# SP SERIES-General Purpose

## SP12-36 (12V 36AH)

## Specification

| | | |
|---|---|---|
| Nominal Voltage | 12V | |
| Nominal Capacity(20HR) | 36.0AH | |
| Dimensions | Length | 195±2mm (7.68 inches) |
| | Width | 130±2mm (5.12 inches) |
| | Container Height | 164±2mm (6.46 inches) |
| | Total Height (with Terminal) | 178±2mm (7.01 inches) |
| Approx Weight | Approx 10.5 kg (23.2lbs) | |
| Terminal | T5 | |
| Container Material | ABS | |
| Rated Capacity | 36.0 AH/1.80A | (20hr ,1.80V/cell,25°C/77°F) |
| | 33.5 AH/3.35A | (10hr,1.80V/cell,25°C/77°F) |
| | 30.6 AH/6.12A | (5hr,1.75V/cell,25°C/77°F) |
| | 27.6 AH/9.19A | (3hr,1.75V/cell,25°C/77°F) |
| | 22.6 AH/22.6A | (1hr,1.60V/cell,25°C/77°F) |
| Max. Discharge Current | 540A (5s) | |
| Internal Resistance | Approx 11mΩ | |
| Operating Temp.Range | Discharge : -15～50°C (5～122°F) | |
| | Charge : 0～40°C (32～104°F) | |
| | Storage : -15～40°C (5～104°F) | |
| Nominal Operating Temp. Range | 25±3°C (77±5°F ) | |
| Cycle Use | Initial Charging Current less than10.8 A .Voltage 14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C | |
| Standby Use | No limit on Initial Charging Current Voltage 13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C | |
| Capacity affected by Temperature | 40°C (104°F) | 103% |
| | 25°C ( 77°F) | 100% |
| | 0°C ( 32°F) | 86% |
| Self Discharge | SP series batteries may be stored for up to 6 months at 25°C(77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter. | |


## Applications

- *Uninterruptable Power Supply (UPS)*
- *Electric Power System (EPS)*
- *Emergency backup power supply*
- *Emergency light*
- *Railway signal*
- *Aircraft signal*
- *Alarm and security system*
- *Electronic apparatus and equipment*
- *Communication power supply*
- *DC power supply*
- *Auto control system*
- *Medical equipments*
- *Solar Application*

## Constant Current Discharge (Amperes) at 25 °C (77°F )

| F.V(Time) | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 68.6 | 52.7 | 43.6 | 37.7 | 29.1 | 21.5 | 18.1 | 10.7 | 8.37 | 6.81 | 5.55 | 4.82 | 3.89 | 3.25 | 1.78 |
| 1.80V/cell | 92.1 | 67.3 | 52.7 | 44.5 | 34.4 | 25.0 | 20.3 | 11.7 | 9.01 | 7.27 | 5.97 | 5.17 | 4.12 | 3.35 | 1.80 |
| 1.75V/cell | 103.8 | 74.0 | 57.6 | 47.9 | 35.7 | 25.9 | 21.2 | 12.1 | 9.19 | 7.44 | 6.12 | 5.31 | 4.20 | 3.44 | 1.82 |
| 1.70V/cell | 114.3 | 80.5 | 61.4 | 50.4 | 37.1 | 26.9 | 21.9 | 12.4 | 9.43 | 7.63 | 6.27 | 5.42 | 4.25 | 3.51 | 1.85 |
| 1.67V/cell | 126.0 | 86.9 | 65.3 | 53.5 | 39.2 | 27.7 | 22.4 | 12.7 | 9.84 | 7.90 | 6.45 | 5.54 | 4.32 | 3.58 | 1.87 |
| 1.60V/cel | 139.0 | 94.4 | 69.8 | 57.0 | 41.5 | 28.8 | 22.6 | 13.2 | 10.14 | 8.15 | 6.67 | 5.66 | 4.36 | 3.62 | 1.88 |

## Constant Power Discharge (Watts/cell) at 25 °C (77°F )

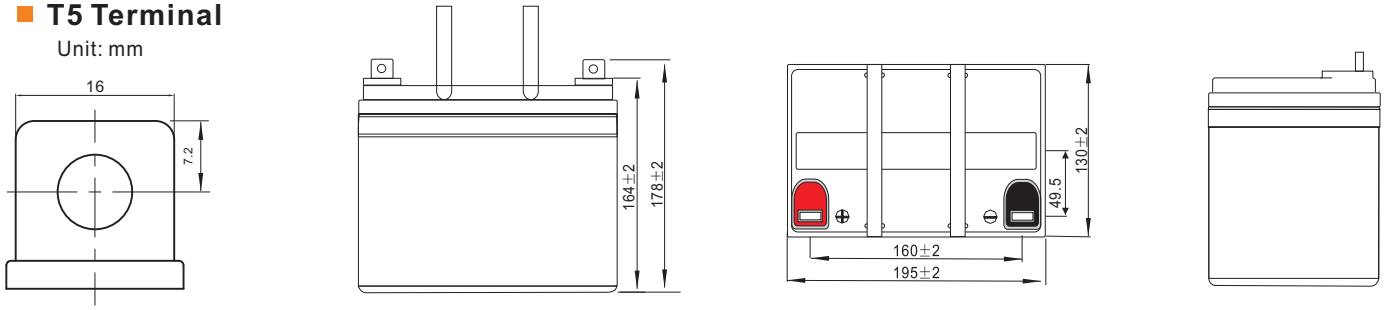
| F.V(Time) | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 125.4 | 97.2 | 81.4 | 71.1 | 55.5 | 41.2 | 35.0 | 20.8 | 16.4 | 13.3 | 10.9 | 9.47 | 7.67 | 6.43 | 3.53 |
| 1.80V/cell | 166.4 | 122.8 | 97.0 | 82.8 | 64.6 | 47.6 | 38.9 | 22.5 | 17.5 | 14.1 | 11.6 | 10.12 | 8.12 | 6.61 | 3.56 |
| 1.75V/cell | 183.7 | 132.8 | 104.6 | 88.3 | 66.4 | 49.0 | 40.5 | 23.2 | 17.7 | 14.4 | 11.9 | 10.39 | 8.24 | 6.79 | 3.59 |
| 1.70V/cell | 196.7 | 141.4 | 110.2 | 92.0 | 68.8 | 50.7 | 41.7 | 23.9 | 18.2 | 14.8 | 12.1 | 10.59 | 8.34 | 6.91 | 3.65 |
| 1.67V/cell | 213.8 | 151.2 | 116.2 | 97.0 | 72.0 | 51.5 | 42.3 | 24.1 | 18.9 | 15.2 | 12.4 | 10.8 | 8.45 | 7.05 | 3.70 |
| 1.60V/cel | 230.4 | 160.5 | 122.3 | 102.2 | 75.5 | 53.4 | 42.5 | 24.9 | 19.3 | 15.6 | 12.9 | 11.0 | 8.52 | 7.11 | 3.71 |

Specifications subject to change without notice.

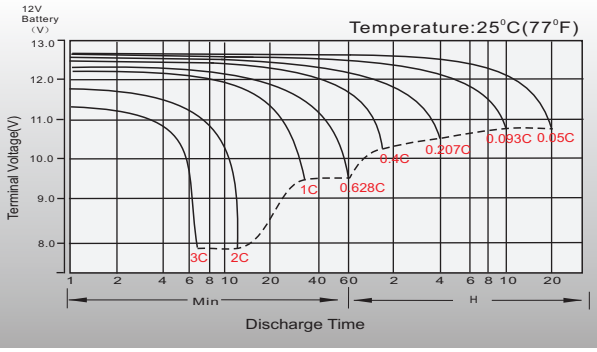
# Dimensions

## T5 Terminal

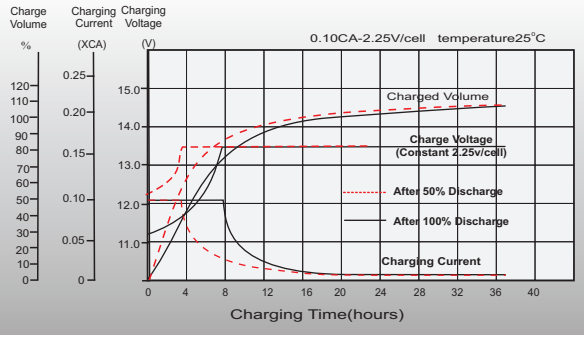
Unit: mm



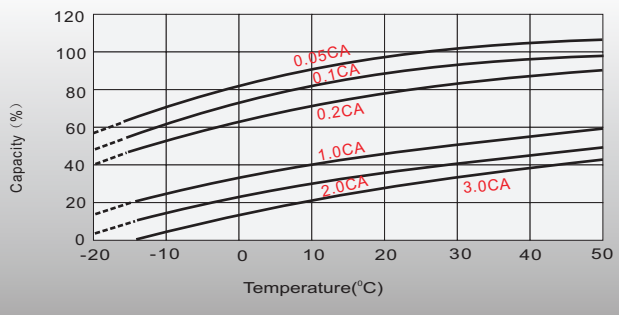

## Discharge Characteristics



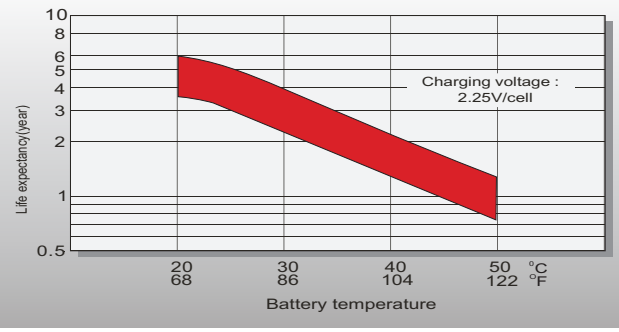

## Float Charging Characteristics



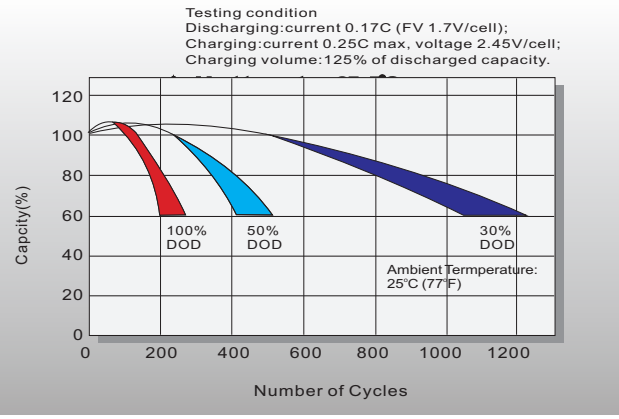

## Temperature Effects in Relation to Battery Capacity



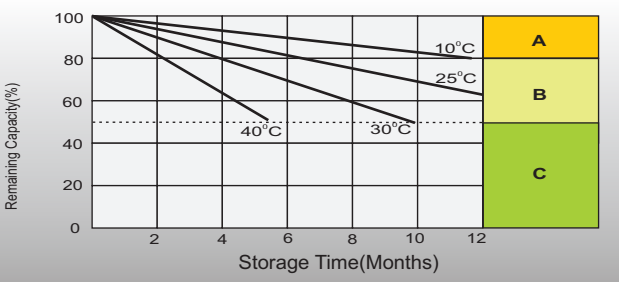

## Effect of Temperature on Long Term Float Life




## Cycle Life in Relation to Depth of Discharge




## Self Discharge Characteristics




**A** No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required.)

**B** Supplementary charge required before use.Optional charging way as below:
1.Charged for above 3 days at limted current 0.25CA and constant volatge 2.25V/cell.
2.Charged for above 20hours at limted current 0.25CA and constant volatge 2.45V/cell.
3.Charged for 8~10hours at limted current 0.05CA .

**C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.