




GSLR6A

TECHNICAL SPECIFICATION FOR ALKALINE MANGANESE DIOXIDE BATTERY

Approved	
General Manager:	 Date:

Date: 2007/09/30
SPEC. No.: GP001-GSLR6A
REVISION: 01

GOLDEN POWER CORPORATION (HK) LTD.

Flat C, 20/F, Block 1, Tai Ping Industrial Centre, 57 Ting Kok Road, Tai Po, N.T. Hong Kong.
Tel: (852) 3125 2288 Fax: (852) 3125 2000 / (852) 3125 2001
E-mail: battery@goldenpower.com Web Page: <http://www.goldenpower.com>

The Manufacturer reserves the right to modify product specification and data stated herein without prior notice.

1. Scope

This specification is applicable to Golden Power's Greenergy Super Plus Alkaline Battery

Model No.: GSLR6A

1.1 Designations

Golden Power: GSLR6A	IEC: LR6	Others: AA, E91, 4006
JIS: AM-3	ANSI: 15A	

1.2 Reference Document

- IEC 60086-1 (2006-12) - Primary Batteries - Part 1: General
- IEC 60086-2 (2006-12) - Primary Batteries - Part 2: Physical and Electrical Specification
- IEC 60086-5 (2006-12) - Primary Batteries - Part 5: Safety of batteries with aqueous electrolyte

2. Chemical System

Alkaline-Manganese Dioxide

* MERCURY AND CADMIUM ARE NOT ADDED IN THE BATTERY

3. Nominal Voltage: 1.5V

4. Average Weight: 23.5g

5. Nominal Capacity

2450mAh (Condition: discharge at $20 \pm 2^\circ\text{C}$ under 43Ω discharge load for 4hr/day to 0.9V end-point voltage)

6. Electrical Characteristics

Test Conditions: $3.9\Omega \pm 0.5\%$ load resistance, measuring time 0.3 seconds, temperature at $20 \pm 2^\circ\text{C}$, tested within 30 days after delivery.

	Open-Circuit Voltage (OCV) [V]	Closed-Circuit Voltage (CCV) [V]	Test Specification
New Battery	1.58	1.45	MIL-STD-105E, Class II, Double Sampling, AQL=0.4
After 3 mth. at temp.=45°C	1.56	1.40	
After 12 mth. room temp.	1.56	1.40	

7. Service Output

Test Conditions: Temperature at $20 \pm 2^\circ\text{C}$, tested within 30 days after delivery.

Standard	Discharge Condition			Average Minimum Discharge Time		
	Discharge load	Daily discharge time	End Point Voltage (V)	New Battery	After 3 mth. at temp.=45°C	After 12 mth. at room temp.
IEC	3.9Ω	1 h/d	0.8V	7.0 h	6.3 h	6.3 h
IEC	10Ω	1 h/d	0.9V	18.5 h	17.5 h	17.5 h
IEC	43Ω	4 h/d	0.9V	90 h	83.7 h	83.7 h
IEC	250mA	1h/d	0.9V	7.5 h	7.1 h	7.1 h
IEC	24Ω	15s/m, 8h/d	1.0V	42 h	37.8 h	37.8 h
IEC	1000mA	10s/m, 1h/d	0.9V	420 cycles	390 cycles	390 cycles
REF	10Ω	24 h/d	0.9V	19.0 h	17.1 h	17.1 h

Satisfaction Standard:

- (1) 9 pieces of battery will be tested for each discharging standard.
- (2) The result of the average discharging time from each discharging standard shall be equal to or more than the average minimum time requirement; and no more than one battery has a service output less than 80% of the specified requirement.
- (3) One re-test is allowed to confirm the previous result.

8. Electrolyte Leakage Proof Characteristics

Item	Condition	Period	Characteristics	Acceptance Standard
Over-discharge Characteristics	10Ωcontinuous discharge at temp. $20 \pm 2^\circ\text{C}$, Relative Humidity : $65 \pm 20\% \text{ RH}$	48 hours	There shall be no deformation exceeding the specified dimensions, nor leakage recognized by human eye	N=30, Ac=1, Re=2
Storage Characteristics	At temp. $60 \pm 2^\circ\text{C}$, Relative Humidity : less than $90\% \pm 5\% \text{ RH}$	30 days		N=30, Ac=1, Re=2

9. Safety Characteristics

Item	Condition	Period	Characteristics	Acceptance Standard
Short circuit Characteristics	Temp.: $20 \pm 2^\circ\text{C}$	24 hours	There shall be no explosion of battery	N=9, Ac=0, Re=1
Abusive Characteristics	Charging current: 80mA, Temp.: $20 \pm 2^\circ\text{C}$	24 hours		

10. Marking

The following markings will be printed, stamped or impressed on the body of the battery:

- (1) Manufacturer's name or abbreviation : **Golden Power** (with logo)
- (2) **Alkaline Super P+US**
- (3) Designation: **GSLR6A**
- (4) **AA SIZE 0.00% MERCURY & CADMIUM**
- (5) Polarity Marking: "+" & "-"
- (6) **1.5V GSLR6A AM3 LR6**
- (7) **Made in China**
- (8) **Warning: Do not dispose of in fire, recharge, put in backwards, mix with used or other battery types – may explode or leak and cause personal injury.**
- (9) Marking of **Separate Collection & Recycling**

11. Caution for Use

- (1) Since the battery is not manufactured for recharging, there are risks of electrolyte leakage or causing damage to the device if the battery is charged.
- (2) The battery shall be installed with its "+" and "-" polarity in correct position, otherwise may cause short-circuit.
- (3) Short-circuiting, heating, disposing of into fire and disassembling the battery are prohibited.
- (4) Battery cannot be forced discharge, which lead to excess internal gas generation and, may result in bulging, leakage and de-crimping of cap.
- (5) New and used batteries cannot be used at the same time, when replaced batteries recommend to replace all and with the same brand type.
- (6) Exhausted batteries should be removed from compartment to prevent over-discharge, which cause leakage & damage to the device.
- (7) Direct soldering is not allowed, which will damage the battery.
- (8) Battery should be kept out of the reach of children to prevent swallow, in case of accident should contact physician at once.
- (9) The battery should not be dismantled and deformed.

12. Shelf Life

3 years after delivery under proper storage conditions.

(Temperature: $20 \pm 2^{\circ}\text{C}$; Relative humidity: $65 \pm 20\% \text{ RH}$)

13. Discharge Curves

Discharge Method: 43Ω , 4h/d (Figure 1)

Discharge Method: 10Ω , 1h/d (Figure 2)

(Condition: Test temperature $20 \pm 2^{\circ}\text{C}$)

14. Battery Dimension (Refer to Drawing DWG-S-001)

Golden Power Corporation (HK) Ltd.

Figure 1: *GSLR6A discharge curve*
Discharge Method: 43Ω; 4h/d
(Condition: Test temperature 20 ±2°C)

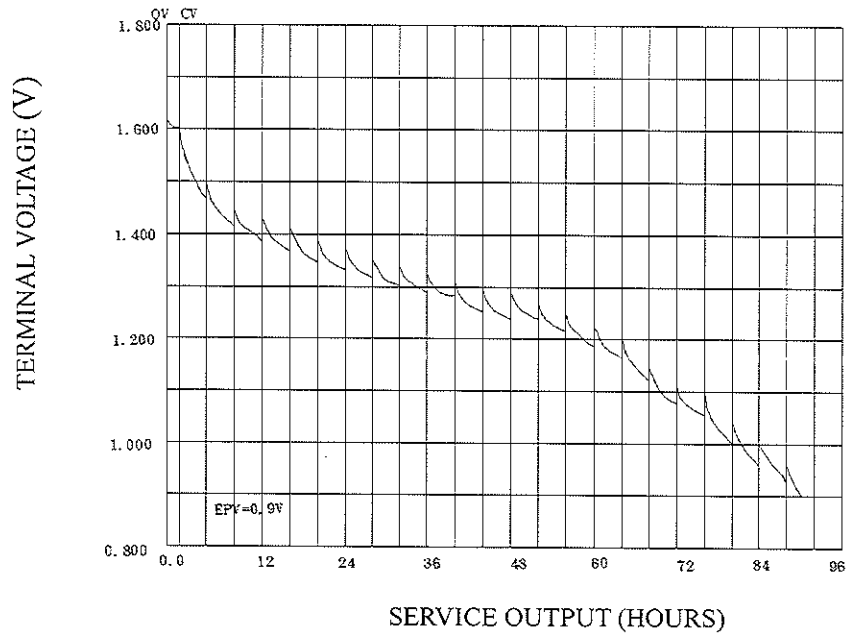
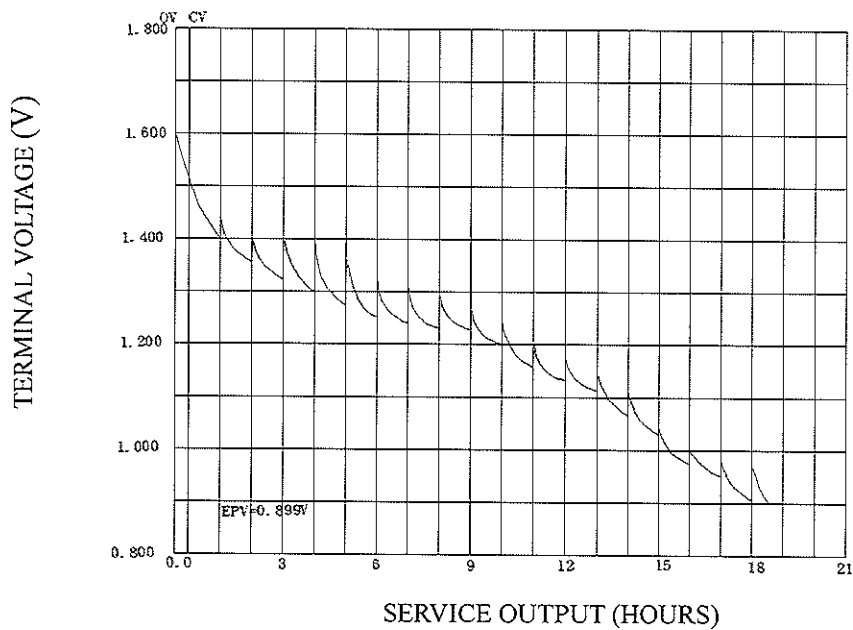
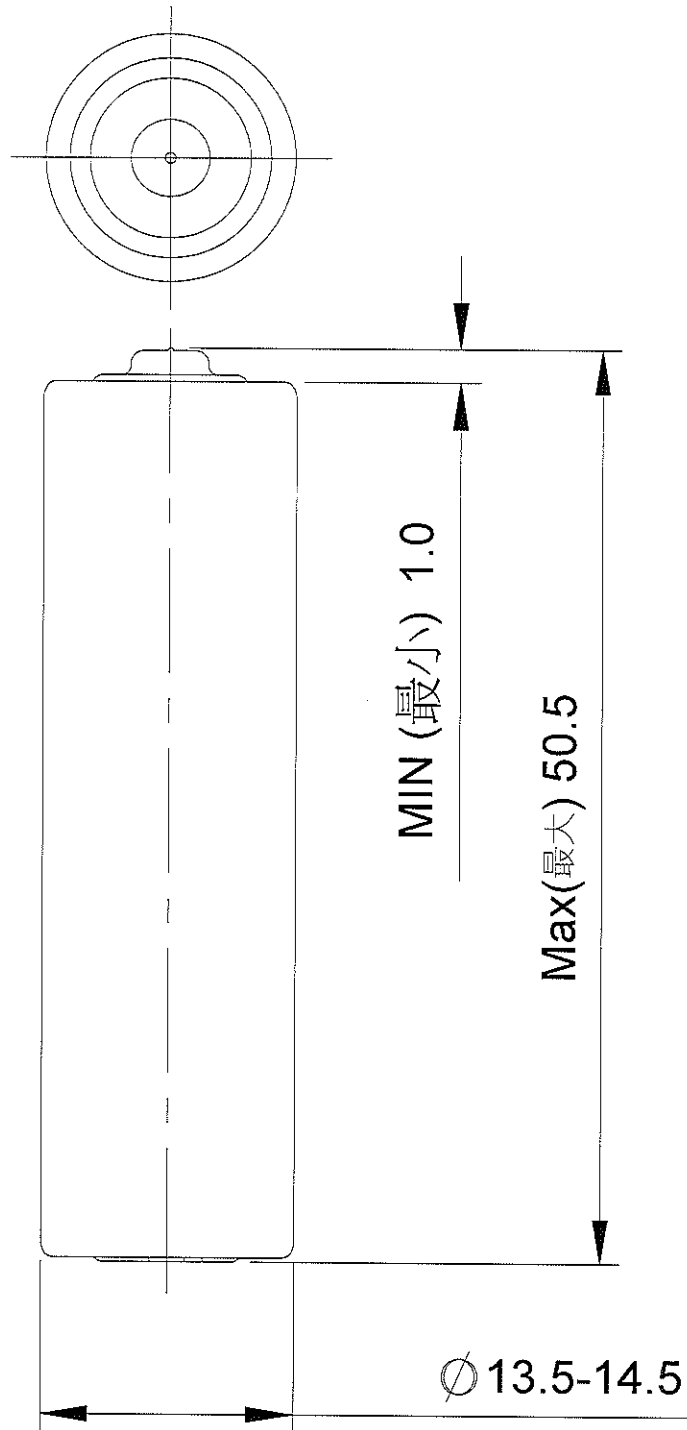


Figure 2: *GSLR6A discharge curve*
Discharge Method: 10Ω; 1h/d
(Condition: Test temperature 20 ±2°C)



GSLR6A BATTERY DIMENSION AND STRUCTURE

GSLR6A 電池外形及尺寸



GOLDEN POWER CORPORATION (HK) LTD.
金力企業(香港)有限公司

MODEL(型號): GSLR6A

DWG No.(圖號): DWG-S-001

SCALE(比例): NTS DIM(單位): mm

Approved by (審核):

DATE(日期): 15/9/05 DRAWN BY(繪制): Kelvin

Cecilia Chu

TOLERANCES (公差) LINEAR ± 0.1 ANGULAR $\pm 1/4^\circ$ 3RD ANGLE PROJECTION (第三角度視圖)