



SANTAK® Battery

# Castle Battery

## C12-9AH

### PRODUCT FEATURES

STK CASTLE series battery uses high magnification lead paste formulations and high corrosion resistant alloy multi-grid, and special exhaust structure and sealing technology. It has many excellent features like high discharge capacity, long life, safe and reliable, very low self-discharge rate, flexible installation, convenient maintenance etc.



### APPLICATION

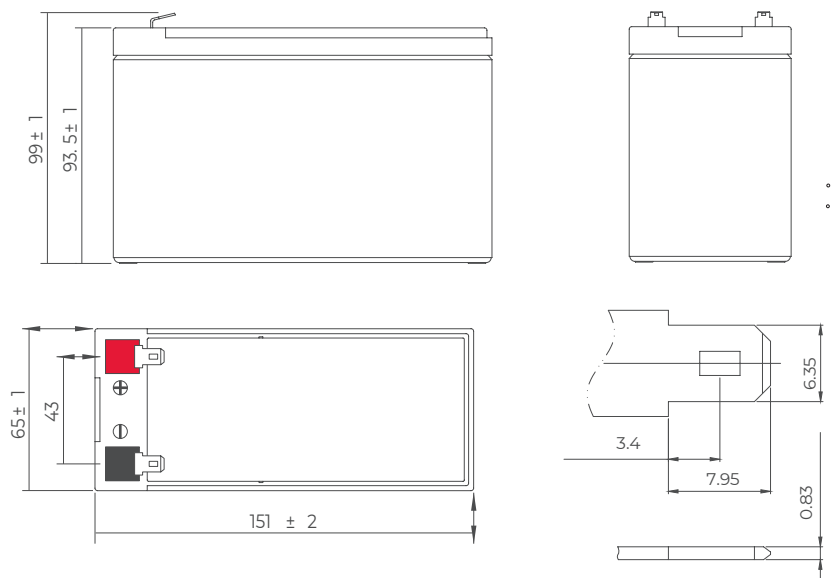
For Network connection equipment, power system, UPS, power station systems, railway and marine systems.



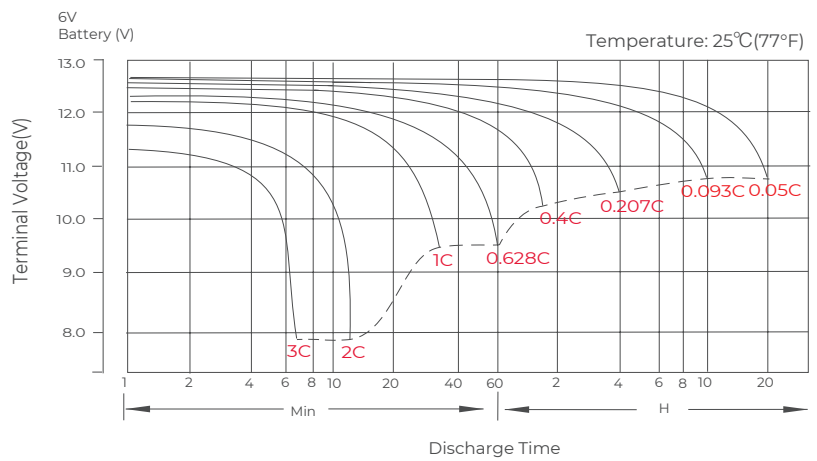
### SPECIFICATION

|                                  |                                                                                                              |
|----------------------------------|--------------------------------------------------------------------------------------------------------------|
| Nominal Voltage                  | 12V                                                                                                          |
| Nominal Capacity(20HR)           | 9 Ah                                                                                                         |
| Dimension                        | Length: 151mm (5.94 in.)<br>Width: 65mm (2.56 in.)<br>Total Height (with Terminal): 99mm (3.90 in.)          |
| Approx Weight                    | 2.50 Kg (5.51 lbs)                                                                                           |
| Terminal                         | T2                                                                                                           |
| Container Material               | ABS                                                                                                          |
| Max. Discharge Current           | 127.5A (5s)                                                                                                  |
| Internal Resistance              | 16~24.0mΩ                                                                                                    |
| Operating Temp.Range             | Discharge: -20°C~55°C (-4 °F~131 °F)<br>Charge: 0°C~40°C (32 °F~104 °F)<br>Storage: -15°C~50°C (5 °F~122 °F) |
| Nominal Operating Temp. Range    | 25°C±3°C (77 °F±5 °F)                                                                                        |
| Standby Use ( 25°C)              | Charging Current: ≤2.7A<br>Charging Voltage: 13.5V~13.8V<br>Temp. Coefficient: -3mV/cell/°C                  |
| Capacity affected by Temperature | 40°C (104 F) : 106%<br>25°C ( 77 F): 100%<br>0°C ( 32 F): 86%                                                |
| Self Discharge                   | ≤2% per month at 20°C                                                                                        |

DIMENSIONS



DISCHARGE CHARACTERISTICS



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

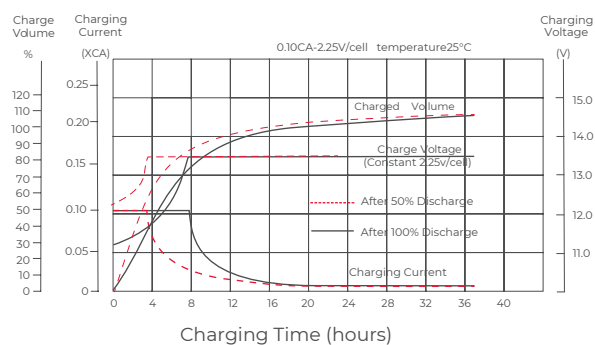
| F.V/Time   | 5min | 10min | 15min | 20min | 30min | 45min | 1h   | 1.5h | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 10h   | 20h   |
|------------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|-------|-------|
| 1.85V/cell | 30.0 | 21.0  | 16.7  | 12.7  | 9.8   | 7.35  | 5.68 | 3.36 | 2.69 | 2.01 | 1.59 | 1.33 | 1.14 | 0.91 | 0.740 | 0.403 |
| 1.80V/cell | 33.0 | 23.5  | 17.4  | 13.2  | 10.3  | 7.60  | 6.00 | 3.68 | 2.93 | 2.18 | 1.72 | 1.43 | 1.22 | 0.97 | 0.801 | 0.435 |
| 1.75V/cell | 36.0 | 24.0  | 18.2  | 13.8  | 10.4  | 7.85  | 6.03 | 3.80 | 3.01 | 2.24 | 1.76 | 1.46 | 1.25 | 0.99 | 0.808 | 0.438 |
| 1.70V/cell | 39.0 | 25.0  | 18.9  | 14.3  | 10.8  | 8.10  | 6.20 | 3.93 | 3.11 | 2.30 | 1.80 | 1.50 | 1.28 | 1.00 | 0.822 | 0.441 |
| 1.67V/cell | 42.0 | 25.5  | 19.3  | 14.9  | 11.2  | 8.35  | 6.28 | 4.00 | 3.16 | 2.34 | 1.83 | 1.51 | 1.29 | 1.01 | 0.826 | 0.448 |
| 1.60V/cell | 45.0 | 26.5  | 19.5  | 15.4  | 11.6  | 8.60  | 6.40 | 4.18 | 3.29 | 2.42 | 1.89 | 1.56 | 1.33 | 1.04 | 0.843 | 0.452 |

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

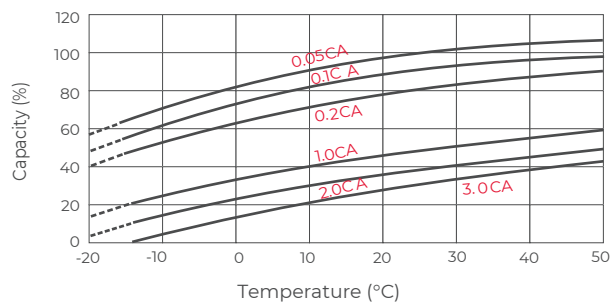
| F.V/Time   | 5min | 10min | 15min | 20min | 30min | 45min | 1h    | 1.5h  | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h   |
|------------|------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|-------|
| 1.85V/cell | 58.6 | 41.5  | 32.2  | 25.1  | 19.30 | 14.35 | 11.30 | 9.37  | 7.35 | 4.87 | 3.93 | 3.35 | 2.64 | 2.05 | 1.83 | 1.24  |
| 1.80V/cell | 62.0 | 43.8  | 33.9  | 26.0  | 20.50 | 15.00 | 11.50 | 9.56  | 7.47 | 4.94 | 4.01 | 3.42 | 2.67 | 2.07 | 1.84 | 1.25  |
| 1.75V/cell | 64.0 | 45.3  | 35.0  | 27.2  | 20.80 | 15.65 | 11.94 | 9.75  | 7.55 | 5.00 | 4.10 | 3.50 | 2.71 | 2.10 | 1.85 | 1.26  |
| 1.70V/cell | 68.0 | 47.2  | 36.0  | 28.3  | 21.50 | 16.30 | 12.40 | 9.94  | 7.66 | 5.07 | 4.17 | 3.53 | 2.73 | 2.12 | 1.86 | 1.27  |
| 1.67V/cell | 70.6 | 48.7  | 36.5  | 29.5  | 22.30 | 16.95 | 12.60 | 10.13 | 7.74 | 5.13 | 4.25 | 3.60 | 2.76 | 2.14 | 1.87 | 1.28  |
| 1.60V/cell | 73.6 | 50.3  | 37.0  | 30.6  | 23.00 | 17.60 | 12.80 | 10.32 | 7.95 | 5.20 | 4.32 | 3.65 | 2.81 | 2.17 | 1.88 | 1.290 |

# CASTLE BATTERY C12-9AH TYPICAL CURVES

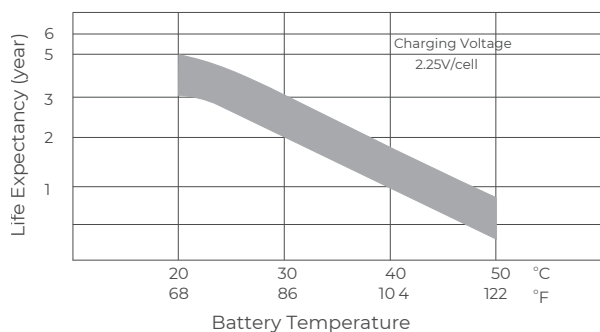
## Float Charging Characteristics



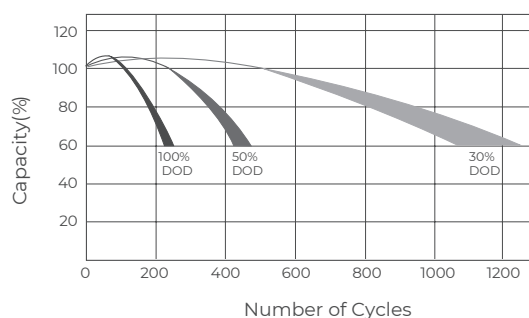
## Temperature Effects in Relation to Battery Capacity



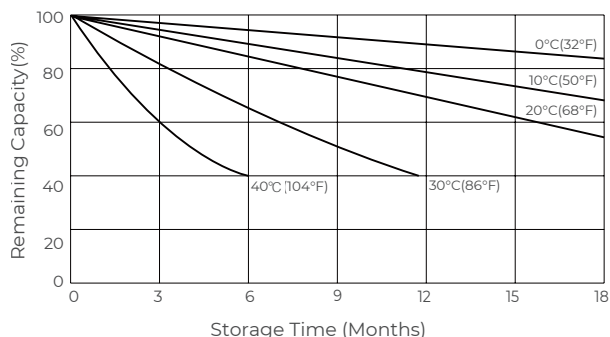
## Effect of Temperature on Long Term Float Life



## Cycle Life in Relation to Depth of Discharge



## Self Discharge Characteristics



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