# LEAD ACID (AGM) BATTERY

# MR5-6

## Applications

› UPS/EPS

› Power systems

› Telecommunications system

› Emergency lighting、Auto control system

› Solar/wind generating storage cyclic

› Other general purpose

## General Features

› High corrosion resistant performance: Pb-Ca multi-alloy grid

› High energy density and power density

› Optimized capability of instant high-current discharging

› Excellent charge acceptance ability

› Excellent deep cycle discharge capability

› Strong high and low temperature performance

› Precision sealing technology

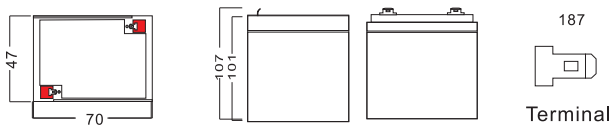Dimension: 70(L)×47(W) ×101(H)×107(TH)  Unit: mm

47

107
101

70

187

Terminal

## Specification

| Nominal Voltage | 6V | | |
|---|---|---|---|
| Nominal Capacity | 5.0Ah | | |
| Design life | 5 years | | |
| Terminal | 187 | | |
| Approx. Weight | Approx0.82kg (1.80lbs) | | |
| Container Material | ABS | | |
| Rated Capacity | 5.00Ah | 20Hour Rate | (0.25A to 5.25V) |
| | 3.90Ah | 3Hour Rate | (1.30A to 5.25V) |
| | 3.30Ah | 1Hour Rate | (3.30A to 4.80V) |
| Internal resistance | Full charged at 25°C: 25.0 mΩ | | |
| Max. Discharge Current | 75A(5S) | | |
| Operating Temperature | Discharge: -20 ~50℃(-4~ 122°F) | | |
| | Charge: -20 ~50?(-4~ 122°F) | | |
| | Storage: -20 ~50℃(-4~ 122°F) | | |
| Charge Method (25 °C) | Charge current: Max.1.25A；Recom.0.50A | | |
| | Float Charge voltage(-3mV/℃）： | | |
| | 6.75-6.90V,recom.6.75V(Full floating system） | | |
| | 6.75-6.90V,recom.6.81V(Cycle use system） | | |
| | Equalize charge:6.90-7.05V,recom.7.05V(-4mV/ °C) | | |
| | Cycle charge:7.20-7.50V,recom.7.20V(-5mV/ °C) | | |
| Self discharge | 3% of capacity declined per month at 25°C | | |

## Constant Current Discharge Characteristics   Unit: A (25℃, 77℉)

| FV/Time | 5min | 10min | 15min | 30min | 1h | 2h | 3h | 4h | 5h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.60V | 19.8 | 13.0 | 9.65 | 6.33 | 3.30 | 1.89 | 1.38 | 1.11 | 0.940 | 0.620 | 0.495 | 0.265 |
| 1.65V | 19.7 | 12.4 | 8.85 | 6.01 | 3.10 | 1.82 | 1.34 | 1.07 | 0.920 | 0.610 | 0.490 | 0.260 |
| 1.70V | 16.1 | 11.7 | 8.25 | 5.82 | 3.00 | 1.78 | 1.32 | 1.02 | 0.910 | 0.600 | 0.480 | 0.255 |
| 1.75V | 15.0 | 11.1 | 7.70 | 5.69 | 2.90 | 1.74 | 1.30 | 1.00 | 0.870 | 0.585 | 0.470 | 0.250 |
| 1.80V | 13.8 | 10.5 | 7.15 | 5.50 | 2.80 | 1.69 | 1.23 | 0.980 | 0.835 | 0.570 | 0.460 | 0.240 |

## Constant Power Discharge Characteristics   Unit: W/cell (25℃, 77℉)

| FV/Time | 5min | 10min | 15min | 30min | 1h | 2h | 3h | 4h | 5h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.60V | 37.2 | 23.3 | 17.7 | 10.7 | 6.05 | 3.54 | 2.61 | 2.09 | 1.78 | 1.17 | 0.959 | 0.525 |
| 1.65V | 34.3 | 22.1 | 16.6 | 10.6 | 5.69 | 3.41 | 2.53 | 2.03 | 1.74 | 1.15 | 0.941 | 0.511 |
| 1.70V | 31.3 | 21.4 | 15.8 | 10.6 | 5.52 | 3.34 | 2.49 | 1.93 | 1.69 | 1.14 | 0.933 | 0.507 |
| 1.75V | 28.4 | 20.8 | 15.3 | 10.5 | 5.36 | 3.27 | 2.46 | 1.90 | 1.66 | 1.09 | 0.912 | 0.496 |
| 1.80V | 25.5 | 20.1 | 14.6 | 10.4 | 5.28 | 3.24 | 2.39 | 1.88 | 1.62 | 1.06 | 0.893 | 0.493 |

## Discharge characteristic

Discharge voltage(V/cell)

2.10 2.00 1.90 1.80 1.70 1.60 1.50 1.40 1.30 1.20

1 2 4 6 8 10 20 40 60 2 4 6 8 10 20

0.2C 0.1C 0.05C
0.6C 0.4C
3C 2C 1C

min — hour
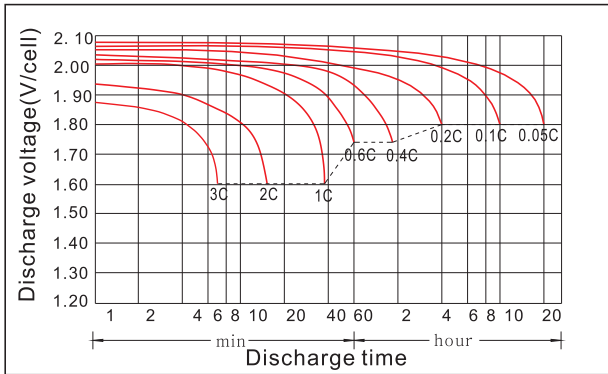
Discharge time

## Charging characteristic

Charge capacity (%) / Charge current (CA) / Chrage voltage (V/cell)

Constant charge at 0.1CA-2.35V/cell(25℃)

120 / 2.40 — Charge voltage
100 / 2.30 — Charge capacity
80 / 0.10 / 2.20
60 / 0.08 / 2.10
40 / 0.06 / 2.00 — 100% DOD
20 / 0.04 / 1.90 — 50% DOD
0 / 0.02 / 1.80 — Charge current
0 / 0

0 4 8 12 16 20 24

Time(hour)
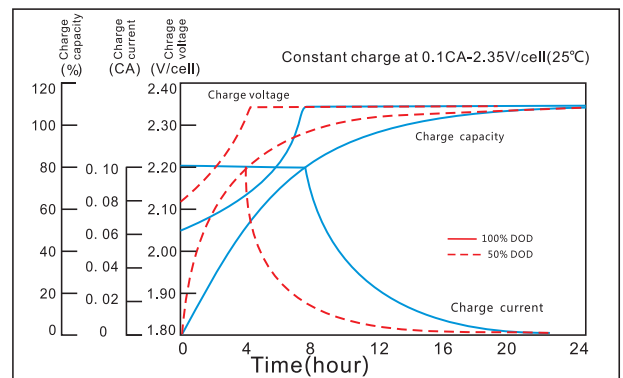
## The effect of temperature on capacity

Capacity(%)

120 100 80 60 40 20 0

-20 -10 0 10 20 30 40 50

Ambient temperature(℃)
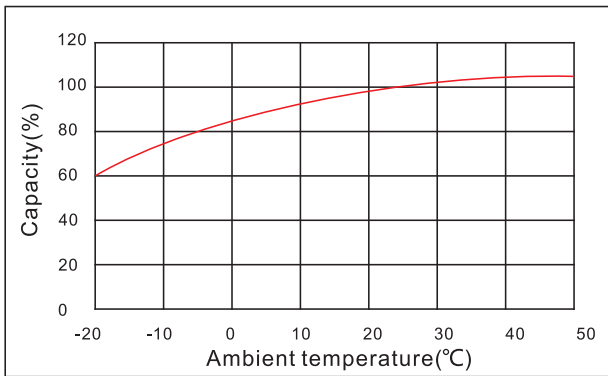
## The effect of discharge depth on cycle life

Capacity(%)

120 100 80 60 40 20 0

0 200 400 600 800 1000 1200 1400

100%DOD    50%DOD    30%DOD

Number of cycles
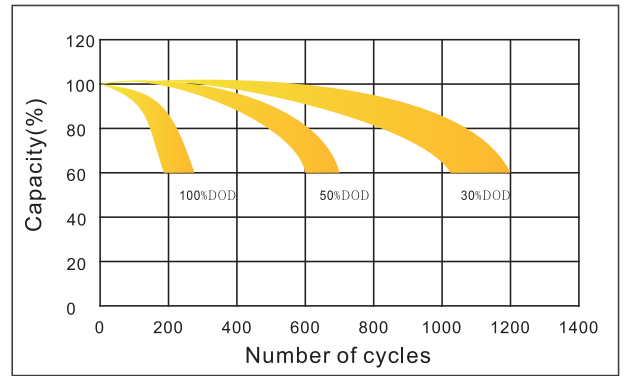
## Curves of self-discharge

Capacity(%)

100 90 80 70 60 50 40

0 3 6 9 12 15 18

0℃
20℃    10℃
40℃    30℃

Storage time(months)
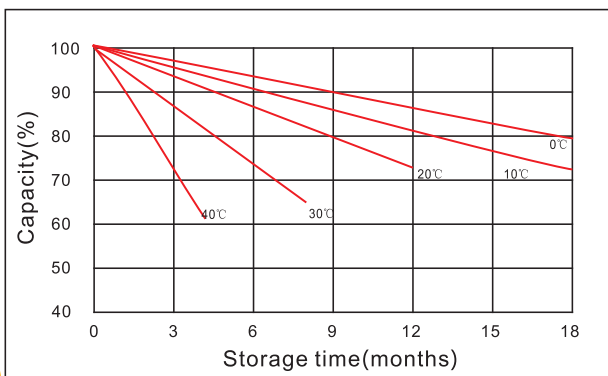
## The effect of temperature on float life

Life(year)

7.5 6.0 4.5 3.0 1.5 0

10 20 30 40 50 60

Ambient temperature(℃ )