

## NSFD018Q11 12.8V18Ah

### LiFePO<sub>4</sub> Lithium Battery

**Longer Cycle Life:** Offers up to 15 times longer cycle life and 5 times longer float/calendar life than lead acid battery.

**Lighter Weight:** About 40% weight of a comparable lead acid battery, save up to 60% in weight.

**Quick Charge:** Short charge time compared with lead acid battery.

**Low Self-Discharge:** Lower self-discharge compared with lead acid battery, longer storage time without recharging.

**Superior Safety:** Multi-protection methods built inside to protect the battery from overcharge, over discharge and short circuit situation.

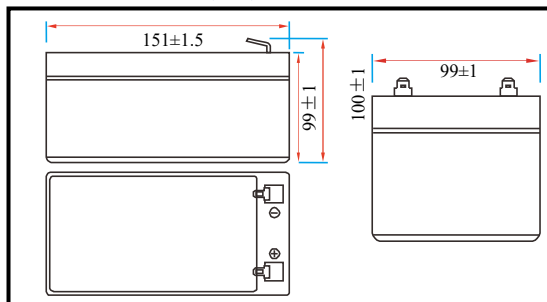
**High Efficient:** Higher round-trip energy efficiency of the average (92%) than lead acid battery 80% (discharge from 100% to 0% and back to 100% charged).



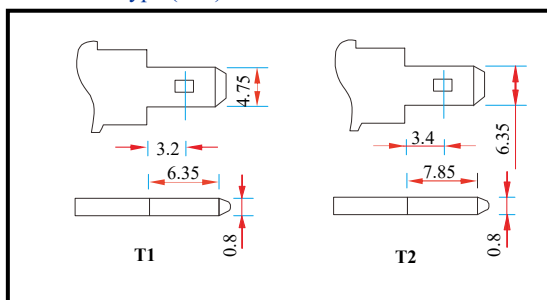
### Specifications

|                  |              |                      |
|------------------|--------------|----------------------|
| Nominal voltage  |              | 12.8V                |
| Nominal capacity |              | 18Ah                 |
| Dimensions       | Length       | 181±1.5mm (5.94inch) |
|                  | Width        | 76±1mm (3.89inch)    |
|                  | Height       | 165±1mm (3.89inch)   |
|                  | Total height | 166±1mm (3.94inch)   |
| Approx. weight   |              | 2.09kg (4.63lbs)±4%  |

### Outer dimensions (mm)



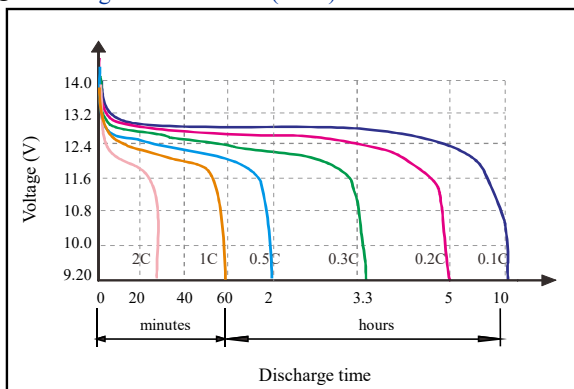
### Terminal type (mm)



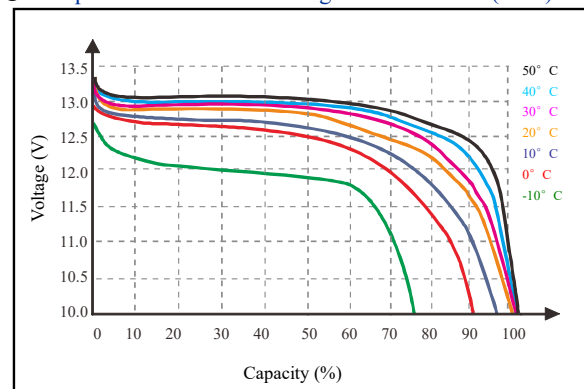
### Characteristics

|                                           |                                  |                                                                                                                             |
|-------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Electrical Parameters (25°C)              | Rated Voltage                    | 12.8V                                                                                                                       |
|                                           | Rated Capacity (C <sub>5</sub> ) | 18Ah@25°C                                                                                                                   |
|                                           | Energy                           | 230Wh                                                                                                                       |
|                                           | Months Self Discharge            | <3%                                                                                                                         |
|                                           | Charge Efficiency                | 99.5%@ 0.2C                                                                                                                 |
|                                           | Discharge Efficiency             | 96-99%@ 1C                                                                                                                  |
| Terminal type                             |                                  | T1/T2                                                                                                                       |
| Internal resistance (Fully charged, 25°C) |                                  | ≤150mΩ                                                                                                                      |
| Cycle life                                |                                  | >6000 cycles @ 0.2C 80%D.O.D                                                                                                |
| Capacity affected by temperature          | 40°C                             | 101%                                                                                                                        |
|                                           | 25°C                             | 100%                                                                                                                        |
|                                           | 0°C                              | 90%                                                                                                                         |
|                                           | -10°C                            | 75%                                                                                                                         |
| Nominal operating temperature             |                                  | 25°C±3°C (77°F±5°F)                                                                                                         |
| Operating temperature range               | Discharge                        | -20°C~60°C (-4°F~140°F)                                                                                                     |
|                                           | Charge                           | 0°C~45°C (32°F~113°F)                                                                                                       |
|                                           | Storage                          | 0°C~40°C (32°F~104°F)                                                                                                       |
| Water Dust Resistance                     |                                  | IP65                                                                                                                        |
| Charge Voltage                            |                                  | 14.6V                                                                                                                       |
| Standard Charge Mode (25°C±2°C, <75%RH)   |                                  | 0.2CA Constant Current to 14.6V, then Constant Voltage 14.6V until the current drops to 0.02CA, before use, rest 30 minutes |
| Charge Current                            |                                  | 3.6A                                                                                                                        |
| Maximum Charge Current                    |                                  | 9A                                                                                                                          |
| Charge Cut off Voltage                    |                                  | 14.6V                                                                                                                       |
| Continuous Discharge Current              |                                  | 20A                                                                                                                         |
| Maximum Pulse Current                     |                                  | 60A (<100ms)                                                                                                                |
| Discharge Cut Off Voltage                 |                                  | 11.2V                                                                                                                       |
| Communicate Protocol (optional)           |                                  | None                                                                                                                        |
| SOC (optional)                            |                                  | None                                                                                                                        |
| Application connection                    |                                  | 1 string 1 parallel                                                                                                         |
| Mechanical                                | Cells                            | 4 Strings                                                                                                                   |
|                                           | Container                        | ABS                                                                                                                         |

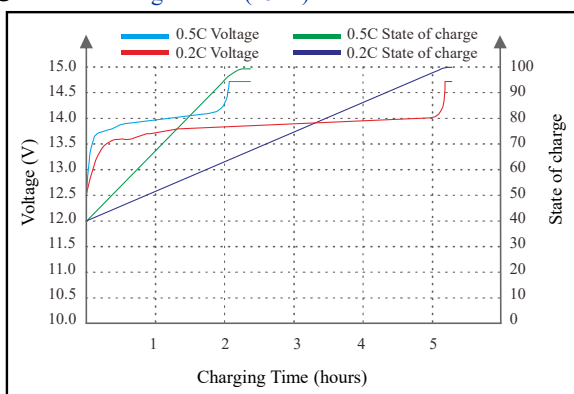
## ● Discharge characteristics (25°C)



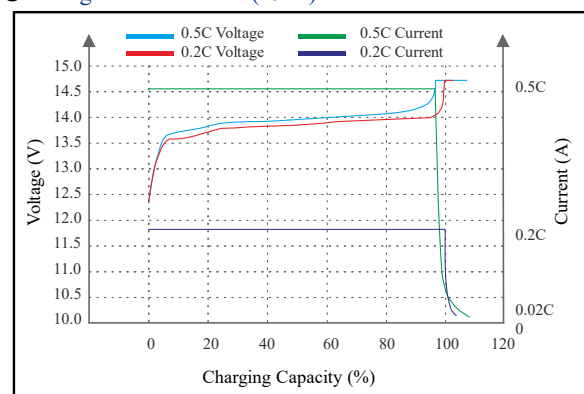
## ● Temperature affect on discharge characteristics (0.5C)



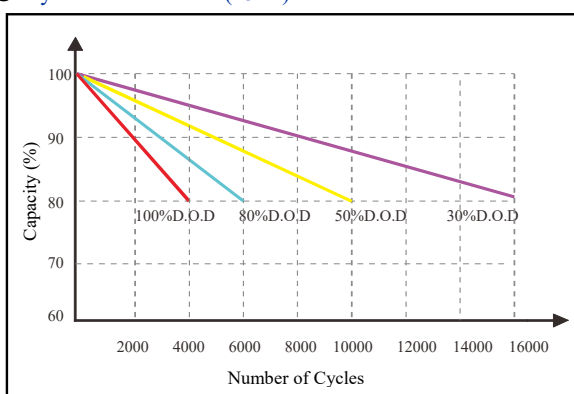
## ● State of Charge Curve (25°C)



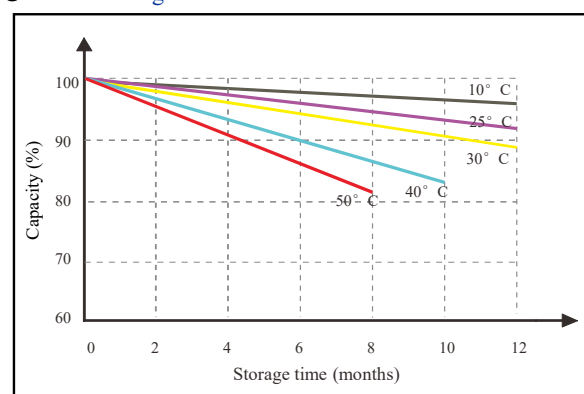
## ● Charge characteristics (25°C)



## ● Cycle life on D.O.D (25°C)



## ● Self Discharge Characteristics Curve



Note 2: The above curves are based on laboratory testing data @ 25°C 40%RH.