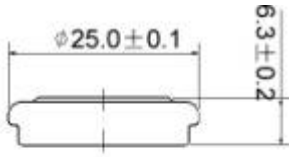
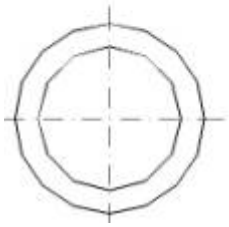
GUANGZHOU MARKYN BATTERY CO.,LTD

# 170H Ni-MH BUTTON CELL

## TECHNICAL DATA

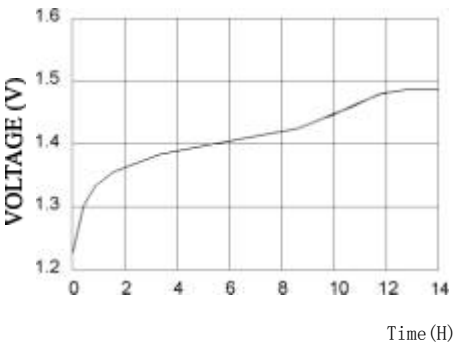


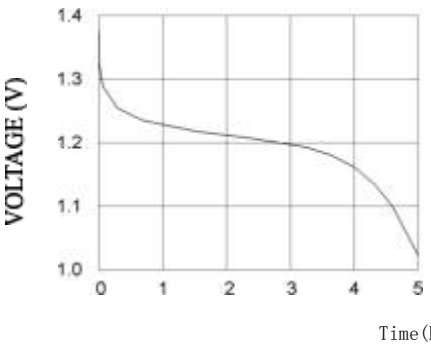
| model | Voltage | Capacity | Recommended Trickle Charge Current | Nominal Charge Current | Normal Charging Time | Nominal Discharge Current | Weight |
|---|---|---|---|---|---|---|---|
| **170H** | **1.2V** | **230mAh** | **7~11.5mA** | **23mA** | **14~16h** | **46mA** | **8.6g** |

## TECHNICAL CHARACTERISTICS

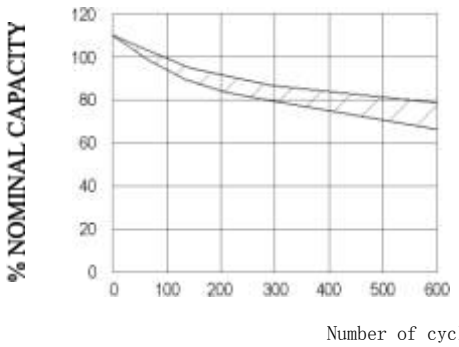
TYPICAL CHARGE CURVE(23mA)




TYPICAL DISCHARGE CURVE(46mA)



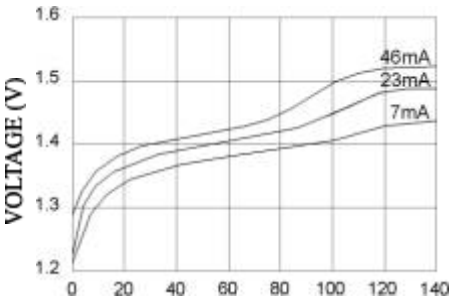

CYCLE LIFE CURVE

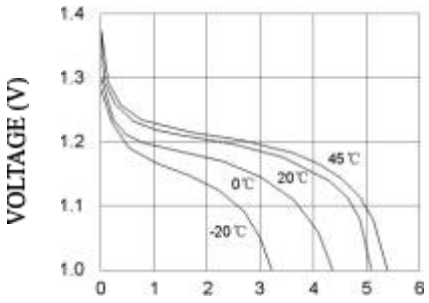


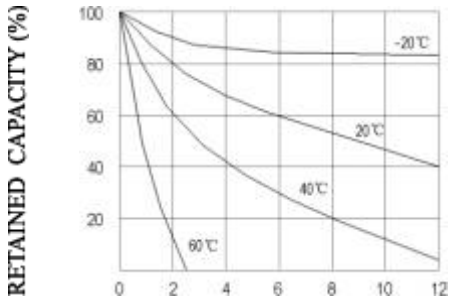

TYPICAL CHARGE CURVE AT VARIOUS CURRENTS

DISCHARGE CURVE AT VARIOUS TEMPERATURES(46mA)

SELF DISCHARGE RATE AT VARIOUS TEMPERATURES




# TECHNICAL INFORMATION

## 1. APPLICATION

This specification applies to the Ni-MH batteries

Model : 170H

## 2. CELL AND TYPE

2.1 Cell :Sealed Ni-MH Button Cell

2.2 Type :Button type

2.3 Size type : 1.2V

## 3. RATINGS

3.1 Nominal voltage : 1.2V

3.2 Nominal capacity : 230mAh/0.2CmA

3.3 Typical weight : 8.6g

3.4 Standard charge : 23mA×14hours

3.5 Rapid charge : 46mA×6hours

Trickle current : 6.9mA

3.6 Discharge cut-off voltage: 1.0V

3.7 Temperature range for operation (Humidity: Max.85%)

| | |
|---|---|
| Standard charge | 0~+45℃ |
| Rapid charge | +10~+45℃ |
| Trickle charge | 0~+45℃ |
| Discharge | -10~+45℃ |

3.8 Temperature range for storage (Humidity: Max.85%)

| | |
|---|---|
| Within 2 years | -20~+35℃ |
| Within 6 months | -20~+45℃ |
| Within a month | -20~+45℃ |
| Within a week | -20~+55℃ |

## 4. ASSEMBLY & DIMENSIONS

Per attached drawing

## 5. PERFORMANCE

5.1 TEST CONDITIONS

The test is carried out with new batteries (within a month after delivery)
ambient conditions

Temperature: +25±5℃

Humidity: 60±20%

Note 1

Standard charge : 23mA×14hours

Standard discharge : 0.2C to 1.0V

5.2 TEST METHOD & PERFORMANCE

| Test | Unit | Specification | Conditions | Remarks |
|---|---|---|---|---|
| Capacity | mAh | ≥230 | Standard Charge/discharge | Up to 3 cycies Are allowed |
| Open Circuit Voltage (OCV) | Voltage (V) | ≥1.3 | After 1 hour standard Charge | |
| Internal Impedance | mΩ/cell | ≤500 | Upon fully charge (1KHz) | |
| High rate Discharge(0.5C) | Minute | ≥60 | Standard charge Before discharge | |
| Discharge Current | mA | 115 | Maximum continuous Discharge current | |
| Over charge | | No leakage Not explosion | 6.9mA(0.03C) charge one year | |
| Charge Retention | mAh | 184 | Standard charge; Storage: 28 days; Standard discharge | |
| Cycle Life | Cycle | ≥500 | IEC285(1993)4.4.1 | |
| Leakage | | No leakage nor Deformation | Fully charge at 23mA, Stand 14 days | |

Note 2 IEC285(1993)4.4.1 cycle life

| Cycle number | Charge | Rest | Discharge |
|---|---|---|---|
| 1-50 | 23mA for 14h | | 46mA for 5h |

50 cycles of test as in the following table condition is repeated, The discharge time of the $100^{th}$,$200^{th}$,$400^{th}$,$500^{th}$ is more than 5 hours. (Ambient temperature is 20±5℃)

5.3 Humidity

The battery shall not leak during the 14 days which it is submitted to the condition of a temperature of 33±3℃ and a relative humidity of 80±5%

## 6. OTHERS

6.1 We recommend you to set the cut-off voltage at 1.0V/cell

6.2 If the cut-off voltage is above 1.1V/cell, the battery may be underutilized resulting insufficient use of the available capacity

6.3 If it is below 1.0V/cell,the battery may have discharge or reverse charge to the cell

## 7. PRECAUTION

The cells shall be delivered in charged condition. Before testing or using, the cell shall be

discharged at 20±5℃ at a constant current of 0.2CmA to a final voltage of 1.0V/cell.

7.1 Avoid throwing cells into a fire or attempting to disassemble them.

7.2 Avoid short circuiting the cells.

7.3 Avoid direct solidarity to cells.

7.4 Observe correct polarity when connecting.

7.5 Do not charge with more than our specified current.

7.6 Use cells only within the specified working temperature range.

7.7 Store cells in dry and cool place.