



Specifications

- ◆ 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 controlsystem

| | | | |
|-------------|--------------|----------------|-----|
| ISO 9001 | ISO 14001 | OHSAS 18001 | TLC |
| CE | RoHS | | |

Specifications

| | | |
|----------------------------------|---|------------------------------|
| Nomial Voltage | 12V | |
| Nomial Capacity(20HR) | 18.0AH | |
| Dimension | Length | 181±1mm (7.14 inches) |
| | Width | 76±1mm (3.03 inches) |
| | Container Height | 167±1mm (6.59 inches) |
| | Total Height (with Terminal) | 167±1mm (6.59 inches) |
| Approx Weight | Approx 5.1 kg | |
| Terminal | T3 | |
| Container Material | ABS | |
| Rated Capacity | 18.0 AH/0.85A | (20hr ,1.80V/cell,25°C/77°F) |
| | 15.7 AH/1.57A | (10hr,1.80V/cell,25°C/77°F) |
| | 14.4 AH/2.88A | (5hr,1.75V/cell,25°C/77°F) |
| | 13.0 AH/4.33A | (3hr,1.75V/cell,25°C/77°F) |
| | 10.6 AH/10.6A | (1hr,1.60V/cell,25°C/77°F) |
| Max. Discharge Current | 255A (5s) | |
| Internal Resistance | Approx 16mΩ | |
| 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 5.1 A.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 | GP 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. | |

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 | 34.3 | 26.3 | 21.8 | 18.9 | 14.6 | 10.7 | 9.05 | 5.35 | 4.19 | 3.41 | 2.78 | 2.41 | 1.94 | 1.62 | 0.89 |
| 1.80V/cell | 46.0 | 33.6 | 26.3 | 22.3 | 17.2 | 12.5 | 10.1 | 5.84 | 4.51 | 3.64 | 2.98 | 2.58 | 2.06 | 1.67 | 0.90 |
| 1.75V/cell | 51.9 | 37.0 | 28.8 | 24.0 | 17.9 | 13.0 | 10.6 | 6.06 | 4.59 | 3.72 | 3.06 | 2.66 | 2.10 | 1.72 | 0.91 |
| 1.70V/cell | 57.1 | 40.3 | 30.7 | 25.2 | 18.6 | 13.5 | 10.9 | 6.21 | 4.72 | 3.82 | 3.14 | 2.71 | 2.13 | 1.75 | 0.93 |
| 1.65V/cell | 63.0 | 43.5 | 32.7 | 26.8 | 19.6 | 13.8 | 11.2 | 6.30 | 4.92 | 3.95 | 3.22 | 2.77 | 2.16 | 1.79 | 0.94 |
| 1.60V/cell | 69.5 | 47.2 | 34.9 | 28.5 | 20.7 | 14.4 | 11.3 | 6.57 | 5.07 | 4.07 | 3.33 | 2.83 | 2.18 | 1.81 | 0.95 |

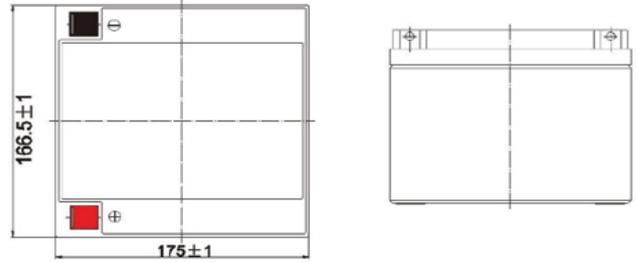
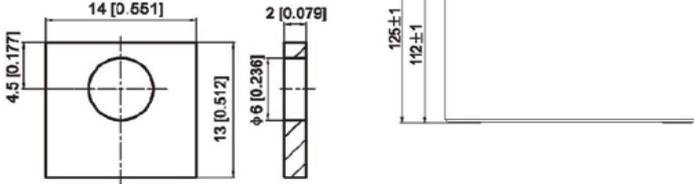
Constant Power Discharge (Watts) at 25°C (77°F)

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 62.7 | 48.6 | 40.7 | 35.5 | 27.8 | 20.6 | 17.5 | 10.4 | 8.16 | 6.66 | 5.45 | 4.74 | 3.84 | 3.21 | 1.77 |
| 1.80V/cell | 83.2 | 61.4 | 48.5 | 41.4 | 32.3 | 23.8 | 19.5 | 11.3 | 8.74 | 7.07 | 5.82 | 5.06 | 4.06 | 3.31 | 1.78 |
| 1.75V/cell | 91.8 | 66.4 | 52.3 | 44.1 | 33.2 | 24.5 | 20.3 | 11.6 | 8.86 | 7.20 | 5.95 | 5.18 | 4.12 | 3.39 | 1.80 |
| 1.70V/cell | 98.3 | 70.7 | 55.1 | 46.0 | 34.4 | 25.4 | 20.8 | 11.9 | 9.09 | 7.38 | 6.09 | 5.28 | 4.17 | 3.46 | 1.83 |
| 1.65V/cell | 106.9 | 75.6 | 58.1 | 48.5 | 36.0 | 25.8 | 21.2 | 12.0 | 9.44 | 7.61 | 6.24 | 5.38 | 4.23 | 3.52 | 1.85 |
| 1.60V/cell | 115.2 | 80.2 | 61.1 | 51.1 | 37.7 | 26.7 | 21.3 | 12.5 | 9.68 | 7.82 | 6.42 | 5.48 | 4.26 | 3.56 | 1.86 |

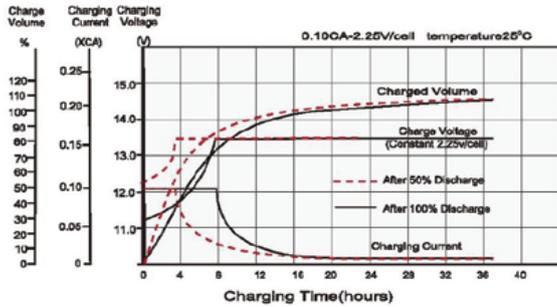
Note The above data are average values, and can be obtained with 3 charge/discharge cycles. These are not minimum values.

Dimensions

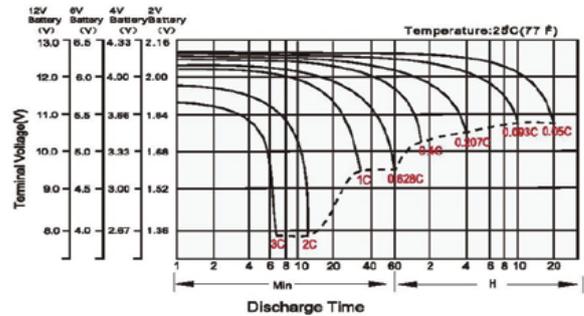
T3 Terminal Unit: mm [inches]



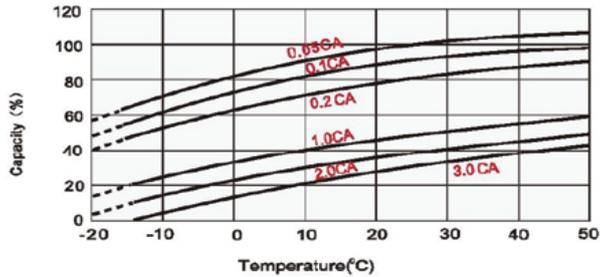
Float Charging Characteristics



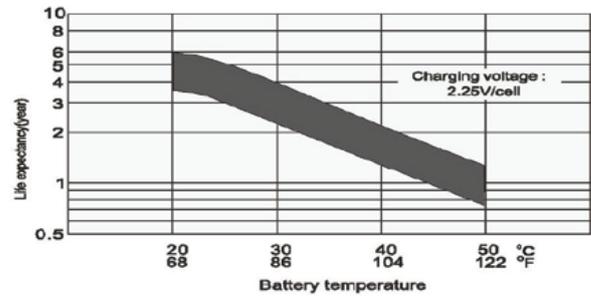
Discharge Characteristics



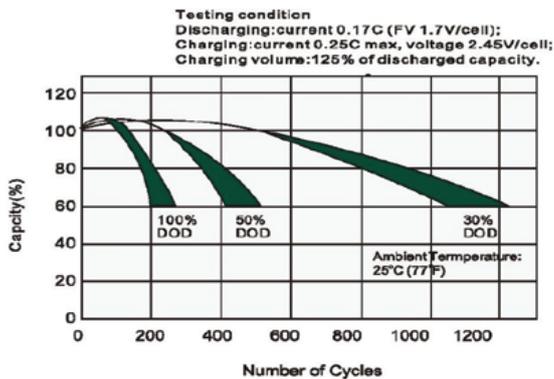
Temperature Effects in Relation to Battery Capacity



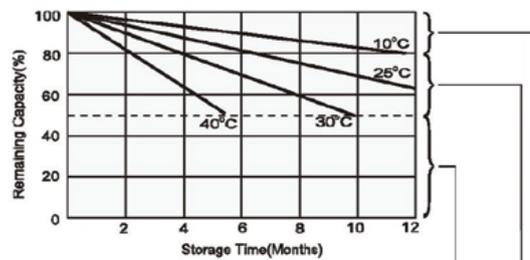
Effect of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



Self Discharge Characteristics



Supplemental charge may often fail to recover the capacity. The battery should never be left standing until this is reached.

Supplemental charge required before use. Optimal 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.

No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required.)