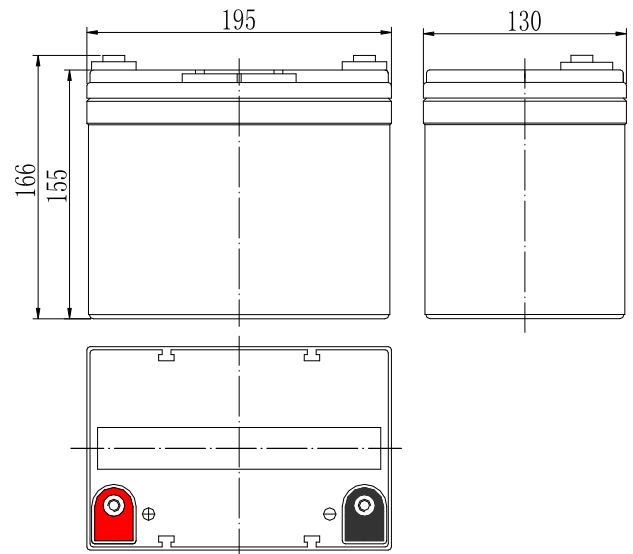


## Specifications

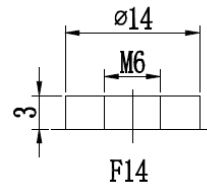
|                                                  |              |                                                          |
|--------------------------------------------------|--------------|----------------------------------------------------------|
| Nominal Voltage                                  |              | 12 V                                                     |
| Capacity<br>(25°C)                               | 10HR(10.8V)  | 33 Ah                                                    |
|                                                  | 5HR(10.5V)   | 29Ah                                                     |
|                                                  | 1HR(9.60V)   | 20.4Ah                                                   |
| Dimension                                        | Length       | 195 ± 2mm (7.68inch)                                     |
|                                                  | Width        | 130 ± 1mm (5.12inch)                                     |
|                                                  | Height       | 155 ± 2mm (6.10inch)                                     |
|                                                  | Total Height | 166 ± 2mm (6.54inch)                                     |
| Approx. Weight                                   |              | 10kg (22.1lbs) ± 4%                                      |
| Terminal type                                    |              | F14                                                      |
| Internal resistance<br>(Fully charged, 25°C)     |              | Approx. 10m Ω                                            |
| Capacity<br>affected by<br>temperature<br>(10HR) | 40°C         | 102%                                                     |
|                                                  | 25°C         | 100%                                                     |
|                                                  | 0°C          | 85%                                                      |
|                                                  | -15°C        | 65%                                                      |
| Self-discharge<br>(25°C)                         | 3 month      | Remaining Capacity: 91%                                  |
|                                                  | 6 month      | Remaining Capacity: 82%                                  |
|                                                  | 12 month     | Remaining Capacity: 65%                                  |
| Nominal operating<br>temperature                 |              | 25°C ± 3°C (77°F ± 5°F)                                  |
| Operating<br>temperature<br>range                | Discharge    | -15°C ~ 50°C (5°F ~ 122°F)                               |
|                                                  | Charge       | -10°C ~ 50°C (14°F ~ 122°F)                              |
|                                                  | Storage      | -20°C ~ 50°C (-4°F ~ 122°F)                              |
| Float charging voltage(25°C)                     |              | 13.50 to 13.80V<br>Temperature compensation:<br>-18mV/°C |
| Cyclic charging voltage(25°C)                    |              | 14.50 to 15.00V<br>Temperature compensation:<br>-30mV/°C |
| Maximum charging current                         |              | 9.9A                                                     |
| Maximum discharge current                        |              | 330A(5 sec.)                                             |
| Designed floating life(20°C)                     |              | 10 years                                                 |



## Dimensions



## Terminal



## Constant Current Discharge Characteristics (A, 25°C)

| F.V/TIME | 10min | 15min | 30min | 60min | 2h   | 3h   | 4h   | 5h   | 8h   | 10h  | 20h  |
|----------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| 9.60V    | 71.9  | 55.4  | 33.2  | 20.4  | 12.1 | 8.58 | 6.93 | 5.92 | 4.07 | 3.36 | 1.78 |
| 9.90V    | 69.8  | 54.1  | 32.5  | 20.1  | 12.0 | 8.53 | 6.89 | 5.89 | 4.05 | 3.35 | 1.78 |
| 10.2V    | 66.9  | 52.1  | 31.5  | 19.6  | 11.9 | 8.47 | 6.85 | 5.85 | 4.02 | 3.34 | 1.77 |
| 10.5V    | 64.0  | 50.3  | 30.7  | 19.2  | 11.7 | 8.42 | 6.80 | 5.81 | 3.99 | 3.32 | 1.76 |
| 10.8V    | 60.4  | 47.7  | 29.6  | 18.6  | 11.4 | 8.16 | 6.59 | 5.63 | 3.87 | 3.30 | 1.75 |

## Constant Power Discharge Characteristics (Watt, 25°C)

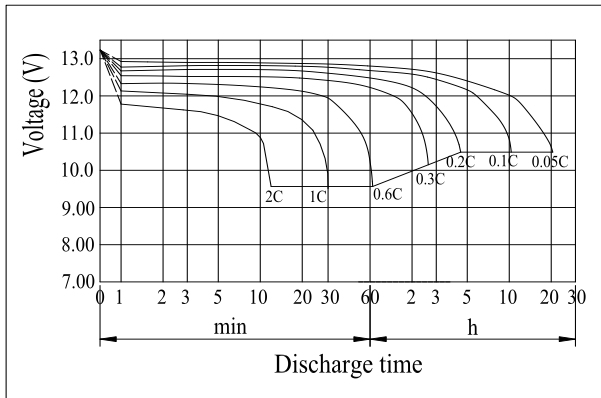
| F.V/TIME | 10min | 15min | 30min | 60min | 2h  | 3h   | 4h   | 5h   | 8h   | 10h  | 20h  |
|----------|-------|-------|-------|-------|-----|------|------|------|------|------|------|
| 9.60V    | 777   | 609   | 372   | 232   | 140 | 101  | 81.5 | 70.0 | 48.4 | 40.1 | 21.4 |
| 9.90V    | 754   | 594   | 365   | 229   | 139 | 100  | 81.1 | 69.6 | 48.1 | 40.0 | 21.3 |
| 10.2V    | 723   | 572   | 354   | 223   | 138 | 100  | 80.5 | 69.1 | 47.8 | 39.9 | 21.3 |
| 10.5V    | 691   | 553   | 345   | 219   | 136 | 99.0 | 79.9 | 68.7 | 47.4 | 39.7 | 21.1 |
| 10.8V    | 653   | 524   | 332   | 212   | 132 | 96.0 | 77.5 | 66.6 | 46.0 | 39.4 | 21.0 |

Note: The above characteristics data can be obtained within three charge/discharge cycles.

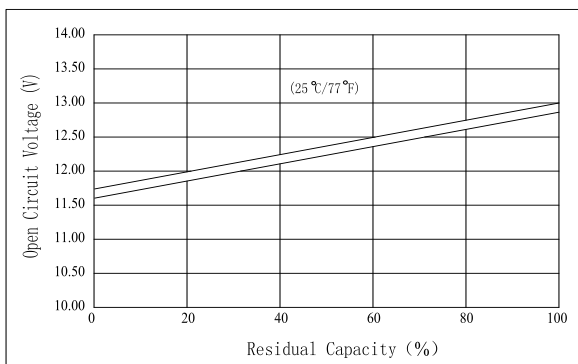
## Construction

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

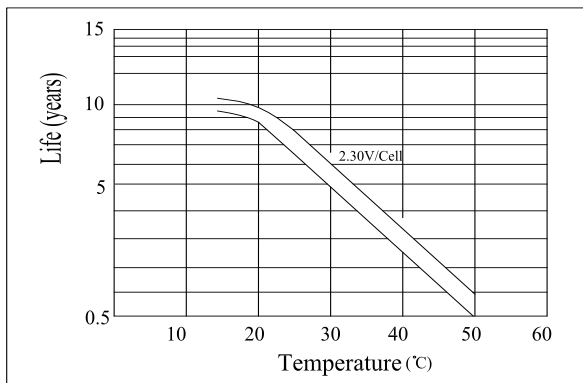
### Discharge Characteristics(25°C)



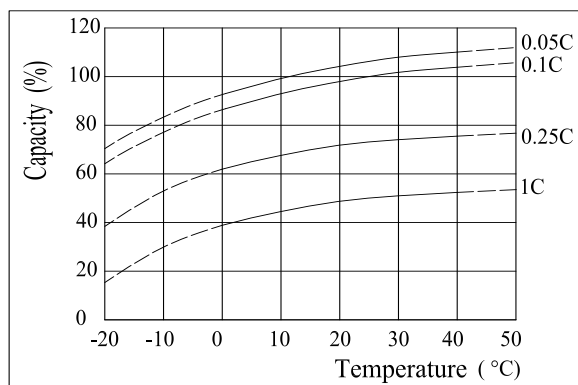
### The Relationship for Open Circuit Voltage and Residual Capacity (25°C)



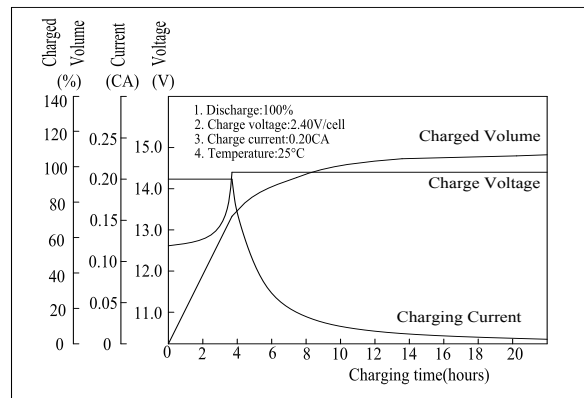
### Floating Life on Temperature



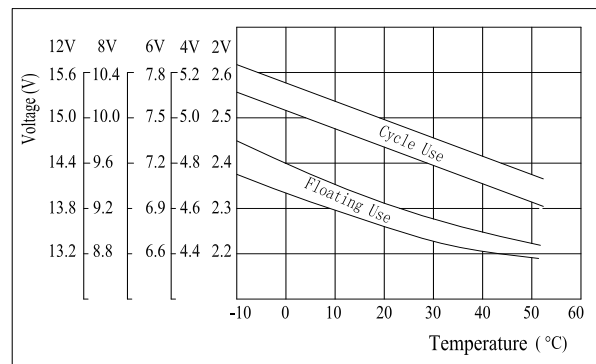
### Effect of Temperature on Capacity



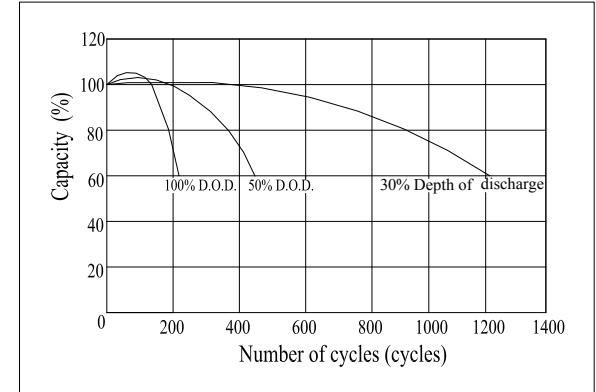
### Charging Characteristics(25°C)



### The Relationship for Charging Voltage and Temperature



### Cycle Life on D.O.D(25°C)



### Self-discharge Characteristics

