CT-ENERGY®

驰特（佛山）新能源科技有限公司

CT（Foshan) New Energy Technology Co., Ltd.

可充电锂离子扣式电池

Lithium-ion Rechargeable Cell Battery

产品编号Model No.: LIR2032H

承认书

Specs Approval

客户名称:	供货商:
Name of Customer :	Name of Supplier:
_____	_____

驰特（佛山）新能源科技有限公司

CT（Foshan）New Energy Technology Co., Ltd.

E-mail:: info@ct-energy.com

工厂地址：佛山市顺德区均安镇鹤峰路 1 号

ADD：No.1 Hefeng Road, Jun'an Town, Shunde District, Foshan City

CONTENTS

1. 适用范围 Applicable Scope

◆本承认书适用于驰特公司生产的锂离子充电电池。
This specs approval is applied only for the lithium-ion rechargeable cell battery produced by CT-ENERGY.

◆本承认书描述产品均有专利技术保护，专利编号：ZL 2015 2 0080508.7

The product described here is a patented product by Patent No. ZL 2015 2 0080508.7

◆客户在使用本公司所生产的专利产品时，负有商业保密义务。同时，为保证双方共同利益，如发现市场有侵权行为，敬请及时反馈信息，便于我方采取维权行动。

Clients should be liable for keeping the business confidential related when they use the patented products manufactured by our company. Meanwhile in order to protect our common interests of both parties, we encourage clients to send us any feedback when you ever find in the market place any intellectual property infringement. We will take legal action accordingly.

2. 产品类型 Type of Products

种类: 扣式锂离子充电电池 Type : Lithium-ion rechargeable cell battery

型号: LIR2032H Model : LIR2032H

3.主要特点 General Features

※使用寿命长 Long Cycle Life

在标准充放电条件下，可循环使用充放电周期≥300周，容量≥80%。

Under the condition of standard discharge, the cycle life of the battery can be ≥300 circles while with capacity ≥80%

※比能量大 High Power Density

高能量密度，使电池重量轻、体积小，方便使用于小型用电设备。

High power density makes the battery light in weight and small in dimension. It can be used in small devices.

※使用安全可靠 Safe and Reliable

没有游离的金属锂，电池使用更安全。

No floating metal lithium assures a safer usage.

※工作电压高 High working voltage

工作电压高达 3.7V，大约是镍镉或镍氢电池的 3 倍，可减少电池的使用数量。

Working voltage is up to 3.7V, approx. 3 times of the voltage of NI-MH or NI-CD, which reduces the quantity of the battery needed in certain application.

※无记忆效应 No memory effect

无记忆效应，使其无时不为你提供最大的能量。

No memory effect assures a constant maximum application.

※自放电率小≤3%/月。 Low self-discharge rate : ≤3%/month

※一致性好 Good Consistency

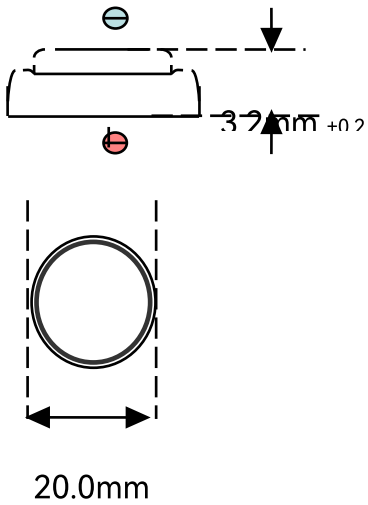
公司内部按 ISO9000 标准建立质量保证体系，对生产全过程实行严格控制，使电池容量、内阻、放电平台、荷电保持能力等性能保持良好的一致性。

Good consistency is showed in battery capacity, internal resistance, discharge platform and capacity retention. A strict complete internal quality control is subject to the ISO9000 system in the company's production.

4.规格特性表 Spec Chart

项目	标准特性
型号	LIR2032H
额定电压（V）	3.7
标称容量	70±5

尺寸	直径（mm）	20.0（Max）
	高度（mm）	3.2 +02
重量（g）		3.15



5. 电池特性 Battery Characteristics

5.1 测试条件 Test Conditions

Temperature 温度：25℃

Relative Humidity: 相对湿度：≤75%±5

Atmosphere pressure 大气压力：1atm

5.2 标准充放电特性 Standard Charge/Discharge Characteristics

在上述条件下测试：The test should be conducted under the condition below:

在环境温度 25℃的条件下，以 0.2CmA 恒流充电，当电池端电压达到充电限制电压 4.20V 后，转为恒压充电，当电流值小于 0.05CmA 时终止充电并放置不超过 10 分钟，再以 0.2CmA 电流恒流放电到 2.75V。

In a temperature of 25℃, CC charge 0.2CmA / voltage up to 4.20V; Then CV charge.Terminate charging when the charging current value is less than 0.05CmA.Rest for no more than 10 minutes, Discharge CC at 0.2CmA to 2.75V.

5.3 快速充放电特性：在环境温度 25℃的条件下，以 1CmA 恒流充电，当电池端电压达到充电限制电压 4.20V 时，转为恒压充电，当电流值小于 0.05CmA 时终止充电并放置不超过 10 分钟，再以 1CmA 电流恒流放电到 2.75V。

Fast Charge/Discharge：Temperature 25℃, CC charge at 1.0CmA to 4.20V; turn to CV charge; Terminate charging when the charging current value is less than 0.05CmA, rest for no more than 10 minutes, then at 1CmA CC discharge to 2.75V.

5.4 工作温度特性：工作温度范围：-20℃—60℃。

Temperature Characteristics : Working temperature range: -20℃—60℃。

5.5 储存温度：20℃±1

Storage temperature：20℃±1

◆充放电曲线请参阅图 1 和图 2;

For charging/discharging characteristics at various currents see fig 1 or 2.

◆不同温度放电曲线请参阅图 3;

For discharging characteristics at various temperatures see fig 3 .

◆自放电曲线请参阅图 4;

For Storage characteristics see fig 4.

◆循环寿命曲线请参阅图 5。

For cycle life characteristics see fig 5.

图 1. 不同电流条件下的充电特性

Fig. 1 Charging Characteristics at various currents

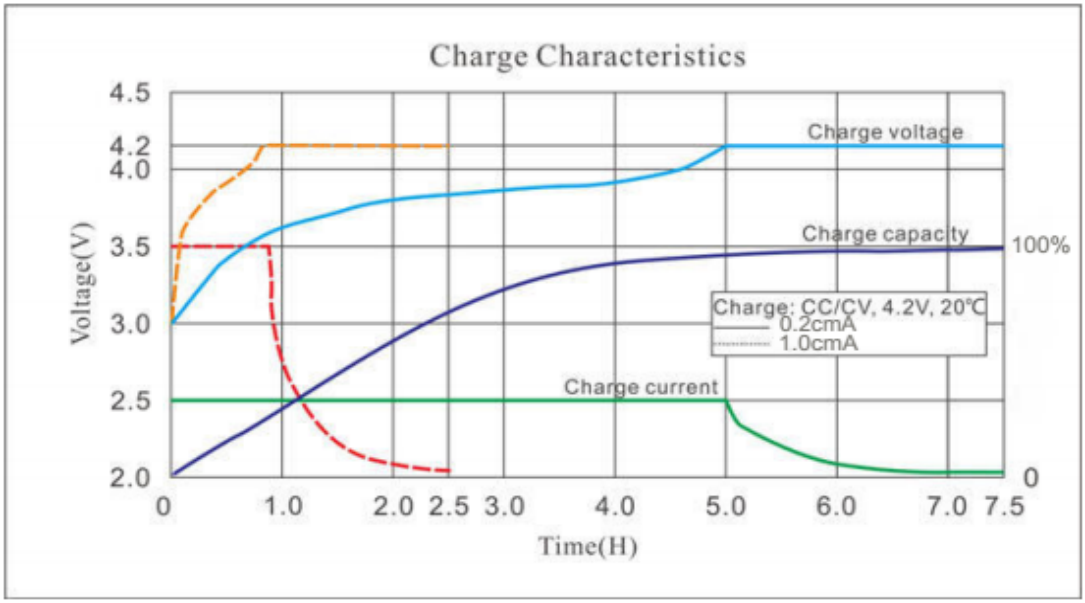


图 2. 不同电流条件下的放电特性

Fig. 2 Discharge Characteristics at various currents

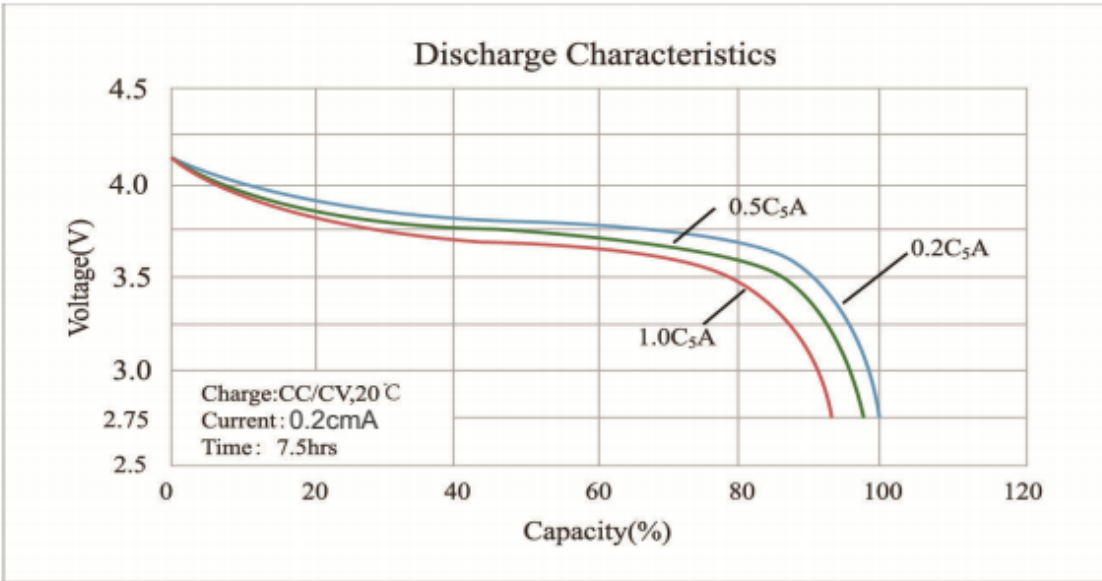


图 3. 不同温度条件下的放电特性 S

Fig. 3 Discharging Characteristics at various Temperatures

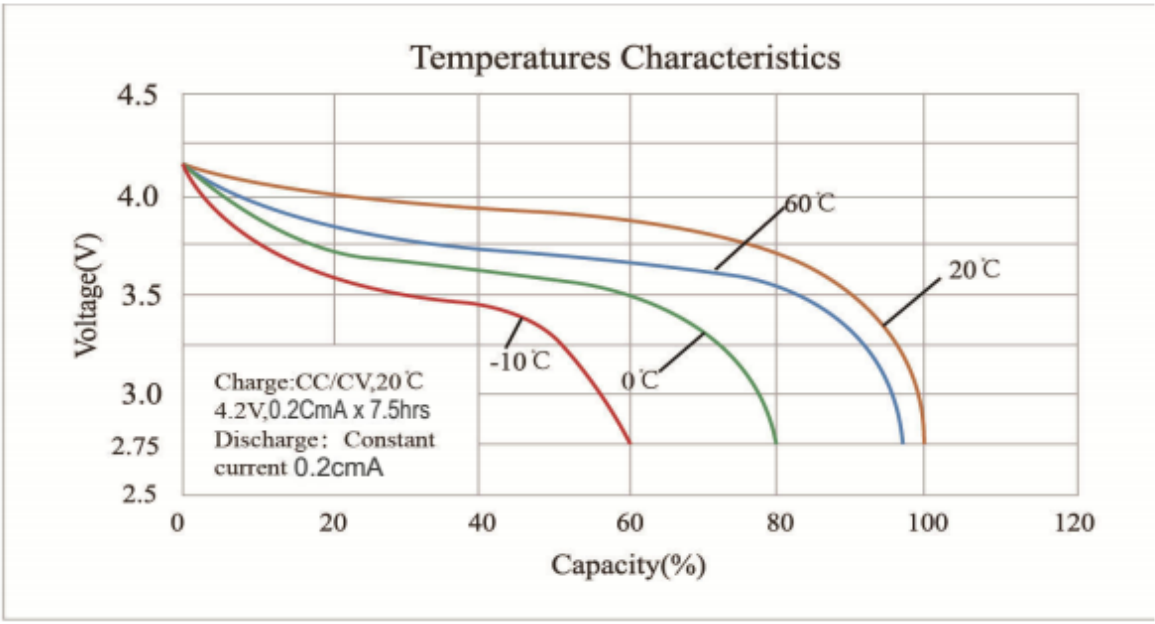


图 4. 自放电保持特性

Fig. 4 Storage Characteristics

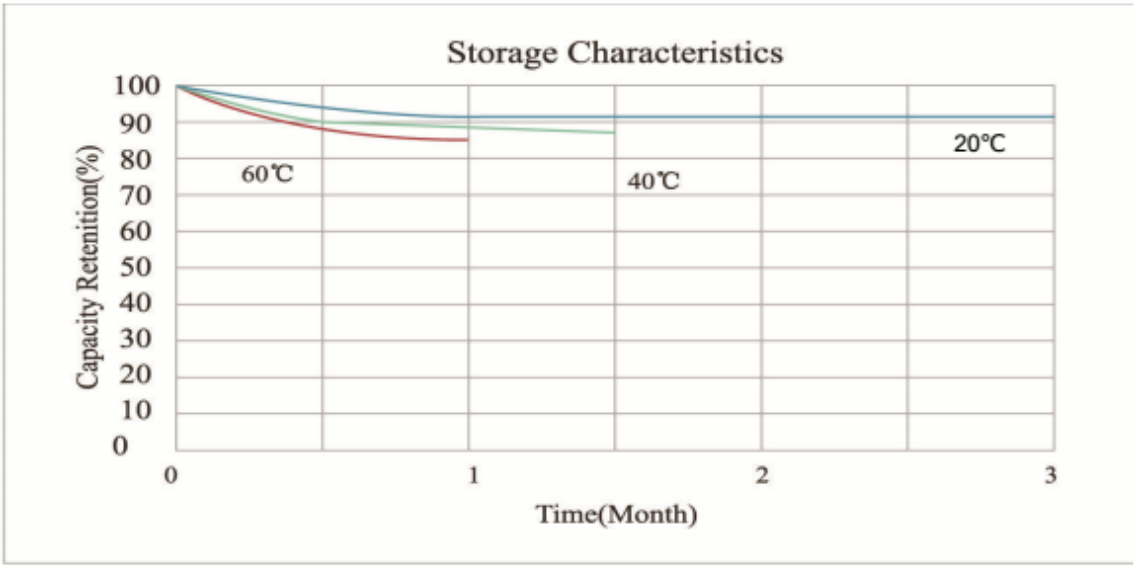
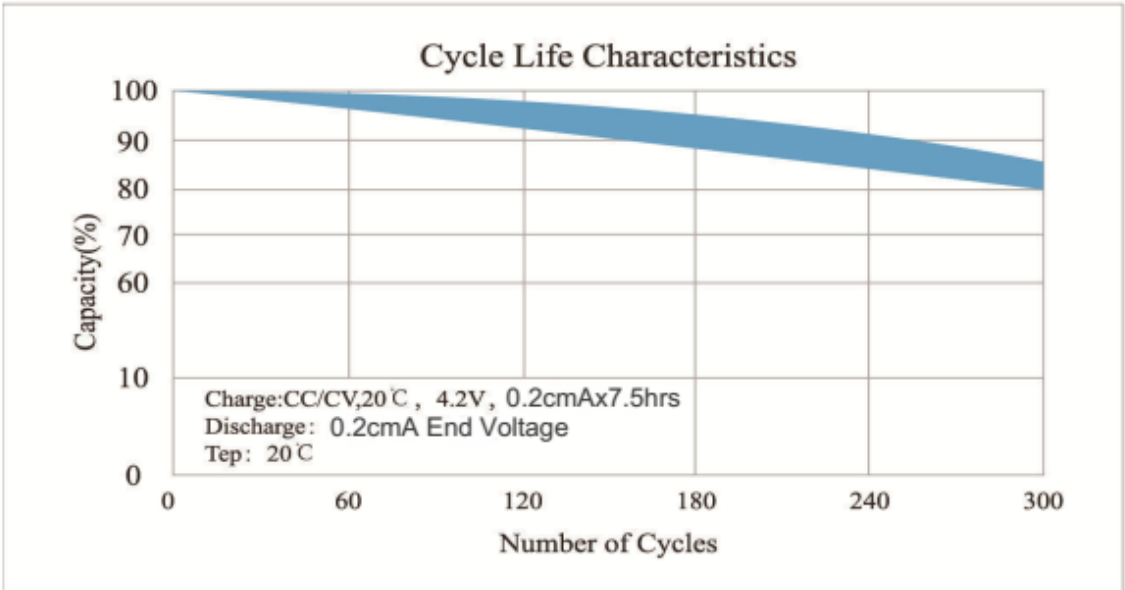


图 5. 循环寿命曲线

Fig. 5 Cycle Life Chart



6.注意事项　Important Notes

◆远离热源、火源；Keep away from source of fire and/or heat.

◆不要擅自解剖电池或电池组；Do not disassemble battery and/or battery pack.

◆不要将电池的正负极用金属片连接，也不要将电池与能够引起其短路的物品一起混放；
Do not connect the positive and negative pole directly using conductive metal; avoid short circuit.

◆不要将电池投入水中或弄湿；　Do not put the battery into water or damp it.

◆不得抛电池；Do not cut the battery.

◆不得针刺、打击电池；Do not strike or needle the battery.

◆用专用的充电器进行充电；Charge the battery using specified chargers.

◆不要用锡焊直接焊接引线与电池连接；Do not solder the battery directly.

◆不要反接电池的正负极；Observe the correct polarity (+/-)

◆不要将电池用于未指定的应用领域；Do not use the battery in un-specified application.

◆不得将电池与干电池或其它类型电池混用；Do not mix the battery in usage with other types of battery.

◆使用电池前应该仔细阅读使用说明书. Read the instruction manual carefully before use.

◆加载产品使用时，建议设计充放电保护电路 When the battery is used on load, it is recommended to design a charge/discharge protection circuit for the battery.

◆在常温环境下，如电池储存六个月未使用要求对电池组织维护，维护办法：以 0.2CmA 电流恒流放电至 2.75V，搁置 5min 后，以 0.2CmA 恒流充电，当电池端电压达到充电限制电压 4.20V 后，转为恒压充电，当电流值小于 0.05CmA 时终止充电 When the battery is stored and not used under room temperature for over 6 months, it needs to be recharged by the procedure below:

1) Discharge by CC mode at 0.2CmA to 2.75V, then rest for 5 minutes
2) Charge by CC mode at 0.2CmA to 4.20V limit, then change to CV charge mode,
3) Cut off the charge when the charging current is less than 0.05CmA.

◆电池保质期为一年 Quality Warrant : one year.

7. 电池应用注意事项 Notes for Coin Battery Application

◆充电部分:
建议使用充电管理 IC 控制，这样就可以很好的确保给电池充电的安全性,充电电流控制在 1 倍率以内;
Charge Section ： It is recommended to use a charging management IC to control the charging current within 1C so as to ensure the safety of charge.

◆保护部分:
线路板上加入电池保护线路，保护 IC 请选择日本精工（编号：S8261-G3J），IC 选择 3.0V 截止放电的;
Protection Section: A protective circuit should be added to the PCM of the battery. It is recommended to use the Seiko IC (Number: S8261-G3J), with a discharge cut-off voltage at 3.0V.

◆静态电流:
产品的静态电流问题非常关键，一定要知道产品在没有维持电源充电状态下，电池要维持 IC 工作的静态电流情况，建议静态电流应控制在≤5uA。
Off-load current
Off-load current is a critical element in the electrical device. When in the condition where the device is off-loaded and there is no outer charging power and the battery should keep the IC in a working status, the off-load current of the device should be recorded. It is suggested to keep the off-load current within ≤5uA.

◆以上使用注意事项请使用者一定要充分考虑，只有在线路考虑周全和电池质量确保的情况下，才能确保产品的整体质量，两者缺一不可。
The application notes should be taken into consideration in design of a device. A well wired PCBA and a quality battery is an integral part to maintain the whole quality of the device.