

TECHNICAL INFORMATION

ALKALINE MANGANESE BATTERY
LR03 Long Life (JEE)

FDK CORPORATION
ALKALINE BATTERY DIVISION
QUALITY ASSURANCE DEPARTMENT



1. Type

LR03 Long Life (JEE) (IEC : LR03, JIS : LR03)

2. Nominal value

(1) Nominal voltage : 1.5 volts

3. Structure

Show Fig.1.

4. Dimension

Show Fig.2.

5. Electric characteristics

	Initial	After 1 years	After 5 years
Off-load voltage (V)	1.60	1.58	1.52
Short-circuit current (A)	10.0	8.0	6.0

1) Test temperature : 20±2°C, Storage temperature : 20±2°C.

6. Service out-put

(1) Average duration

Discharge condition		Initial	After 1 years	After 5 years
5.1Ω 4mON/56mOFF Repeat.× 8hr/D (m) EPV=0.9V	Normal	220	213	206
	JIS/IEC(MAD)	130	117	—
24Ω 15s ON/45s OFF Repeat.× 8hr/D (hr)EPV=1.0V	Normal	18	18	17
	JIS/IEC(MAD)	14.5	13.1	—
5.1Ω 1hr/D (m) EPV=0.8V	Normal	220	215	205
	JIS/IEC(MAD)	120	108	—
50mA 1hr on /11hr off Repeat. (hr.) EPV=0.9V	Normal	20	19	18
	JIS/IEC(MAD)	12	10.8	—

1) EPV : End point voltage

2) Test temperature : 20±2°C, Storage temperature : 20±2°C.

3) MAD=Minimum average duration

(Minimum average time on discharge which is met by a sample of batteries)

*This data are not intended to make or imply any guarantee or warranty.



7. 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°C, below 70%RH

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

(3) Storage at 60°C, 90%RH

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

8. Safety characteristics (abuse test)

(1) Short circuit test

Shorted time	n	24hours
Explosion	20	none

(2) Incorrect installation (four batteries in series)

Charging time	n	24hours
Explosion	20	none

9. Operating temperature range

-10°C~50°C(In the state of over 40°C, within 30 day)

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Fig.1 LR03 STRUCTURE

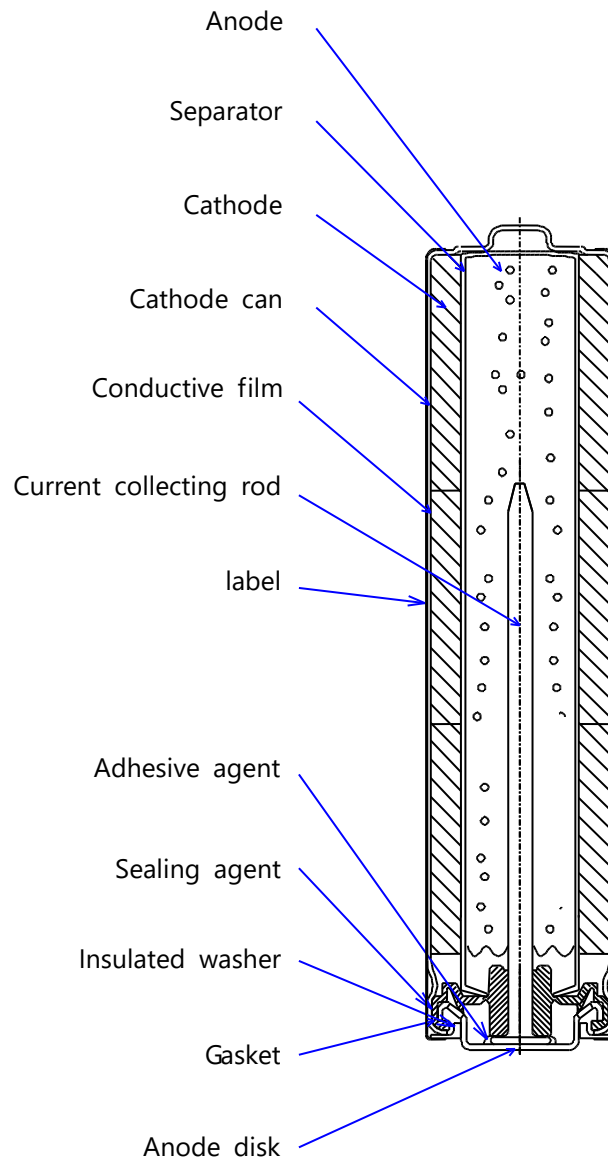
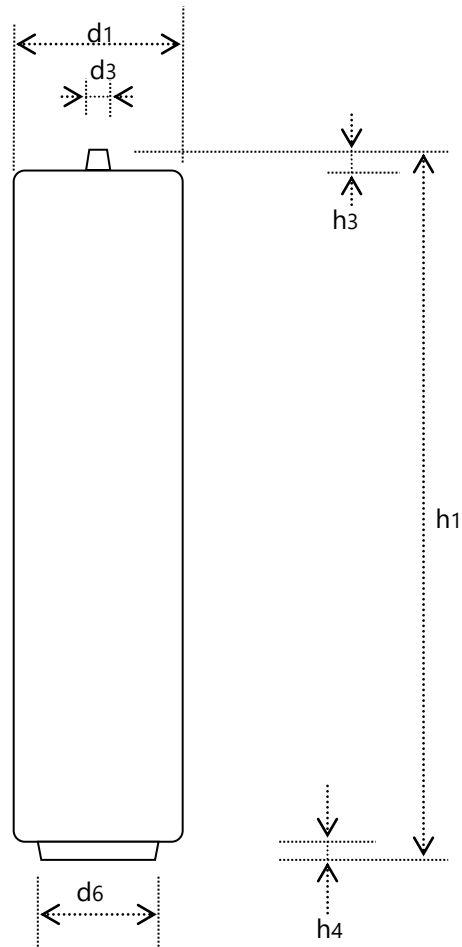


Fig.2 LR03 DIMENSION



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.