



# VTM 18A-12

## Specifications

Nominal Voltage(V) **12V**

### Nominal Capacity

20 hour rate	(0.9A	to	10.50V)	18Ah
10 hour rate	(1.71A	to	10.50V)	17.1Ah
5 hour rate	(3.06A	to	10.20V)	15.3Ah
1 C	(18A	to	9.60V)	11.4Ah
3 C	(54A	to	9.60V)	7.2Ah

Weight **Approx. 5.6kg(12.32Lbs.)**

Internal Resistance (at 1KHz) **Approx. 10.5 mΩ**

Maximum Discharge Current for  
5 seconds: **270A**

### Charging Methods at 25°C(77°F)

Cycle use:	
Charging Voltage	14.4 to 15.0V
Coefficient	-5.0mV/°C/cell
Maximum Charging Current :	5.4A
Standby use:	
Float Charging Voltage	13.5 to 13.8V
Coefficient	-3.0mV/°C/cell

### Operating Temperature Range

Charge	-15°C(5°F)	to	40°C(104°F)
Discharge	-15°C(5°F)	to	50°C(122°F)
Storage	-15°C(5°F)	to	40°C(104°F)

### Charge Retention (shelf life) at 20°C(68°F)

1 month	92%
3 month	90%
6 month	80%

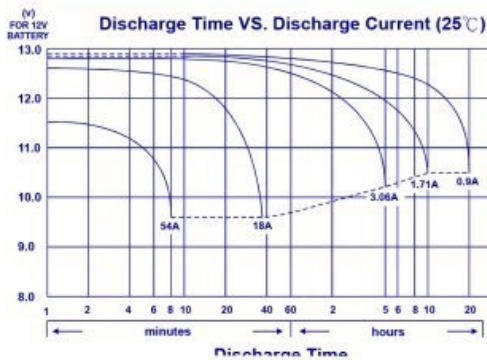
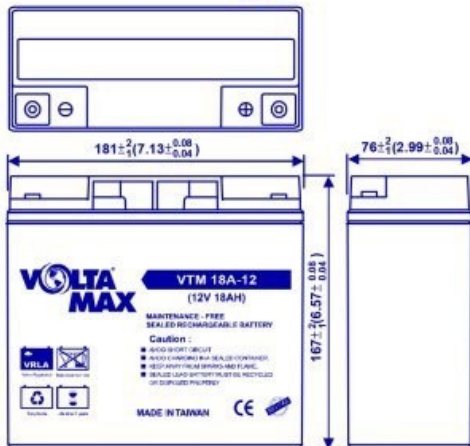
Case Material **ABS UL94 HB**

Terminal **F6**

Description of torque value of hard ware for the terminals:  
 Recommended torque value **M5: 5 N-m (51kgf-cm)**  
 Maximum allowable torque value **M5: 6 N-m (61kgf-cm)**

## Dimensions

mm(inch)



**- PERFORMANCE DATA**

**Discharge Rates in Watts to Various End Voltages at 25°C (77°F)**

End Voltage		1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
Time								
5	min	98.9	116	128	135	137	139	141
10	min	67.0	77.1	84.5	89.1	90.2	91.7	92.9
15	min	57.2	64.5	69.4	72.5	73.3	74.2	75.1
30	min	32.7	35.1	37.7	39.4	39.8	40.3	40.8
60	min	18.8	19.8	20.7	21.3	21.5	21.8	22.2
120	min	11.9	12.4	12.7	13.1	13.2	13.3	13.5
180	min	8.75	9.10	9.33	9.53	9.60	9.68	9.78
240	min	6.63	6.93	7.12	7.27	7.32	7.38	7.46
300	min	5.82	6.05	6.17	6.27	6.30	6.35	6.41
600	min	3.40	3.52	3.60	3.67	3.68	3.72	3.75
1200	min	1.77	1.83	1.88	1.92	1.93	1.95	1.96

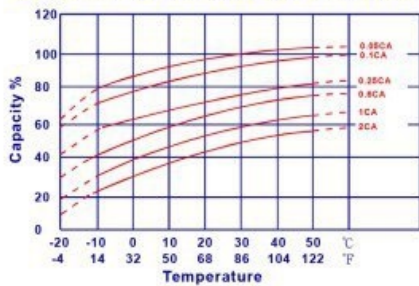
**- Discharge Rates in Amperes to Various End Voltages at 25°C (77°F)**

End Voltage		1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
Time								
5	min	62.6	68.3	71.9	75.1	76.4	77.8	80.2
10	min	38.6	41.8	44.3	46.5	47.4	48.4	50.1
15	min	31.9	34.6	36.3	37.7	38.2	38.8	39.7
30	min	17.4	18.7	19.8	20.7	21.0	21.4	21.9
60	min	9.74	10.3	10.7	11.0	11.1	11.3	11.5
120	min	5.98	6.23	6.39	6.53	6.58	6.64	6.72
180	min	4.35	4.52	4.64	4.73	4.76	4.80	4.85
240	min	3.43	3.52	3.58	3.62	3.63	3.65	3.68
300	min	2.96	3.02	3.07	3.11	3.12	3.14	3.16
600	min	1.73	1.77	1.80	1.82	1.83	1.84	1.85
1200	min	0.893	0.914	0.931	0.946	0.952	0.959	0.962

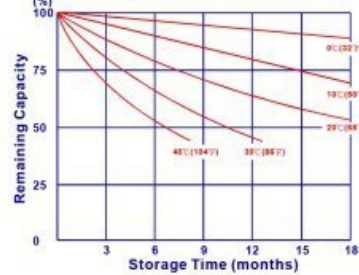
All data on the spec. sheet is an average value:

The tolerance range :  $X < 6\text{min}$  (+15%~-15%),  $6\text{min} \leq X < 10\text{min}$  (+12%~-12%),  $10\text{min} \leq X < 60\text{min}$  (+8%~-8%),  $X \geq 60\text{min}$  (+5%~-5%)

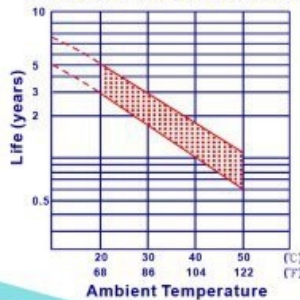
**Effect of Temperature on Capacity 25°C (77°F)**



**Capacity Retention Characteristic**



**Trickle (or float) Service Life**



**Cycle Service Life**

