



valve regulated  
sealed lead acid type  
rechargeable battery

**sunbattery®**

# SB12-3.4AH(12V3.4AH)



## Specification

|                                  |   |
|----------------------------------|---|
| Nominal Voltage                  | 12V   |
| Nominal Capacity(20HR)           | 3.4AH   |
| Dimension                        | Length 134 ± 1mm (5.28 inches)  |
|                                  | Width 67 ± 1mm (2.64 inches)  |
|                                  | Container Height 60.5 ± 1mm (2.38 inches)   |
|                                  | Total Height (with Terminal) 66.5 ± 1mm (2.62 inches)   |
|                                  | Approx Weight 1.35 kg (2.98lbs)   |
| Terminal                         | T1  |
| Container Material               | ABS Standard ABS UL94 HB Optional ABS UL94 V0   |
| Rated Capacity                   | 3.40 AH/0.170A (20hr, 1.80V/cell, 25°C/77°F)  |
|                                  | 3.16 AH/0.316A (10hr, 1.80V/cell, 25°C/77°F)  |
|                                  | 2.89 AH/0.578A (5hr, 1.75V/cell, 25°C/77°F)   |
|                                  | 2.60 AH/0.867A (3hr, 1.75V/cell, 25°C/77°F)   |
|                                  | 2.14 AH/2.14A (1hr, 1.60V/cell, 25°C/77°F)  |
| Max. Discharge Current           | 51A (5s)  |
| Internal Resistance              | Approx 45mΩ   |
| 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 than 1.02A. Voltage 14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C   |
|                                  | No limit on Initial Charging Current Voltage 13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C  |
| Standby Use                      | 40°C (104°F) 103%   |
|                                  | 25°C (77°F) 100%  |
|                                  | 0°C (32°F) 86%  |
| Capacity affected by Temperature | SB 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. |
| Self Discharge                   |   |
| Life expectancy                  | 3~5 years at 25°C with charge voltage 2.25V/cell  |

## Applications

- ◆ All purpose
- ◆ 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



Conform to:  
IEC60896-21&22 and/or IEC61427

## 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 | 6.47 | 4.97  | 4.12  | 3.56  | 2.75  | 2.03  | 1.71 | 1.01 | 0.791 | 0.643 | 0.525 | 0.455 | 0.367 | 0.307 | 0.168 |
| 1.80V/cell | 8.69 | 6.35  | 4.98  | 4.21  | 3.25  | 2.36  | 1.92 | 1.10 | 0.851 | 0.687 | 0.563 | 0.488 | 0.389 | 0.316 | 0.170 |
| 1.75V/cell | 9.80 | 6.98  | 5.44  | 4.53  | 3.37  | 2.45  | 2.00 | 1.14 | 0.867 | 0.702 | 0.578 | 0.502 | 0.396 | 0.325 | 0.172 |
| 1.70V/cell | 10.8 | 7.61  | 5.80  | 4.76  | 3.51  | 2.55  | 2.07 | 1.17 | 0.891 | 0.721 | 0.593 | 0.512 | 0.402 | 0.331 | 0.175 |
| 1.65V/cell | 11.9 | 8.21  | 6.17  | 5.06  | 3.70  | 2.61  | 2.11 | 1.19 | 0.929 | 0.746 | 0.609 | 0.523 | 0.408 | 0.338 | 0.177 |
| 1.60V/cell | 13.1 | 8.91  | 6.60  | 5.39  | 3.91  | 2.72  | 2.14 | 1.24 | 0.957 | 0.769 | 0.629 | 0.534 | 0.412 | 0.342 | 0.178 |

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

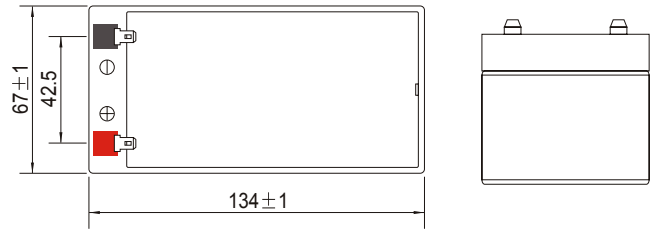
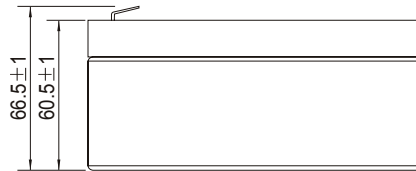
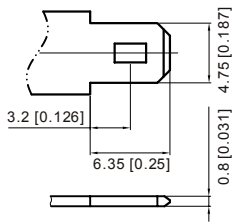
| F.V/Time   | 5min | 10min | 15min | 20min | 30min | 45min | 1h   | 2h   | 3h   | 4h   | 5h   | 6h   | 8h    | 10h   | 20h   |
|------------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|-------|-------|-------|
| 1.85V/cell | 11.8 | 9.18  | 7.69  | 6.71  | 5.25  | 3.90  | 3.30 | 1.96 | 1.54 | 1.26 | 1.03 | 0.90 | 0.725 | 0.607 | 0.333 |
| 1.80V/cell | 15.7 | 11.6  | 9.16  | 7.82  | 6.10  | 4.50  | 3.67 | 2.13 | 1.65 | 1.34 | 1.10 | 0.96 | 0.766 | 0.625 | 0.336 |
| 1.75V/cell | 17.3 | 12.5  | 9.88  | 8.33  | 6.28  | 4.62  | 3.83 | 2.20 | 1.67 | 1.36 | 1.12 | 0.98 | 0.778 | 0.641 | 0.339 |
| 1.70V/cell | 18.6 | 13.4  | 10.4  | 8.69  | 6.50  | 4.79  | 3.93 | 2.25 | 1.72 | 1.39 | 1.15 | 1.00 | 0.788 | 0.653 | 0.345 |
| 1.65V/cell | 20.2 | 14.3  | 11.0  | 9.16  | 6.80  | 4.87  | 4.00 | 2.27 | 1.78 | 1.44 | 1.18 | 1.02 | 0.798 | 0.665 | 0.349 |
| 1.60V/cell | 21.8 | 15.2  | 11.5  | 9.65  | 7.13  | 5.05  | 4.01 | 2.35 | 1.83 | 1.48 | 1.21 | 1.04 | 0.805 | 0.672 | 0.351 |



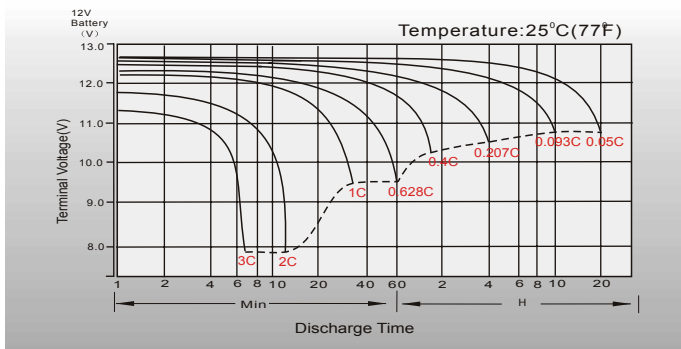
# Dimensions

## T1 Terminal

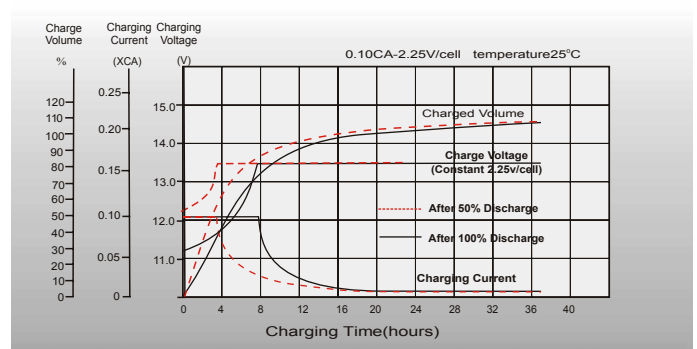
Unit: mm [inches]



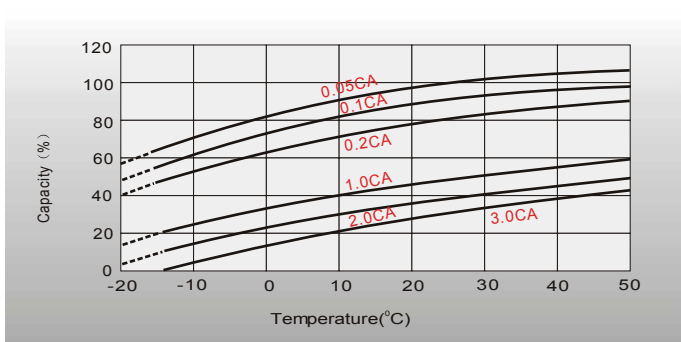
## Discharge Characteristics



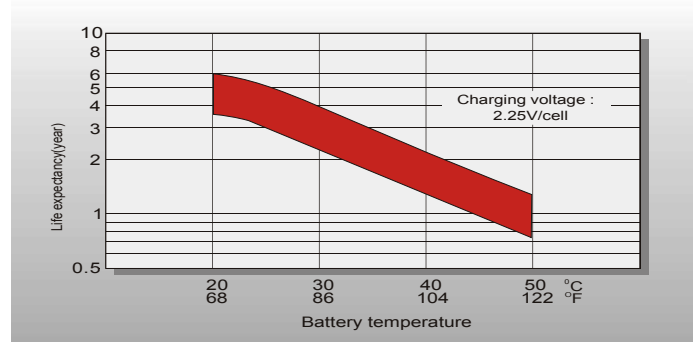
## Float Charging Characteristics



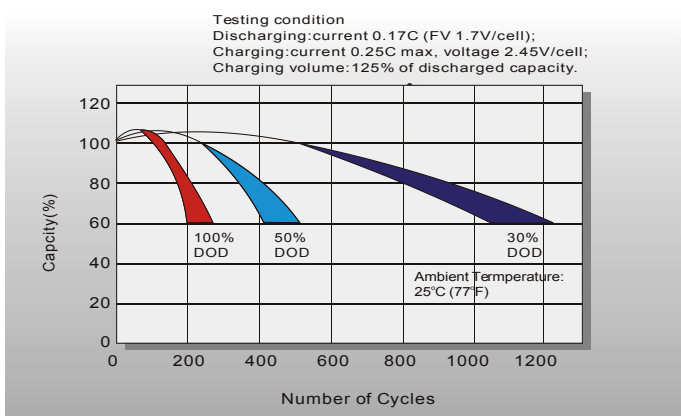
## Temperature Effects in Relation to Battery Capacity



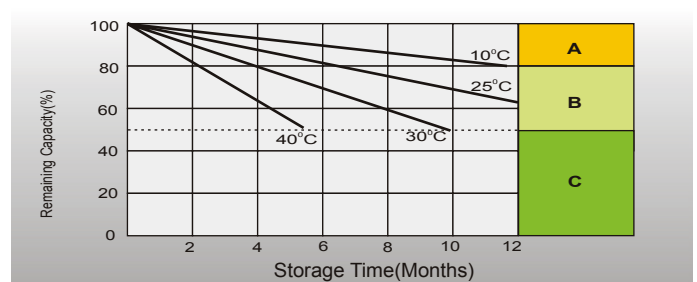
## Effect of Temperature on Long Term Float Life



## 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 limited current 0.25CA and constant voltage 2.25V/cell.
  2. Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.
  3. Charged for 8-10 hours at limited current 0.05CA.
- C** Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this is reached.