

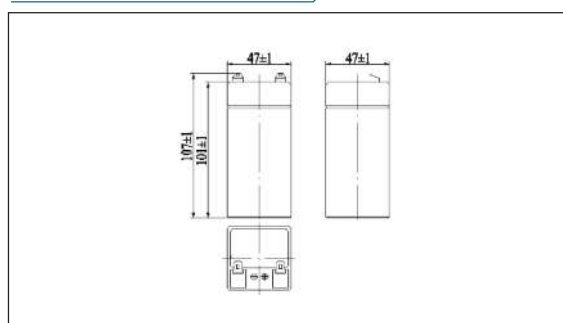
## NP4-4Ah 4V4Ah



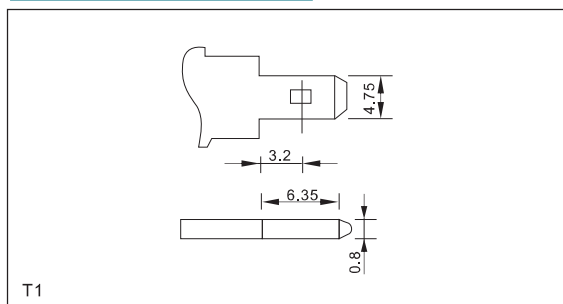
### Specifications

|                               |              |                    |
|-------------------------------|--------------|--------------------|
| Nominal Voltage               |              | 4V                 |
| Rated capacity (20 hour rate) |              | 4Ah                |
| Dimensions                    | Length       | 47±1mm(1.85inch)   |
|                               | Width        | 47±1mm(1.85inch)   |
|                               | Height       | 101±1mm(3.98inch)  |
|                               | Total Height | 107±1mm(4.21inch)  |
| Approx. Weight                |              | 0.46kg(1.01lbs)±5% |

### Outer dimensions (mm)



### Terminal Type (mm)



### Characteristics

|  |             |   |
|--|-------------|---|
| Capacity (25°C)                          | 20HR(3.50V) | 4Ah   |
|  | 10HR(3.50V) | 3.7Ah   |
|  | 1HR(3.20V)  | 2.4Ah   |
| Terminal type                            |             | T1  |
| Internal resistance (Fully charged,25°C) |             | Approx.21m Ω  |
| Capacity affected by temperature (20HR)  | 40°C        | 102%  |
|  | 25°C        | 100%  |
|  | 0°C         | 85%   |
|  | -15°C       | 65%   |
| Self-discharge (25°C)                    | 3 months    | Remaining Capacity:91%                              |
|  | 6 months    | Remaining Capacity:82%                              |
|  | 12 months   | Remaining Capacity:65%                              |
| Nominal operating temperature            |             | 25°C ±3°C(77°F ±5°F)                                |
| Operating temperature 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)             |             | 4.50 to 4.60V<br>Temperature compensation: -6mV/°C  |
| Cyclic charging voltage(25°C)            |             | 4.80 to 5.00V<br>Temperature compensation: -10mV/°C |
| Maximum charging current                 |             | 1.2A  |
| Maximum discharge current                |             | 60A(5 sec.)   |
| Designed floating life(20°C)             |             | 5 years   |

### 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   |

### Constant Current Discharge Characteristics Unit:A(25°C,77°F)

| F.V/Time | 5min | 10min | 15min | 30min | 60min | 2h   | 3h   | 4h   | 5h   | 10h  | 20h  |
|----------|------|-------|-------|-------|-------|------|------|------|------|------|------|
| 4.80V    | 15.3 | 9.68  | 7.56  | 4.26  | 2.62  | 1.43 | 0.99 | 0.82 | 0.70 | 0.38 | 0.20 |
| 4.95V    | 14.8 | 9.39  | 7.38  | 4.17  | 2.58  | 1.42 | 0.99 | 0.82 | 0.69 | 0.38 | 0.20 |
| 5.10V    | 14.2 | 9.00  | 7.11  | 4.05  | 2.52  | 1.41 | 0.98 | 0.81 | 0.69 | 0.38 | 0.20 |
| 5.25V    | 13.6 | 8.62  | 6.86  | 3.95  | 2.47  | 1.39 | 0.97 | 0.80 | 0.68 | 0.37 | 0.20 |
| 5.40V    | 12.8 | 8.13  | 6.50  | 3.80  | 2.39  | 1.36 | 0.94 | 0.78 | 0.66 | 0.37 | 0.20 |

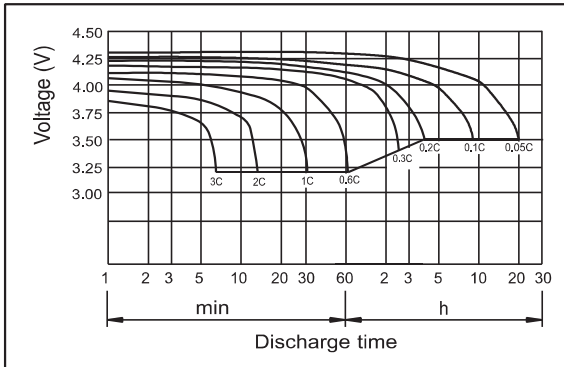
### Constant Power Discharge Characteristics Unit:W(25°C,77°F)

| F.V/Time | 5min | 10min | 15min | 30min | 60min | 2h   | 3h   | 4h   | 5h   | 10h  | 20h  |
|----------|------|-------|-------|-------|-------|------|------|------|------|------|------|
| 4.80V    | 56.8 | 36.4  | 28.7  | 16.3  | 10.1  | 5.59 | 3.93 | 3.26 | 2.78 | 1.52 | 0.81 |
| 4.95V    | 55.1 | 35.3  | 28.0  | 15.9  | 10.0  | 5.56 | 3.90 | 3.24 | 2.76 | 1.51 | 0.81 |
| 5.10V    | 52.9 | 33.8  | 27.0  | 15.5  | 9.71  | 5.51 | 3.88 | 3.21 | 2.74 | 1.50 | 0.80 |
| 5.25V    | 50.6 | 32.4  | 26.1  | 15.1  | 9.52  | 5.42 | 3.85 | 3.19 | 2.72 | 1.49 | 0.80 |
| 5.40V    | 47.7 | 30.6  | 24.7  | 14.5  | 9.22  | 5.29 | 3.73 | 3.10 | 2.64 | 1.46 | 0.78 |

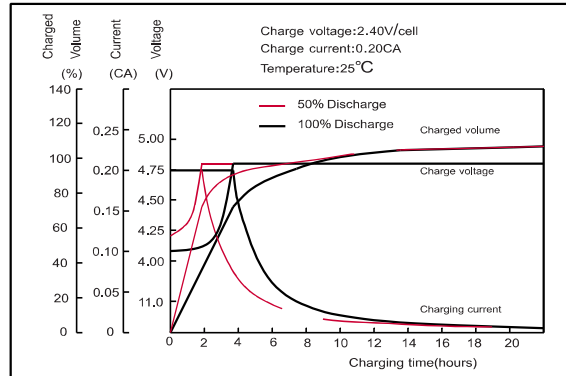
Note: The above characteristics data can be obtained within three charge or discharge cycles.

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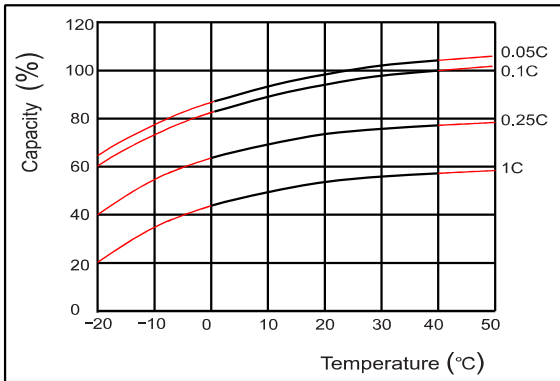
## Discharge characteristics(25°C)



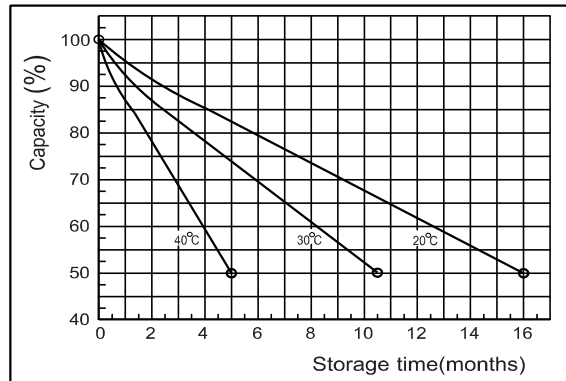
## Charging characteristics (25°C)



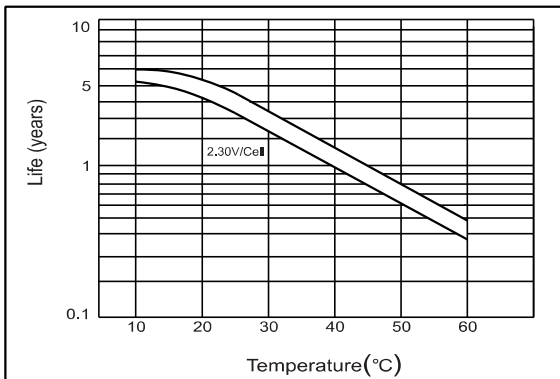
## Effect of temperature on capacity



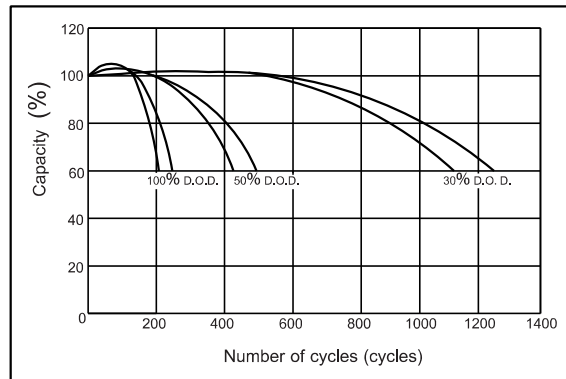
## Self-discharge characteristics



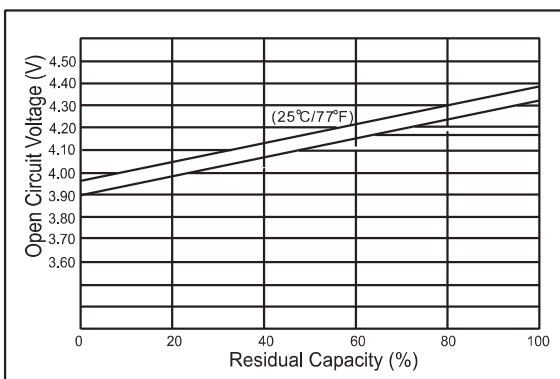
## Floating life on temperature



## Cycle life on D.O.D(25°C)



## The relationship for OCV and Capacity (25°C)



## The relationship for Charging voltage and Temperature

