

Tekcell, Always with you



CONTENTS

- 03 _ CEO Message
- 04 _ Company Histroy
- 05 Certifications / Production Infrastructure
- 06 _ Our Solution
- 08 _ Feature
- 12 _ Products
- 28 _ EDLC Line Up
- 29 _ Military Pack
- 32 _ Battery Application Worksheet
- 33 _ Available Terminals
- 34 _ Technical List



Vitzrocell (Tekcell Brand, a Korean Manufacturer) has been recognized as one of the best power solution providers of Lithium Primary Batteries in the world. We are proud of full-fledged range of products suitable for various applications such as Utility Meters (AMR), Asset Tracking, Security, Leak Detector, and Military Devices & Equipment. Based on more than 30 years of accumulated expertise equipped with ISO9001, ISO14001, UL and others, we have achieved a leading position in the global markets through creative R&D resources, vertically integrated production facilities, reliable products, on-time delivery, and superb technical service. In this context, we do have very close relationship with lots of valuable partners and customers in more than 50 countries.

CEO MESSAGE

"Vitzrocell, a leader of portable power solutions!"

Vitzrocell has been recognized as one of the best power solution providers and the most reliable manufacturers of Lithium Primary Batteries in the world. We're proud of the full-fledged range of products suitable for various application. And our teammates of R&D , Marketing & Sales, Factory, and so on is duly ready and resourceful enough to offer the added value which you have not had taste before. Based on more than 30 years of accumulated know-how, we are glad to have achieved a leading position in the world wide markets.

Considering the remarkable growing demand for portable power solutions and our continuous innovation activities, we're convinced that Vitzrocell will be able to make our valuable customers, partners, and the stakeholders happy with the enduring profitable growth with Vitzrocell. We humbly would like to invite you to enjoy and share the promising business opportunity with us as a strategic Partner.

VITZROCELL



Vision

Longing for Happy Life of Vitzrocell Family and all the other stakeholders (3S)

Mission

To Enhance Smart, Safe, and Green World as a dedicated power solution provider



CERTIFICATIONS

TS16949 / Certificate of Advanced Technology Center. / Defense Agency for Technology and Quality / IS014001 / IS09001



PRODUCTION INFRASTRUCTURE

100% self- developed facilities & large-scale production infra.

Vertical Systematization (Full Automation) Vertical production for core parts like Lithium, Electrolyte etc



OUR SOLUTION

Power Solution for Next Generation

VITZROCELL has products suitable for various applications including Utility Meter (AMR), Asset Tracking, Security, Leak Detector and Military Devices & Equipments. In addition, we are currently expanding our business in the military market and increasing the sales in AMR market. VITZROCELL is constantly planning new businesses including RFID Tag of heavy equipments and containers, Toll Pass equipments, wireless terminals, ocean equipments, new electronic appliances and medical devices.





FEATURE

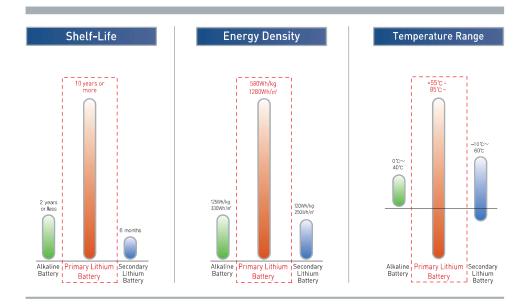
Optimum Solution Provider adopting the best solution!
Becoming a leading firm in the global market!



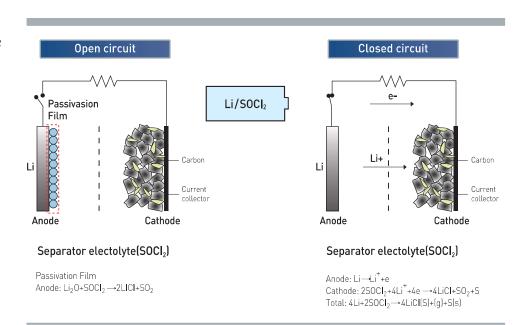
The lithium thionyl chloride battery

The TEKCELL lithium batteries have a nominal voltage of 3.6 Volts, which High and stable is considerably higher than any other commercially available battery. operating voltage The batteries are capable of operating in a wide temperature range normally Wide temperature range from -55°C ~ +85°C. Low self-discharge rate Less than 1% self-discharge after 1 year storage at + 20°C The electrochemical system offers the highest energy density of any available High energy density primary battery: up to 650Wh/kg and 1,280Wh/dm3 All of the TEKCELL primary lithium batteries are UL recognized, and meet Ultimate safety UN transportation test requirements. TEKCELL lithium batteries offer prolonged storage with a proven shelf life Extensive Shelf Life of 10 years when stored at normal room temperature.

Comparison with other battery types

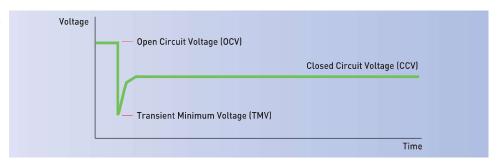


Mechanism for reaction of Li/SOCl2 Battery



FEATURE

Transient Minimum Voltage(TMV)

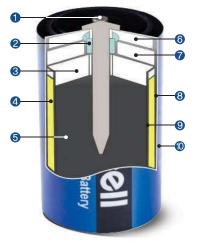


Lithium thionyl chloride battery has very low self discharge rate than other conventional batteries. That is due to the passivation layer (LiCl film) formed on the lithium surface This layer effectively prevents the self-discharge of the lithium as it is nonconductive. Therefore, this layer should be broken at the initial stage of discharge to allow lithium ion to flow to lithiumion. In the process, the layer adds to internal resistance, causing a momentary voltage drop, which is called TMV (Transient Minimum Voltage). The voltage of cells kept under proper conditions immediately recovers to normal operational voltage after TMV. TMV varies depending on the thickness and density of the passivation layer. The higher the discharge current gets, the lower TMV becomes. The passivation layer extends the shelf life by effectively preventing self-discharge but it brings about TMV. Thus, TMV must be fully considered, when a device is being designed.

Construction

Li/SOCl₂ Bobbin type

Application of Low Current drain



- Positive Pin&Current Collector
- 2 Glass-to-Metal Seal 3 Insulator 4 Anode
- **6** Cathode **6** Spacer **7** Header Base

- 8 Case 9 Separator 10 Shrinkable Tube

Strength

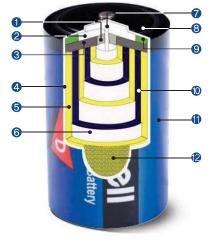
- · High Safety Level
- · Very Low Self Discharge Rate
- · High Energy Density
- · Excellent Operating Life

Weakness

- · Low Power
- · High Passivation (Voltage Delay)

Li/SOCl₂ Spiral type

Application of High Current drain



- 1 Glass-to-Metal Seal 2 Cell Tuse
- 3 Header Base 4 Case 5 Anode

- 6 Separator 7 Positive pin 8 Terminal Cap
- Current Collector

Strength

- · High Power
- · Low Passivation (Voltage Delay)

Weakness

- · Low Safety Level
- · Low Operating Life
- · Low Self Discharge Rate
- · Low Energy Density

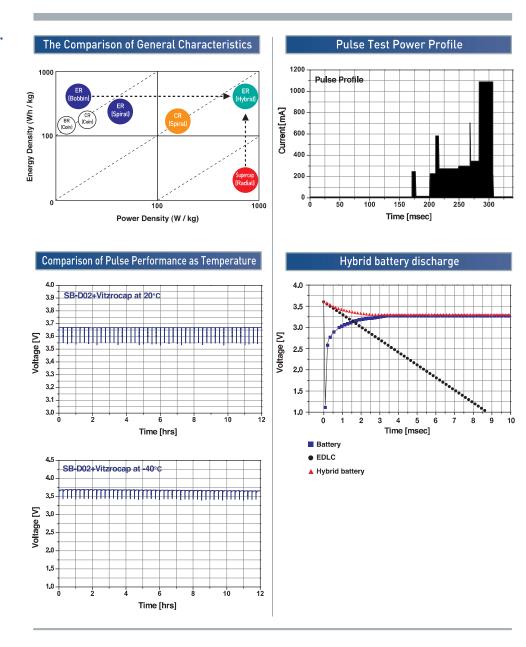
Hybrid Battery Technology as **Pulse Assist**



Vitzro Hybrid Battery

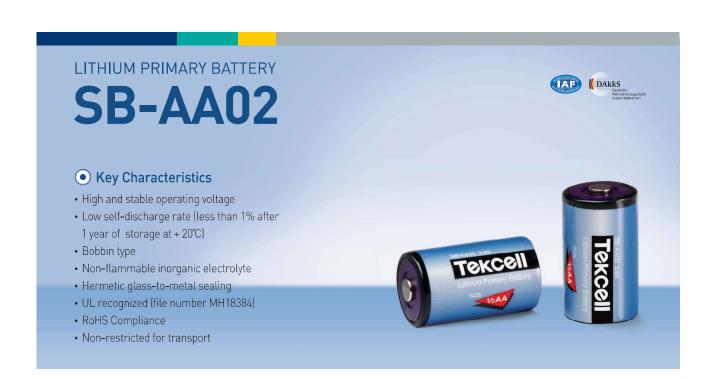
Hybrid Battery Type		Characteristic	Performance		
Main Power	Pulse Assist	of Pulse Assist	Load of Battery	Working Voltage	Life of Battery
	Electrolytic Capacitor	Small capacitance	High	Low	Short
Primary Battery	Li 2nd Battery	Bad charge efficiency Limitation of Power	Middle	Middle	Middle
	Vitzrocap.	Ultra low resistance Excellent charge efficiency	Low	High	Long

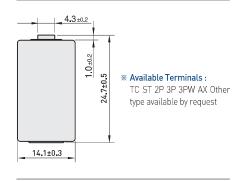
Comparison between Vitzrocap. and Li 2nd Battery



High Power Vitzrocap.
 High Efficiency: EDLC (Electric Double Layer Capacitor) of physical reaction

High Power Design: Carbon electrode as thin film and high power combination



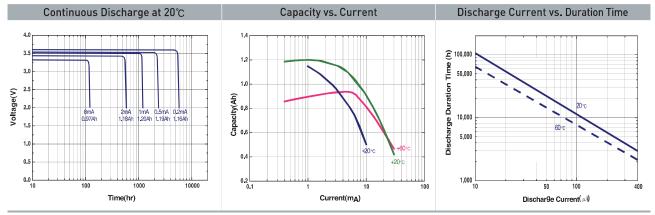


Specifications

Model	SB-AA02
Nominal voltage	3.6V
Nominal capacity (at 1mA, 20°C, 2.0V cut off)	1,2Ah
Maximum recommended continuous current [Higher currents are possible, consult Vitzrocell]	20mA
Max. pulse discharge current	50mA
Weight	9.0g
Operating temperature range	-55 ~ 85°C

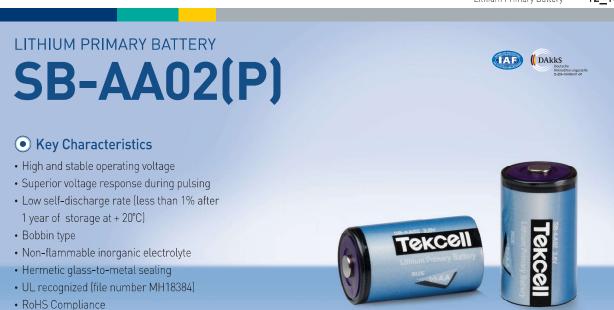
** Max. pulse current/0.1 second pulses, drained every 2 min at + 20°C from undischarged cells with 10µA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

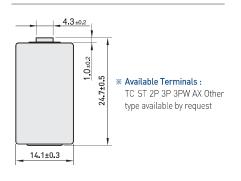
Characteristic Curve



^{**} This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environment, we recommend you to consult Vitzrocell.

Warning





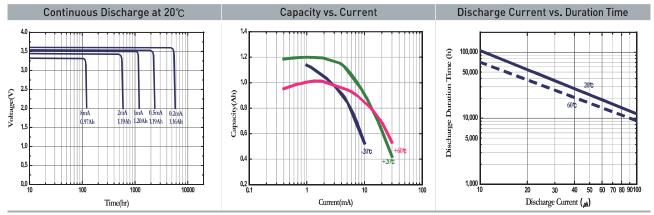
• Non-restricted for transport

Specifications

Model	SB-AA02(P)
Nominal voltage	3.6V
Nominal capacity (at 1mA, 20°C, 2.0V cut off)	1,2Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	20mA
Max. pulse discharge current	80mA
Weight	9.0g
Operating temperature range	-55 ~ 85°C

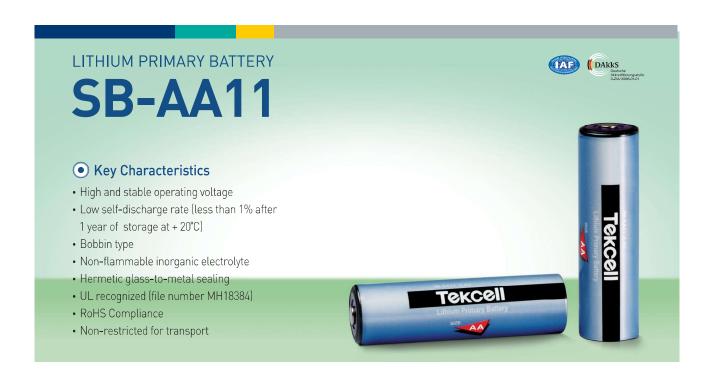
** Max. pulse current/0.1 second pulses, drained every 2 min at + 20°C from undischarged cells with 10µA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

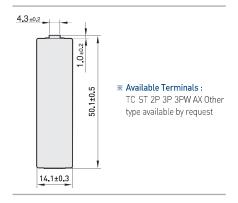
Characteristic Curve



^{**} This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environment, we recommend you to consult Vitzrocell.

Warning





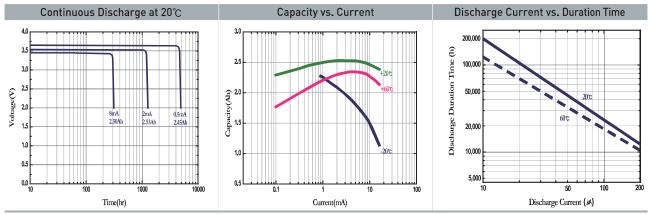
Specifications

Model	SB-AA11
Nominal voltage	3.6V
Nominal capacity (at 2 _m A, 20°C, 2.0V cut off)	2,5Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	60mA
Max. pulse discharge current	100mA
Weight	16.0g
Operating temperature range	-55 ~ 85°C

** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 °C from undischarged cells with 10µA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.

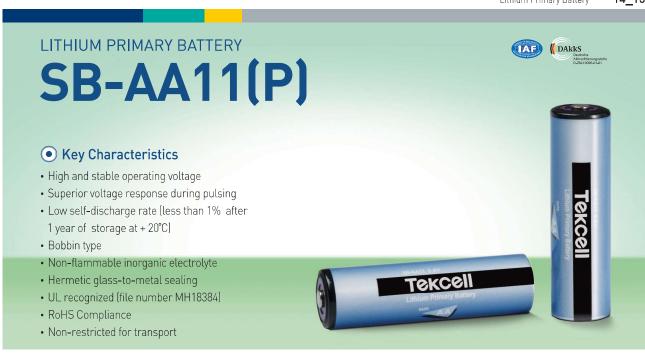
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

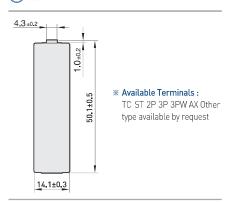
Characteristic Curve



** This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environment, we recommend you to consult Vitzrocell.

Warning





Specifications

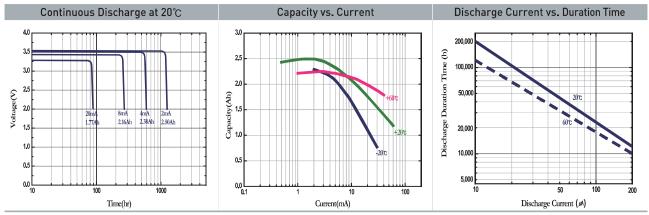
Model	SB-AA11(P)
Nominal voltage	3.6V
Nominal capacity (at 2 _m A, 20°C, 2.0V cut off)	2,5Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	60mA
Max. pulse discharge current	150mA
Weight	16.0g
Operating temperature range	-55 ~ 85°C

※ Max. pulse current/0.1 second pulses, drained every 2 min at + 20℃ from undischarged cells with 10

µA
base current, yield voltage readings above 3.0V. The readings may vary according to the pulse
characteristics, the temperature, and the cell's previous history.

Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

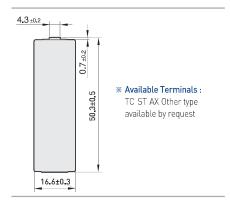
Characteristic Curve



** This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environment, we recommend you to consult Vitzrocell.

Warning



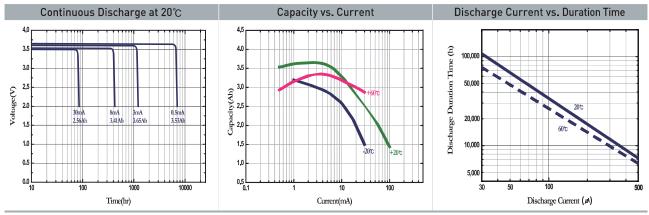


Specifications

Model	SB-A01
Nominal voltage	3.6V
Nominal capacity (at 3mA, 20°C, 2.0V cut off)	3.65Ah
Maximum recommended continuous current [Higher currents are possible, consult Vitzrocell]	70mA
Max. pulse discharge current	160mA
Weight	24.0g
Operating temperature range	-55 ~ 85°C

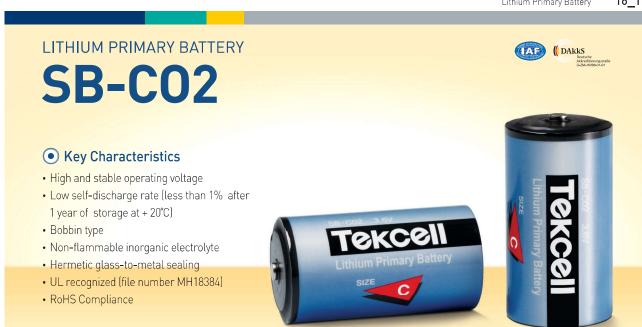
** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10µA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

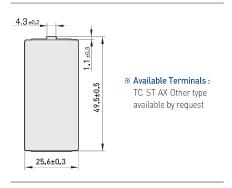
Characteristic Curve



** This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environment, we recommend you to consult Vitzrocell.

Warning



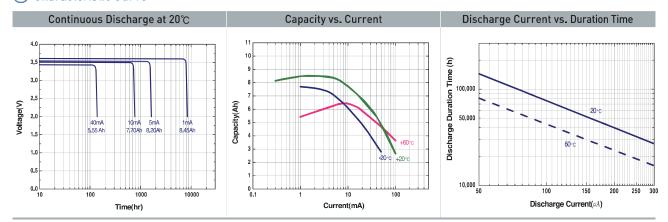


Specifications

Model	SB-C02
Nominal voltage	3.6V
Nominal capacity (at 4mA, 20°C, 2.0V cut off)	8.5Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	80mA
Max. pulse discharge current	180mA
Weight	51.0g
Operating temperature range	-55 ~ 85°C

 \times Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10 μ A base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history. Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

Characteristic Curve



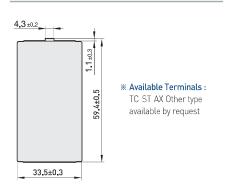
^{*} This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environment, we recommend you to consult Vitzrocell.

Warning

LITHIUM PRIMARY BATTERY SB-D02 • Key Characteristics • High and stable operating voltage • Low self-discharge rate (less than 1% after 1 year of storage at + 20°C) • Bobbin type • Non-flammable inorganic electrolyte • Hermetic glass-to-metal sealing • UL recognized (file number MH18384)

External Dimensions

• RoHS Compliance

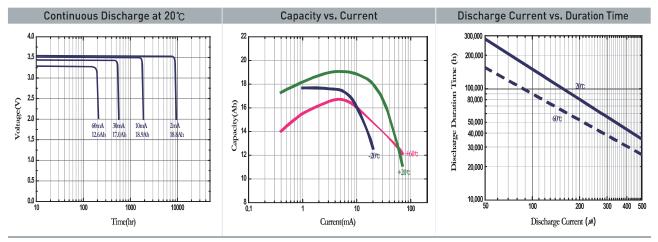


Specifications

Model	SB-D02
Nominal voltage	3.6V
Nominal capacity (at 6mA, 20°C, 2.0V cut off)	19.0Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	100mA
Max. pulse discharge current	250mA
Weight	100.0g
Operating temperature range	-55 ~ 85° C

** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10 pA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

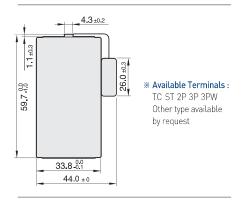
Characteristic Curve



^{**} This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environments, we recommend you to consult Vitzrocell.

Warning





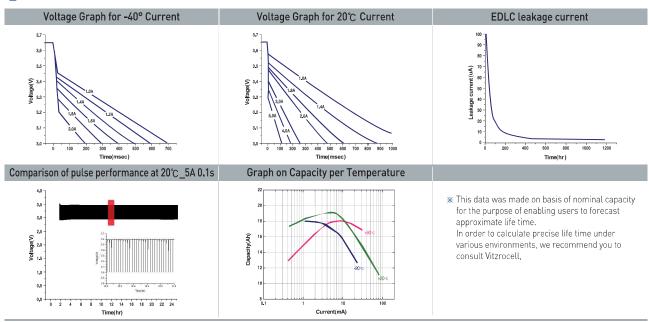
Specifications

Hybrid Battery: (SB-D02) + EDLC (2.0F EDLC)

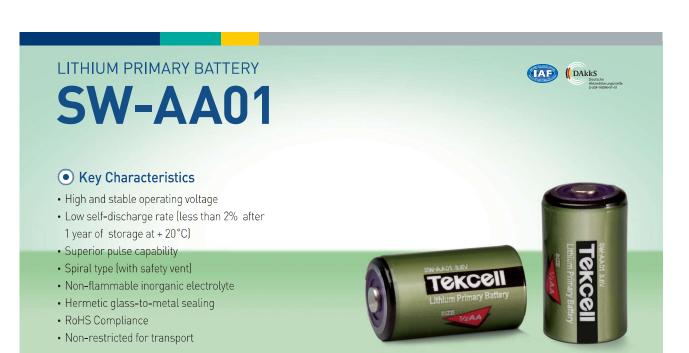
Model	HSB-D02 (2F)
Nominal voltage	3.6V
Nominal capacity (at 6mA, 20°C, 2.0V cut off)	19Ah
Max. 0.1s Pulse current to 3.0V	5A
Max. Pulse length at 1A	2Sec
Weight	110g
Operating temperature range	-55 ~ 85° C

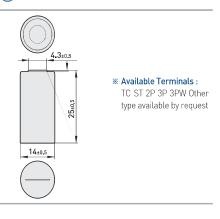
- ** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10 pA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
 Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.
- st Before using the product, consult with VITZROCELL

Characteristic Curve



Warning



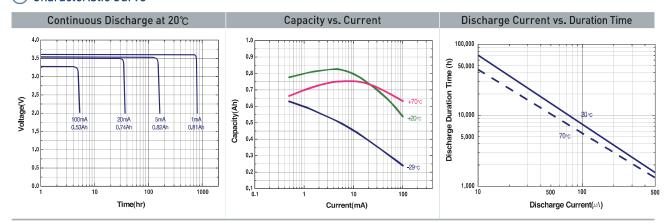


Specifications

Model	SW-AA01
Nominal voltage	3.6V
Nominal capacity (at 1mA, 20°C, 2.0V cut off)	0.8Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	100mA
Max. pulse discharge current	300mA
Weight	9.0g
Operating temperature range	-55 ~ 85 °C

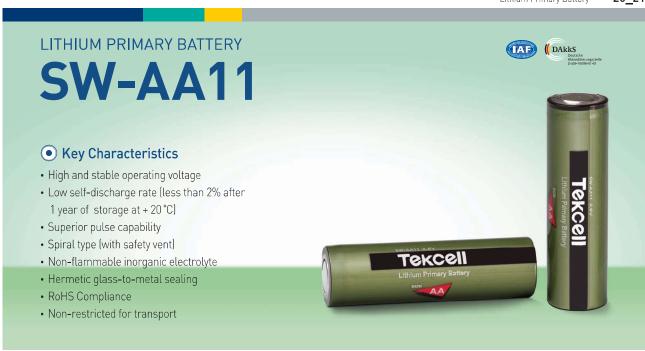
** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10 μA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

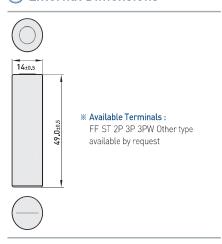
Characteristic Curve



^{**} This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environments, we recommend you to consult Vitzrocell.

Warning



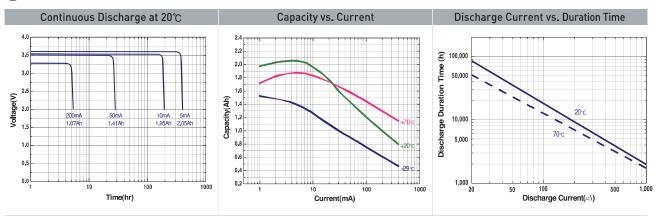


Specifications

Model	SW-AA11
Nominal voltage	3.6V
Nominal capacity (at 3 _m A, 20°C, 2.0V cut off)	2.0Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	250mA
Max. pulse discharge current	800mA
Weight	17.0g
Operating temperature range	-55 ~ 85°C

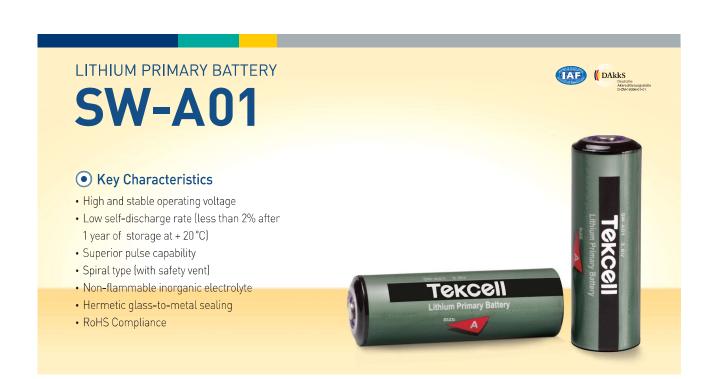
** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 °C from undischarged cells with 10 µA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

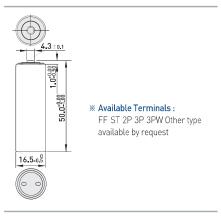
Characteristic Curve



** This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environments, we recommend you to consult Vitzrocell.

Warning



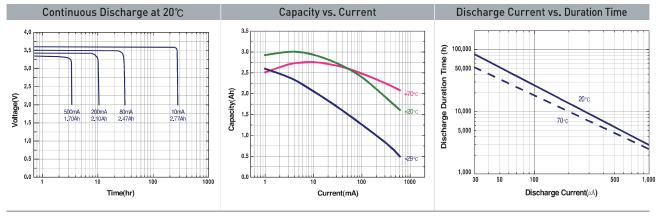


Specifications

Model	SW-A01
Nominal voltage	3.6V
Nominal capacity (at 5 _m A, 20°C, 2.0V cut off)	3.0Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	600mA
Max. pulse discharge current	1,500mA
Weight	30.0g
Operating temperature range	-55 ~ 85 °C

** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10µA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

Characteristic Curve



** This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environments, we recommend you to consult Vitzrocell.

Warning

SW-C01

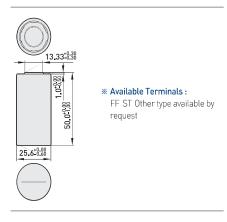
DAKKS Dautsche Akkreditserungsche



- High and stable operating voltage
- Low self-discharge rate (less than 2% after 1 year of storage at + 20°C)
- Superior pulse capability
- Spiral type (with safety vent)
- Finished with 4A fuse
- Non-flammable inorganic electrolyte
- · Hermetic glass-to-metal sealing
- UL recognized (file number MH18384)
- RoHS Compliance



External Dimensions

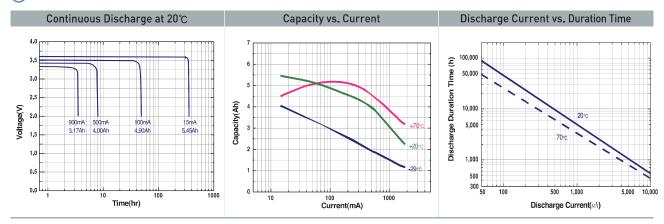


Specifications

Model	SW-C01
Nominal voltage	3.6V
Nominal capacity (at 15mA, 20°C, 2.0V cut off)	6.0Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	900mA
Max. pulse discharge current	1,800mA
Weight	52.0g
Operating temperature range	-55 ~ 85°C

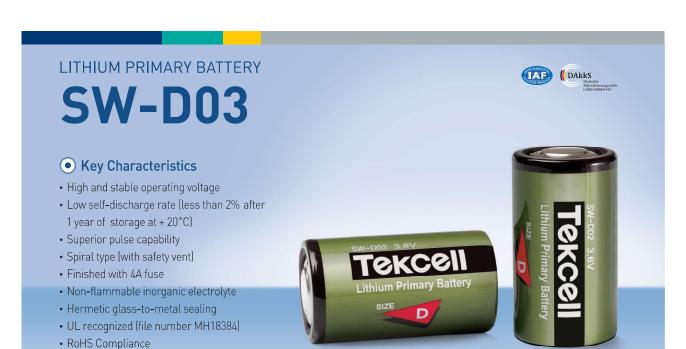
** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10 μA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

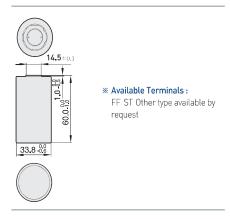
Characteristic Curve



** This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environments, we recommend you to consult Vitzrocell.

Warning



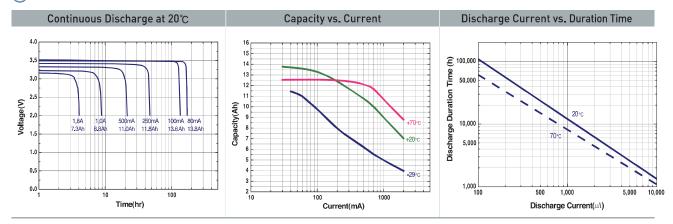


Specifications

Model	SW-D02
Nominal voltage	3.6V
Nominal capacity (at 20mA, 20°C, 2.0V cut off)	14.0Ah
Maximum recommended continuous current [Higher currents are possible, consult Vitzrocell]	1,800mA
Max. pulse discharge current	3,000mA
Weight	102.0g
Operating temperature range	-55 ~ 85 °C

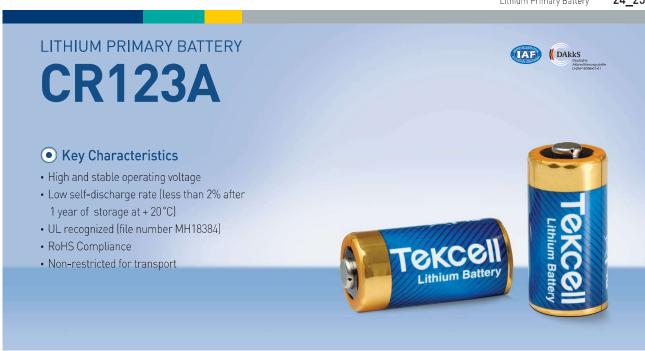
** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10μA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

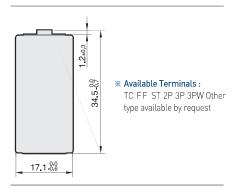
Characteristic Curve



* This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environments, we recommend you to consult Vitzrocell.

Warning



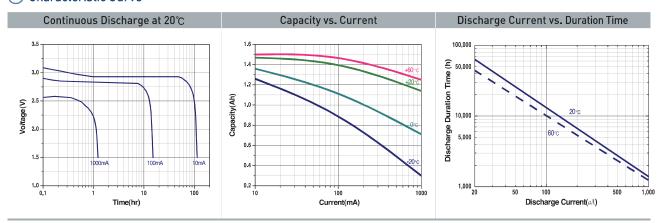


Specifications

Model	CR123A
Nominal voltage	3.0V
Nominal capacity (at 14mA, 20°C, 2.0V cut off)	1,500mAh
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	1,000mA
Max. pulse discharge current	3,500mA
Weight	16.0g
Operating temperature range	-30 ~ 60 °C

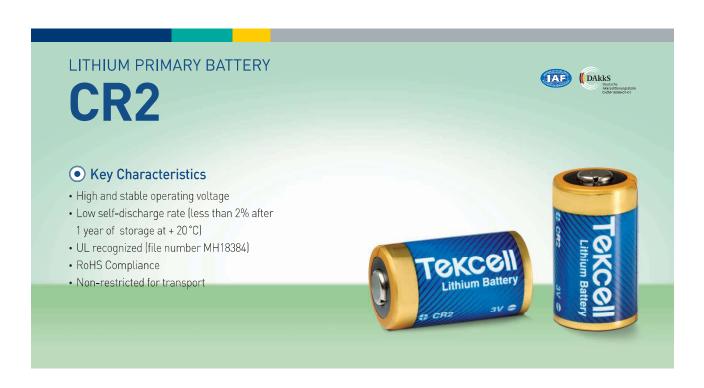
** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 °C from undischarged cells with 10 μA base current, yield voltage readings above 2.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

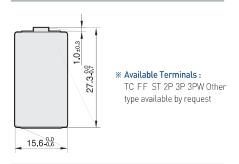
Characteristic Curve



^{**} This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environments, we recommend you to consult Vitzrocell.

Warning



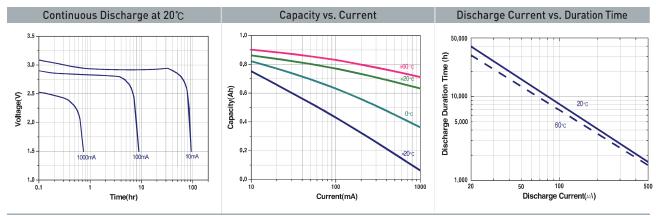


Specifications

Model	CR2
Nominal voltage	3.0V
Nominal capacity (at 10mA, 20°C, 2.0V cut off)	850mAh
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	800mA
Max. pulse discharge current	2,500mA
Weight	11.5g
Operating temperature range	-30 ~ 60 °C

** Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10 μA base current, yield voltage readings above 2.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

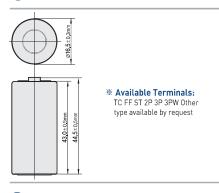
Characteristic Curve



^{**} This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environments, we recommend you to consult Vitzrocell.

Warning



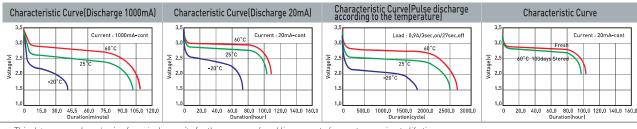


Specifications

Model	CR17450
Nominal voltage	3.0V
Nominal capacity (at 10 _m A, 20°C, 2.0V cut off)	2400mAh
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	1000mA
Max. pulse discharge current	3000mA
Weight	23.0g
Operating temperature range	-30 ~ +60°C

* Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10μΑ base current, yield voltage readings above 2.0 V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history. Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

Characteristic Curve



^{*} This data was made on basis of nominal capacity for the purpose of enabling users to forecast approximate life time. In order to calculate precise life time under various environments, we recommend you to consult Vitzrocell.

100d

80d

120d

140d

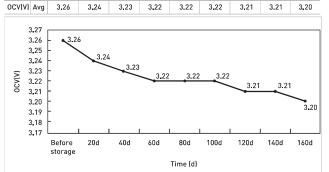
Warning

20d

Fire, explosion and severe burn hazard. Do not recharge, crush, disassemble, heat above 212°F(100°C), incinerate, short circuit or expose contents to water. Keep battery out of reach of children and in original package until ready to use. Dispose of used batteries promptly.

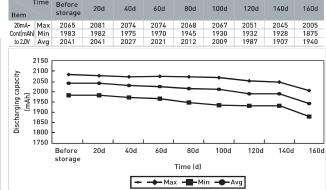
* Any information given here is for reference only. Information is also dependent on actual conditions of use and does not guarantee future performance, and subject to change. Graph of testing result for CR17450 stored under high-temp. 60C(Electrical capability)

160d



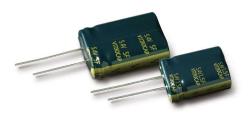
60d

40d



ELECTRIC DOUBLE LAYER CAPACITOR

EDLC Line Up

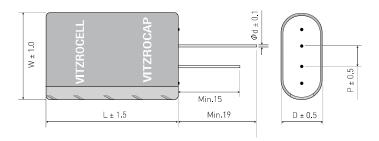


Features

- Two Lead Terminals and Cylindrical CellVery Low ESR(High-power density)High-CapacitanceRoHS Compliant

D	Р	d
8.5	5	0.6
10.5	5	0.6
12.5	7	0.6

Drawing



Specification

	Item	Performance		
Rated	Voltage(V _R)	5.0 volts	5.4 volts	
Nominal Ca	pacitance Range	1.5 to 7.5 F	1.5 to 7.5F	
Capacita	nce Tolerance	-20% to +30% (at 25℃)	-20% to +30% (at 25 $^{\circ}$ C)	
Operating Te	mperature Range	-25℃ to 70℃	-40℃ to 65℃	
Opera	ating at 85℃	Max 4.2 volts	Max 4.6 volts	
		After 1,000 hours at rated voltage loaded under +65℃, +70℃ the capacitor shall meet the specified endurance limits :		
End	durance	Capacitance change $\leq 30\%$ of initial value		
		Internal resistance ≤ 2 times of specified value		
	Measure at	At -25, +25, 70℃	At -40, +25, 65℃	
Temperature Characteristics	△ C	≤±30% of init	ial value	
Characteristics	Internal Resistance	≤±2 times of sp	ecified value	
Cycle Life	F00,000,0	Capacitance change ≤ 3	80% of initial value	
Characteristics 500,000 Cycles		Internal resistance ≤ 2 times of specified value		
She	Shelf Life After 1,000 hours storage at +65 $^{\circ}$ C(2.7 volts), +70 $^{\circ}$ C(2.5 volts) wi the capacitor shall meet the specified endurance limit			

Military Pack







	BA-6853AK		BA-300K		BA-6813AK	
Item	Specification	Remark	Specification	Remark	Specification	Remark
Nominal Voltage(V)	14.4	Open Circuit Voltage(OCV)	28.4	Open Circuit Voltage(OCV)	10.8	Open Circuit Voltage(OCV)
Nominal Capacity(Ah)	13.0	at 20mA, 20℃, 8V cut off	26.0	at 40mA, 20℃, 16V cut off	13.0	at 20mA, 20℃, 6V cut off
Pack Construction	4 Series	Unit Cell: SW-D02	8 Series × 2 Parallel	Unit Cell: SW-D02	3 Series	Unit Cell: SW-D02
Life Time	16 (60℃)	at 6.5 Q 1min, 50 Q	26 (54℃)	at 32 Q continuous	11 (60℃)	at 131 Q continuous
Life Time as Temperature(Hr)	20 (21℃)	9min pulse discharge,	26 (21℃)	discharge, 19.2V cut-off	15 (21℃)	discharge,
remperatare(iii)	8 (-32℃)	10V cut-off	6 (-29℃)		5 (-32℃)	7.5V cut-off
Dimension(mm)	102×72×65.7	W×D×H	189×146×71.5	W×D×H	210 × 40 × 40	W×D×H
Weight(g)	500		3,000		450	
NSN	6135-37-511-2825	National Stock Number	6135-37-502-0931	National Stock Number	6135-37-511-2828	National Stock Number
Main Application	PRC-999K	FM Radio Set	SB-30K	Changer for filed operation	ADU-95	Automatic Decode Unit
Shelf Life(years)	5		5		5	







	BA-	6818AK	BA-680		BA-	6821AK
Item	Specification	Remark	Specification	Remark	Specification	Remark
Nominal Voltage(V)	14.4	Open Circuit Voltage(OCV)	7.2	Open Circuit Voltage(OCV)	32.4	Open Circuit Voltage(OCV)
Nominal Capacity(Ah)	13.0	at 20mA, 20℃, 8V cut off	13.0	at 20mA, 20℃, 4V cut off	13.0	at 20mA, 20℃, 18V cut off
Pack Construction	4 Series	Unit Cell: SW-D02	2 Series	Unit Cell: SW-D02	9 Series	Unit Cell: SW-D02
1:6 T	15 (60℃)	9min pulse discharge,	23 (54°C)	at 15 $m{arOmega}$ continuous discharge, 4V cut-off	21 (60℃)	at 11 Q 1min, 110 Q 9min pulse discharge, 21V cut-off
Life Time as Temperature(Hr) 18 (21°C)	18 (21℃)		22 (21℃)		23 (21°C)	
remperature(m)	9 (-20℃)	10V cut-off	4 (-25℃)		14 (-20℃)	
Dimension(mm)	210×40×40	W×D×H	36×135	ØXL	207×76×77	W×D×H
Weight(g)	550		240		1,200	
NSN	6135-37-511-2827	National Stock Number	6135-37-509-7092	National Stock	6135-37-511-2826	National Stock Number
Main Application	ARF-95	Security Device	K-CAM	NumberChemical Detector	PRC-950K	AM Radio Set
Shelf Life(years)	5		5		5	

Military Pack







	BA-6863K		BA	BA-6812K		BA-6086K	
Item	Specification	Remark	Specification	Remark	Specification	Remark	
Nominal Voltage(V)	14.4	Open Circuit Voltage(OCV)	7.2	Open Circuit Voltage(OCV)	10.8	Open Circuit Voltage(OCV)	
Nominal Capacity(Ah)	26.0	at 40mA, 20℃, 8V cut off	13.0	at 20mA, 20℃, 4V cut off	4.0	at 6mA, 20°C, 6V cut off	
Pack Construction	4 Series × 2 Parallel	Unit Cell: SW-D02	2 Series	Unit Cell: SW-D02	3 Series × 2 Parallel	Unit Cell: SW-AA11	
1 'C T'	9 (54℃)	at 6.5 Q 1min, 3.2 Q	16 (54℃)	at 10 $m{arrho}$ continuous	12 (54℃)	at 11 Q 1min, 50 Q 1min,	
Life Time as Temperature(Hr)	9 (21℃)	9min pulse discharge, 7V cut-off	12 (21°C)	discharge,	12 (21℃)	265 @ 8min, pulse	
remperature(m)	5 (-20℃)		3 (-20℃)	5.5V cut-off	6 (-29℃)	discharge, 6V cut-off	
Dimension(mm)	170×72.2×65.7	W×D×H	38×135	ØXL	130×16×58	W×D×H	
Weight(g)	1,000		250		160		
NSN	6135-37-509-8121	National Stock	6135-37-507-8697	National Stock	6135-37-506-5009	National Stock Number	
Main Application	VRC-680AK	Number Portable Terminal Set	PAS-01K	Number Heat Reflection Sight	PRC-96K	Communication Device	
Shelf Life(years)	5		5		5		







	BA-6218K		BA-6012K		BA-6085K	
Item	Specification	Remark	Specification	Remark	Specification	Remark
Nominal Voltage(V)	18.0	Open Circuit Voltage(OCV)	7.2	Open Circuit Voltage(OCV)	14.4	Open Circuit Voltage(OCV)
Nominal Capacity(Ah)	4.0	at 6mA, 20℃, 10.0V cut off	4.0	at 6mA, 20℃, 4V cut off	2.0	at 3mA, 20℃, 8V cut off
Pack Construction	5 Series × 2 Parallel	Unit Cell: SW-AA11	2 Series × 2 Parallel	Unit Cell: SW-AA11	4 Series	Unit Cell: SW-AA11
1.77 T	55 (54°C)	at 35mA(430 .2) continuous discharge, 10V cut-off	60 (54℃)	at 140 Q continuous	30 (54℃)	at 64.7 Q 5sec, 200 Q 5sec,
Life Time as Temperature(Hr)	55 (21℃)		60 (21℃)	discharge, 4.5V cut-off	29 (21℃)	336.7 .2 40sec, pulse discharge, 10V cut-off
remperature(m)	48 (-35℃)		45 (-29℃)		7 (-29℃)	
Dimension(mm)	78×54×45	W×D×H	59×55.3×17	W×D×H	55×32×35	54.5×31.5×35.6
Weight(g)	220		100		100	
NSN	6135-37-505-3618	National Stock Number	6135-37-508-7363	National Stock Number	6135-37-502-8021	National Stock Number
Main Application	PRG-1831K	Remote Explosion Device	PDR-1K	Radiation Device	PRC-85K	Communication Device
Shelf Life(years)	5		5		5	

Military Pack







	BA-6501K		BA-6822AK		BA-6823AK	
Item	Specification	Remark	Specification	Remark	Specification	Remark
Nominal Voltage(V)	3.6	Open Circuit Voltage(OCV)	10.8	Open Circuit Voltage(OCV)	7.2	Open Circuit Voltage(OCV)
Nominal Capacity(Ah)	13	at 20mA, 20°C, 2V cut off	13	at 20mA, 20°C, 6V cut off	13	at 20mA, 20°C, 4V cut off
Pack Construction	1Series	Unit cell: SW-D03	3Series	Unit cell: SW-D03	2Series	Unit cell: SW-D03
Life Time	10(21℃)	-+ 220 20i 20 1Ei	100(21℃)	at 102Ω continuous discharge, 7.5V cut-off	100(21℃)	-1 /001
Life Time as Temperature(Hr) 12(54°C)	12(54℃)	at 22Ω 30min, 2Ω 15min	100(54℃)		100(52℃)	at 68Ω continuous discharge, 7.5V cut-off
remperature(m)	6(-30℃)	pulse discharge, 2.0V cut-off	80(-32℃)		80(-32℃)	
Dimension(mm)	26.8 x 79	ØxH	120.5 x 68 x 41	WxDxH	71 x 37.5 x 70	WxDxH
Weight(g)	130		400		250	
NSN	6135-37-515-4077	National Stock	6135-37-525-4782	National Stock	6135-37-525-4860	National Stock
Main Application	K11	Fire control system	K421	Remote control Firing device	K421	Remote control Firing device
Shelf Life(years)	3		5		5	



	BA-6301K					
Item	Specification	Remark				
Nominal Voltage(V)	28.8	Open Circuit Voltage(OCV)				
Nominal Capacity(Ah)	12	at 30mA, 20 $^{\circ}\mathrm{C}$, 16V cut off				
Pack Construction	8Series x 2Parallel	Unit cell: SW-C01				
1.77 T	11.8(21℃)	at 35.7Ω continuous				
Life Time as Temperature(Hr)	14.2(43℃)	discharge, 16V cut-off				
Temperature(in)	5.8(-32℃)	at 27.7Ω continuous discharge, 7.5V cut-off				
Dimension(mm)	190 x 81 x 59	WxDxH				
Weight(g)	1100					
NSN	미 정	National Stock				
Main Application	ATL-1K	Firing device				
Shelf Life(years)	3					

Battery Application Worksheet

CompanyInformation	Company										
	Name	E-Mail									
	Department	Tel.									
	Address	Fax.									
	Physical Requirements										
	Battery type & Pack construction Li/SOCI ₂ , Li/MnO ₂	(series, parallel)									
at 20mA, 20℃, 6V cut off	Application Terminal or conn	ector Cable									
• Electrical Requirements	Cut-off voltage (Minimum operating voltage) Current profile Ex) Pulse2 Pulse3 Base current for Pulse1 for Pulse2 for Pulse3	Expected life time Maximum operating voltage Current(mA) Duration(sec) Interval(sec) Base current Pulse1 Pulse2 Pulse3									

Operating Temperature (min, mean, max)

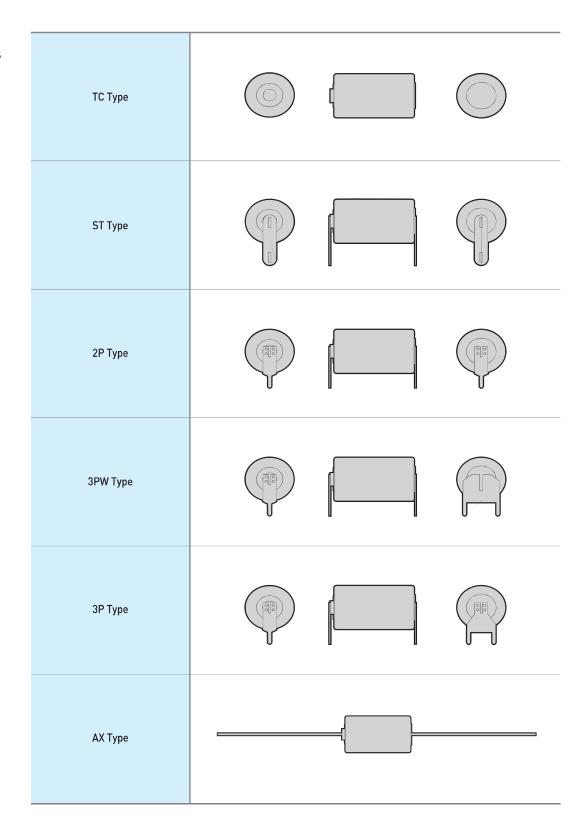
Additional Information

Environmental Requirements

Storage Temperature (min, mean, max)

Available Terminals

Available Terminals



Technical List

Product List

Туре	Size	Model	IEC	Nominal Voltage (V)	Nominal Capacity (Ah)	Standard Discharge Current(mA)	Maximum Continuous Discharge Current(mA)	Maximum Pulse Discharge Current (mA)	Temperature Range(℃)	Weight (g)
Bobbin type	1/2AA	SB-AA02	ER14250	3.6	1.2	1	20	50	-55~85	9.0
		SB-AA02(P)	ER14250	3.6	1.2	1	20	80	-55~85	9.0
	AA	SB-AA11	ER14500	3.6	2.5	2	60	100	-55~85	16.0
		SB-AA11(P)	ER14500	3.6	2.5	2	60	150	-55~85	16.0
	А	SB-A01	ER17500	3.6	3.65	3	70	160	-55~85	24.0
	С	SB-C02	ER26500	3.6	8.5	4	80	180	-55~85	51.0
	D	SB-D02	ER33600	3.6	19.0	6	100	250	-55~85	100.0
Spiral type	1/2AA	SW-AA01	ER14250	3.6	0.8	1	100	300	-55~85	9.0
	АА	SW-AA11	ER14500	3.6	2.0	3	250	800	-55~85	17.0
	А	SW-A01	ER17500	3.6	3.0	5	600	1,500	-55~85	30.0
	С	SW-C01	ER26500	3.6	6.0	15	900	1,800	-55~85	52.0
	D	SW-D02	ER33600	3.6	14.0	20	1,800	3,000	-55~85	102.0
Li/MnO ₂	2/3A	CR123A	CR17350	3.0	1.5	14	1,000	3,500	-30~60	16.0
		CR2	CR16270	3.0	0.8	10	800	2,500	-30~60	11.5

^{*} Various terminals such as pin, wire, connector and etc. are also available by request

Technical List

Packing Information

T	Model	Unit/Packing	Net Wt.	Inner Box		Outer Box					
Туре				Q' ty(pcs)	Net Wt.(g)	Q' ty(pcs)	Net Wt.(kg)	Gross Wt. (kg)	СВМ	Dimension(mm)	
Bobbin type	SB-AA02(P)	1pc.(bulk)/TC,ST,P	9.2	100	980	1000	9.8	10.7	0.0337	510×330×200	
		1pc.(bulk)/AX	9.2	30	316	300	3.2	4.1	0.0290	435×370×180	
	SB-AA11(P)	1pc.(bulk)/TC,ST,P	16.0	100	1660	600	10.0	10.9	0.0337	510×330×200	
		1pc.(bulk)/AX	16.0	25	440	250	4.4	5.3	0.0290	435×370×180	
	SB-A01	1pc.(bulk)/TC,ST,P	24.0	90	2220	540	13.3	14.2	0.0337	510×330×200	
	SB-C02	1pc.(bulk)/TC,ST,P	51.0	50	2610	300	15.7	16.6	0.0357	515×347×200	
	SB-D02	1pc.(bulk)/TC,ST,P	100.0	30	3060	120	12.2	13.1	0.0337	510×330×200	
Spiral type	SW-AA01	1pc.(bulk)/TC,ST,P	9.2	100	980	1000	9.8	10.7	0.0337	510×330×200	
	SW-AA11	1pc.(bulk)/TC,ST,P	17.0	100	1760	600	10.6	11.5	0.0337	510×330×200	
	SW-A01	1pc.(bulk)/TC,ST,P	30.0	90	2775	540	16.7	17.6	0.0337	510×330×200	
	SW-C01	1pc.(bulk)/TC,ST,P	51.0	50	2610	300	15.7	16.6	0.0357	515×347×200	
	SW-D02	1pc.(bulk)/TC,ST,P	102.0	30	3120	120	12.5	13.4	0.0337	510×330×200	
	BW-D01	1pc.(bulk)/TC,ST,P	102.0	30	3120	120	12.5	13.4	0.0337	510×330×200	
	CR123A	1pc.(Blister)	16.0	10	210	200	4.7	5.3	0.0202	509×228×174	
	CR-2	1pc.(Bulk)	11.5	100	1,649	800	13.2	14.0	0.0202	509×228×174	
		1pc.(Blister)		10	159	200	3.7	4.3	0.0202	509×228×174	
		1pc.(Bulk)		40	539	960	12.9	13.7	0.0202	509 × 228 × 174	

Memo

Green Batteries for Smart Grid INNOVATION TEKCELL





Head Office & Factory

 $70, {\sf Indeoseupakeu-ro}, {\sf Hapdeok-eup}, {\sf Dangjin-si}, {\sf Chungcheongnam-do}, {\sf Republic of Korea}, 31816$

T. 82-41-332-8642

F. 82-41-332-8642

Seoul Office

VITZRO B/D

10, Neungdong-ro 25-gil, Gwangjin-gu, Seoul, 04998 Republic of Korea

T. 82-2-2024-3234/3223/3227/3226/3239/3232

F. 82-2-499-2756

VITZROCELL Agency

2022.10 www.vitzrocell.com