



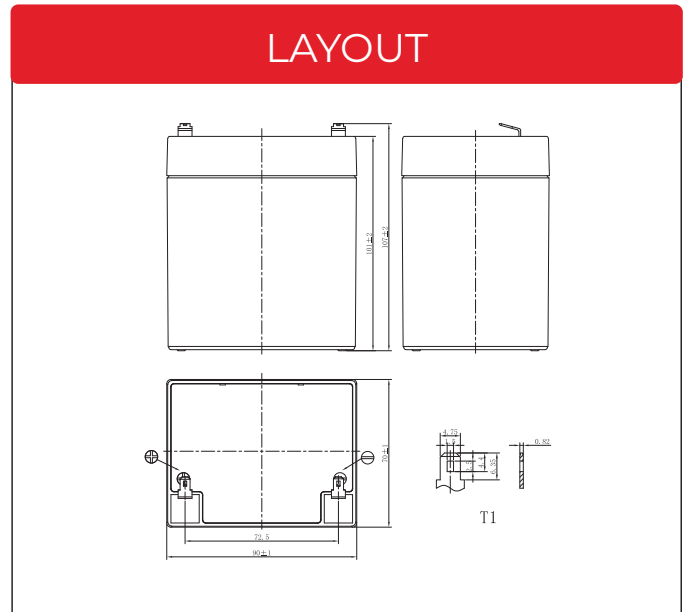
GENERAL PURPOSE **BATTERIES**

ST12-4.5 (12V 4.5Ah)



ST SERIES - GENERAL PURPOSE

ST12-4.5



General Features

- ✓ 5 years design life(25°C)
- ✓ Special exhaust structure and sealing technology, safe and reliable, flexible installation, convenient maintenance
- ✓ PbCaSn alloy for plate grids: less gassing, less self-discharging
- ✓ High quality AGM separator: extend cycle life and prevent micro short circuit
- ✓ High purity raw material: ensure low self discharge rate

Applications

- ✓ All purpose
- ✓ Uninterruptable Power Supply (UPS)
- ✓ Electric Power System (EPS)
- ✓ Emergency backup power supply
- ✓ Alarm and security system
- ✓ Communication power supply
- ✓ DC power supply
- ✓ Auto control system

Standards

- ✓ Compliance with IEC 60896 standards, EU Battery Directive
- ✓ UL, CE Certified
- ✓ Manufactured in Starmax® IATF16949, ISO45001, ISO 9001 and ISO 14001 certified production facilities



SPECIFICATIONS

| | | |
|-------------------------------|---|-------------------------------|
| Rated Voltage | 12V | |
| Nominal Capacity | 4.5Ah | (C ₂₀ ,1.75V/cell) |
| Dimensions | Length | 90±1mm (3.54 inches) |
| | Width | 70±1mm (2.76 inches) |
| | Container height | 101±2mm (3.98 inches) |
| | Total height | 107±2mm (4.21 inches) |
| Approx. weight | 1.39 Kg (3.06 lbs) | |
| Terminal | T1/T2 | |
| Container material | ABS | |
| Rated capacity (25°C) | 4.50 Ah | (20hr,0.225A,1.75V/cell) |
| | 4.19 Ah | (10hr,0.419A,1.75V/cell) |
| | 3.83 Ah | (5hr,0.765A,1.75V/cell) |
| | 3.39 Ah | (3hr,1.13A,1.75V/cell) |
| | 2.66 Ah | (1hr,2.66A,1.60V/cell) |
| Max. discharge current | 75A (5s) | |
| Internal resistance (25°C) | Approx 48mΩ | |
| Operating temp. range | Discharge | -15~50°C (5~122°F) |
| | Charge | -20~40°C (-4~104°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 1.35A. Voltage 14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C | |
| Standby Use | Initial Charging Current less than 1.35A. Voltage 13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C | |
| Effect of temp. to Capacity | 40°C (104°F) | 103% |
| | 25°C (77°F) | 100% |
| | 0°C (32°F) | 86% |
| Self discharge | ST 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. | |

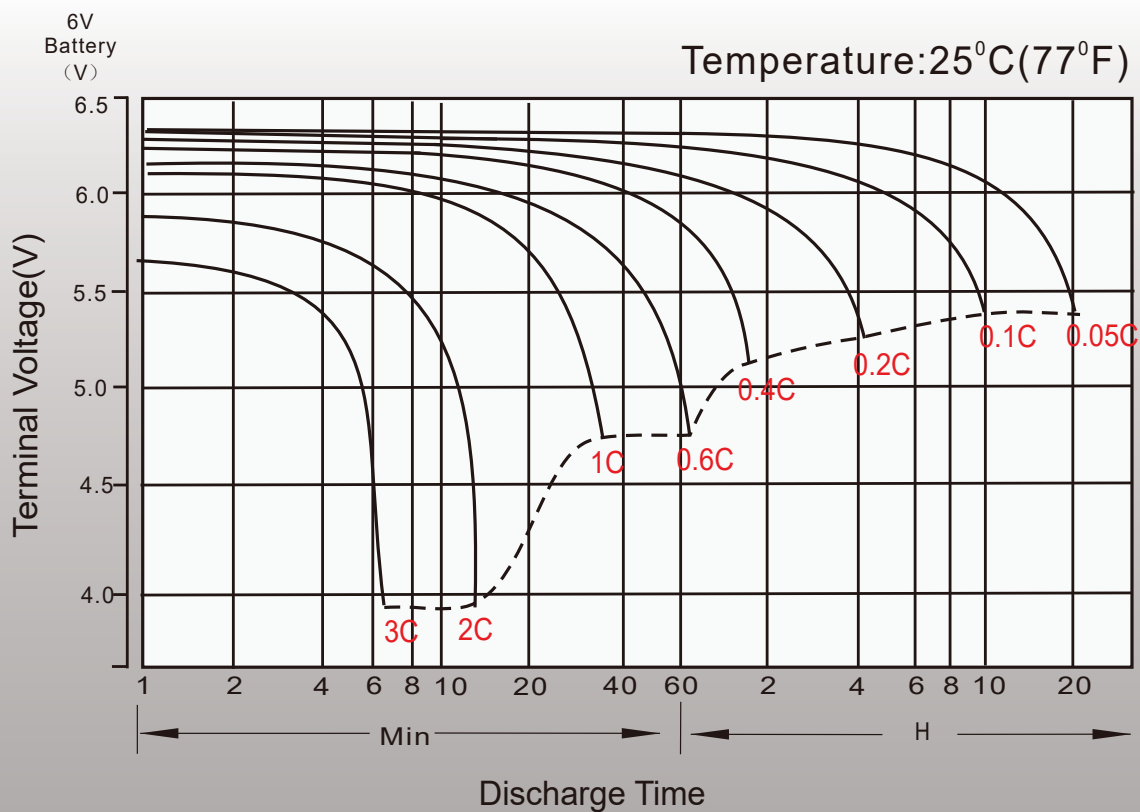
Constant Current Discharge (Amperes) at 25°C (77°F)

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 1.5h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|------------|------|-------|-------|-------|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| 1.85V/cell | 11.3 | 8.26 | 6.55 | 5.35 | 4.07 | 2.99 | 2.44 | 1.84 | 1.53 | 1.09 | 0.876 | 0.744 | 0.637 | 0.500 | 0.409 | 0.220 |
| 1.80V/cell | 12.2 | 8.69 | 6.81 | 5.51 | 4.17 | 3.04 | 2.48 | 1.87 | 1.56 | 1.11 | 0.888 | 0.755 | 0.645 | 0.507 | 0.413 | 0.222 |
| 1.75V/cell | 13.1 | 9.10 | 7.06 | 5.68 | 4.27 | 3.11 | 2.53 | 1.90 | 1.58 | 1.13 | 0.900 | 0.765 | 0.653 | 0.513 | 0.419 | 0.225 |
| 1.70V/cell | 14.1 | 9.50 | 7.31 | 5.84 | 4.37 | 3.16 | 2.57 | 1.94 | 1.61 | 1.14 | 0.910 | 0.775 | 0.662 | 0.519 | 0.424 | 0.227 |
| 1.67V/cell | 14.8 | 9.80 | 7.46 | 5.95 | 4.43 | 3.20 | 2.60 | 1.95 | 1.62 | 1.15 | 0.920 | 0.780 | 0.667 | 0.523 | 0.427 | 0.229 |
| 1.60V/cell | 16.0 | 10.40 | 7.80 | 6.17 | 4.56 | 3.29 | 2.66 | 2.00 | 1.66 | 1.17 | 0.940 | 0.795 | 0.679 | 0.532 | 0.433 | 0.231 |

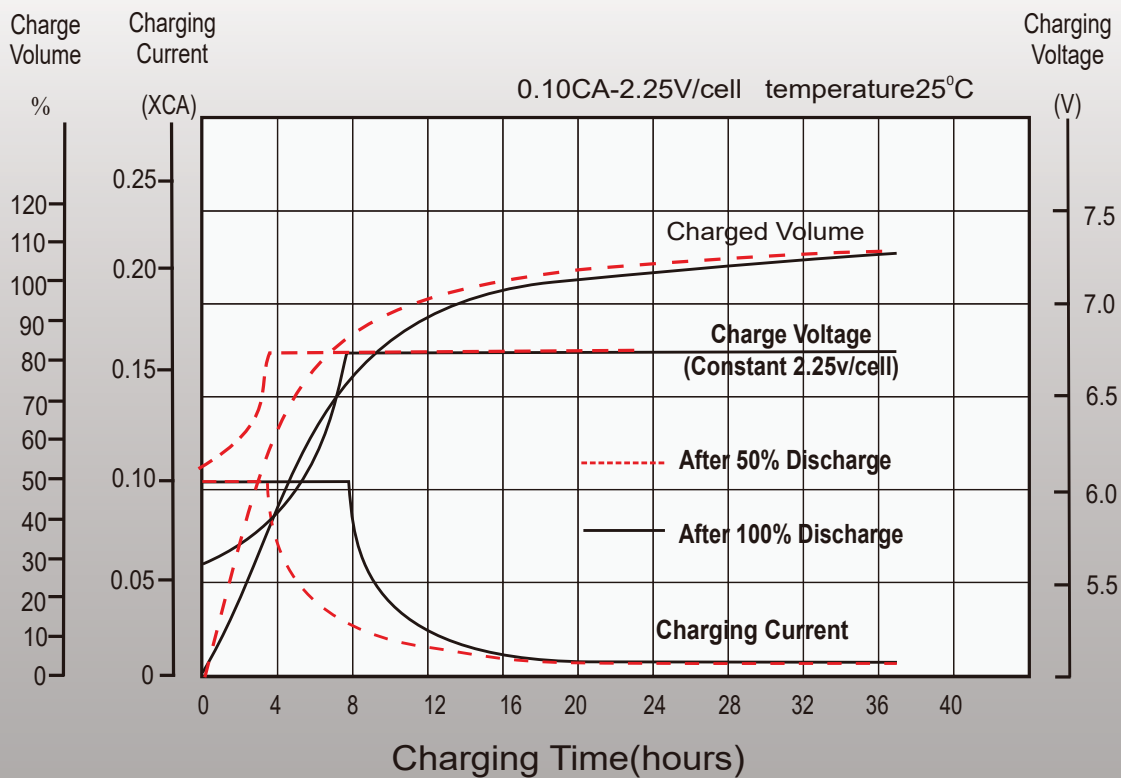
Constant Power Discharge (Watts/cell) at 25°C (77°F)

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 1.5h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|------------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|-------|-------|-------|
| 1.85V/cell | 21.3 | 15.8 | 12.6 | 10.3 | 7.86 | 5.79 | 4.74 | 3.59 | 3.01 | 2.15 | 1.73 | 1.47 | 1.26 | 0.990 | 0.812 | 0.489 |
| 1.80V/cell | 23.0 | 16.5 | 13.1 | 10.5 | 8.02 | 5.89 | 4.82 | 3.65 | 3.04 | 2.18 | 1.75 | 1.49 | 1.28 | 1.01 | 0.821 | 0.494 |
| 1.75V/cell | 24.7 | 17.2 | 13.4 | 10.8 | 8.18 | 5.98 | 4.89 | 3.69 | 3.09 | 2.21 | 1.76 | 1.50 | 1.29 | 1.02 | 0.831 | 0.499 |
| 1.70V/cell | 26.4 | 17.9 | 13.9 | 11.1 | 8.33 | 6.07 | 4.96 | 3.74 | 3.12 | 2.23 | 1.79 | 1.52 | 1.31 | 1.03 | 0.840 | 0.504 |
| 1.67V/cell | 27.4 | 18.4 | 14.0 | 11.3 | 8.42 | 6.13 | 5.00 | 3.77 | 3.15 | 2.25 | 1.80 | 1.53 | 1.31 | 1.04 | 0.845 | 0.507 |
| 1.60V/cell | 29.5 | 19.3 | 14.6 | 11.6 | 8.63 | 6.26 | 5.09 | 3.83 | 3.20 | 2.29 | 1.83 | 1.56 | 1.33 | 1.05 | 0.858 | 0.515 |

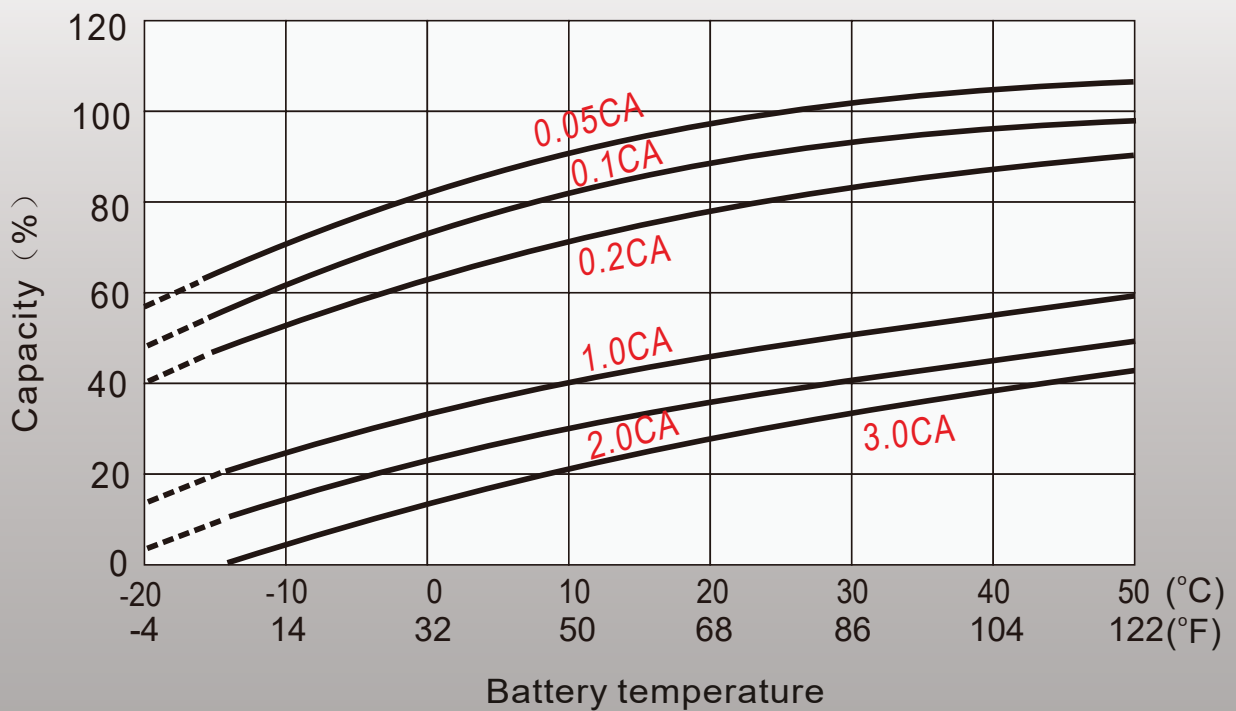
Discharge Characteristics



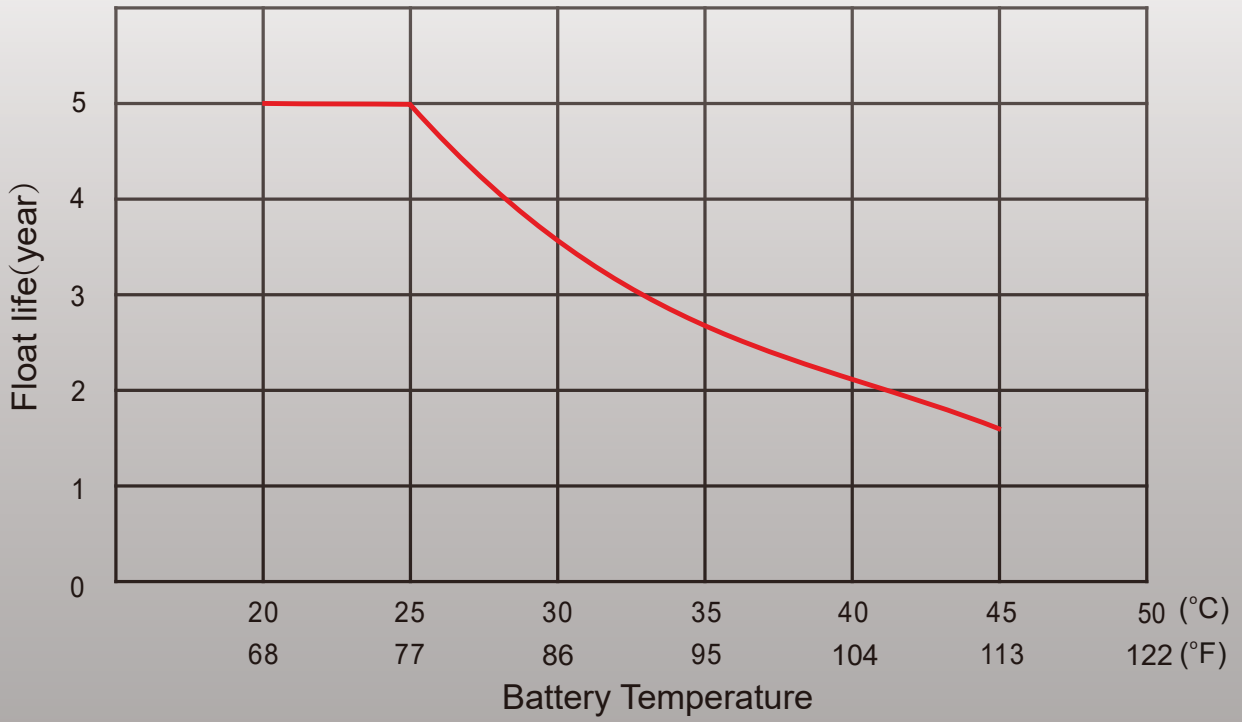
Float Charging Characteristics



Temperature Effects in Relation to Battery Capacity



Float Service Life



ST12-4.5 (12V 4.5Ah)



Starmax Corporation

1585 Cliveden Avenue, Delta, British Columbia
V3M 6M1, Canada

Phone: +1 888 669 1310

Email: info@starmaxbatteries.com

Website: www.starmaxbatteries.com

