

NABC

North American Battery Company

**SPECIFICATION FOR
LITHIUM MANGANESE DIOXIDE
BATTERY
Type :CR123A**

Approved by: S. Provost – Director of Business Development

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1. GENERAL DESCRIPTION

This document contains specification for a CR123 primary Lithium Manganese Dioxide non-rechargeable cell. This 3 volt cell is mainly for use as a power source for cameras. The cell will operate safely (i.e. without venting, overheating, fire, explosion, etc.) when used within the limits described in this document.

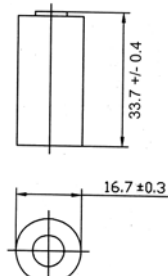
2. NOMINAL SPECIFICATION

(1) NABC Model:	CR-123A
(2) Nominal Voltage:	3.0V
(3) Typical Capacity:	1400 mAh
(4) Nominal Weight:	Approx. 16 grams
(5) Standard Discharge Current (mAh)	10
(6) Maximum Continuous Discharge Current (mAh)	1,000
(7) Maximum Pulse Discharge Current (mAh)	3,000
(8) Dimension w/Label (mm)	33.7 \pm 0.4 x 16.7 \pm 0.3
(9) Temperature Range (C°)	-40 ~+ 60

3. DESIGN, CONSTRUCTION & DIMENSION

The design, construction and physical dimensions of the battery shall be as shown in this drawing, including the label:

(CELL DIMENSIONS)



4. APPEARANCE

There shall be no such defects as deformation, flaw, stain, discoloration or electrolyte leakage, which may adversely affect commercial value of the battery.

5. CHARACTERISTICS

5.1 Nominal Capacity: 1400 mAh (Conditions discharge at 14 mAh , 24 hours per day at 20 +/- 2°C, and cut-off voltage 1.55 volts)

5.2 Test Methods & Performance

5.3 Shelf life: Good shelf life; loses 0.5% per year. Shelf life is specified as 10 years @ 25°C.

Electrical Characteristics

(Conditions: 200 +/-5% ohm load resistance, measuring time 0.3 seconds, temperature 20 +/-2°C)

	Off-load Voltage (V)	On-load Voltage (V)	Short-circuit Current (A)	Acceptance Standard
Initial	Over 3.15	Over 2.8	2A	MIL-STD105E, Class II, Double Sampling, AQL=0.4
After 3 months at 45°C	Over 3.15	Over 2.8	2A	
After 12 mo. Room temp.	Over 3.15	Over 2.8	2A	

Service Output

(Conditions: Test temperature 20 +/-2°C)

	Discharge Condition			Average Minimum Discharge Time		
	Discharge Load	Daily Discharge Time	End Point Voltage (V)	New Battery		
IEC / JIS Standard	14 mA	Continuous	1.55	100 hrs.		

Electrolyte Leakage Proof Characteristics

Item	Condition	Period	Characteristics	Acceptance Std.
Over-discharge Characteristics	Once the completely discharged cell is connected in series with the specified number of fresh cells, the resultant battery pack is short circuited	24 hr.	No leakage, fire, explosion, rupture. Weight loss within 0.5%	UL1642
Storage Characteristics	60° C	30 days		UL1642
	20 +/-2° C	12 months		

Safety Characteristics

Item	Condition	Period	Characteristics	Acceptance Std.
Short-circuit Characteristics	Both terminals connected with copper wire	24 hr.	No rupture, fire, explosion	UL1642
Abusive (Charging)	14 mA	48 hr.		

7. PRECAUTIONS TO ENSURE SAFETY ON BATTERY HANDLING

As to any problems caused by mishandling of batteries as mentioned below, NABC is not in a position to undertake any responsibility

7.1 Disposal of in fire, heating or throwing into water

Do not dispose cells or batteries of in fire or heat them, which may cause explosion of the cells. Do not throw them into water, which will result in malfunctioning of the cells or batteries

*This clause or equivalent should be clearly stated in customer's instructions.

7.2 Insertion into reverse polarity

Do not insert cells or batteries into wrong polarity, that may cause swelling or rupture.

7.3 Short-circuit

Do not short-circuit cells, may result in damaging applications or burns to people by the generated heat inside the cells

*This clause or equivalent should be clearly stated in customer's instructions.

7.4 Disassembling a cell

Do not attempt to disassemble a cell. The cells may be short-circuited.

7.5 Direct soldering

Direct soldering of cells may cause damaging the function of safety vents or internal mechanism of the cells

7.6 Airtight sealed applications

Do not install cells or batteries in airtight sealed applications, that may run a risk of generating gas inside them (oxygen gas, hydrogen gas) resulting in explosion triggered by fire sources (motors or switches)

7.7 Use for other applications or purposes

Do not use cells or batteries for any other applications than specified, that may result in damage not only to the cells or the batteries but also to the applications.

8. CAUTION REMARKS TO BE MENTIONED ON BATTERY PACKAGING

To ensure the safety, items listed below should be stated clearly as cautions.

- Do not disassemble or mutilate, may cause burns.
- Do not incinerate or heat, may cause burns, burst or release toxic materials.
- Do not short circuit, may cause burns.
- Keep away from children.