



valve regulated  
sealed lead acid type  
rechargeable battery

**sunbattery**®

# SB12-7.0 (12V7.0AH) (SB12-7 V0)



## Specification

Nominal Voltage	12V	
Nominal Capacity(20HR)	7.0AH	
Dimension	Length	151±2mm (5.94 inches)
	Width	65±1mm (2.56 inches)
	Container Height	94±1mm (3.70 inches)
	Total Height (with Terminal)	99.5±1mm (3.92 inches)
	Approx Weight	Approx 2.30 kg (5.07lbs)
Terminal	T1 / T2	
Container Material	ABS UL.94:HB0(optional ABS UL.94:V0)	
Rated Capacity	7.00 AH/0.350A	(20hr ,1.80V/cell,25°C/77°F)
	6.51 AH/0.651A	(10hr,1.80V/cell,25°C/77°F)
	5.95 AH/1.19A	(5hr,1.75V/cell,25°C/77°F)
	5.22 AH/1.74A	(3hr,1.75V/cell,25°C/77°F)
	4.37 AH/4.37A	(1hr,1.60V/cell,25°C/77°F)
Max. Discharge Current	105A (5s)	
Internal Resistance	Approx 23mΩ	
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 2.1A.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	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.	
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


## 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	13.3	8.86	7.31	6.43	5.26	4.11	3.40	2.09	1.57	1.29	1.10	0.95	0.756	0.631	0.347
1.80V/cell	16.0	10.6	8.6	7.35	5.88	4.51	3.68	2.24	1.68	1.38	1.15	0.99	0.784	0.651	0.350
1.75V/cell	19.2	12.2	9.5	8.13	6.30	4.83	3.89	2.33	1.74	1.41	1.19	1.02	0.805	0.667	0.354
1.70V/cell	22.2	13.6	10.5	8.80	6.72	5.06	4.06	2.42	1.78	1.44	1.21	1.04	0.817	0.678	0.360
1.65V/cell	24.5	14.7	11.3	9.43	7.07	5.28	4.20	2.49	1.83	1.48	1.24	1.06	0.830	0.686	0.365
1.60V/cell	27.0	16.0	12.1	9.95	7.45	5.50	4.37	2.56	1.87	1.52	1.27	1.09	0.848	0.698	0.367

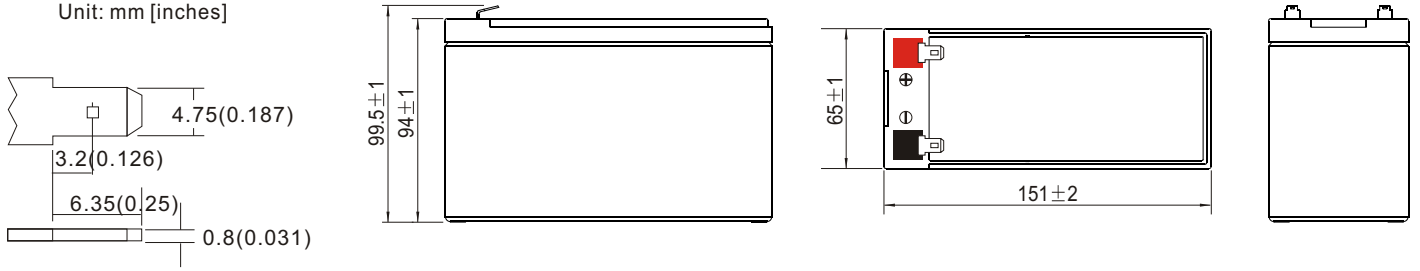
## Constant Power Discharge (Watts) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	24.9	16.6	13.7	12.1	10.0	7.88	6.57	4.06	3.07	2.53	2.15	1.87	1.492	1.250	0.686
1.80V/cell	28.9	19.5	15.9	13.8	11.1	8.58	7.06	4.32	3.26	2.67	2.25	1.94	1.543	1.286	0.692
1.75V/cell	34.3	22.1	17.5	15.1	11.8	9.14	7.43	4.49	3.35	2.73	2.31	1.99	1.581	1.317	0.698
1.70V/cell	39.2	24.3	19.1	16.2	12.5	9.52	7.73	4.63	3.43	2.79	2.35	2.03	1.603	1.336	0.710
1.65V/cell	42.6	26.0	20.2	17.2	13.1	9.88	7.95	4.76	3.51	2.85	2.40	2.07	1.625	1.351	0.719
1.60V/cell	46.2	27.7	21.4	17.8	13.6	10.2	8.21	4.86	3.58	2.91	2.44	2.11	1.656	1.372	0.722

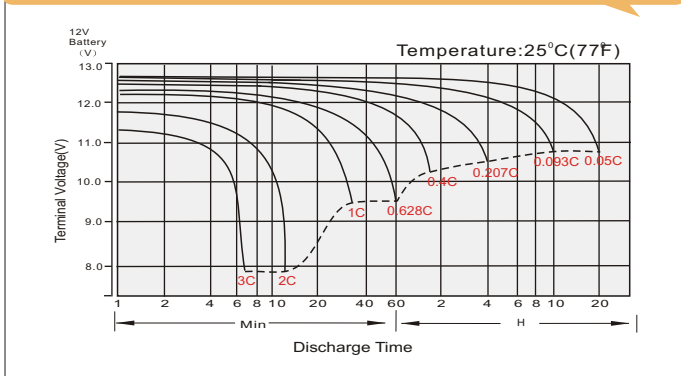
# Dimensions

## T1 Terminal

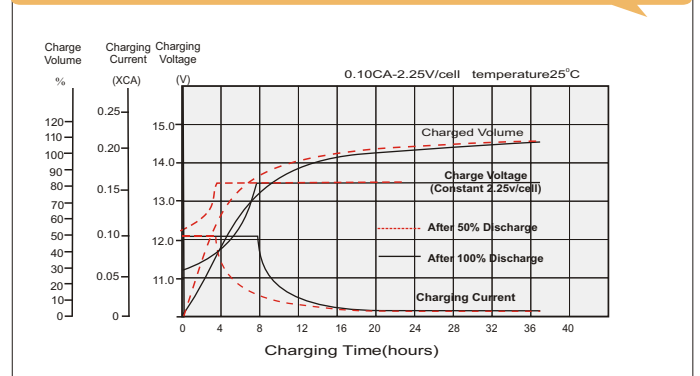
Unit: mm [inches]



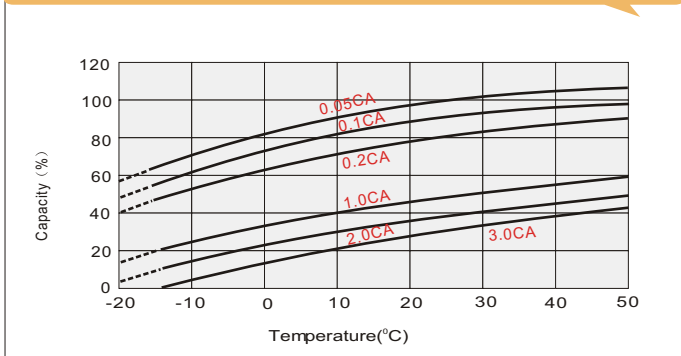
## Discharge Characteristics



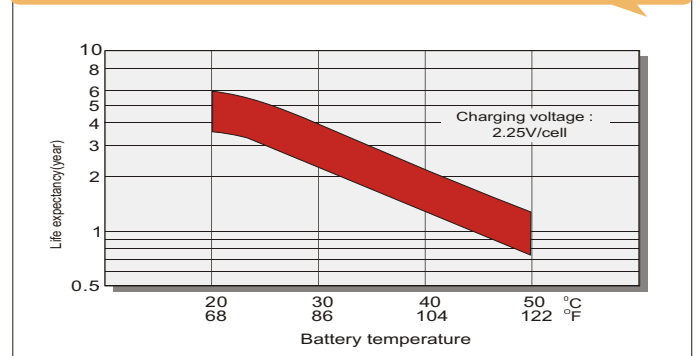
## Float Charging Characteristics



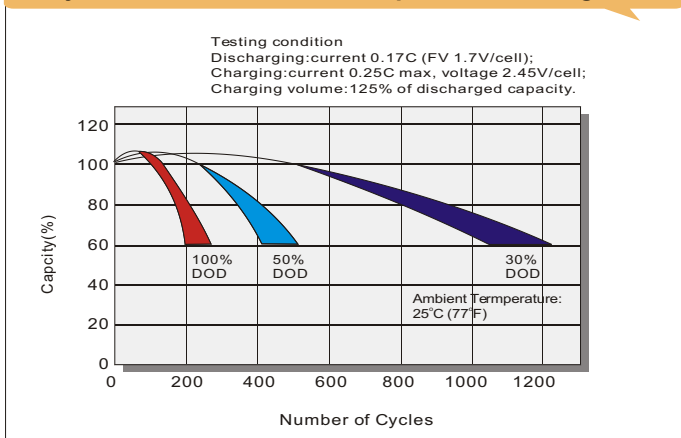
## Temperature Effects in Relation to Battery Capacity



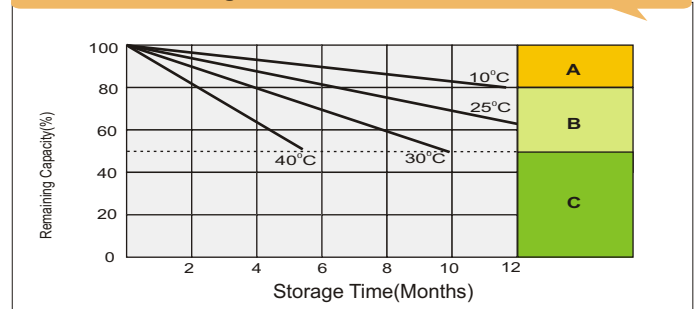
## Effect of Temperature on Long Term Float Life



## 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.