SAMSUNG C&T

Pleomax LR03 Product Specification

Edition: 2016-11

1.0. SCOPE

Scope : This specification defines the technical requirements for alkaline cell, Zn/MnO_2, LR03 Size.

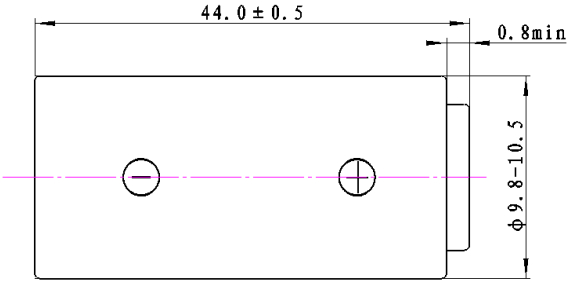
2.0. Reference standards

IEC60086-1 : 2011《Primary batteries-part 1 : General》
IEC60086-2 : 2011《Primary batteries-part 2 : Physical and technologic specifications》
IEC60086-5 : 2011《Primary batteries-part 5 : Safety of batteries with aqueous electrolyte》

3.0. Mechanical requirements

3.1. Dimension :

Figure 1



3.2. Weight

Weight range per cell : 12±1 g.

4.0. Electrical requirements

4.1. Nominal voltage: 1.5 V

4.2. Open-circuit voltage	OCV
Min. :	1.50V
Max. :	1.68V

4.3. Cell service life

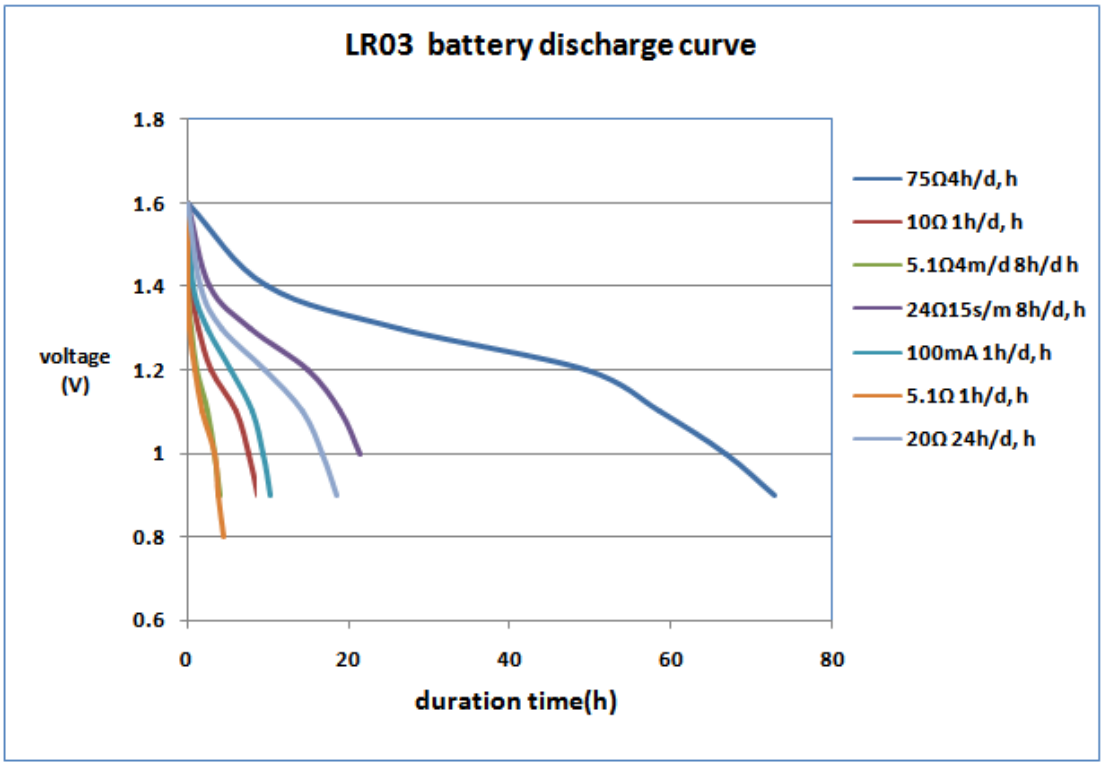
Unless otherwise stated, all measurements are to be performed at a Standard Environment of 20±2℃, 55±20% R.H..

Table 1 cell service life

	Application	Power Load	Cycle Time	Cutoff Voltage	Minimum Average Duration				
					Initial	After 12 months storage	After 36 months storage	After 60 months storage	unit
AAA	Radio/Clock	75Ω	4h/d	0.9	70	64.4	59.5	52.5	h
	Recorder[1)]	10Ω	1h/d	0.9	8	7.4	6.8	6.0	h
	Portable lighting	5.1Ω	4m/h, 8h/d	0.9	3.8	3.5	3.2	2.9	h
	Romote control	24Ω	15s/m, 8h/d	1	20	18.4	17	15	h
	Photo flash	600mA	10s/m, 1h/d	0.9	280	258	238	210	pulse
	Digital audio[2)]	100mA	1h/d	0.9	9	8.2	7.6	6.8	h
	Toy[2)]	5.1Ω	1h/d	0.8	2	1.8	1.7	1.5	h
	※	20Ω	24h/d	0.9	17	15.6	14.5	12.8	h
Note	1) The item is canceled in IEC edition 3.0 (2011-03) 2) The item is add in IEC edition 3.0 (2011-03) ※ The item is established by the Factory								

4.4. Discharge curve

Figure 2



5.0. Safety of batteries

Table 2 Test and requirements

Test		Misuse simulation	requirements
Electrical	D	Incorrect installation	No fire(NF) No explosion (NE)
	E	External short circuit	No fire(NF) No explosion (NE)
	F	overdischarge	No fire(NF) No leakage and distortion
Temperature	G	High temperature store	No leakage

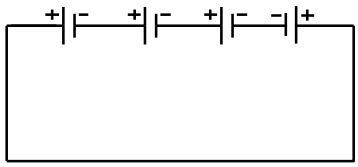
5.1. TEST D - incorrect installation (four batteries in series)

5.1.1. Test procedure (5 groups)

Four undischarged batteries of the same brand, type and origin shall be connected in series with one reversed (B1) as shown in figure2. The circuit shall be connected for 24 h or until the battery case temperature has returned to ambient temperature.

The resistance of the inter-connecting circuitry shall not exceed 0.1Ω.

Figure 3



5.1.2. requirements

See table 2.

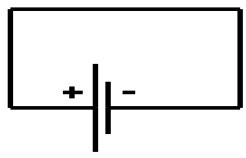
5.2 TEST E – External short circuit

5.2.1 Test procedure (5 groups)

An undischarged battery shall be connected as shown in figure 3.The circuit shall be connected for 24 h or until the battery case temperature has returned to ambient temperature.

The resistance of the inter-connecting circuitry shall not exceed 0.1Ω.

Figure 4



5.2.2. requirements

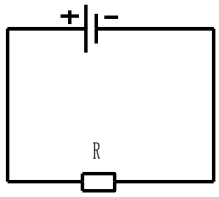
See table 2.

5.3. Test F- Overdischarge

5.3.1. Test procedure (5 groups)

After have finished discharging under the stated condition, continue discharge, until the on-load voltage falls to 40% of the nominal voltage.

Figure 5



5.3.2. requirements

See table 2.

5.4. Test G – High temperature

5.4.1. Test procedure

Batteries stored in the condition of 60℃, 90%±5% R.H. for 20 days.

5.4.2. requirements

See table 2.

6.0. Heave metal contents

Mercury limit (per battery weight)	1ppm
Cadmium limit (per battery weight)	2ppm
Lead limit (per battery weight)	15ppm

7.0. Shelf life : 60 months .