powerBOX BATTERIES

# 12V9AH SERIES

www.powerboxups.com

## (12V9.0AH)

## Specification

| | | |
|---|---|---|
| Nominal Voltage | 12V | |
| Nominal Capacity(20HR) | 9.0AH | |
| Dimensions | Length | 151±2mm (5.95 inches) |
| | Width | 65±1mm (2.56 inches) |
| | Container Height | 93.5±1mm (3.68 inches) |
| | Total Height (with Terminal) | 99±1mm (3.90 inches) |
| Approx Weight | Approx 2.66 kg (5.87lbs) | |
| Terminal | T2 | |
| Container Material | ABS | |
| Rated Capacity | 9.00AH/0.430A | (20hr,1.80V/cell,25 °C/77 °F) |
| | 7.86AH/0.786A | (10hr,1.80V/cell,25 °C/77 °F) |
| | 7.00AH/1.40A | (5hr,1.75V/cell,25 °C/77 °F) |
| | 6.36AH/2.12A | (3hr,1.75V/cell,25 °C/77 °F) |
| | 5.84AH/5.84A | (1hr,1.60V/cell,25 °C/77 °F) |
| Max. Discharge Current | 129A (5s) | |
| Internal Resistance | Approx 19mΩ | |
| 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 2.58A.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 | 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. Self-discharge ratio less than 3% per month at 25°C(77°F). | |


## Applications

- All purpose
- Uninterruptable Power Supply(UPS)
- Electric Power System(EPS)
- Emergency backuppower supply
- Emergency light
- Railway signal
- Aircraft signal
- Alarm and securitysystem
- Electronic apparatusand equipment
- Communication power supply
- DC power supply
- Auto controlsystem

## 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 | 28.0 | 18.7 | 14.7 | 12.2 | 9.06 | 6.57 | 5.13 | 2.80 | 2.00 | 1.58 | 1.32 | 1.14 | 0.913 | 0.764 | 0.417 |
| 1.80V/cell | 31.5 | 20.5 | 15.9 | 12.9 | 9.46 | 6.81 | 5.32 | 2.89 | 2.06 | 1.62 | 1.36 | 1.18 | 0.941 | 0.786 | 0.430 |
| 1.75V/cell | 34.6 | 21.6 | 16.9 | 13.6 | 9.83 | 7.05 | 5.50 | 2.98 | 2.12 | 1.68 | 1.40 | 1.21 | 0.979 | 0.807 | 0.432 |
| 1.70V/cell | 36.8 | 22.8 | 17.6 | 14.0 | 10.2 | 7.28 | 5.64 | 3.07 | 2.18 | 1.72 | 1.44 | 1.24 | 0.988 | 0.822 | 0.438 |
| 1.65V/cell | 38.5 | 23.6 | 18.2 | 14.5 | 10.5 | 7.44 | 5.74 | 3.12 | 2.22 | 1.76 | 1.47 | 1.26 | 1.01 | 0.830 | 0.440 |
| 1.60V/cell | 39.7 | 24.5 | 18.5 | 14.8 | 10.7 | 7.57 | 5.84 | 3.17 | 2.25 | 1.78 | 1.49 | 1.28 | 1.02 | 0.838 | 0.443 |

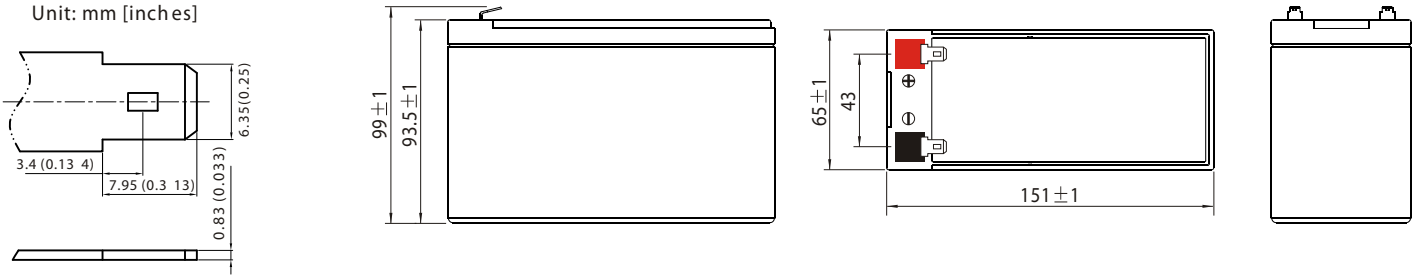
## Constant Power Discharge (Watts) at 25 °C (77°F)

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 51.8 | 34.9 | 27.6 | 23.0 | 17.2 | 12.6 | 9.90 | 5.42 | 3.89 | 3.09 | 2.59 | 2.24 | 1.80 | 1.51 | 0.827 |
| 1.80V/cell | 57.3 | 37.7 | 29.5 | 24.2 | 17.8 | 13.0 | 10.2 | 5.57 | 4.00 | 3.15 | 2.65 | 2.31 | 1.85 | 1.55 | 0.851 |
| 1.75V/cell | 62.1 | 39.3 | 31.0 | 25.2 | 18.4 | 13.3 | 10.5 | 5.73 | 4.09 | 3.25 | 2.73 | 2.38 | 1.92 | 1.59 | 0.854 |
| 1.70V/cell | 65.2 | 41.0 | 32.0 | 25.8 | 19.0 | 13.7 | 10.7 | 5.88 | 4.21 | 3.34 | 2.80 | 2.43 | 1.94 | 1.62 | 0.863 |
| 1.65V/cell | 67.0 | 41.7 | 32.6 | 26.4 | 19.4 | 13.9 | 10.9 | 5.96 | 4.27 | 3.40 | 2.85 | 2.46 | 1.97 | 1.63 | 0.868 |
| 1.60V/cell | 68.1 | 42.8 | 32.9 | 26.7 | 19.6 | 14.0 | 11.0 | 6.02 | 4.30 | 3.42 | 2.87 | 2.49 | 1.98 | 1.64 | 0.872 |

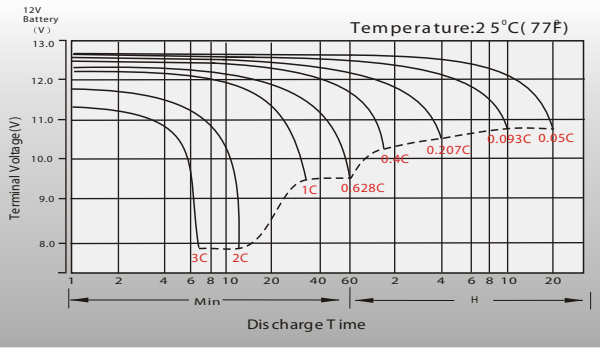
## Dimensions

### T2 Terminal

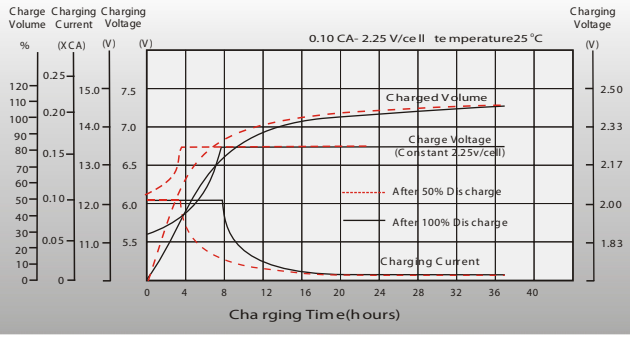
Unit: mm [inches]



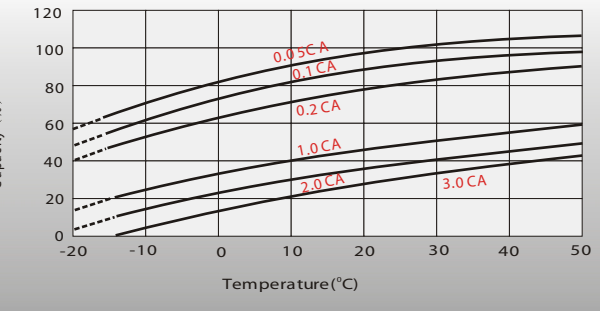

## Discharge Characteristics



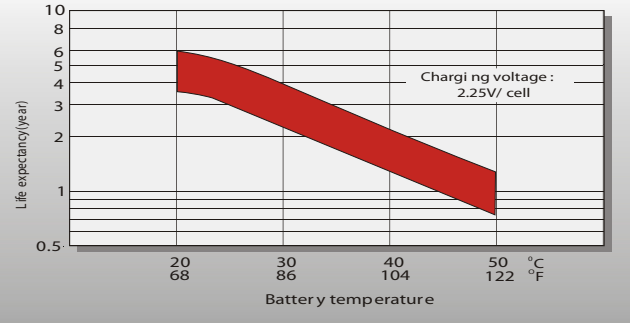

## Float Charging Characteristics



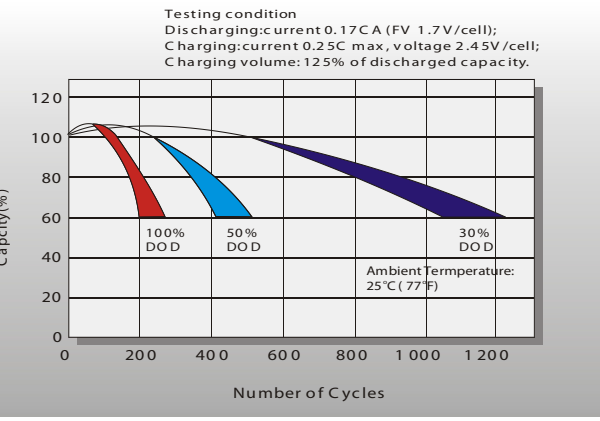

## Temperature Effects in Relation to Batter Capacity



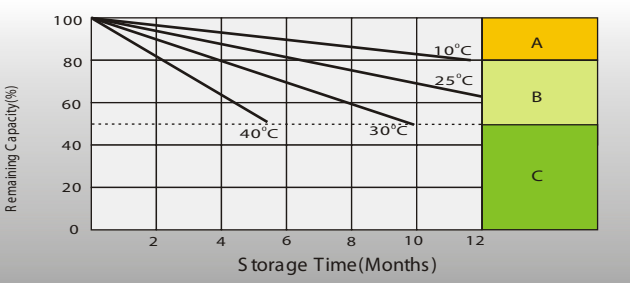

## Effect of Temperature on Long Term Float Life




## 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 limted current 0.25CA and constant voltage 2.25V/cell.
2.Charged for above 20 hours at limted current 0.25CA and constant voltage 2.45V/cell.
3.Charged for 8 ~10hours at limted current 0.05 CA.

**C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.