

# TBS SERIES - UPS BATTERY

## TBS12V-7AH-5 (12V 7AH)

### Specification

Nominal Voltage	12V	
Nominal Capacity(20HR)	7.0AH	
Dimension	Length	151 ± 2mm (5.95 inches)
	Width	64.5 ± 1mm (2.54 inches)
	Container Height	94.5 ± 1mm (3.72 inches)
	Total Height (with Terminal)	100 ± 1mm (3.94 inches)
Approx Weight	Approx 2.18 kg (4.81lbs)	
Terminal	T1 / T2	
Container Material	ABS	
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)
	6.00 AH/1.20A	(5hr, 1.75V/cell, 25 °C/77 °F)
	5.46 AH/1.82A	(3hr, 1.75V/cell, 25 °C/77 °F)
	4.42 AH/4.42A	(1hr, 1.60V/cell, 25 °C/77 °F)
Max. Discharge Current	105A (5s)	
Internal Resistance	Approx 23m Ω	
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	TBS 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

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

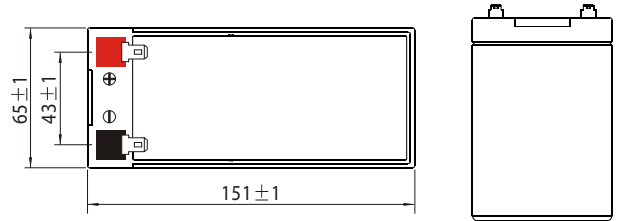
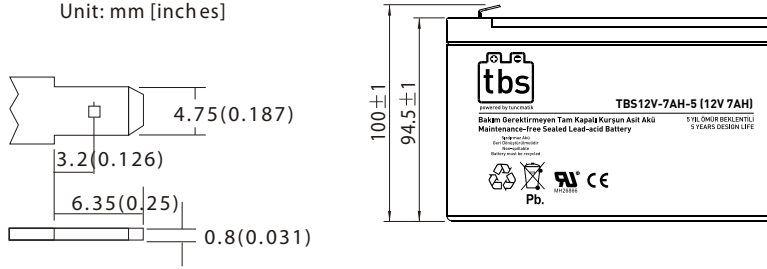
F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	20.4	13.6	10.70	8.99	6.55	4.85	3.89	2.29	1.70	1.37	1.14	0.99	0.767	0.631	0.340
1.80V/cell	23.5	15.2	11.7	9.66	6.96	5.07	4.06	2.40	1.77	1.41	1.18	1.01	0.787	0.651	0.350
1.75V/cell	26.0	16.3	12.4	10.12	7.25	5.25	4.17	2.45	1.82	1.44	1.20	1.03	0.803	0.662	0.356
1.70V/cell	28.1	17.2	13.1	10.58	7.50	5.41	4.28	2.50	1.84	1.46	1.22	1.04	0.818	0.673	0.362
1.65V/cell	29.7	18.1	13.6	11.0	7.76	5.60	4.42	2.55	1.86	1.48	1.24	1.06	0.830	0.679	0.366
1.60V/cell	31.9	19.2	14.3	11.4	8.02	5.75	4.52	2.60	1.89	1.50	1.25	1.08	0.844	0.694	0.372

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

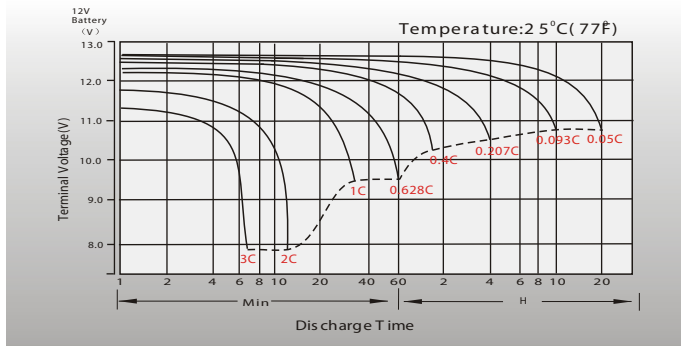
F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	38.6	25.9	20.7	17.5	12.8	9.57	7.71	4.55	3.40	2.74	2.30	1.99	1.550	1.279	0.689
1.80V/cell	44.1	28.8	22.4	18.7	13.6	9.95	8.01	4.76	3.53	2.82	2.36	2.03	1.584	1.314	0.708
1.75V/cell	48.2	30.7	23.7	19.5	14.1	10.28	8.21	4.85	3.61	2.86	2.39	2.05	1.612	1.330	0.716
1.70V/cell	51.5	32.1	24.8	20.3	14.5	10.56	8.41	4.92	3.65	2.90	2.43	2.08	1.636	1.350	0.728
1.65V/cell	54.1	33.5	25.7	21.0	15.0	10.9	8.65	5.01	3.68	2.93	2.46	2.11	1.656	1.359	0.732
1.60V/cell	57.5	35.4	26.8	21.7	15.4	11.1	8.81	5.10	3.72	2.96	2.48	2.14	1.679	1.384	0.742

# Dimensions

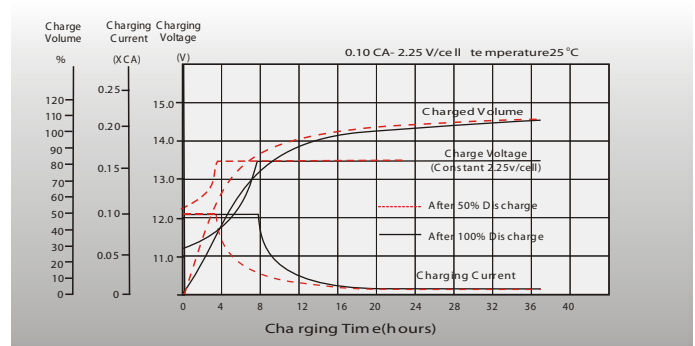
## T1 Terminal Unit: mm [inches]



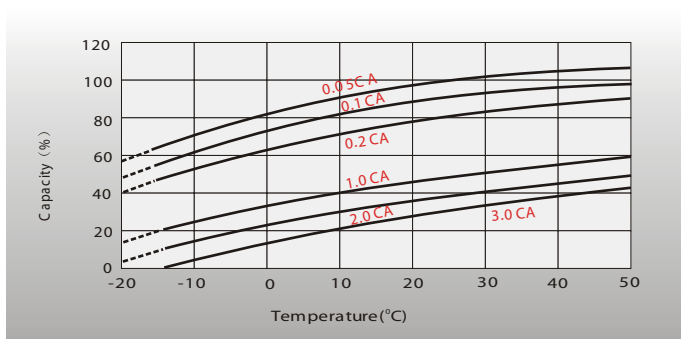
## Discharge Characteristics



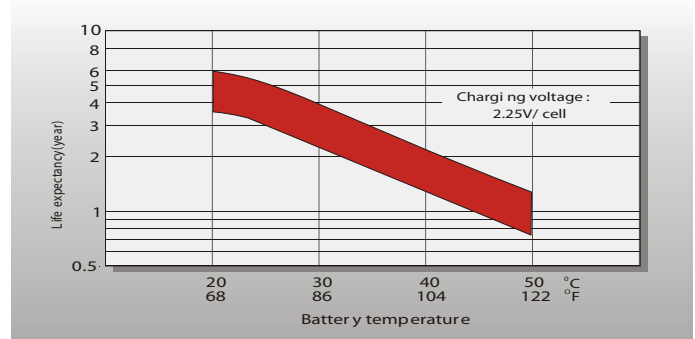
## Float Charging Characteristics



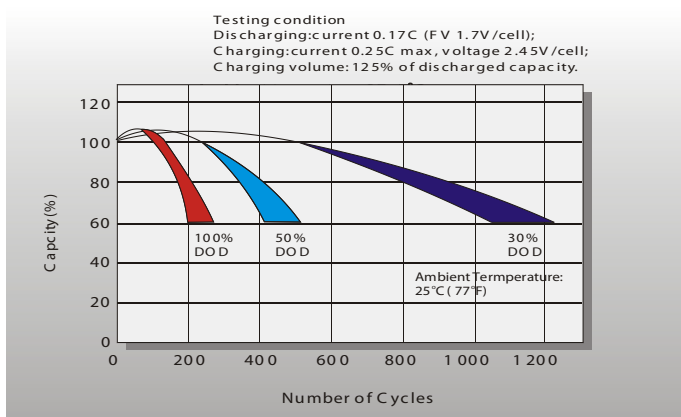
## Temperature Effects in Relation to Battery Capacity



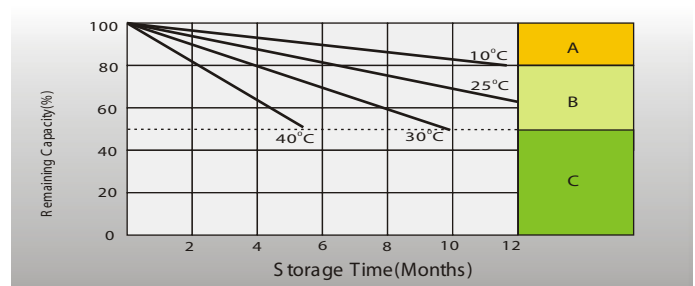
## Effect of Temperature on Long Term Float Life



## Cycle Life in Relation to Depth of Discharge



## Self Discharge Characteristics



- A** No supplementary charging required (Carry out supplementary charging before use if 100% capacity is required)
- B** Supplementary charging required before use. Optimal charging way as below:  
1. Charged for a above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.  
2. Charged for a above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.  
3. Charged for 8 ~10 hours at limited current 0.05 CA.
- C** Supplementary charging may often fail to recover the capacity. The battery should never be left standing till this is reached.