



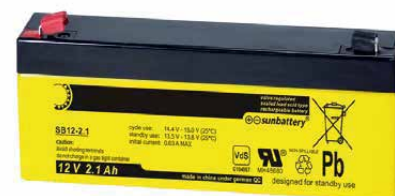
valve regulated  
sealed lead acid type  
rechargeable battery

⊕⊖ **sunbattery**®

# SB12-2.1(12V2.1AH) (SB12-2.1V0)






## Specification

Nominal Voltage	12V
Nominal Capacity(20HR)	2.3AH
Dimensions	Length 178±2mm (7.00 inches)
	Width 35±1mm (1.38 inches)
	Container Height 60±1mm (2.36 inches)
	Total Height (with Terminal) 66±1mm (2.60 inches)
	Approx Weight Approx 0.96 kg (2.12lbs)
Terminal	T1
Container Material	ABS Standard ABS UL94 HB Optional ABS UL94 V0
Rated Capacity	2.30 AH/0.115A (20hr, 1.80V/cell, 25°C/77°F)
	2.14AH/0.214A (10hr, 1.80V/cell, 25°C/77°F)
	1.93 AH/0.386A (5hr, 1.75V/cell, 25°C/77°F)
	1.69 AH/0.563A (3hr, 1.75V/cell, 25°C/77°F)
	1.40 AH/1.40A (1hr, 1.60V/cell, 25°C/77°F)
Max. Discharge Current	34.5A (5s)
Internal Resistance	Approx 90mΩ
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 0.69A. 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

 MH45680	 ETL SEMKO	
 ISO14001	 ISO9001	 G104067

Comform 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	4.42	3.08	2.54	2.20	1.77	1.36	1.11	0.679	0.517	0.425	0.361	0.312	0.248	0.207	0.114
1.80V/cell	5.43	3.67	2.94	2.49	1.96	1.48	1.20	0.721	0.544	0.447	0.376	0.326	0.258	0.214	0.115
1.75V/cell	6.43	4.15	3.25	2.71	2.09	1.57	1.26	0.752	0.563	0.461	0.386	0.334	0.265	0.218	0.116
1.70V/cell	7.30	4.58	3.51	2.91	2.19	1.63	1.31	0.783	0.581	0.472	0.396	0.342	0.269	0.222	0.118
1.65V/cell	8.05	4.93	3.72	3.06	2.29	1.70	1.37	0.806	0.596	0.482	0.405	0.349	0.273	0.225	0.120
1.60V/cell	8.45	5.13	3.87	3.15	2.35	1.74	1.40	0.831	0.610	0.494	0.413	0.356	0.279	0.229	0.121

## 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	8.33	5.86	4.88	4.27	3.45	2.66	2.19	1.34	1.03	0.848	0.722	0.627	0.500	0.416	0.230
1.80V/cell	10.1	6.93	5.61	4.79	3.79	2.89	2.34	1.42	1.07	0.886	0.748	0.650	0.515	0.428	0.231
1.75V/cell	11.8	7.76	6.13	5.17	4.02	3.05	2.45	1.47	1.11	0.908	0.764	0.662	0.526	0.434	0.232
1.70V/cell	13.3	8.46	6.58	5.51	4.19	3.15	2.54	1.52	1.14	0.925	0.778	0.674	0.530	0.439	0.235
1.65V/cell	14.5	8.99	6.87	5.73	4.33	3.25	2.63	1.56	1.16	0.940	0.792	0.684	0.536	0.443	0.237
1.60V/cell	14.9	9.24	7.08	5.84	4.41	3.29	2.67	1.60	1.18	0.957	0.803	0.694	0.545	0.448	0.237

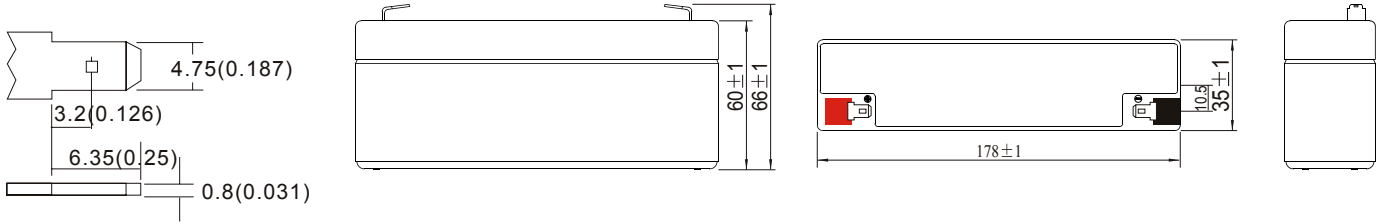


Specifications subject to change without notice. Updated: 13.02.2020

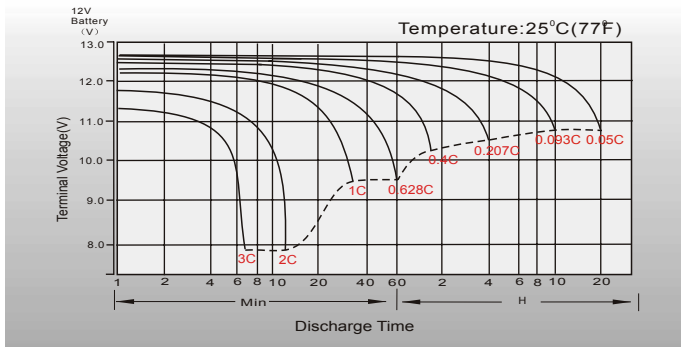
# Dimensions

## T1 Terminal

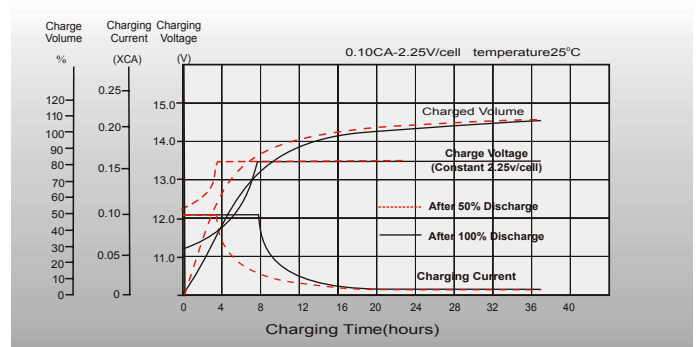
Unit: mm [inches]



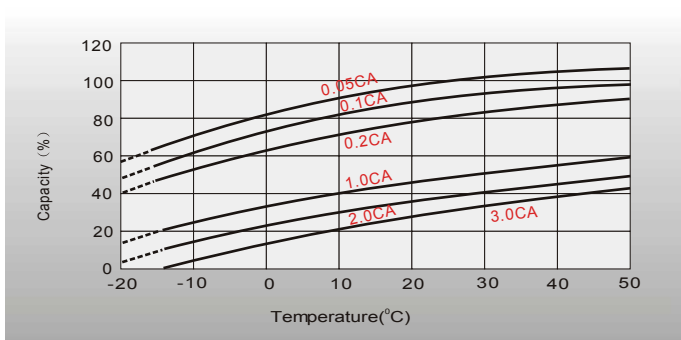
## Discharge Characteristics



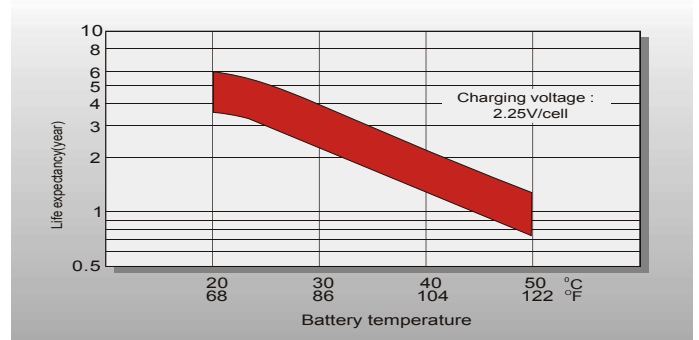
## Float Charging Characteristics



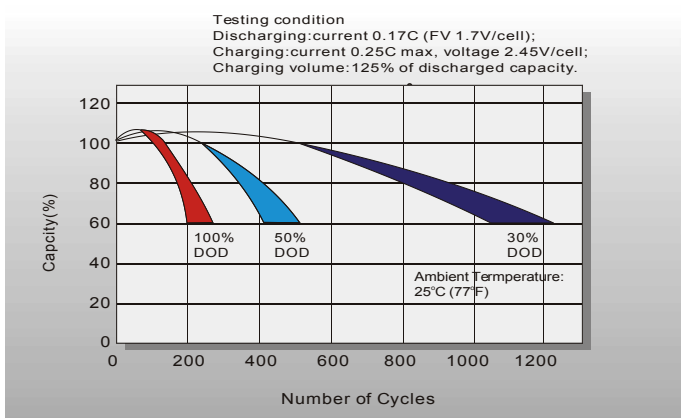
## Temperature Effects in Relation to Battery Capacity



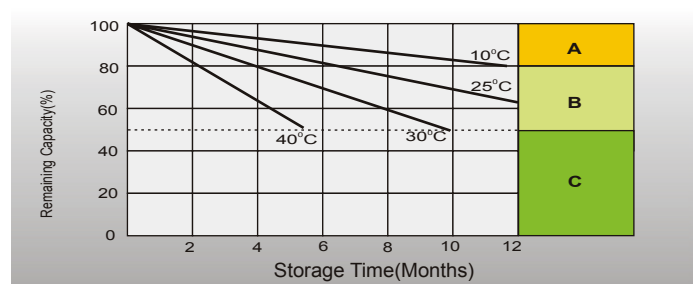
## Effect of Temperature on Long Term Float Life



## 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.