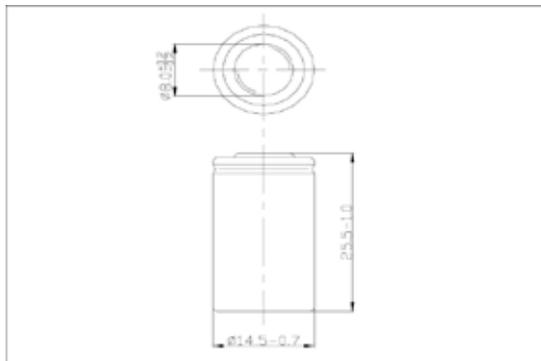


X1/2AA600

Specifications of single cell

Nominal voltage		1.2 V	
Capacity		0.2 C Discharge	1.0 C Discharge
	Minimum	300 min	57 min
	Typical	315 min	60 min
Dimensions	Diameter	mm	
	Height	14.5 ^{-0.7}	
Weight (approximately)		gram	
		11.5	
Internal Impedance at 1000 Hz		50 mΩ (max) After Charge	
Charge	Standard	60 mA (0.1 C) × 15 h	
	Rapid	600 mA (1.0 C) × 1.1 h	
Ambient temperature	Charge	Standard	°C
		Rapid	0°C to 40°C
	Discharge	-20°C to 50°C	
	Storage	-20°C to 30°C	

Dimensions with tube (unit mm)

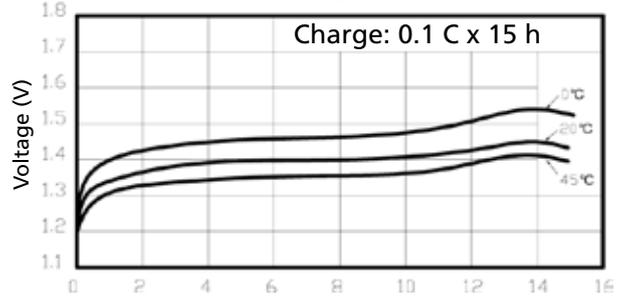


Note:

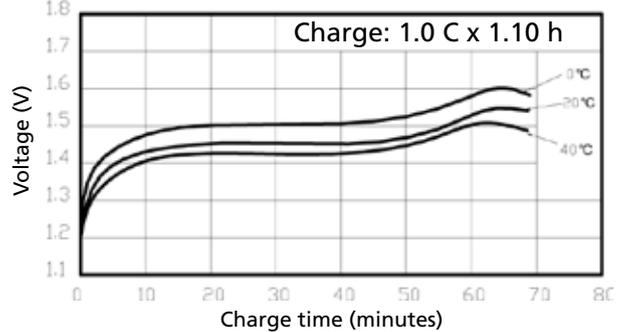
1. Nominal capacity, rated at 0.2 C 20°C.
2. Average capacity, for reference only.
3. Weight and internal impedance are for reference.
4. Standard according as IEC of test cycle life.

Typical characteristics

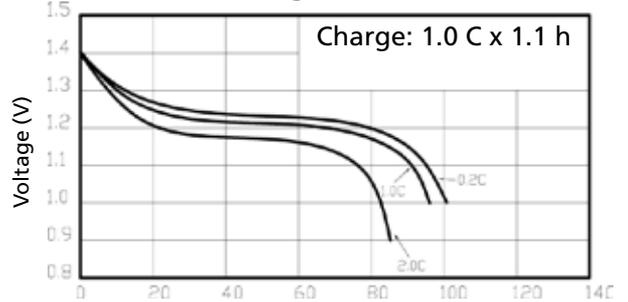
Standard charge characteristics



Rapid charge characteristics

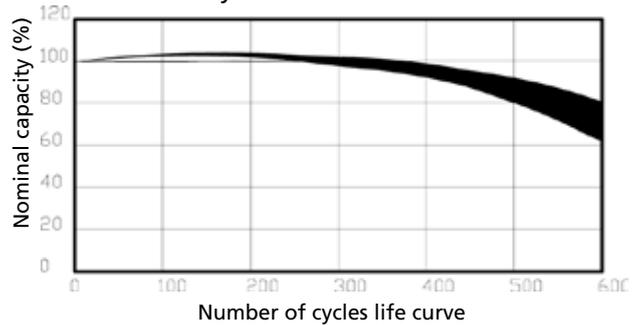


Discharge characteristics

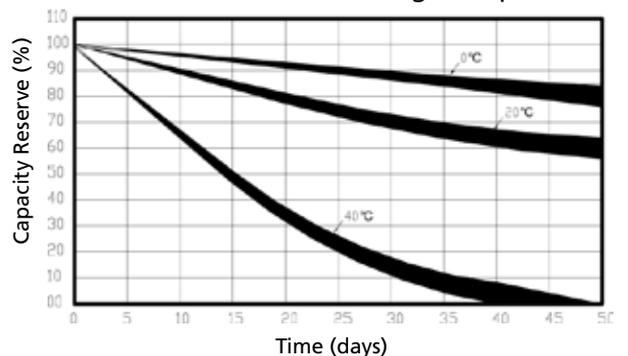


Discharge capacity (%)

Cycle life characteristics



Charge retention curves of Ni-MH cylindrical cell at various storage temperature



1. RATINGS

Description	Unit	Specification	Condition
Nominal Voltage	V	1.2	Unit pack
Typical Capacity	min	315	Standard Charge/Discharge
Nominal Capacity	mAh	600	Standard Charge/Discharge
Minimum Capacity	min	300	Standard Charge/Discharge
Standard Charge	mA	450 (0.1 C)	Ta = 0~40°C (see note)
	hour	15	
Fast Charge	mA	60 (0.1 C)	-ΔV = 5 mV/cell Timer cutoff = 110 % input capacity Temp. cutoff = 40~45°C dT/dt = 0.8°C/min (0.5 to 1.0 C); 0.8~1°C/min (1 C)
	hour	15	
Trickle Charge	mA	30 (0.05 C)~60 (0.1 C)	Ta = 0~40°C (see note 1)
Discharge Cut-off Voltage	V	1.0	Unit cell
Maximum Discharging Current	mA	1200 (2.0 C)	Ta = 0~50°C 0.9 V/cell cut off
Storage Temperature	°C	-20~+25 (within 1 year) -20~+30 (within 3 month) -20~+40 (within 1 month) -20~+50 (within 1 week)	*
Typical Weight	g	11.5 approx.	*

2. PERFORMANCE

Test	Unit	Specification	Condition	Remarks
Capacity	min	≥ 300	Standard Charge/Discharge	Up to 3 cycles are allowed.
Open circuit Voltage (OCV)	V	≥ 1.25	Within 1 h after standard charge	Unit pack
Internal Impedance (Ri)	mΩ	≤ 50	Upon fully charge at 1 kHz	*
High Rate Discharge (1.0 C)	min	≥ 57	Standard Charge/rest 30 min discharge at 1.0 C to 1.0 V	Up to 3 cycles are allowed.
High Rate Discharge (2.0 C)	min	N/A	Standard Charge/rest 30 min discharge at 2.0 C to 0.9 V	Up to 3 cycles are allowed.
Low Temperature Discharge	min	≥ 240	Standard Charge, Storage: 24 h at 0 ± 2°C 0.2 C discharge at 0 ± 2°C	1.0 V/cell Cut-off
Overcharge	N/A	No conspicuous deformation and/or leakage	0.1 C charge for 48 h	*
Charge reserve	min	≥ 180 min	Standard charge Storage: 28 days, Standard discharge (0.2 C)	1.0 V/cell Cut-off
IEC Cycle Life Test	Cycle	≥ 500	IEC61951-2(2003)7.4.1.1	*
Humidity	N/A	No leakage	Standard charged, stand for 14 days at 33 ± 3°C and 80 ± 5% of relative humidity.	*

External Short Circuit	N/A	No fire and no explosion	After standard charge, short-circuit the cell at $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ until the cell temperature returns to ambient temperature (cross section of the wire or connector should be more than 0.75 mm^2).	*
Safety Device Operation	N/A	No explosion	Forced discharge at 0.2 C to a final voltage of 0 V, then the current be increased to 1 C and forced discharge continue for 60 min.	Leakage of electrolyte and Deformation are acceptable.
Free falling (drop)	N/A	$\Delta V < 0.02 \text{ V/cell}$ $\Delta R_i < 5 \text{ %/cell}$	Charge at 0.1 C for 16 h, and then leave for 24 h, check battery before/after drop. Height: 50 cm Thickness of wooden board: 30 mm Direction is not specified. Test for 3 times.	*

3. APPEND:

Table 5-Endurance in cycles

Cycle number	Charge	Stand in Charged condition	Discharge
1	0.1 C _t A for 16 h	None	0.25 C _t A for 2 h 20 min ²)
2 to 48	0.25 C _t A for 3 h 10 min	None	0.25 C _t A for 2 h 20 min ²)
49	0.25 C _t A for 3 h 10 min	None	0.25 C _t A to 1.0 V/cell
50	0.1 C _t A for 16 h	1 h to 4 h	0.2 C ₅ A to 1.0 V/cell
<ul style="list-style-type: none"> It is permissible to allow sufficient open-circuit rest time after the completion of discharge at cycle 50, so as to start cycle 51 at an exact two-week interval. A similar procedure may be adopted at cycles 100, 150, 200, 250, 300, 350, 400 and 450. If cell discharge voltage drops below 1.0 V/cell, discharge may be discontinued. 			