

# VTM 2.3A-12

## Specifications

Nominal Voltage(V) 12V

### Nominal Capacity

|              |         |    |         |         |
|--------------|---------|----|---------|---------|
| 20 hour rate | (0.115A | to | 10.50V) | 2.3Ah   |
| 10 hour rate | (0.219A | to | 10.50V) | 2.185Ah |
| 5 hour rate  | (0.391A | to | 10.20V) | 1.955Ah |
| 1 C          | (2.3A   | to | 9.60V)  | 1.303Ah |
| 3 C          | (6.9A   | to | 9.60V)  | 0.92Ah  |

Weight Approx. 1.04kg(2.29Lbs.)

Internal Resistance (at 1KHz) Approx. 37 mΩ

Maximum Discharge Current for  
5 seconds: 34.5A

### Charging Methods at 25°C (77°F)

Cycle use:  
Charging Voltage 14.4 to 15.0V  
Coefficient -5.0mV/°C /cell  
Maximum Charging Current : 0.69A  
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% |

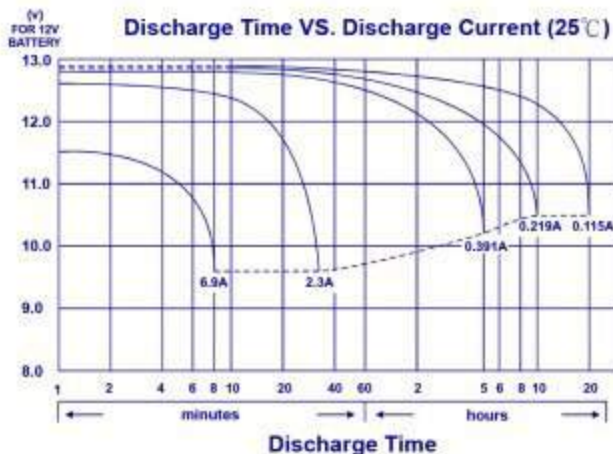
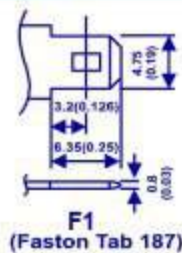
Case Material ABS UL94 HB

Terminal F1 (Faston Tab 187)



## 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 | 11.8  | 13.9  | 15.3  | 16.4  | 16.7  | 17.2  | 17.8  |
| 10          | min | 7.82  | 9.38  | 10.1  | 10.6  | 10.8  | 11.1  | 11.4  |
| 15          | min | 6.87  | 7.90  | 8.28  | 8.53  | 8.63  | 8.75  | 8.90  |
| 30          | min | 3.95  | 4.25  | 4.43  | 4.58  | 4.63  | 4.70  | 4.78  |
| 60          | min | 2.27  | 2.45  | 2.60  | 2.72  | 2.75  | 2.80  | 2.85  |
| 120         | min | 1.36  | 1.50  | 1.56  | 1.62  | 1.64  | 1.67  | 1.70  |
| 180         | min | 1.08  | 1.21  | 1.24  | 1.27  | 1.28  | 1.29  | 1.30  |
| 240         | min | 0.863 | 0.960 | 0.988 | 1.01  | 1.02  | 1.03  | 1.04  |
| 300         | min | 0.702 | 0.777 | 0.808 | 0.837 | 0.848 | 0.858 | 0.869 |
| 600         | min | 0.415 | 0.453 | 0.468 | 0.480 | 0.483 | 0.488 | 0.493 |
| 1200        | min | 0.230 | 0.242 | 0.248 | 0.253 | 0.255 | 0.257 | 0.258 |

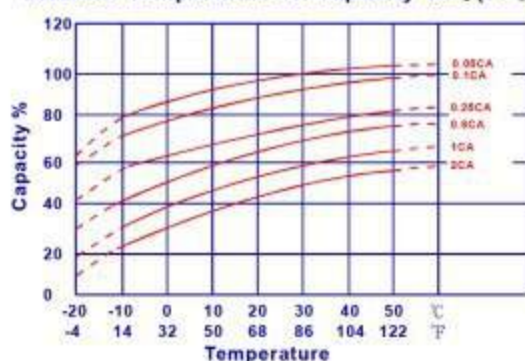
### - Discharge Rates in Amperes to Various End Voltages at 25°C (77°F)

| End Voltage |     | 1.85V | 1.80V | 1.75V | 1.70V | 1.67V | 1.65V | 1.60V |
|-------------|-----|-------|-------|-------|-------|-------|-------|-------|
| Time        |     |       |       |       |       |       |       |       |
| 5           | min | 9.08  | 9.36  | 9.62  | 9.82  | 9.95  | 10.1  | 10.4  |
| 10          | min | 4.76  | 5.45  | 5.68  | 5.87  | 5.94  | 6.03  | 6.15  |
| 15          | min | 3.89  | 4.15  | 4.27  | 4.38  | 4.42  | 4.47  | 4.53  |
| 30          | min | 2.02  | 2.17  | 2.24  | 2.30  | 2.32  | 2.35  | 2.39  |
| 60          | min | 1.23  | 1.34  | 1.39  | 1.42  | 1.43  | 1.45  | 1.47  |
| 120         | min | 0.668 | 0.731 | 0.765 | 0.796 | 0.809 | 0.826 | 0.849 |
| 180         | min | 0.508 | 0.562 | 0.587 | 0.609 | 0.618 | 0.628 | 0.643 |
| 240         | min | 0.411 | 0.449 | 0.472 | 0.491 | 0.497 | 0.505 | 0.513 |
| 300         | min | 0.364 | 0.383 | 0.396 | 0.405 | 0.409 | 0.414 | 0.419 |
| 600         | min | 0.217 | 0.226 | 0.232 | 0.237 | 0.238 | 0.240 | 0.242 |
| 1200        | min | 0.114 | 0.118 | 0.121 | 0.123 | 0.124 | 0.125 | 0.126 |

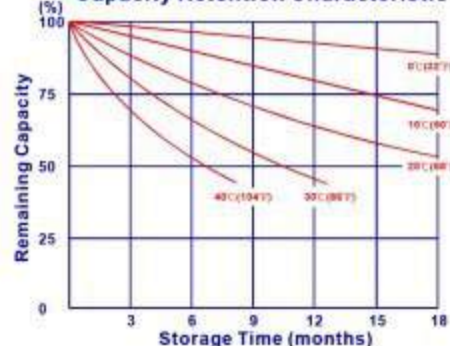
All data on the spec. sheet is an average value:

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%)

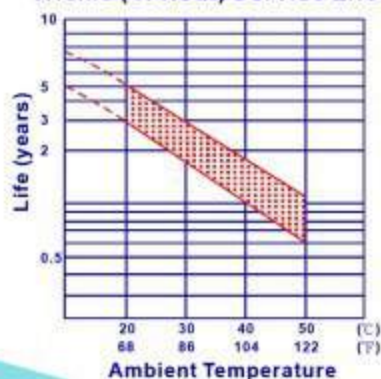
Effect of Temperature on Capacity 25°C (77°F)



Capacity Retention Characteristic



Trickle (or float) Service Life



Cycle Service Life

