

LITHIUM ION BATTERY
SPECIFICATION

BATTERY CLASSIFICATION LITHIUM ION BATTERY

PRODUCT CODE (T,B,D)

CLIENT LEGO Company Ltd.

CLIENT MODEL NAME NXT

[The client's agreement]

Signature: _____
Name in block letters: _____
Date: _____

*If there is no reply within 30 days after the delivery, this document shall be presumed valid.

Automotive & Industrial Systems Company of Panasonic Group
Portable Rechargeable Battery Business Division, SANYO Electric Co.,Ltd.

Technical Service Group No.1
AVC&BA Business Development Team

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2. Safety Instructions

Prohibited Actions

The battery contains flammable objects such as organic solvents. If the battery is mishandled, it may cause fire, smoke or an explosion and the battery's functionality will be seriously damaged. Please read and check the following prohibited actions. Also, please equip a protection in the application so the application troubles don't affect the battery. Additionally, SANYO highly recommends embedding these instructions into the owner's manual.

! Danger

- Immersion

"Do not immerse the battery with liquid such as water, sea water or soda."

The battery or the battery pack (including protection circuit) may catch on fire, smoke, explode, or cause heat generation by unexpected electrical load.

- High Temperature

"Do not use or place the battery near fire, a heater or a high temperatures (more than 80°C)."

The battery's polyolefin separator may get damaged from the heat and could cause an internal short circuit. This may cause the battery to catch on fire, smoke, explode, or cause heat generation.

- Charger and Charge Condition

"Do not use unauthorized chargers."

If the battery is charged under unacceptable conditions (For example: usage in restricted temperature ranges, over voltage, or over current with unauthorized chargers) the battery may catch on fire, smoke, explode, or cause heat generation.

- Reverse Polarity

"Do not force a reverse-charge or a reverse-connection."

The battery has correct polarity. If the battery doesn't fit, please check the battery's orientation and do not force into the battery mount. If the battery is forced to set with a different polarity, the battery may catch on fire, smoke, explode, or cause heat generation.

- Direct Connection

"Do not connect the battery with AC plug (outlet) or car plugs."

The battery requires a specific charger. If the battery connects with the outlet directly, the battery may catch on fire, smoke, explode, or cause heat generation.

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<ul style="list-style-type: none"> ● Inappropriate Use with Other Equipment <i>"Do not adapt the battery to unspecified applications. "</i> If the battery is used for unspecified applications or systems, the battery may get damaged or catch on fire, smoke, explode, or cause heat generation. ● Incineration and Heat <i>"Please keep the battery away from heat and fire"</i> The battery materials will get damaged and may catch on fire, smoke, explode, or cause heat generation. ● Short-Circuit <i>"Do not make a short-circuit. "</i> Do not connect the + and - terminals with conductive material. Do not carry or store the battery with metal objects (such as wire, necklace or hairpins). If the battery is in a short-circuit, excessive large current will flow and may catch on fire, smoke, explode, or cause heat generation. ● Impact <i>" Avoid unnecessary impact to the battery"</i> Unnecessary impact may cause the battery to leak, heat generation, smoke, fire or explode. Also, the protection circuit may break and that will lose the function of the battery's protection system. ● Penetration <i>" Do not penetrate with a nail or strike with a hammer"</i> The battery cell may get destroyed or damaged. And the battery's protection circuit may get damaged and case an internal short-circuit. Additionally, the battery may catch on fire, smoke, explode, or cause heat generation. ● Soldering <i>"Do not directly solder the battery"</i> The insulator could melt or the gas release vent might get damaged from the heat. Additionally, the battery may catch on fire, smoke, explode, or cause heat generation. ● Disassemble and Reconstruction <i>"Do not disassemble the battery"</i> If the protection circuit gets damaged, the battery will not be protected. Then, the battery may catch on fire, smoke, explode, or cause heat generation. ● Charge near High Temperatures <i>"Do not charge the battery near high temperatures"</i> If the battery is charged near high temperatures, the battery may not be able to charge due to the activation of the protection circuit. In these conditions, the protection circuit may break and the battery may catch on fire, smoke, explode, or cause heat generation. 				
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! Warning

- Ingestion

"Keep away from infants"

The battery should be kept away from infants. In case of swallowing the battery, see a doctor immediately.

- Storing

"Do not put the battery in the microwave or other cooking appliances"

The battery may on fire, smoke, explode, or cause heat generation due to heat or the electrical impact from the microwave.

- Mixed Use

"Do not mix the battery with other batteries."

The battery should not be used with other batteries with different capacity, chemistry or manufacturer. Do not connect with other batteries or mix with other batteries. The battery may catch on fire, smoke, explode, or cause heat generation.

- Rust, Changing Color and Deformities

"Do not use abnormal batteries."

Please stop using the battery if there are noticeable abnormalities such as abnormal smell, heat, deformities, or discoloration. The battery may have a defect and may catch fire, smoke, heat generation or explode if used continuously.

- Charging Time

" Stop charging if the charging process cannot be finished."

If the battery can not finish the charging process within the specified time, please stop the charging process. The battery may catch on fire, smoke, explode, or cause heat generation.

- Leakage①

"Do not use a leaking battery near flames"

If the battery or liquid leaking from the battery has a pungent odor, the battery should keep away from flames. The battery may ignite and explode.

- Leakage②

"Do not touch a leaking battery"

If the liquid leaking from the battery gets into eyes, it will cause significant damage. If the leaking liquid gets into your eyes, please flush eyes immediately with pure water. Please consult a physician immediately. If the liquid remains in the eyes it will cause significant damage.

- Transport

" Pack the battery tightly during transport"

To prevent short-circuit or damages, please tightly pack the battery into a case or a carton box.

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! Caution

- **Use under Direct Sunlight**

Do not use or leave the battery in excessive heat such as in a car in direct sunlight.

The battery may catch on fire, smoke, explode, or cause heat generation. Also, it might cause a deterioration of battery's characteristics and battery life.

- **Static Electricity**

The battery pack has a protection circuit. Do not use the battery where it generates static electricity (more than 100V) that might damage the protection circuit. If the protection circuit is broken, the battery may catch on fire, smoke, explode, or cause heat generation.

- **Charging Temperature Range**

Charging temperature range is regulated between 0°C and 45°C. Do not charge the battery out of the specified temperature range. Otherwise, it may cause heat generation, leakage or a serious damage. Also, it might cause deterioration of the battery's characteristics and battery life.

- **Manual**

Please read the manual before usage. Please save the manual for future reference.

- **Charging Method**

Please read the charger's manual for the charging method.

- **First Time Use**

Please contact the supplier If the battery has unusual odor, heat generation or rusts during the first usage.

- **Use by Children**

Parents must explain how to use the system and the battery. Please check back periodically to ensure children are using the system and the battery correctly.

- **Inflammable Materials**

Please keep away from flammable materials during the charge and the discharge. It may catch on fire, smoke, explode, or cause heat generation.

- **Leakage**

If electrolyte leak from the battery and adhere to the skin or clothes, immediately flush it with water. Otherwise, it may cause skin irritation.

- **Insulation**

If lead wires or metal objects come out from the battery, please seal and insulate them completely. Otherwise, the battery may cause a short circuit and catch on fire, smoke, explode, or cause heat generation.

- **Recycle**

Please recycle the battery according to local rules or regulations after use.

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3. Extent of the Application

This specification is applied to Lithium Ion Battery of 2UR18650A-B008A for Mind storms with LEGO Company Ltd.

For special applications in which quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or cause threat of personal injury such as for weapon, aircraft and aerospace equipment, aircraft electronics equipment, medical equipment (a part of class 2 equipment, class 3 or more equipment), explosion-proof equipment, electric vehicle, hybrid electric vehicle, and electric motor cycle (except electric bicycle), this Specification shall not be applied.

4. Battery Classification and Model No.

4.1 Battery Classification	Lithium Ion Battery
4.2 Product Code	(T,B,D)
4.3 Model Name	2UR18650A-B008A
4.4 Cell Type	UR18650A

5. Nominal Specifications

Items		Specifications	Notes
5.1	Rated Capacity	2100mAh	0.43A discharge at 20°C
5.2	Capacity	Minimum	2150mAh
		Typical	2250mAh
5.3	Nominal Voltage	7.4V	0.43A discharge at 25°C
5.4	Discharging End Voltage	6.0V	
5.5	Charging Current (Std.)	1.5A	
5.6	Charging Voltage	8.40 ± 0.06V	
5.7	Charging Time (Std.)	3.0 hours	
5.8	Continuous Discharging Current (Max.)	2.15A	0 ~ +40°C
5.9	Internal Resistance (Max.)	151.0 mohm	AC Impedance 1 kHz
5.10	Weight (Max.)	88.0 g	
5.11	Operating Temperature	Charge	0 ~ +45°C
		Discharge	-20 ~ +60°C
5.12	Storing Conditions	less than 1 month	-20 ~ +50°C
		less than 3 months	-20 ~ + 40°C
		less than 1 year	-20 ~ + 20°C
		Percentage of recoverable capacity 80%*	

※ Percentage of recoverable capacity

= (Discharging time after storage / Initial discharging time) ×100

The discharging time is measured by the discharge current of 0.43 A until 6.0V of end voltage after the battery is fully charged at 25°C.

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6. Electrical Characteristics				
Items	Conditions		Criteria	
6.1 Full Charge	The battery is charged with 1.5A constant current until the voltage reaches 8.4V. Then, the current is reduced in order to keep the constant voltage of 8.4V. The total charging time is 3.0 hours at 25 °C.			
6.2 Capacity	① Within 1 hour, after fully charged at 25°C, the battery is discharged with 0.43A continuously until 6.0V of end voltage at 25°C.		More than 300min.	
	② Within 1 hour, after fully charged at 25°C, the battery is discharged with 2.15A continuously until an end voltage of 6.0V at 25°C.		More than 54min.	
6.3 Cycle Life	The battery is repeated 300 times of Charge and Discharge cycles, (Charged by CC-CV of 1.5A-8.4V for 3.0 hours, Discharged by CC of 2.15A to 6.0V) at 25°C. After the 300cycles, the discharge time is measured by the Item 6.2.②.		More than 38min.	
6.4 Temperature Characteristics	① Within 1 hour, after fully charged at 25°C, the battery is stored at 0 °C for 3 hours. After that, the discharge time is measured Item 6.2.② at 0 °C.		More than 30min.	
	② Within 1 hour, after fully charged at 25°C, the battery is stored at 60 °C for 3 hours. After that, the discharge time is measured Item 6.2.② at 60 °C.		More than 50min.	
6.5 Storage at Fully Charged State	After fully charged at 25°C, the battery is stored for 20 days at 60 °C. After the storage, the battery is set in 25°C for 3 hours. Then, the discharge time is measured Item 6.2.②.		More than 30min.	
	Then, the same battery is fully charged again and checked the second discharge time by the Item 6.2 ② at 25 °C.		More than 40min.	
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6.6 Storage at Full Discharged State	After fully charged at 25°C, the battery is discharged by the Item 6.2.②. Then, the battery is stored for 20 days at 60 °C. After the storage, the battery is set in 25°C for 3 hours. Then, the discharge time is measured by Item 6.2.② at 25°C.		More than 50min.	
7. Safety Characteristics				
Item	Test Method		Criterion	
7.1 Short Circuit Test	After fully charged at 25°C, the battery is forced to be in a short -circuit condition by connecting the positive and the negative terminals with a total resistance of less than 0.1Ω wire.		No explosion, no fire and no smoke	
7.2 Over charge Test	After fully charged at 25°C, the battery is being charged continuously for 24 hours with the constant current by the Item 5.6 and constant voltage of 8.4V.		No explosion, no fire, no smoke and no leakage	
7.3 Over Discharge Test	After discharged by the Item 6.2.② at 25°C, the battery is discharged with the resistance of 50Ω for 24 hours.		No explosion, no fire, no smoke and no leakage	
7.4 HighTemperature Storage	After fully charged at 25°C, the battery is stored for 8 hours at 85°C.		No explosion, no fire, no smoke and no leakage	
7.5 Leak Test	After fully charged at 25 °C, the battery is stored for 24 hours at 60 °C with the humidity 90 %RH.		No leakage	
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<p>STANDARD TEST CONDITIONS:</p> <p>The tests shall be implemented with new batteries that were delivered within the last 7 days.</p> <p>The tests shall be performed at 25 ± 2 °C (The standard temperature of second grade is specified by <i>JIS Z 8703</i> (Standard Test Conditions)), 65 ± 20 % (The standard humidity of twentieth grade is specified by <i>JIS Z 8703</i> (Standard Test Conditions)). The grade of voltmeter and ammeter in the tests shall be higher than Class 0.5 which is specified by <i>JIS C 1102</i> (Electric Indicator).</p> <p>8. Design and Dimmensions</p> <p>The battery design is shown in the following documents or drawings. (Drawing No. 2UR18650A-B008A02,SSPL-KOU-01)</p> <p>9. Appearance</p> <p>The battery should not have the following appearance issues at delivery:</p> <ul style="list-style-type: none"> • Scratch • Rust • Discoloration • Dirt • Deformation • Leakage <p>The battery should be in good condition.</p> <p>10. Shipping Charge</p> <p>The battery is shipped out with the approximately 40%* charged state.</p> <p>*The 40% capacity is the condition in which SANYO ships the battery but it's not the condition when LEGO Company Ltd., receives the battery.</p>			
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11. Protection Circuit Characteristics (at 25°C)

Item	Test Condition and Criterion
1. Over Charge Protection	The battery is charged by a power supply which the voltage is set less than 4.20V/ cell. If the battery voltage reaches more than $\text{typ. } 4.30\text{V} \pm 0.02/\text{cell}$, the charging current shall be turned off.
2. Over Discharge Protection	If the battery voltage reaches less than $2.30 \pm 0.035\text{V}/\text{cell}$, the discharging current shall be turned off.
3. Over Discharge Current Protection	If the discharge load hits more than 4.5A, the circuit shall be shut down.
4. Consumption Current (Normal State)	Typical: 4.0 μA (The battery voltage is in 3.50V/cell)
5. Consumption Current (Over Discharge State)	Max: 0.1 μA (The battery is in the over discharge state.)
6. Over Charge Current Protection	When the charge current exceed about 4.2A, charging turns off.

12. Standard Charging Method

- (1) The standard charge condition is 1.5A – 8.4V (Constant current-constant voltage).
The charging process should be discontinued when either the time, the current or battery voltage reaches certain values.
- (2) The maximum charging current of battery pack is 2.15A. The output current of charger should not exceed 2.15A.
- (3) In case of the over discharge state (For example: Battery voltage is less than 2.0V/cell), the battery should be charged by a pre-charge system in order to prevent FET's heat generation in a circuit.
- (4) The pre-charging current should be approximately 0.21A. Once, the battery voltage reaches more than 3.0V/cell, the charger can resume the standard charging method. The pre-charging should have a cut-off timer and if the voltage doesn't recover over 3.0V/cell in the set time, the charging should be stopped.
- (5) The current interrupt device (CID) may work if the battery is charged continuously after fully-charged and/or is charged at high temperature.
Please consult SANYO for the charging method instructions.

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13. Lithium-ion Battery Handling Precautions

(1) The capacity of battery is 2150mAh as stated in the Item 5.2.

This is the capacity when the battery is charged by CC-C V (1.5A – 8.4V) for 3.0 hours and discharged with 0.43A continuously until 6.0V end voltage at 25 °C.

However, In the below cases, there is possibilities that rated capacity is not reached.

- The charge condition is insufficient.
- The discharge current is greater than 0.43A.
- The battery is charged at low temperature.
- The battery is discharged at low temperature.
- The battery is used repeatedly.
- The battery pack is stored for long time.

(2) The charging voltage should not exceed 8.4V and it should be controlled with a tight tolerance.

The maximum charging voltage, including the tolerance, is 8.46V. However, if the charging voltage is set beyond 8.4V, the capacity degradation of battery will be accelerated. Also, CID (Current Interrupt Device) activation could be accelerated either in this case if it's compared with 8.4V charging condition. Additionally, CID may be generated the activation chance if the battery is stored in high temperature continuously.

(3) The recommended charging current is 1.07A to 1.5A.

The maximum current is 2.15A. However, if the charging current is set beyond 1.5A, the capacity degradation of battery may be accelerated

(4) The following conditions are the charge termination points. Then, the battery should be stopped the charging process when the conditions are met and it's required to avoid the continuous charging status.

- The charging current reaches approximately 43mA in CV mode.
- The total charging time reaches 3.0 hours

(5) The temperature range.

1) The charging temperature range should be in 0 °C to 45°C.

If the battery is charged more than 45°C, the capacity degradation will be accelerated than the regular temperature operation.

2) Although the charging temperature range is 0 °C to 45°C when the battery is charged n lower temperature, such as near 0°C, the charged will be smaller than the room temperature's one.

3) If the battery is discharged in lower temperature, the discharge time will be shorter accordingly.

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- (6) When the battery is stored for while, the battery should be placed in a cool place (20 °C). Also, the battery may need a supplementary charge of 10 % to 15 % capacity if it takes more than one year storage.

14. Core Pack Handling Precautions

Precautions of Designing

- 1) Do not convert this battery into the other applications.
- 2) Do not connect in series or in parallel.
- 3) Applied part of battery pack should be shut tightly to keep of static electricity and moisture.
- 4) Use the material for applied part of battery pack, which has durability agains electrolyte.
- 5) Battery pack fixed in applied part.
- 6) Endure designing of applied part that rib and prejection don't cause any damage to battery even when drop or vibration.
- 7) Make the structure where the end user cannot remove the pack easily.
- 8) Make the structure where the charge and adapter of other model cannot connected.
- 9) In case there is heat source in main body, the battery pack should be alienated from heat source.
- 10) Applied part of battery pack should be insulated with circuit board of main body. And make the structure where the circuit board of main body should not saturated in electrolyte when it occurs leakage of electrolyte.

Precautions of Assembling

- 1) Core pack should be handled at the factory, which has a countermeasure against static electricity (Anti static voltage should be less than 100V).
- 2) Workers should put on earth band and keep countermeasure against static electricity.
- 3) The battery pack should be 20~40% charged state when storing. And, it should be stored at the place where is no corrosive gas, dry and low temperature (-20~30°C). And also, it should not be stored at the plase where is high temperaute and receiving direct sunlight.
- 4) Do not use abnormal batteries which have damages by drop, short or transformation, and which gives off electrolyte odor.

As another notes, state the collection method of the battery in the instruction manual in obedience to the recycling law.

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Title	Specifications of Lithium Ion battery (Cylindrical Type)	page	13/13
<p>15. Battery Warranty Period</p> <p>The warranty period is limited to one year from date of shipment. SANYO will replace batteries if it is clear that there was a defect in SANYO's manufacturing process and that the battery was not misused.</p> <p>16. Battery Safety Requirements</p> <p>In order to ensure the safety of the battery, please contact SANYO to discuss the application design from a mechanical or a electrical viewpoint. Also, if there are special conditions (For example: lager current load, a quick charge method or an unique usage pattern), please contact SANYO to check the conditions before the product specification is fixed.</p> <p>17. Document Terms</p> <ol style="list-style-type: none">(1) The expiration period for this document is 6 months.(2) If a new document is released, please return or dispose the old one.(3) This document is still preliminary. The contents are not fixed completely.			
File No	UR1865-3526	Portable Rechargeable Battery Business Division, SANYO Electric Co., Ltd.	

**NXT Mind Storm
SU(Safety Unit)
Specification
(Tentative)**

Jul.30, 2013

Revision 0.1

A P P	C H K	D R W
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Portable Rechargeable Battery Business Division
Sanyo Electric Co., Ltd. Automotive &Industrial
Systems Company of Panasonic Group

- Revision History -

Date	Rev.	Item	Contents of revision	Description
2013.07.30	0.1		First edition(Tentative)(circuit diagram-DS0)	

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1. General Descriptions

1.1 Applied Field

This specification is applied to Li-ion Battery Pack Safety Unit.

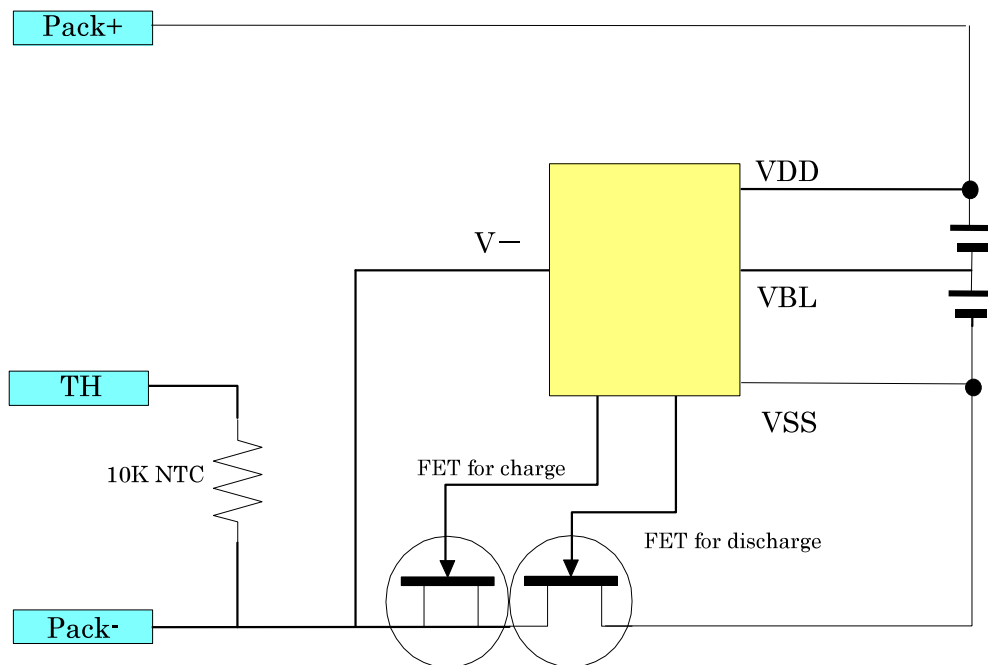
This specification is composed of following sections.

- Section 1. General Description

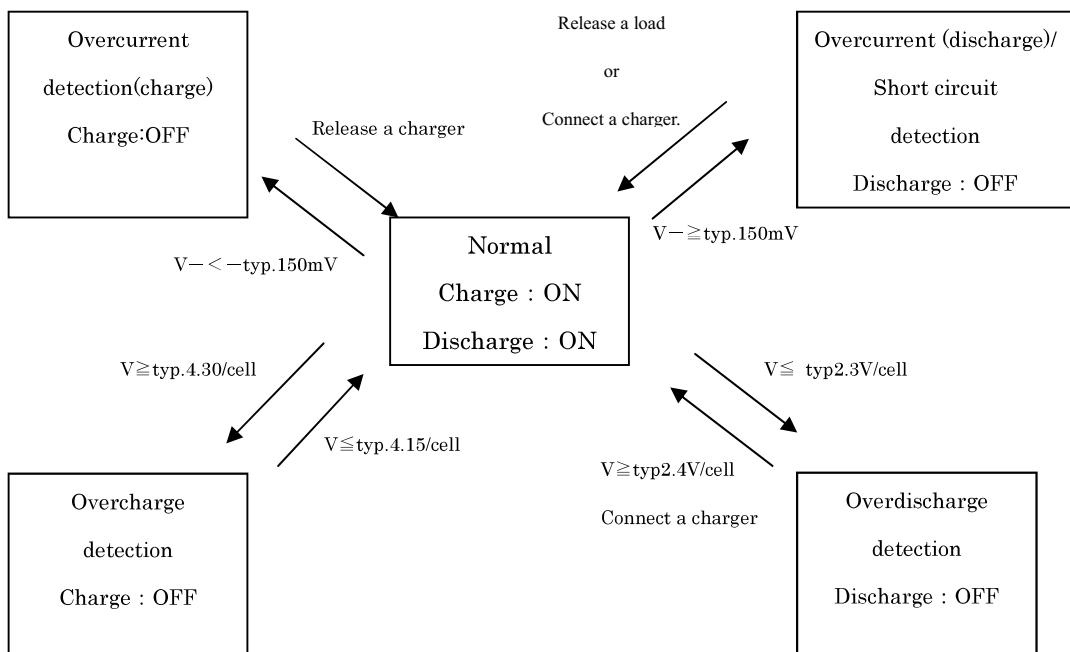
Applied field, Block diagram/ State Transfer

- Section 2. Electrical characteristic
- Section 3.Safety control.

1.2 SU Block Diagram



1.3 State Transfer



2. Electric characteristic

(At 25degC)

Item	Symbol	Min.	Typ	Max	Unit
Over charge detection voltage	V_{det1}	4.28	4.30	4.32	V
- Delay time	T_{Vdet1}	0.8	1.00	1.2	sec
Over charge release voltage	V_{rel1}	4.12	4.15	4.18	V
Over discharge detection voltage	V_{det2}	2.265	2.30	2.335	V
- Delay time	T_{Vdet2}	76.8	96	115.2	msec
Overdischarge release voltage	V_{rel2}	2.265	2.4	2.435	V
Overcurrent detection(discharge)(at 3.6V/cell)	I_{det3}	4.5	6.0	7.5	A
Overcurrent detection(discharge) (at 3.0V/cell,60degC)	I_{det3}	3.5	5.0	6.5	A
Over current detection voltage(discharge)(at 3.6V/cell)	V_{det3}	140	150	160	mV
- Delay time	T_{Vdet3}	16	20	24	msec
Short circuit current detection voltage(at 3.6V/cell)	V_{Short}	0.8	0.9	1.0	V
- Delay time	T_{Short}	0.28	0.4	0.56	msec
Over current protection(charge) (at 3.6V/cell)	I_{det4}	4.2	6.0	7.8	A
Over current detection voltage(charge)(at 3.6V/cell)	V_{det4}	-170	-150	-130	mV
- Delay time	T_{Vdet4}	6.4	8.0	9.6	msec
Circuit resistance(at 3.6V/cell)	R_{Cr}	20	25	30	$m\Omega$
Current consumption at normal (at 3.5V/cell)	I_{DD}	-	4.0	8.0	μA
Current consumption at Shut-down Status (at 1.9V/cell)	I_S	-	-	0.1	μA

3 Safety control/Operation

3.1 Normal Status

Protection IC monitors cell voltage is among VDD-VBL and VBL-VSS, and controls charge and discharge. If the voltage of the cell is between V_{det1} and V_{det2} and voltage between V- and VSS is less than V_{det3-1} and more than V_{det4} , Charge-FET and Discharge-FET is set ON. Then, charge and discharge can do freely.

3.2 Over Voltage Detection

【Contents of operation】

Detect : When cell voltage exceeds over charge detection voltage for 1.0s(typ).

Turn off Charge-FET.

Cancel : Cell voltage becomes less than over charge release voltage.

【Operation condition】

When the cell voltage become greater than the over charge detection voltage(V_{det1}) during more than the over charge detection delay time(T_{Vdet1}), the circuit turns off the Charge-FET device.

【release condition】

No current can be delivered to the battery pack until the battery is discharged or the cell voltage drop below the over charge release voltage(V_{rel1})

3.3 Over Discharge Detection

【Contents of operation】

Detect : When cell voltage becomes less than over discharge detection voltage for 96msec(typ).

Turn off Discharge-FET.

Cancel : When charger(8.4V typ) is input and cell voltage exceed over discharge release voltage.

【Operation condition】

When the cell voltage drops below the over discharge detection voltage (V_{det2}) during more than the over discharge detection delay time(T_{Vdet2}), the circuit turns off the Discharge-FET device.

【release condition】

No current can be drawn from the battery pack until a charging current is applied and the cell voltage is above the over discharge release voltage (V_{rel2})

3.4 Over Discharge Current Detection

【Contents of operation】

Detect : When discharge current exceeds over 4.0A .

Cancel : Release a load or connect a charger.

【Operation condition】

When the V- terminal becomes greater than the over current detection voltage for discharge(V_{det3}) during more than the over current detection delay time for discharge(T_{Vdet3}), the Discharge-FET is turned off.

【release condition】

No current can be drawn from the battery until charging current is applied.

3.5 Short Circuit Current Detection

【Contents of operation】

Detect : When voltage between FET becomes typ.0.9V..

Cancel : Release a load or connect a charger.

【Operation condition】

When the V- terminal becomes greater than the short circuit detection voltage(V_{Short}) during more than the short circuit detection delay time(T_{Short}), the Discharge-FET is turned off.

【release condition】

No current can be drawn from the battery until charging current is applied.

3.6 Over current detection for Charge

【Contents of operation】

Detect : When charge current exceeds over 3.8A .

Cancel : Release charger.

【Operation condition】

When the V- terminal becomes less than the over current detection voltage for charge (V_{det4}) during more the over current detection delay time for charge (T_{Vdet4}), the Charge-FET is turned off.

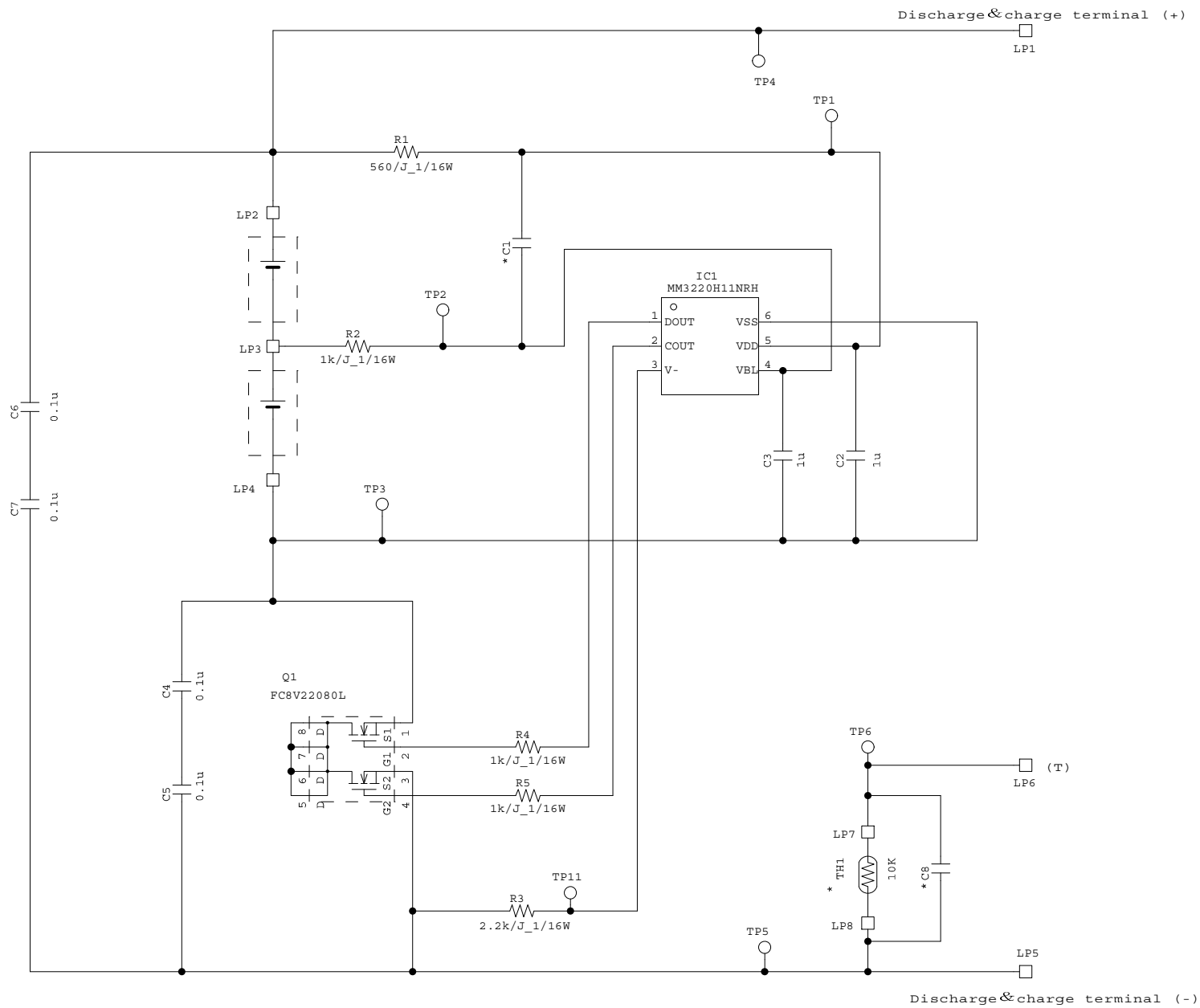
【release condition】

No current can be delivered to the battery pack until charger are removed from output terminals.

3.7 Consumption Current

Normal Status : Less than 8.0uA when cell voltage is 3.5V/cell.

Shut-down Status : Less than 0.1uA when cell voltage is less than 1.9V /cell.



A

History

CAD . NO .

DRAWING No.

MODEL

2SB0061

VERSION No.

DS0

DATE 2013/7/15

CAD	DES	CHK	APP
okamura		ikawa	tamai

(*):parts is no used

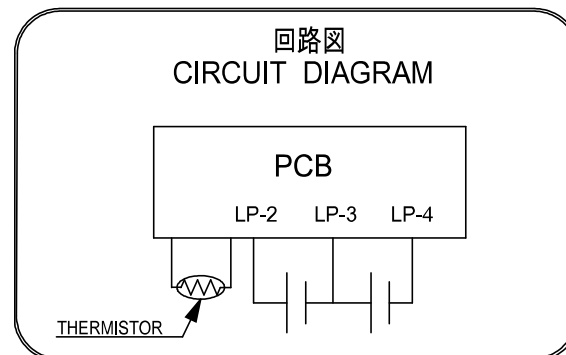
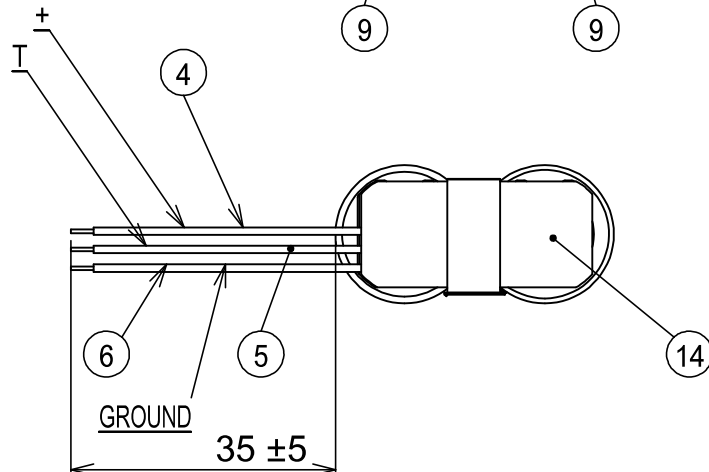
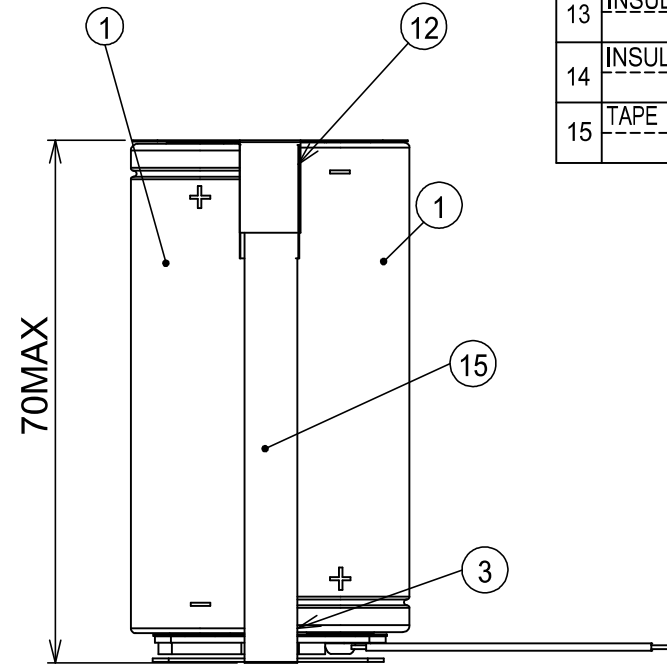
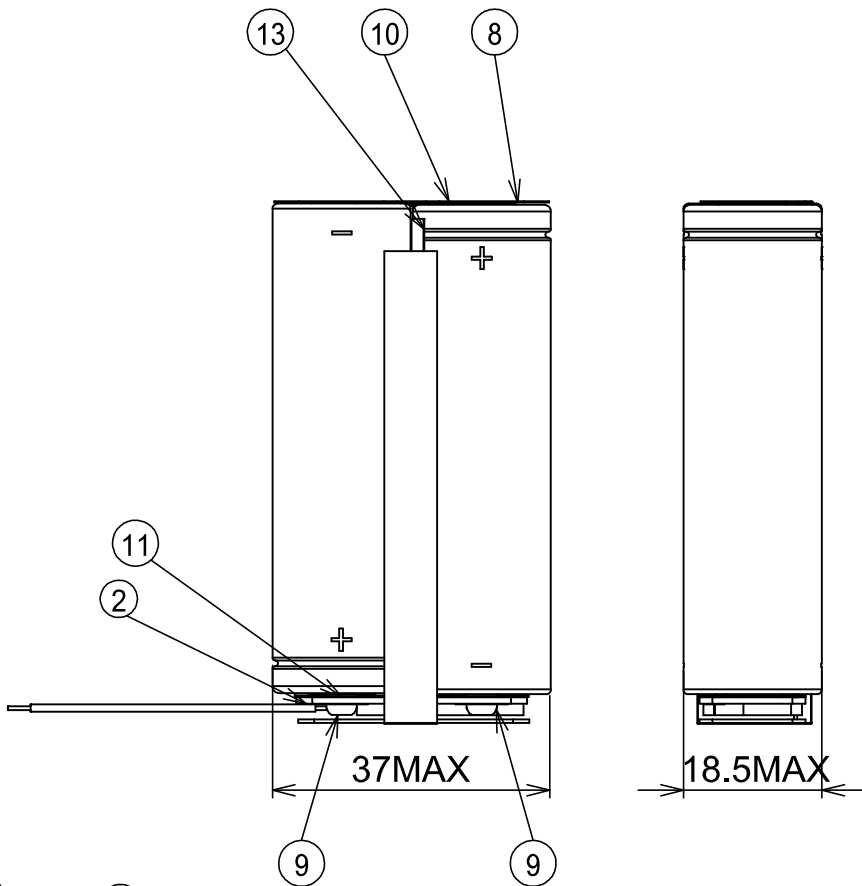
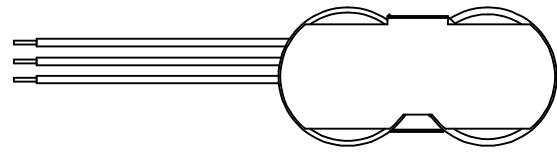
Part list

	Location	PARTS NAME	ALT	SIZE	TYPE NOS. DESIGNATION	MANUFACTURE	QTY.
	C1, C8	Capacitor		1005	NOT USED	-	0
&	C2, C3	Capacitor		1005	1u/K_16V		2
&	C4, C5, C6, C7	Capacitor		1005	0.1u/K_16V		4
	IC1	IC		SSOP6	MM3220H11NRH	MITSUMI ELECTRIC	1
	Q1	FET		WMini8-F1	FC8V22080L	PANASONIC	1
&	R1	Resistor		1005	560/J 1/16W		1
&	R2, R4, R5	Resistor		1005	1k/J 1/16W		3
&	R3	Resistor		1005	2.2k/J 1/16W		1
	TH1	Thermistor			10k Ω (25°C)	-	1

"&" Marking parts : Use Manufacturer's parts or Equivalent's parts.

1 2 3 4 5 6 7

NO.	PART NAME	APPLICATION PART CODE	QTY.	MATERIAL SPECIFICATION	NOTE
1	BATTERY CELL		2		
2	PCB		1		
3	THERMISTER		1		
4	LEAD WIRE		1	UL3302 AWG26 RED	
5	LEAD WIRE		1	UL3302 AWG26 WHITE	
6	LEAD WIRE		1	UL3302 AWG26 BLACK	
7	LEAD WIRE		1	UL3302 AWG26 BLUE	
8	LEAD PLATE A		1		
9	LEAD PLATE B		2		
10	INSULATION PLATE A		1		
11	INSULATION PLATE B		1		
12	INSULATION PLATE C		1		
13	INSULATION PLATE D		1		
14	INSULATION PLATE E		1		
15	TAPE		1		

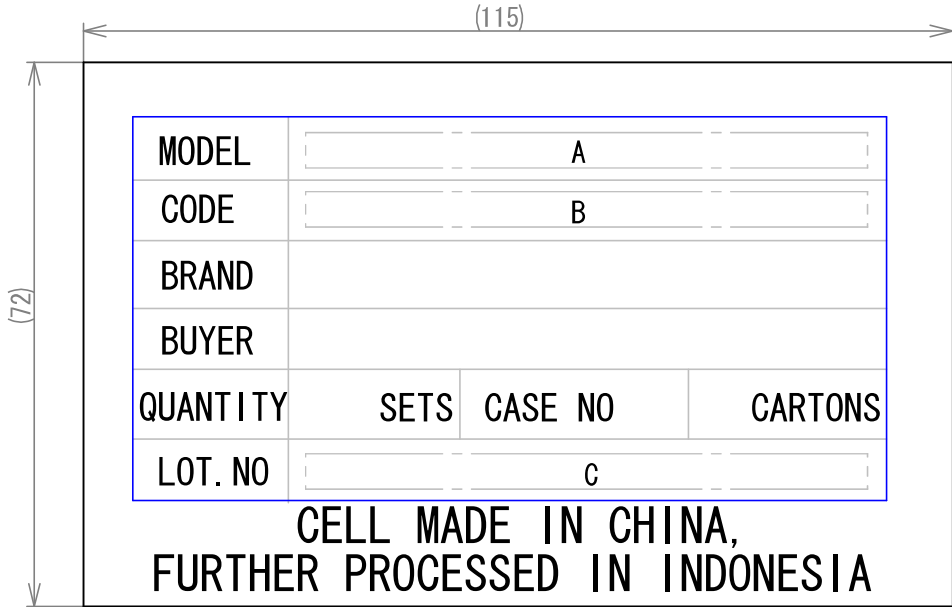


- 注/NOTES)
1. 全長・全厚・全幅寸法は、形状補正した形状のものとする。
よって、寸法測定時には、力を加えて測定するものとする。(20N以下)
ALL DIMENSIONS (THICKNESS, HEIGHT, AND WIDTH) ARE THE CORRECTED DIMENSIONS THAT PRODUCTION TOLERANCES ARE CONSIDERED, THEY SHALL BE MEASURED WITH APPLYING FORCE. (MAX 20N)
 2. 傷及び、汚れ等の不具合のなきこと。
PART TO BE FREE FROM SCRATCHES AND DISCOLORATION.
 3. 指示なき寸法公差は、別表の通りとする。
UNSPECIFIED TOLERANCE TO BE FOLLOWED TOLERANCE TABLE.

DRAWING NOT TO SCALE

DATE	29.AUG.2013	REMARK		
DR	Y.Nishijima	MODEL: 2UR18650A-B008A	材料・規格	初回出図/1st DRAWING(Y.Nishijima)
ENG	Y.Nishijima	TOLERANCE	MATERIAL	DESCRIPTION
CHK		< L ±	処理・加工	
CHK	N.Takao	< L ≦ ±	FINISH	
APP	M.Nakanish	< L ≦ ±	部品名	組電池図面
		L ≦ ±	PART NAME	BATTERY PACK
			PART CODE	
			DRAWING NO	2UR18650A-B008A02
			Rev.	

1	2	3	4		
NO.	PART NAME	APPLICATION-PART CODE	QTY.	MATERIAL-SPECIFICATION	NOTE



- 注) 1. 出荷ラベルの貼り付け位置は各包装仕様図に記載された位置を守ること。
SHIPPING LABEL TO BE PUT ON MASTER CARTON, FOLLOWING PACKING SPECIFICATIONS.
2. 捺印内容は以下の通りとする
PRINTS ARE FOLLOWING BELOW.
- Ⓐ 三洋k機種名
 - Ⓐ SANYO MODEL No.
 - Ⓑ 三洋品番
 - Ⓑ SANYO PART CODE
 - Ⓒ 製造ロットと同一の出荷ロット
 - Ⓒ SAME NUMBER AS PRODUCT'S LOT No.

構成する材料は、パナソニックグループが発行する下記の基準に従っていること。
a) グリーン調達基準書
b) 化学物質管理ランク指針

The material must comply with the following rules issued by Panasonic Group.
a) Green Procurement Standards
b) Chemical Substances Management

DRAWING NOT TO SCALE

2	2UR18650A-B008A	F26402286 (BJ-A120073AA)	2UR1860A-B008A60-**-**	----	YYYY. MM.
1	2UR18650A-B006A	F26402285 (BJ-A120074AA)	2UR1860A-B006A60-**-**	----	YYYY. MM.
NO	Ⓐ SANYO MODEL NO.	Ⓑ SANYO PART CODE	PACKING SPEC. DRAWING NO.	OEM MODEL	Ⓒ LOT NO.
DATE		REMARK			
26. AUG. 2013				26. AUG. 2013 初回出図 (1st DRAWING: Y. NISHIJIMA)	
D R	Y. Nishijima	MODEL: 2UR18650A-B006A		材料・規格	
C H K	Y. Nishijima	CUSTOMER CODE:		MATERIAL	
C H K		TOLERANCE		処理・加工	
E N G	N. Takao	0 <L ± 1		FINISH	
A P P	M. Nakanishi	<L ≤ ±		部品名 出荷ラベル捺印指示図	
		<L ≤ ±		UNIT mm	PART NAME SHIPPING LABEL STAMPING
		L ≤ ±	QTY	SCALE 1/1	DRAWING NO SSPL-KOU-01
					Rev.