



30 Amp Hour Cell

NANO LITHIUM TITANATE BATTERY CELL

<i>Performance Characteristics</i>	<i>Nominal Values</i>
Nominal Voltage	2.3 V
Capacity (Minimum / Typical @ 30 amp [1C rate] at 25°C, CCCV charge)	30 / 31.5 Ah
Typical energy (30 amp [1C rate] at 25°C, CCCV discharge)	75 Wh
Pulse power (FreedomCAR, 10s pulse, 50% SOC at 25°C) (discharge / charge) ¹	900 W, 1700 W
Energy density	140 Wh/L
Specific energy	75 Wh/kg
Internal charge impedance (10 sec DC pulse, 50% SOC, 25°C)	0.42 mΩ
Internal discharge impedance (10 sec DC pulse, 50% SOC, 25°C)	0.43 mΩ
Max continuous charge	300 A
Max continuous discharge	300 A
Max 10 sec Pulse discharge or charge current	600 A

<i>Life Characteristics</i>	
Cycle life at 2C charge and 2C discharge, 100% DOD, 25°C	>20000 to 95% initial capacity
Cycle life at 2C charge and 2C discharge, 100% DOD, 55°C	>10000 to 90% initial capacity
Calendar life at 25°C	> 25 years

<i>Temperature Limits²</i>	
Operating and Storage temperature range	-50°C to +65°C cell temperature

<i>Voltage Limits³</i>	
Discharge cut off voltage at -40°C to +55°C	1.5 V
Charge cut off voltage at -40°C to +55°C	2.9 V

<i>Cell Dimensions⁴</i>	
Width (W) x Height (H) x Thickness (T, compressed)	173 x 97 x 27.8 mm
Weight	1.01 kg

<i>Transportation</i>	
Transportation Specifications	Tested to UN 38.3

1. Power at 25°C for 10 sec is calculated using FreedomCar discharge formulas.

2. Optimal storage temperature is 25°C.

3. In battery systems, the battery management system must enforce the voltage limits at the individual cell level.

4. Cell terminal heights are not included in the stated cell dimensions.