TECHNICAL INFORMATION

ALKALINE MANGANESE BATTERY

R03N

(Made in Indonesia)

2019 Edition

FDK CORPORATION
ALKALINE BATTERY DIVISION
QUALITY ASSURANCE DEPARTMENT

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1. Type

R03N Made in Indonesia (IEC : R03, JIS : R03)

2. Nominal value

(1)Nominal voltage : 1.5 volts

(2)Standard capacity : 500 mAh (75Ωdischarging for 4 hour in a day. discharge at 20℃, End point voltage = 0.9 volts)

3. Dimension

Show Fig.1.

4. Electric characteristics

	Initial	After 1 years	After 2 years
Off-load voltage (V)	1.58	1.50	1.50
On-load voltage (V)	1.50	1.44	1.25

1) Load resistance : 5Ω(The resistance shall be adjusted within±0.05%.), Measure time : 0.3 seconds

2) Test temperature : 20±2℃, Storage temperature : 20±2℃.

5. Service out-put

(1) Average duration

Discharge condition	Initial	After 1 years	After 2years
5.1Ω 4mON/56mOFF Repeat.× 8hr/D (m) EPV=0.9V	**90**	**72**	**59**
5.1Ω 1hr/D (m) EPV=0.8V	**70**	**59**	**49**
50mA 1hr on /11hr off Repeat. (hr.) EPV=0.9V	**7.7**	**6.5**	**5.5**
24Ω 15s ON/45s OFF Repeat.× 8hr/D (hr)EPV=1.0V	**8.0**	**7.5**	**6.5**
75Ω 4hr/D (hr) EPV=0.9V	**28**	**25**	**20**

1) EPV : End point voltage

2) Test temperature : 20±2℃, Storage temperature : 20±2℃.

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6. Electrolyte leakage proof characteristics

(1) Over-discharge test

Visual check at the time when the on-load voltage of test cell first decreases below 40% of the nominal voltage.

Discharge condition	n	Leakage
5.1Ω 4mON/56mOFF Repeat.× 8hr/D	n=8×5lots	0
5.1Ω 1hr/D	n=8×5lots	0

(2) Storage at 45℃, below 70%RH

Period	n	10days	20days	30days	60days	90days
Leakage	40	none	none	none	none	none

(3) Storage at 60℃, 90%RH

Period	n	10days	20days	30days	40days
Leakage	40	none	none	none	none

7. Safety characteristics (abuse test)

(1) Short circuit test

Shorted time	n	12hours	24hours
Explosion	5	none	none

(2) Charging test (150mA)

Charging time	n	12hours	24hours
Explosion	10	none	none

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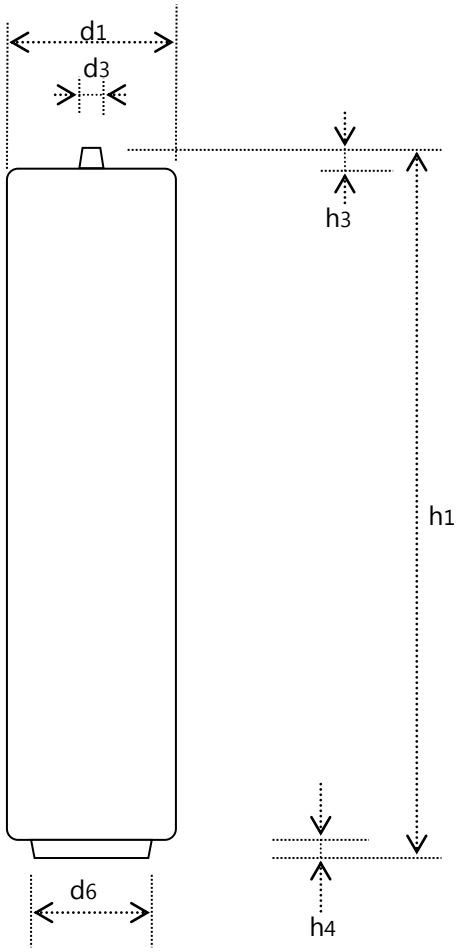
Fig.1 R03 DIMENSION



Unit : mm

h1	Overall height	44.5 max. (43.5 min.)
d6	Outer diameter of the negative contact area	4.3 min.
h4	Recess of negative contact from enclosure	0.5 max.
d3	Diameter of the positive contact	3.8 max. (2.0 min.)
h3	Height of the projected flat contact from the next higher part	0.8 min.
d1	Diameter	10.5 max. 9.8 min.

The numerical values in parentheses are informative reference values.