



XELLEX BATTERY (HK) LIMITED

SHENZHEN XELLEX BATTERY & POWER SUPPLY TECH. CO., LTD

R03P-AAA-UM4

TECHNICAL SPECIFICATIONS

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The Technical Specifications hereinafter is only applicable to the Hg & Cd Free Zinc Manganese Dioxide R03P AAA type battery, which was provided by Xellex Battery Co., Ltd. All the practical technical data, which were used to describe Battery Performance involved in the Specifications are obtained from the relevant experiments to the products of Xellex. Rights reserved to take relevant rectifications or modifications to the structure and performance of the products without prior notice.

1.Scope

The Specifications is solely applicable to the “Xellex” Hg & Cd Free Zinc Manganese Dioxide Battery---R03P

1.1Designations

Xellex : R03P IEC :R03P JIS :SUM-4

ANSI :24D Other : AAA, 1212

1.2 Reference Document

IEC 86-1 (1996-07) --- *Primary Batteries - General*

IEC 60086-2 (1997-07) --- *Primary Batteries – Specification Sheets*

2.Chemical System

Zinc-Manganese Dioxide Battery (Zinc Chloridize Electrolyte, 0%Hg and 0%Cd added)

3.Dimensions

Diameter: 9.5 ~ 10.5 mm Height: 43.3 ~ 44.5 mm

4.Nominal Voltage : 1.5 Volts

5.Average Weight : 7.6 g

6.Nominal Capacity

425mAh (75Ω continuous discharge , Temp. : 20 ± 2 , CDV<Cut-off Discharge Volt> : 0.9 Volts)

7.Electrical Performance

(Conditions : $75\Omega \pm 0.5\%$ load resistance, Measuring time 0.3 Seconds, Temperature at 20 ± 2 , Tested within 30 Days after delivery)

	Off-load Voltage (V)	On-load Voltage (V)	*Flush Short Circuit Current(A)	Acceptance Standard
New Battery	1.55	1.35	3.5	MIL-STD105E, Class II , Double Sampling , AQL=0.4
After 12 Mths Shelf Time at room Temp	1.52	1.30	3.0	

*The Hair Spring Ampere Meter with $\pm 0.5\%$ Accuracy (0.5 Level) shall be used.

8.Service Output

(Conditions : Test Temp. 20 ± 2 , Test within 30 Days after delivery)

Test Standards	Discharge Condition			Average Minimum Discharge Time	
	Discharge Load	Daily Discharge Time	Cut-off Discharge Voltage (V)	New Battery	After 12 Mths Shelf Time at room Temp.
IEC Standard	75Ω	4 Hours	0.9	≥24.5 Hours	≥22 Hours
	5.1Ω	4 Mins/Hour, 8 Hours	0.9	≥85 Mins	≥75 Mins
	10Ω	1 Hour	0.9	≥150 Mins	≥135 Mins
	3.6Ω	15 Secs/Mins	0.9	≥190 Times	≥170 Times

Acceptance Criteria : 9 batteries shall be tested for each discharging standard, the Average Discharging Time should be equal to or above the Average Minimum Discharging Time required. Moreover, the total amount of the batteries whose Average Discharging Time is less than 80% of the time required shall not exceed 1, Thus, the ADT of the batteries can be recognized accorded with the requirements

9. Electrolyte Leakage Proof Characteristics

Item	Condition	Period	Characteristics	Acceptance Standard
Over-charge Characteristics	Temp. : 20 ± 2 Relative Humidity : $65 \pm 20\%RH$	15Ω continuous discharge to E.P.V.:0.6V	There shall be no deformation exceeding the specified dimensions, nor leakage recognized by human eye	N=40,Ac=1,Re=2
Storage Characteristics	Temp. : 45 ± 2 Relative Humidity : < 70%RH	90 Days		N=40,Ac=1,Re=2

10. Safety Characteristics

Item	Condition	Period	Characteristics	Acceptance Standard
Short Circuit Characteristics	Temp: 20 ± 2 Relative Humidity: $60 \pm 15\%$ Directly connect the Positive & Negative Terminals with a wire	24 Hours	There shall be no explosion of battery	N=9,Ac=0,Re=1
Abusive Characteristics	Temp. 20 ± 2 Connect 4pcs batteries in series in a battery case, in which, connect one of the batteries reversely, then short connect the wire of the battery pack, until the discharging ended up.		No explosion, No leakage, and no obvious deformation shall happen	N=12,Ac=0,Re=1

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

- (1) Designation : R03P AAA UM4
- (2) Manufacturer's name, abbreviation or brand : XELLEX
- (3) Nominal Voltage : 1.5 V
- (4) Polarity : " + " , " - "
- (5) Warning: Battery may explode or leak if recharged or disposed of in fire.
- (6) Expiry Date(Guarantee Period) : The Date which shows on the labels of the finished product is used to indicate the Quality Assurance Period before it is used.



- (7) Icon :  An Icon which indicates the battery can not be disposed of in the Rubbish Can.

12. 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 "-" in the right position.
- (3) Short-connecting, heating, disposing of into fire and disassembling the battery are prohibited.

13. Shelf Life 2 years after delivery under room Temp. or other proper storage conditions

14. Discharging Curves

- 75 ,24 Hours/Day, E.P.V: 0.9V Continuous Discharging Curves (Figure 1)
- 10 ,24 Hours/Day, E.P.V: 0.9V Continuous Discharging Curves (Figure 2)
- 3.9 ,24 Hours/Day, E.P.V: 0.9V Continuous Discharging Curves (Figure 3)

15. Battery Dimensions & Structure (Figure 4)

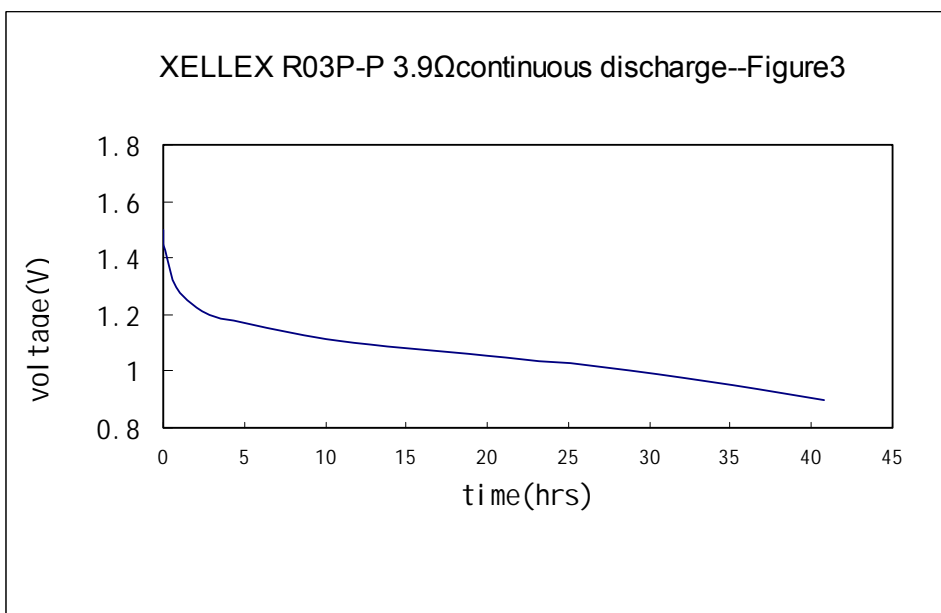
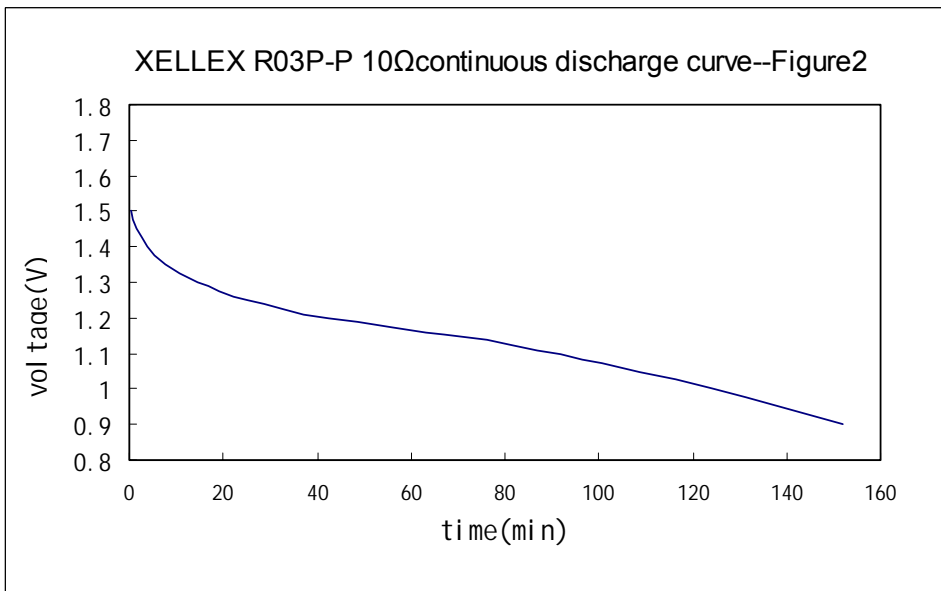
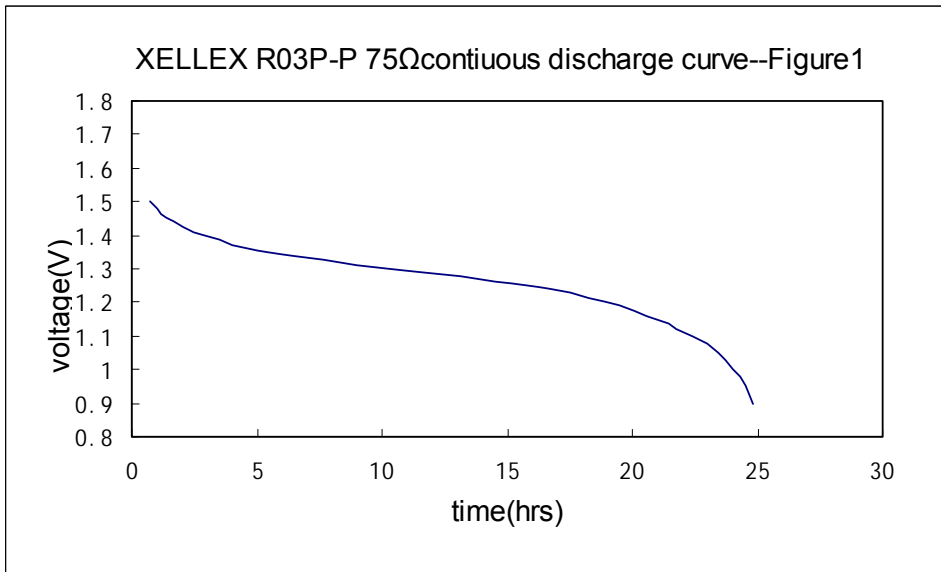


Figure 4:

