

Nominal Voltage :	1.20 V
Open Circuit Voltage :	≥ 1.40 V after 16h/0.1C charge
Nominal Capacity	4500 mAh at 0.2C discharge to 1.0V after 16h/0.1C charge*
Weight ± 5 g :	87 g
Int. Resistance :	12 mΩ at 1 kHz
Self Discharge :	35% / year at 20°C storage



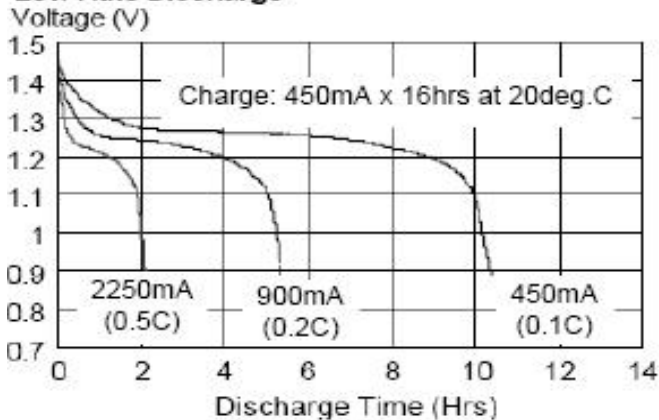
Charge Characteristics

Standard Charge :	16 h x 0.1 C (450mA)
Fast Charge :	2 h x 0.5 C (2250mA)

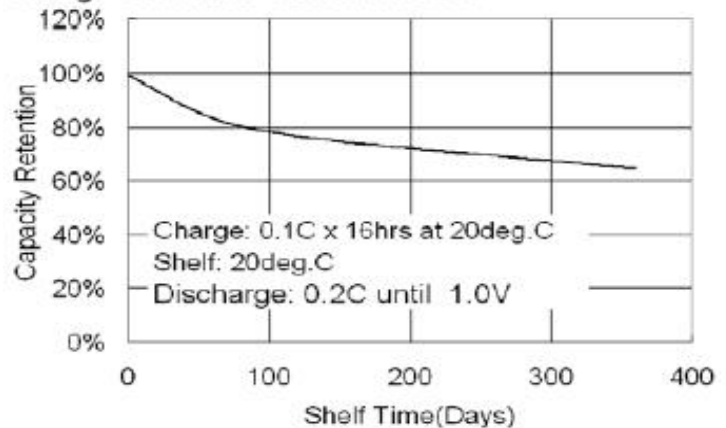
Discharge Characteristics

end 1.0 V	
0.2 C (900mA)*	300 min
0.5 C (2250mA)*	120 min

Low Rate Discharge



Charge Retention Characteristics



* test condition: 20 ± 5°C

Performance Characteristics

Storage Temperature :	min -20 °C	max 40°C
Operating Temperature :	min -20 °C	max 50°C
Cycle life test :	IEC standard	up to 1000 cycles

Cycle life performance (IEC)

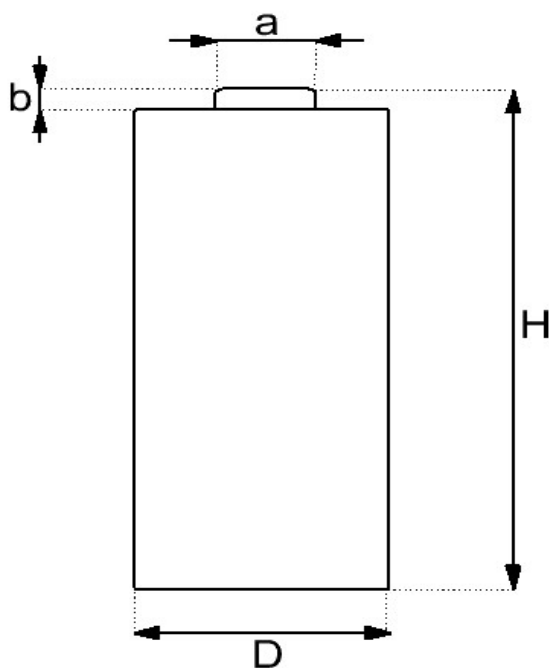
Cycle number	Charge	Rest	Discharge
1	0.1C / 16h	no	0.25C 2.33 h
2 to 48	0.25 C / 3.17h	no	0.25C / 2.33h
49	0.25C / 3.17h	no	0.25 C to 1.0 V
50	0.1C / 16h	1-4h	0.25 C to 1.0 V

The endurance test is considered complete when two such successive cycles give a discharge duration less than 3 h of any 50th cycle

Safety Performance

Drop test	Drop to an concrete floor from a height of 75 cm 4 times after fully charge and discharge	No machanical and electrical abnormality
Short-circuit	Short-circuit for 2 hours with 0,75qmm wire after fully charge and discharge	No explosion
Overcharge test 1	Charge 0.1C / 16h, charge 0.1C / 48h rest 1h, discharge 0.1C to 1.0V	Discharge time should be > 5h
Overcharge test 2	Charge 1.0C (-dV:5mV), rest 10 min, charge 1.0A (-dV:5mV) rest 10 min, charge 1.0C (-dV:5mV)	No leakage should occurr
Drop-overcharge	Discharge 1.0C to 1.0 V, discharge 0.2C to 1.0 V, drop to an concrete floor 3 times, charge 1.0C / 5h	No explosion
Drop short-circuit	Charge 0.1C / 16h, drop to an concrete floor 3 times, short-circuit for 2 hours with 0,75qmm wire	No explosion

Dimensions



Height (H) $\pm 0.50\text{mm}$	50.00 mm
Diameter (D) $\pm 0.50\text{mm}$	25.50 mm
Nipple height (b) min.	1.50 mm
Nipple diameter (a) $\pm 0.30\text{mm}$	8.00 mm

Don't disassemble and don't mix with used or other battery types.
Don't dispose to fire.
Remove batteries when not in use for long periods.