

# ST SERIES-Standard

## ST12003.4(12V3.4AH)



Specification	
Nominal Voltage	12V
Nominal Capacity(20HR)	3.4AH
Dimensions	Length 134 ± 2mm (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	Approx 1.35 kg (2.98lbs)
Terminal	T1
Container Material	ABS
Rated Capacity	3.20 AH/0.160A (20hr, 1.80V/cell, 25°C/77°F)
	2.98 AH/0.298A (10hr, 1.80V/cell, 25°C/77°F)
	2.69 AH/0.538A (5hr, 1.75V/cell, 25°C/77°F)
	2.35 AH/0.783A (3hr, 1.75V/cell, 25°C/77°F)
	1.94 AH/1.94A (1hr, 1.60V/cell, 25°C/77°F)
Max. Discharge Current	48.0A (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 0.96A. 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
Capacity affected by Temperature	40°C (104°F) 103%
	25°C (77°F) 100%
	0°C (32°F) 86%
Self Discharge	ST 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

- ◆ 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	6.14	4.28	3.53	3.06	2.46	1.89	1.55	0.944	0.719	0.591	0.502	0.435	0.345	0.287	0.158
1.80V/cell	7.55	5.11	4.10	3.47	2.72	2.06	1.66	1.00	0.756	0.622	0.524	0.454	0.358	0.298	0.160
1.75V/cell	8.95	5.78	4.52	3.77	2.91	2.19	1.75	1.05	0.783	0.641	0.538	0.465	0.368	0.303	0.162
1.70V/cell	10.2	6.37	4.89	4.05	3.05	2.27	1.82	1.09	0.809	0.657	0.551	0.476	0.374	0.308	0.164
1.65V/cell	11.2	6.85	5.17	4.25	3.18	2.36	1.90	1.12	0.829	0.670	0.563	0.485	0.380	0.313	0.167
1.60V/cell	11.8	7.14	5.39	4.39	3.27	2.41	1.94	1.16	0.849	0.687	0.575	0.495	0.388	0.318	0.168

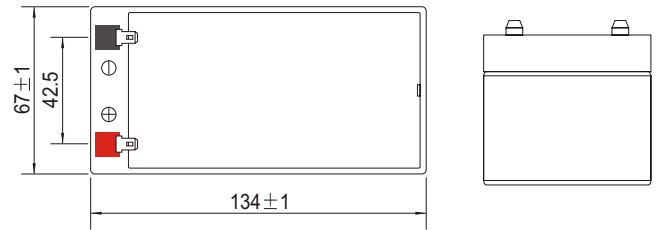
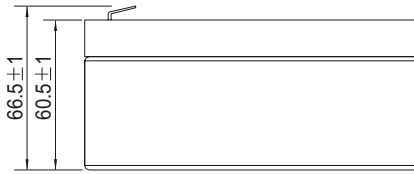
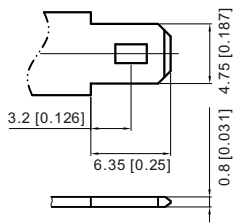
### Constant Power Discharge (Watts/cell) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	11.6	8.16	6.79	5.93	4.79	3.71	3.04	1.87	1.43	1.18	1.00	0.872	0.695	0.579	0.320
1.80V/cell	14.1	9.64	7.81	6.66	5.27	4.01	3.26	1.98	1.49	1.23	1.04	0.905	0.716	0.596	0.322
1.75V/cell	16.5	10.8	8.53	7.20	5.59	4.24	3.41	2.05	1.54	1.26	1.06	0.921	0.731	0.604	0.322
1.70V/cell	18.5	11.8	9.15	7.67	5.83	4.38	3.53	2.12	1.58	1.29	1.08	0.938	0.738	0.610	0.326
1.65V/cell	20.1	12.5	9.56	7.97	6.03	4.52	3.66	2.17	1.61	1.31	1.10	0.952	0.746	0.616	0.329
1.60V/cell	20.8	12.9	9.86	8.13	6.13	4.58	3.71	2.22	1.64	1.33	1.12	0.966	0.758	0.623	0.330

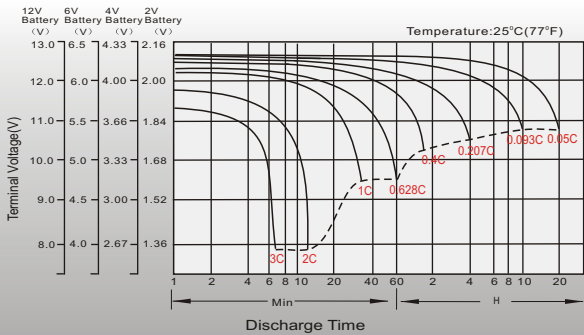
## Dimensions

### T1 Terminal

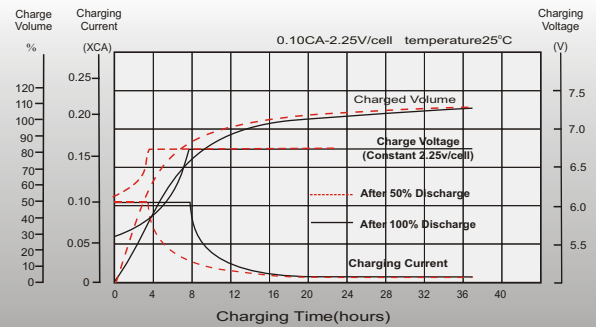
Unit: mm [inches]



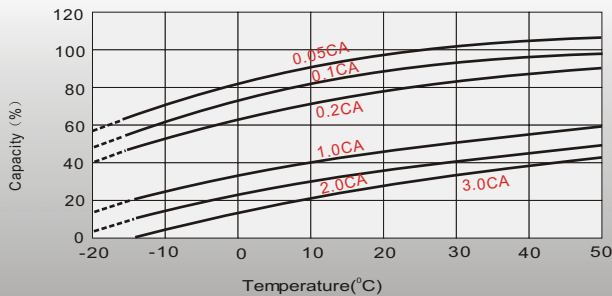
## Discharge Characteristics



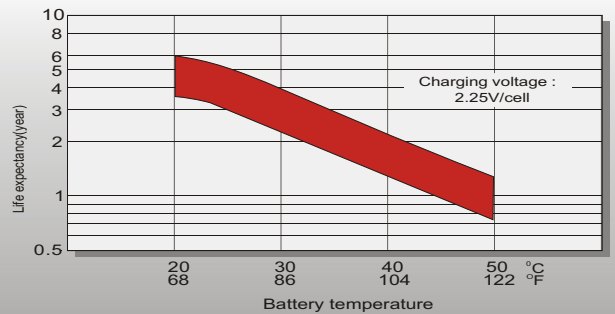
## Float Charging Characteristics



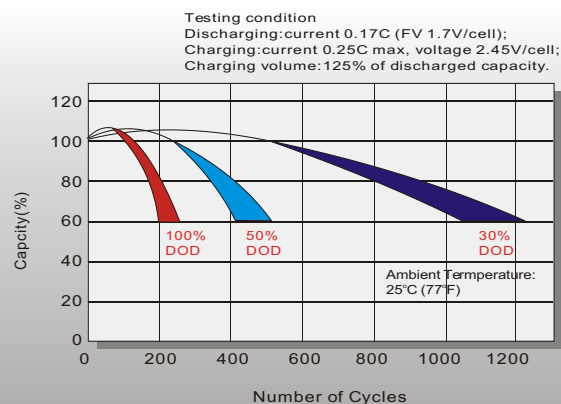
## Temperature Effects in Relation to Battery Capacity



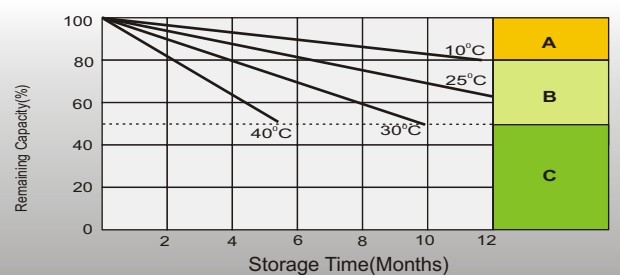
## Effect of Temperature on Long Term Float Life



## 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.