



NH2500AJF • Nickel metal hydride battery

NH2500AJF • Nickel metal hydride battery

1. Introduction

This specification governs the performance of the following FULLWAT[®] Nickel-Metal Hydride Cylindrical cell (NH2500AJF) and its stack-up batteries.

2. Data of stack up batteries

All data involve voltage and weight of stack-up batteries are equal to the value of unit cell multiplied by the number of unit cell which consisted in the stack-up batteries.

Example: Stack-up batteries consisting three unit cells: Nominal voltage of unit cell=1.2V

Nominal voltage of stack-up batteries =1.2V×3=3.6V

3. Ratings

Description	Unit	Specification	Condition	
Nominal voltage	V/cell	1.2	Unit cell	
Minimum capacity	mAh	2450	Standard Charge/Discharge	
Nominal capacity	mAh	2500	Standard Charge/Discharge	
Standard charge	mA	250 (0.1C)	$T_a=20\pm 5^{\circ}\text{C}$ (See Note 1)	
	hour	16		
Fast charge	mA	750 (0.3C)	- $\Delta V=0\sim 5\text{mV/cell}$, Timer Cutoff=120% nominal capacity, Temp. Cutoff=55°C, $dT/dt=0.8^{\circ}\text{C/min}$, $T_1=20\pm 5^{\circ}\text{C}$	
	hour	4 approx (See Note 2)		
Trickle charge	mA	(0.03C)~(0.05C)	$T_a=20\pm 5^{\circ}\text{C}$	
Standard discharge	mA	500 (0.2C)	$T_a=20\pm 5^{\circ}\text{C}$ Humidity: Max.85%	
Discharge Cut-off voltage	V/cell	1.0		
Storage temperature	°C	-20~25	Within 1 year*	State: 30% charge, Max Humidity: 85%
		-20~35	Within 6 months	
		-20~45	Within 1 month	
		-20~55	Within 1 week	
Typical weight	Gram	38	Unit cell	

Notes

* To keep the best performance for those not used for a long time, we recommend to charge the cells/batteries at least 30% after discharge entirely in every 6 months.

NH2500AJF • Nickel metal hydride battery

4. Performance

Unless otherwise stated, tests should be done within one month of delivery under the following conditions:

Ambient temperature: 20±5°C
Relative humidity: 65±20%

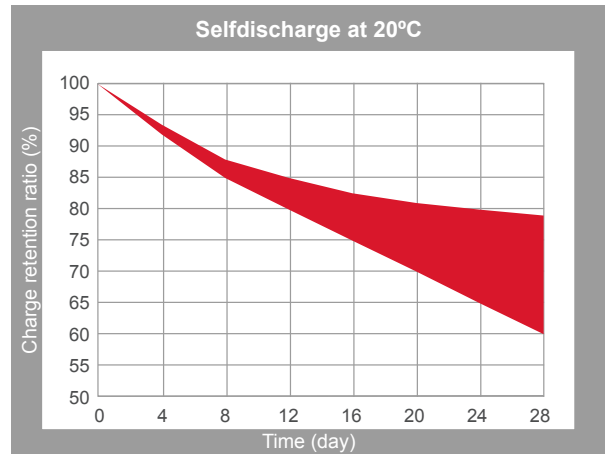
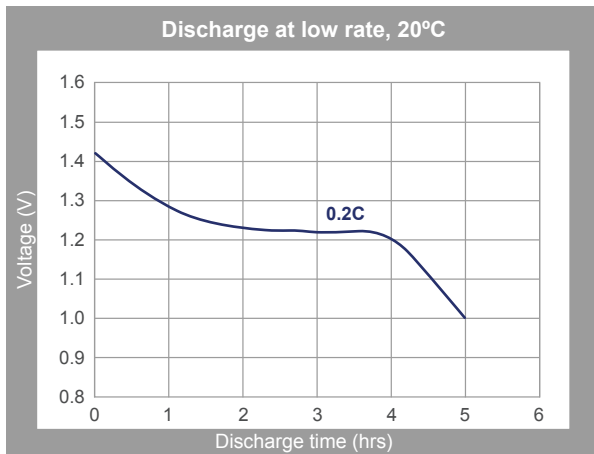
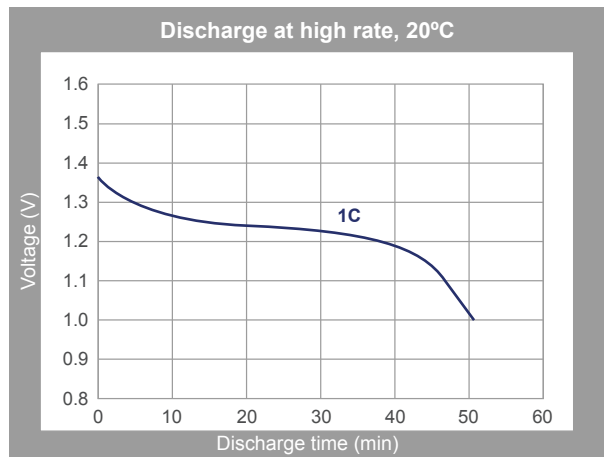
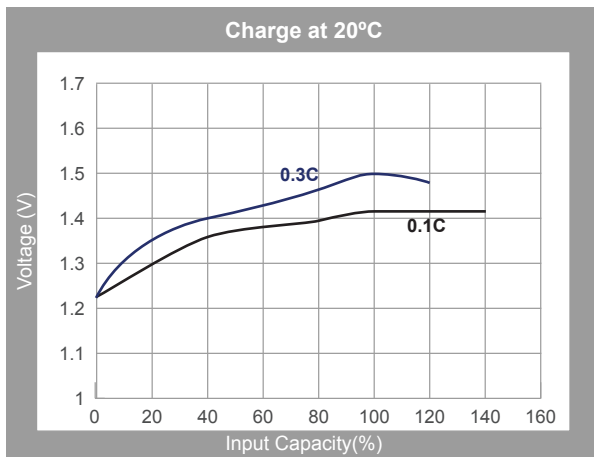
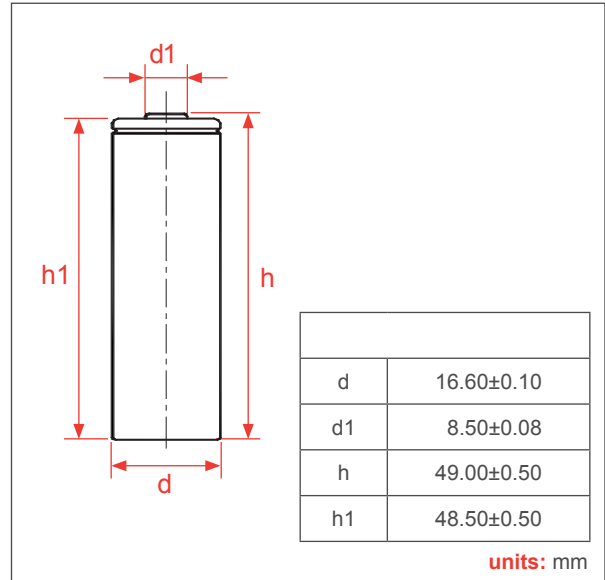
Notes: Standard Charge/Discharge conditions:
Charge: 250mA (0.1C) x 16 hours
Discharge: 500mA (0.2C) to 1.0 V/cell

Test	Unit	Value	Conditions	Remarks
Capacity	mAh	≥2450	Standard charge /discharge.	Up to 3 cycles are allowed.
Open circuit voltage (OCV)	V	≥1.25	Within 1 hour after standard charge.	
Internal impedance	mΩ	≤18	Upon fully charge (1KHz).	
High rate discharge (1C)	min	≥51	Standard charge, 1 hour rest before discharge by 1C to 1.0V/cell.	Up to 3 cycles are allowed.
Charge retention	mAh	≥1500 (60%)	Standard charge. Storage: 28 days. Standard discharge.	T ₁ =20±5°C
IEC Cycle Life	Cycle	≥ 200	IEC61951-2(2003)7.4.1.1	(See Note 3)
Leakage		No leakage No deformation	Fully charge at 250mA for 48hrs.	
Vibration resistance		Change of voltage should be less than 0.02V/cell, change of impedance should be less than 5milliohm/cell	Charge the battery at 0.1C for 14hrs, then leave for 24hrs, check battery before/ after vibration, amplitude 1.5mm, vibration 3000 CPM, any direction for 60mins.	
Impact resistance		Change of voltage should be less than 0.02V/cell, change of impedance should be less than 5milliohm/cell	Charge the battery at 0.1C for 14hrs, then leave for 24hrs, check battery before/after dropped, height 50cm wooden board (thickness 30mm) direction not specified, 3 times.	

NH2500AJF • Nickel metal hydride battery

5. Configuration, dimensions and markings

Nominal capacity		2500mAh	
Nominal voltage		1.2V	
Charge current	Standard	250mA	
	Fast	750mA	
Charge time	Standard	16hrs	
	Fast	4hrs	
Ambient temperature	Charge	Standard	0 ~ 45°C
		Fast	10 ~ 40°C
	Discharge	-20 ~ 60°C	
Storage		-20 ~ 55°C	
Internal impedance (mΩ) (After charge)		≤18	
Weight		38gr.	



NH2500AJF • Nickel metal hydride battery

6. Warranty

The warranty is specified in our warranties section of *Terms of Sales*. If the product is to be stored for more than three months it is necessary to perform the appropriate maintenance to ensure the good condition of the batteries. Consult our annex to the *Terms of Sales* on the recommended maintenance.

7. Caution

- Reverse charging is not acceptable.
- Charge before use. The cells/batteries are delivered in an uncharged state.
- Do not charge/discharge with more than our specified current.
- Do not short circuit the cell/battery. Permanent damage to the cells/batteries may result.
- Do not incinerate or mutilate the cells/batteries.
- Do not solder directly to the cells/batteries.
- The expected life may be reduced if the cells/batteries are subjected to adverse conditions as: extreme temperature, deep cycling, excessive overcharge/ over-discharge.
- Store the cells/batteries in a cool dry place. Always discharge batteries before packing.

NH2500AJF • Nickel metal hydride battery

Notes

- (1) T_a : Ambient Temperature.
- (2) Approximate charge time from discharged state, for reference only.
- (3) Table: IEC61951-2(2003)7.4.1.1 cycle life:

Cycle number	Charge	Rest	Discharge
1	0.1C×16h	None	0.25C×2h20min
2-48	0.25C×3h10min	None	0.25C×2h20min
49	0.25C×3h10min	None	0.25C to 1.0V/cell
50	0.1C×16h	1-4h	0.2C to 1.0V/cell

Cycle 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes less than 3h.