Total number of pages..... | 18 |
| Name of Testing Laboratory preparing the Report..... | Shenzhen Tiansu Calibration and Testing Co., Ltd. |
| Applicant's name..... | MUST ENERGY (GUANGDONG) TECHNOLOGY CO.,LTD |
| Address..... | 1-5F, 7F, 9F, 10F of No.8 building, No.115, Zhangcha Road 1, Chancheng district, Foshan city, Guangdong Province, P.R. China |
| Test specification: | |
| Standard..... | IEC 62619: 2017 |
| Non-standard test method..... | N/A |
| General disclaimer: | |
| The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing Testing Laboratory. | |
| Test item description..... | LiFePo4 BATTERY PACK |
| Trade Mark..... | MUST |
| Manufacturer..... | Same as Applicant' s |
| Model/Type reference..... | LP16-48100 |
| Ratings..... | 51.2V, 100Ah, 5.12kWh |
| Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): | |
| <input checked="" type="checkbox"/> Testing Laboratory: | Shenzhen Tiansu Calibration and Testing Co.,Ltd. |
| Testing location/ address..... | B/1,4, NO.2 Jinlong Road, Longgang District, Shenzhen, China |
| Tested by (name, function, signature)..... | Dove Fan Test Engineer |
| Approved by (name, function, signature)... | Duan Jiangtao Technology supervisor |



| Summary of testing: | |
|--|--|
| Tests performed (name of test and test clause): 7.2.1 External short-circuit test (cell or cell block) 7.2.2 Impact test (cell or cell block) 7.2.3 Drop test (cell or cell block, and battery system) 7.2.6 Forced discharge test (cell or cell block) 7.3.2 Internal short-circuit test (cell) 8.2.2 Overcharge control of voltage (battery system) 8.2.3 Overcharge control of current (battery system) 8.2.4 Overheating control (battery system) | Testing location: Shenzhen Tiansu Calibration and Testing Co.,Ltd B/1,4, NO.2 Jinlong Road, Longgang District, Shenzhen, China |

Copy of marking plate:

The artwork below may be only a draft.



Battery Pack label

| | |
|--|--|
| Test item particulars : | |
| Classification of installation and use : -- | |
| Supply Connection : Specified connector | |
| 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 : 2022-03-25 | |
| Date (s) of performance of tests : 2022-04-11 to 2022-04-19 | |
| General remarks: | |
| "(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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator. | |
| Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60335-1: | |
| The application 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..... : | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable |
| When differences exist; they shall be identified in the General product information section. | |
| Name and address of factory (ies) : Same as applicant | |

General product information and other remarks:

The battery pack consists of 16 battery module in series, and has overcharge, over-discharge, over current, short-circuit and over temperature proof circuit.

The product covered by this report is Rechargeable LiFePo4 BATTERY PACK mainly composed of:

- Battery Modules (consists of 16 cells in 16S1P)
- Metal Shell
- Fixed Bead
- BMS PWB
- Wire
- Charge and Discharge Connector

The main features of the battery pack are shown as below:

| Model | Nominal capacity | Nominal voltage | Nominal Charge Current | Nominal Discharge Current | Maximum Charge Current | Maximum Discharge Current | Maximum Charge Voltage | Final Voltage |
|------------|------------------|-----------------|------------------------|---------------------------|------------------------|---------------------------|------------------------|---------------|
| LP16-48100 | 100Ah | 51.2V | 20A | 50A | 50A | 100A | 57.6V | 44.0V |

The main features of the cell are shown as below:

| Model | Nominal capacity | Nominal voltage | Nominal Charge Current | Nominal Discharge Current | Maximum Charge Current | Maximum Discharge Current | Maximum Charge Voltage | Final Voltage |
|-------------|------------------|-----------------|------------------------|---------------------------|------------------------|---------------------------|------------------------|---------------|
| IFP48173115 | 100Ah | 3.2V | 20A | 50A | 50A | 100A | 3.65V | 2.0V |

| IEC 62619 | | | |
|------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 4 | PARAMETER MEASUREMENT TOLERANCES | | P |
| | Parameter measurement tolerances | | P |
| 5 | GENERAL SAFETY CONSIDERATIONS | | P |
| 5.1 | General | | P |
| | Cells and batteries are safe under conditions of both intended use and reasonably foreseeable misuse.. : | | P |
| 5.2 | Insulation and wiring | | P |
| | Voltage, current, altitude, and humidity requirements | | P |
| | Adequate clearances and creepage distances between connectors | | P |
| | The mechanical integrity of internal connections | | P |
| 5.3 | Venting | | P |
| | Pressure relief function | Vent design in cell. | P |
| | Encapsulation used to support cells within an outer casing | | P |
| 5.4 | Temperature/voltage/current management | | P |
| | The design prevents abnormal temperature-rise | Overcharge, over discharge, over current and short-circuit proof circuit used in this battery. See tests of clause 8 | P |
| | Voltage, current, and temperature limits of the cells | See above. | P |
| | Specifications and charging instructions for equipment manufacturers | The charging limits specified in the manufacturer's specification. | P |
| 5.5 | Terminal contacts of the battery pack and/or battery system | | P |
| | Polarity marking(s) | | N/A |
| | Capability to carry the maximum anticipated current | Complied, DC Connector | P |
| | External terminal contact surfaces | See above. | P |
| | Terminal contacts are arranged to minimize the risk of short circuits | | P |
| 5.6 | Assembly of cells, modules, or battery packs into battery systems | | P |
| 5.6.1 | General | | P |
| | Independent control and protection method(s) | | P |
| | Recommendations of cell operating limits by the cell manufacturer | | P |

| IEC 62619 | | | |
|------------|---|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Batteries designed for the selective discharge of a portion of their series connected cells | | N/A |
| | Protective circuit component(s) and consideration to the end-device application | | N/A |
| 5.6.2 | Battery system design | | P |
| | The voltage control function | | P |
| | The voltage control for series-connected batteries | | P |
| 5.7 | Operating region of lithium cells and battery systems for safe use | | P |
| | The cell operating region.....: | -10°C to 60°C | P |
| | Designation of battery system to comply with the cell operating region | 0°C to 50°C | P |
| 5.8 | Quality plan | | N/A |
| | Manufacturing quality plan (for example: ISO9001, etc.) prepared and implemented..... : | Relevant document did not provided. | N/A |
| | The process capabilities and the process controls | | N/A |
| 6 | TYPE TEST CONDITIONS | | P |
| 6.1 | General | | P |
| 6.2 | Test items | | P |
| | Cells or batteries that are not more than six months old (See Table 1 of IEC62619) | | P |
| | Capacity confirmation of the cells or batteries | | P |
| | Default ambient temperature of test, 25 °C ± 5 °C | | P |
| 7 | SPECIFIC REQUIREMENTS AND TESTS | | P |
| 7.1 | Charging procedure for test purposes | | P |
| | The battery discharged to a specified final voltage prior to charging | | P |
| | The cells or batteries charged using the method specified by the manufacturer.....: | Charging the battery with 20A constant current and 57.6V constant voltage until the current reduces to 2A at ambient 25 °C ± 5 °C. | P |
| 7.2 | Reasonably foreseeable misuse | | P |
| 7.2.1 | External short-circuit test (cell or cell block) | | P |
| | Short circuit with total resistance of 30 mΩ ± 10 mΩ at 25 °C ± 5 °C | | P |
| | Results: no fire, no explosion | | P |

| IEC 62619 | | | |
|-----------|--|--------------------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 7.2.2 | Impact test (cell or cell block) | | P |
| | Cylindrical cell, longitudinal axis impact | | P |
| | Prismatic cell, longitudinal axis and lateral axis impact | | P |
| | Results: no fire, no explosion. | | P |
| 7.2.3 | Drop test (cell or cell block, and battery system) | Cell tested. Battery Pack tested. | P |
| 7.2.3.1 | General | | P |
| 7.2.3.2 | Whole drop test (cell or cell block, and battery system) | | P |
| | Description of the Test Unit.....: | Cell | — |
| | Mass of the test unit (kg).....: | 2.04kg for cell | — |
| | Height of drop (m).....: | 1.0 | — |
| | Results: no fire, no explosion | | P |
| 7.2.3.3 | Edge and corner drop test (cell or cell block, and battery system) | Battery Pack tested. | P |
| | Description of the Test Unit.....: | Battery Pack | — |
| | Mass of the test unit (kg).....: | 46.08kg for battery module | — |
| | Height of drop (m).....: | 0.1 | — |
| | Results: no fire, no explosion | | P |
| 7.2.4 | Thermal abuse test (cell or cell block) | | P |
| | Results: no fire, no explosion | | P |
| 7.2.5 | Overcharge test (cell or cell block) | | P |
| | For those battery systems that are provided with only a single protection for the charging voltage control | | — |
| | Results: no fire, no explosion.....: | | P |
| 7.2.6 | Forced discharge test (cell or cell block) | | P |
| | Upper limit charge voltage of the cell.....: | 3.65V | P |
| | Cells connected in series in the battery system.....: | | N/A |
| | Redundant or single protection for discharge voltage control provided in battery system.....: | | N/A |
| | Target Voltage.....: | -3.65V | P |
| | Maximum discharge current of the cell, I_m: | 100A | P |
| | Discharge current for forced discharge, 1.0 I_t: | 100A | P |
| | Discharging time, $t = (1 I_t / I_m) \times 90$ (min.).....: | 90min | P |

| IEC 62619 | | | |
|--------------|---|---------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Results: no fire, no explosion.....: | | P |
| 7.3 | Considerations for internal short-circuit – Design evaluation | | P |
| 7.3.1 | General | | P |
| 7.3.2 | Internal short-circuit test (cell) | | P |
| | Samples preparation procedure: a), in accordance with 8.3.9 of IEC62133:2012; or b), the nickel particle inserted before charging, or c), the nickel particle was inserted before electrolyte filling..... : | | P |
| | Tested according to Cl. 8.3.9 of IEC 62133:2012 test method, except all tests were carried out in an ambient temperature of 25 °C ± 5 °C. | | P |
| | The appearance of the short-circuit location recorded by photograph or other means..... : | | — |
| | The pressing was stopped - When a voltage drop of 50 mV was detected; or | | N/A |
| | - The pressing force of 800 N (cylindrical cells) or 400 N (prismatic cells) was reached | 400N for prismatic cells. | P |
| | Results: no fire, no explosion.....: | | P |
| 7.3.3 | Propagation test (battery system) | | N/A |
| | Method to create a thermal runaway in one cell : | | N/A |
| | Results: No external fire from the battery system or no battery case rupture.....: | | N/A |
| 8 | BATTERY SYSTEM SAFETY (CONSIDERING FUNCTIONAL SAFETY) | | P |
| 8.1 | General requirements | | N/A |
| | Functional safety analysis for critical controls | | N/A |
| | Conduct of a process hazard, risk assessment and mitigation of the battery system | | N/A |
| 8.2 | Battery management system (or battery management unit) | | P |
| 8.2.1 | Requirements for the BMS | | P |
| | The safety integrity level (SIL) target of the BMS | | N/A |
| | The charge control evaluated by tests in clauses 8.2.2 to 8.2.4 | | P |
| 8.2.2 | Overcharge control of voltage (battery system) | | P |
| | The exceeded charging voltage applied to the whole battery system | | P |

| IEC 62619 | | | |
|-----------|---|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | The exceeded charging voltage applied to only a part of the battery system, such as the cell(s)..... : | | P |
| | Results: no fire, no explosion..... : | See Table 8.2.2. | P |
| | The BMS interrupted the overcharging before reaching 110% of the upper limit charging voltage | | P |
| 8.2.3 | Overcharge control of current (battery system) | | P |
| | Results: no fire, no explosion..... : | See Table 8.2.3 | P |
| | The BMS detected the overcharging current and controlled the charging to a level below the maximum charging current | | P |
| 8.2.4 | Overheating control (battery system) | | P |
| | The cooling system, if provided, was disconnected | | P |
| | Elevated temperature for charging, 5 °C above maximum operating temperature..... : | Maximum operating temperature is 50°C. | P |
| | Results: no fire, no explosion..... : | See Table 8.2.4 | P |
| | The BMS detected the overheat temperature and terminated charging | | P |
| | The battery system operated as designed during test | | P |
| 9 | INFORMATION FOR SAFETY | | P |
| | The cell manufacturer provides information about current, voltage and temperature limits of their products | Information for safety mentioned in manufacturer's specifications. | P |
| | The battery system manufacturer provides information regarding how to mitigate hazards to equipment manufacturers or end-users. | Information is given in manufacturer's specifications. | P |
| 10 | MARKING AND DESIGNATION (REFER TO CLAUSE 5 OF IEC 62620) | | N/A |
| | The marking items shown in Table 1 in IEC 62620 indicated on the cell, battery system or instruction manual. | | N/A |
| | Cell or battery system has clear and durable markings | | N/A |
| | Cell designation | | N/A |
| | Battery designation | | N/A |
| | Battery structure formulation | | N/A |

| IEC 62619 | | | |
|-----------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| ANNEX A | OPERATING REGION OF CELLS FOR SAFE USE | | P |
|----------------|---|---|---|
| A.1 | General | | P |
| A.2 | Charging conditions for safe use | Cell charge temperature range: 0~50°C, Battery pack charge temperature range: 0~50°C | P |
| A.3 | Consideration on charging voltage | | P |
| A.4 | Consideration on temperature | | P |
| A.5 | High temperature range | 50°C | P |
| A.6 | Low temperature range | 0°C | P |
| A.7 | Discharging conditions for safe use | | P |
| A.8 | Example of operating region | | P |

| ANNEX B | PROCEDURE OF 7.3.3 PROPAGATION TEST | | N/A |
|----------------|--|--|-----|
| B.1 | General | | N/A |
| B.2 | Test conditions: | | N/A |
| | – The battery fully charged according to the manufacturer recommended conditions..... : | | — |
| | – Target cell forced into thermal runaway..... : | | — |
| | – A specially prepared sample (e.g. a heater or a hole for nail penetration provided) used for ease of testing..... : | | — |
| B.3 | Method used for initiating the thermal runaway. 1) Heater (Heater, Burner, Laser, Inductive heating 2) Overcharge 3) Nail penetration of the cell 4) Combination of above methods 5) Other methods..... : | | — |

| ANNEX C | PACKAGING | | P |
|----------------|---|--|---|
| | The materials and pack design chosen in such a way as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of environmental contaminants | | |

| IEC 62619 | | | |
|-----------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| 5.1 | TABLE: Critical components information | | | | | P |
|-------------------------|---|--------------------------|---|--------------------|--|---|
| Object/part no. | Manufacturer/ trademark | Type/model | Technical data | Standard | Mark(s) of conformity ¹⁾ | |
| Cell | JIANGXI ANCHI NEW ENERGY TECHNOLO CO., LTD | IFP48173115- 100Ah | 3.2V, 100Ah, 320Wh | IEC 62619: 2017 | Tested with appliance | |
| PCB | GLOBAL SUCCESS CIRCUITS CO LTD | SCS-M | V-0, 130°C | -- | Tested with appliance | |
| IC (UM1) | HUADA SEMICONDUCT OR Co., Ltd | HC32F460PETB | V _{CU} : 3.60±0.08V, V _{DL} : 1.65±0.02V | -- | Tested with appliance | |
| MOSFET (QP1 to QP24) | MAGNACHIP Co., Ltd | MDE10N026 | V _{DS} : 100V, V _{GS} : 1.65±0.02V, T _{opr} : -40°C to 85°C | -- | Tested with appliance | |
| PTC (R308) | ShenZhen JinRui Electronic Material Co.,Ltd | JK-nSMD005 | I _h : 0.05A, I _t : 0.15A, V _{max} : 60V, Operating Temperature: -40°C to 85°C | -- | Tested with appliance | |
| Fuse (R253) | Shenzhen liangsheng electronics Co., LTD | 12h1400C | Rated voltage: 63V, Rated current: 4A, Off current: 50A | -- | Tested with appliance | |
| NTC (RT2) | Shenzhen Sunlord Electronics Co., Ltd. | SDNT1608X103F 3435FTF | 10KΩ±1% at 25°C, B25/85=3435K±1% | -- | Tested with appliance | |

Supplementary information:

¹⁾ Provided evidence ensures the agreed level of compliance. See OD-2039.

Some of the above component information cannot be provided due to the customer's commercial secrets.

| IEC 62619 | | | |
|-----------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| 7.2.1 | TABLE: External short-circuit test (cell or cell block) | | | | | P |
|------------|---|-----------------------------|----------------------------|---------------------------------------|---------|---|
| Sample No. | Ambient (at 25°C ± 5°C) | OCV at start of test (V dc) | Resistance of Circuit (mΩ) | Maximum Case Temperature Rise ΔT (°C) | Results | |
| C01# | 23.5 | 3.471 | 35 | 39.2 | A, E | |
| C02# | 23.5 | 3.472 | 37 | 38.4 | A, E | |

Supplementary information:
A - No fire or Explosion
B - Fire
C - Explosion
D - The test was completed after 6 h
E - The test was completed after the cell casing cooled to 20% of the maximum temperature rise
F - Other (Please explain): _____

| 7.2.6 | TABLE: Forced discharge test (cell or cell block) | | | | | P |
|------------|---|-----------------------|--|--|---------|---|
| Sample No. | OCV before applying reverse charge, (V dc) | Target Voltage (V dc) | Measured Reverse Charge Current I _t , (A) | Total Time for Reversed Charge Application (min) | Results | |
| C11# | 3.027 | 3.65 | 100 | 90 | A | |
| C12# | 3.022 | 3.65 | 100 | 90 | A | |

Supplementary information:
Results:
A - No fire or Explosion
B - Fire
C - Explosion
D - Other (Please explain): _____

| IEC 62619 | | | |
|-----------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| 7.3.2 | TABLE: Internal short-circuit test (cell) | | | | P |
|------------|---|---------------------------------|-------------------------------|---------|---|
| Sample No. | OCV at start of test, (V dc) | Particle location ¹⁾ | Maximum applied pressure, (N) | Results | |
| C13# | 3.460 | 1 | 400 | A, E | |
| C14# | 3.476 | 1 | 400 | A, E | |
| C15# | 3.478 | 1 | 400 | A, E | |
| C16# | 3.479 | 1 | 400 | A, E | |
| C17# | 3.474 | 1 | 400 | A, E | |
| C18# | 3.347 | 1 | 400 | A, E | |
| C19# | 3.349 | 1 | 400 | A, E | |
| C20# | 3.352 | 1 | 400 | A, E | |
| C21# | 3.341 | 1 | 400 | A, E | |
| C22# | 3.346 | 1 | 400 | A, E | |

Supplementary information:

¹⁾ Identify one of the following:

1: Nickel particle inserted between positive and negative (active material) coated area.

2: Nickel particle inserted between positive aluminium foil and negative active material coated area.

No location 2 exists.

Results:

A - No fire or explosion

B - Fire

C - Explosion

D - Test concluded when 50 mV voltage drop occurred prior to reaching force limit

E - Test concluded when 400 N pressure was reached and 50 mV voltage drop was not achieved

F - Test was concluded when fire or explosion occurred

G - Other (Please explain): ___

| IEC 62619 | | | |
|-----------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| 7.3.3 | TABLE: Propagation test (battery system) | | | | | N/A |
|--------------------------------------|---|--|-------------------------------------|--|---------|-----|
| Sample No. | OCV of Battery System Before Test, (V dc) | OCV of Target Cell Before Test, (V dc) | Maximum Cell Case Temperature, (°C) | Maximum DUT Enclosure Temperature, (°C) | Results | |
| | | | | | | |
| Method of cell failure ¹⁾ | | Location of target cell | | Area for fire protection (m ²) | | |
| | | | | | | |
| Supplementary information: | | | | | | |

| 8.2.2 | TABLE: Overcharge control of voltage (battery system) | | | | | P |
|------------|---|-------------------------------|--|--|-------------|---|
| Sample No. | OCV at start of test for Cell/Cell Blocks, (V dc) | Maximum Charging Current, (A) | Max. Charging Voltage, (V dc) | Max. Voltage of Cell/Cell Blocks, (V dc) | Results | |
| B03# | 47.326 | 50 | 63.36 | 3.65 | A, D, F | |
| B04# | 47.273 | 50 | 63.36 | 3.65 | A, D, F | |
| | | | Charge Voltage Applied Battery System: 1) | | | |
| | | | Whole | | Part | |
| | | | Yes | | No | |

Supplementary information:

1. The exceeded voltage can be applied to only a part of the system such as the cell(s) in the battery system per Figure 6 of IEC 62619, if it is difficult to do it in using the whole battery system.

Results:

A - No Fire or Explosion

B - Fire

C - Explosion

D - The voltage of the measured cells or cell blocks did not exceed the upper limit charging voltage

E - The voltage of the measured cells or cell blocks did exceed the upper limit charging voltage

F - All function of battery system did operate as intended during the test.

G - All function of battery system did not operate as intended during the test.

H - Other (Please explain): ____

| IEC 62619 | | | |
|-----------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| 8.2.3 | TABLE: Overcharge control of current (battery system) | | | | P |
|------------|---|----------------------------|-------------------------------|---------|---|
| Sample No. | OCV at start of test, (V dc) | Max. Charging Current, (A) | Max. Charging Voltage, (V dc) | Results | |
| B05# | 47.302 | 60 | 57.6 | A, D, F | |
| B06# | 47.273 | 60 | 57.6 | A, D, F | |

Supplementary information:
Results:
A – No fire or Explosion
B – Fire
C – Explosion
D - Overcurrent sensing function of BMU did operate and then charging stopped
E - Overcurrent sensing function of BMU did not operate and then charging stopped
F - All function of battery system did operate as intended during the test.
G - All function of battery system did not operate as intended during the test.
H - Other (Please explain): _____

| 8.2.4 | TABLE: Overheating control (battery system) | | | P |
|---|---|--|--------------------------------|---|
| Model No. | OCV at start(SOC 50%) of test, V dc | Maximum Charging Current, A | Maximum Charging Voltage, V dc | |
| B07# | 51.333 | 50 | 57.6 | |
| B08# | 51.352 | 50 | 57.6 | |
| Maximum Specified Temperature of Battery System, °C | | Maximum Measured Cell Case Temperature, °C | Results | |
| 55 | | 55.1 | A, D, F | |
| 55 | | 55.3 | A, D, F | |

Supplementary information:
Results:
A – No fire or Explosion
B – Fire
C – Explosion
D - Temperature sensing function of BMU did operate and then charging stopped
E - Temperature sensing function of BMU did not operate and then charging stopped
F - All function of battery system did operate as intended during the test.
G - All function of battery system did not operate as intended during the test.
H - Other (Please explain): _____

Product protective circuit module

The circuit schematic and layout information cannot be reflected due to customer's business secrets.

Product Photos:



View of Battery Pack-1



View of Battery Pack-2