

## General features for MPG (GEL) battery

- \* Nanometer SiO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> gelled electrolyte technology for gas recombination of up to 99% and freedom from electrolyte maintenance or water adding.
- \* Computer designed lead, calcium tin alloy grid for high power density.
- \* Not restricted for air transport-complies with IATA/ICAO Special Provision A67.UL-recognized component.
- \* Long service life, float or cyclic applications, specially suitable for motive power applications, such as golf trailer, sruubber, folklift, etc.
- \* Maintenance-free operation. Lower self discharge.
- \* Case and cover available in both standard and flame retardant ABS.
- \* The design life to 12V GEL battery is 15years, the deep discharge cycles increased over 50% as compared with the AGM battery.



**Maxton Power Tech Co., Ltd**  
www.maxtonpower.com  
info@maxtonpower.com

**MPG12-50 (12V50Ah)**

## Specifications

|                               |              |                      |                      |
|-------------------------------|--------------|----------------------|----------------------|
| Nominal Voltage               |              | 12V                  |                      |
| Rated capacity (20 hour rate) |              | 50Ah                 |                      |
| Dimensions<br>(±2mm)          | Total Height | T16                  | 216 mm (8.50 inches) |
|                               |              | T9                   | 228 mm (8.98 inches) |
|                               | Height       | 208 mm (8.19 inches) |                      |
|                               | Length       | 230 mm (9.1 inches)  |                      |
|                               | Width        | 138 mm (5.43 inches) |                      |
| Weight Approx (±3%)           |              | 17.5Kg (38.6 lbs)    |                      |

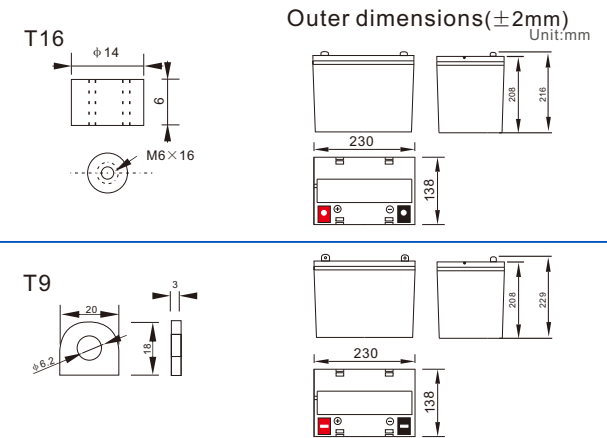
## Battery picture and construction



### Battery Construction

|              |                |                |              |          |
|--------------|----------------|----------------|--------------|----------|
| Component    | Positive plate | Negative plate | Container    | Cover    |
| Raw material | Lead dioxide   | Lead           | ABS          | ABS      |
| Component    | Electrolyte    | Separator      | Safety valve | Terminal |
| Raw material | Gelled acid    | PVC            | Rubber       | Copper   |

## Outer dimension and terminal



## Characteristics

|   |                                    |   |
|---|------------------------------------|---|
| Capacity<br>25°C (77°F)                                 | 20 hour rate(2.5 A, 10.5V)         | 50Ah  |
|   | 10 hour rate(4.7A, 10.5V)          | 47Ah  |
|   | 5 hour rate(8A, 10.5V)             | 40Ah  |
|   | 1 hour rate(30A, 9.6V)             | 30Ah  |
| Internal Resistance                                     | Full charged battery at 25°C(77°F) | Approx 8.3mΩ  |
| Capacity<br>affected<br>by Temperature<br>(20hour rate) | 40°C (104°F)                       | 102%  |
|   | 25°C (77°F)                        | 100%  |
|   | 0°C (32°F)                         | 85%   |
|   | -15°C (5°F)                        | 65%   |
| Remaining capacity<br>Self-Discharge<br>At 25°C(77°F)   | Capacity after 3 month storage     | 91%   |
|   | Capacity after 6 month storage     | 82%   |
|   | Capacity after 12 month storage    | 64%   |
| Terminal type   | T16 (Option T9)                    |   |
| Max. Discharge current 25°C/(77°F)                      | 500A (5Seconds)                    |   |
| Nominal operating temperature                           | 25°C ±5°C(77°F ±9°F)               |   |
| Operating<br>Temperature<br>Range                       | Discharge                          | -20°C ~55°C (-4°F ~131°F)   |
|   | Charge                             | -10°C ~55°C (14°F ~131°F)   |
|   | Storage                            | -20°C ~55°C (-4°F ~131°F)   |
| Charge methods<br>(constant Voltage)<br>At 25°C(77°F)   | Cycle use                          | Initial Charging Current less than 12.5A<br>Voltage 14.5-15.0V<br>Temperature compensation:-20mV/°C |
|   | Standby use                        | Voltage 13.5-13.8V<br>Temperature compensation:-30mV/°C   |

## Constant current discharge (25°C , 77 °F)

## Constant power discharge (25°C , 77 °F)

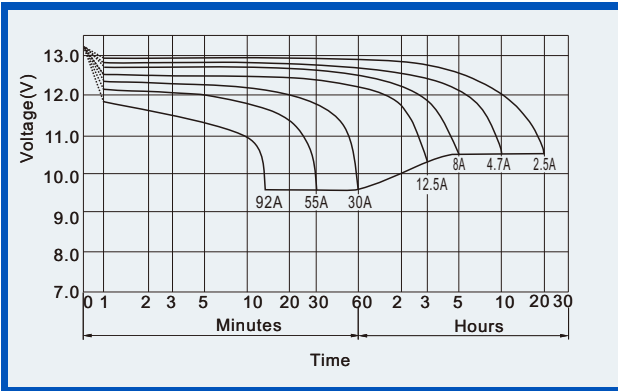
Unit:A Unit:watts

| Time   |   | Unit:A |       |      |      |      |      |      |      |      |      |
|--------|---|--------|-------|------|------|------|------|------|------|------|------|
|        |   | 10min  | 30min | 1h   | 2h   | 3h   | 4h   | 5h   | 8h   | 10h  | 20h  |
| 9.60V  | A | 100.0  | 55.0  | 30.0 | 17.5 | 12.9 | 10.0 | 8.3  | 5.7  | 4.8  | 2.6  |
|        | W | 1060   | 586   | 321  | 189  | 141  | 110  | 91.0 | 63.3 | 52.7 | 29.1 |
| 10.20V | A | 95.0   | 55.5  | 28.2 | 16.7 | 12.5 | 9.8  | 8.1  | 5.7  | 4.7  | 2.5  |
|        | W | 1045   | 613   | 313  | 187  | 141  | 111  | 92   | 64   | 53   | 29   |
| 10.50V | A | 90.0   | 51.0  | 27.5 | 16.3 | 12.2 | 9.6  | 8.0  | 5.6  | 4.7  | 2.5  |
|        | W | 1008   | 574   | 311  | 186  | 140  | 110  | 92   | 64   | 53   | 29   |
| 10.80V | A | 85.0   | 47.0  | 26.5 | 15.9 | 11.9 | 9.5  | 7.8  | 5.5  | 4.6  | 2.4  |
|        | W | 965    | 536   | 303  | 184  | 138  | 110  | 91   | 63   | 54   | 28   |
| 11.10V | A | 80.0   | 42.0  | 25.0 | 15.5 | 11.5 | 9.2  | 7.6  | 5.3  | 4.4  | 2.4  |
|        | W | 920    | 485   | 290  | 181  | 135  | 108  | 90   | 63   | 52   | 28   |

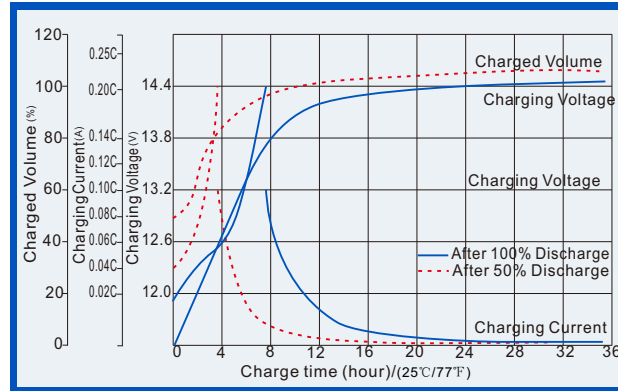
(Above characteristics data are average values obtained within three charge/discharge cycles, not the minimum values.)

# GEL Battery (GEL technology) Maintenance-free Sealed Lead Gel Rechargeable Battery

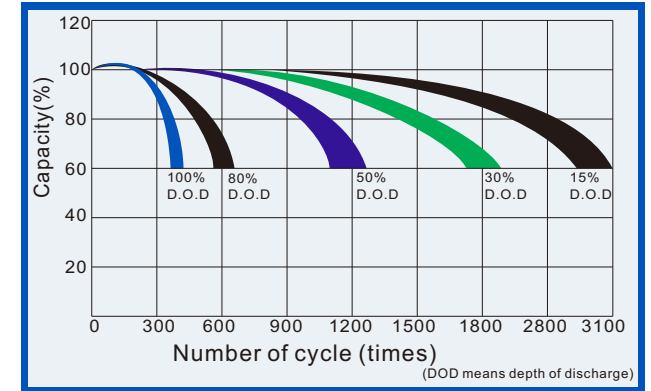
**Discharge characteristics (25°C, 77°F)**



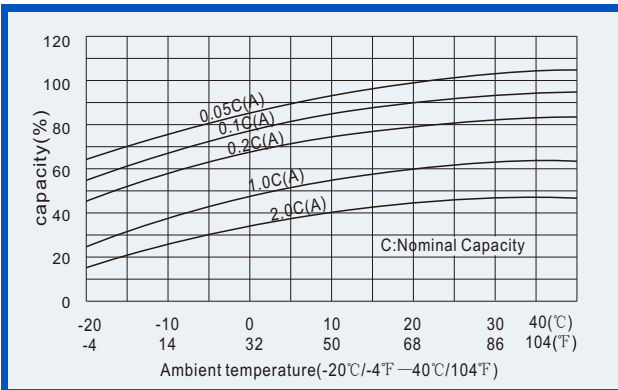
**Charge characteristics (25°C, 77°F)**



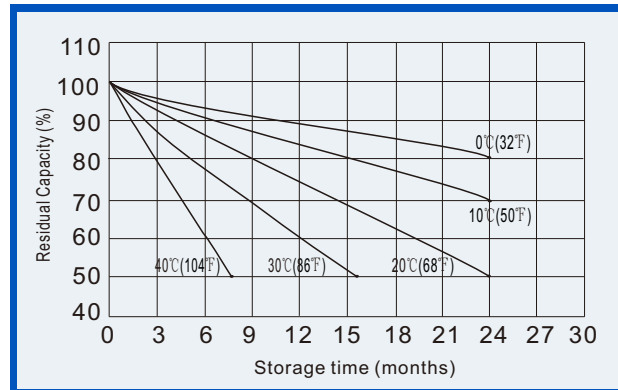
**Life characteristics of Cyclic Use (25°C, 77°F)**



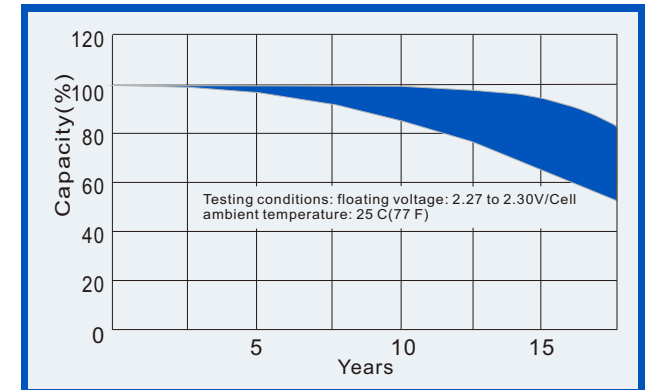
**Effect of Temperature on capacity**



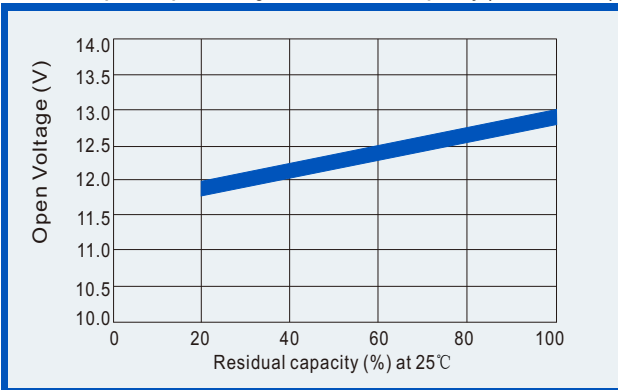
**Self-discharge characteristics**



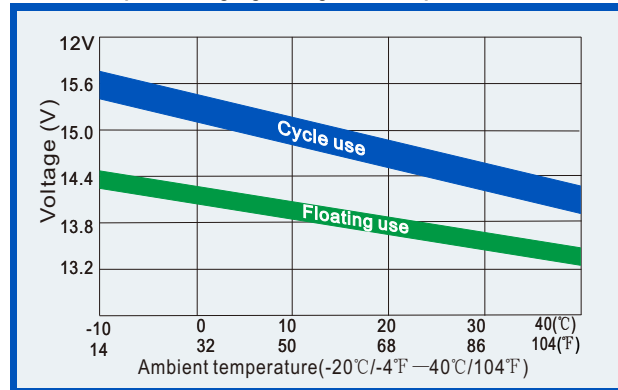
**Life Characteristics of float service (25°C, 77°F)**



**Relationships for open voltage and remained capacity (for reference)**



**Relationship for charging voltage and temperature**



**Temperature effects on floating life**

