NPP Power Co., Ltd.

NPP
CLEAN ENERGY, SAFE POWER

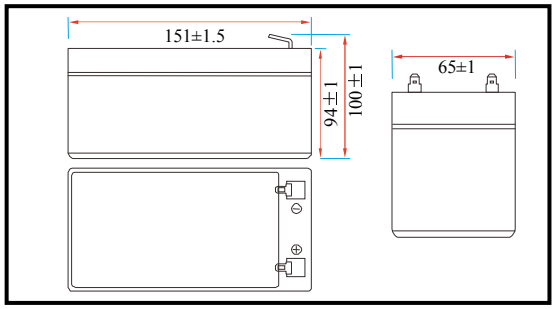
HR1234W (12V34 Watts/cell)

Valve Regulated Lead Acid Battery

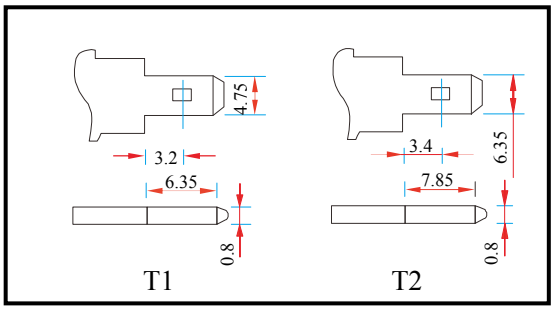
Specifications

Nominal voltage		12V (6 cells per unit)
Rated capacity (15min. rate)		34 Watts/cell /1.67V
Dimensions	Length	151±1.5mm (5.94inch)
	Width	65±1mm (2.56inch)
	Height	94±1mm (3.70inch)
	Total height	100±1mm (3.90inch)
Approx. weight		2.60kg (5.51lbs)±4%

Outer dimensions (mm)



Terminal type (mm)



Characteristics

Capacity (25°C)	15min. rate	34 Watts/cell /1.67V
	20HR	9Ah/10.5V
Terminal type		T2/T1
Internal resistance (Fully charged, 25°C)		Approx. 14mΩ
Capacity affected by temperature (10HR)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self-discharge (25°C)	3 months	Remaining capacity: 91%
	6 months	Remaining capacity: 82%
	12 months	Remaining capacity: 65%
Nominal operating temperature		25°C± 3°C (77°F± 5°F)
Operating temperature range	Discharge	- 15°C~ 50°C (5°F ~ 122°F)
	Charge	- 10°C~ 50°C (14°F ~ 122°F)
	Storage	- 20°C~ 50°C (-4°F ~ 122°F)
Float charging voltage (25°C)		13.60 to 13.80V Temperature compensation: -18mV/°C/Block
Cyclic charging voltage (25°C)		14.50 to 15.00V Temperature compensation: -30mV/°C/Block
Maximum charging current		2.72A
Maximum discharge current		135A (5 sec.)
Design life		5 years for floating (25°C)
		Eurobat (20°C): 3-5 years, standard commercial

Construction

Component	Positive plate	Negative plate	Container	Cover	Separator	Electrolyte	Safety valve	Terminal
Raw material	Lead dioxide	Lead	ABS	ABS	AGM	Sulfuric acid	Rubber	Copper

Constant current discharge characteristics unit: Ampere/cell (at 25°C, 77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V/cell	38.64	23.84	17.80	14.10	9.55	7.07	5.78	3.31	2.35	1.89	1.62
1.67V/cell	36.96	22.79	17.20	13.50	9.24	6.84	5.64	3.28	2.33	1.87	1.61
1.70V/cell	35.91	22.16	16.70	13.20	9.07	6.72	5.55	3.26	2.32	1.87	1.60
1.75V/cell	34.44	21.21	16.20	12.80	8.85	6.55	5.44	3.21	2.30	1.85	1.59
1.80V/cell	32.45	19.95	15.30	12.10	8.53	6.31	5.27	3.13	2.23	1.80	1.55

Constant power discharge characteristics unit: Watt/cell (at 25°C, 77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V/cell	72.47	44.00	35.30	27.90	18.90	14.00	11.50	6.58	4.72	3.80	3.27
1.67V/cell	69.19	42.00	34.00	26.80	18.30	13.50	11.20	6.52	4.68	3.77	3.24
1.70V/cell	67.34	40.90	33.10	26.20	18.00	13.30	11.00	6.48	4.66	3.75	3.22
1.75V/cell	64.47	39.10	32.00	25.30	17.50	13.00	10.80	6.39	4.63	3.73	3.20
1.80V/cell	60.89	37.00	30.30	24.00	16.90	12.50	10.40	6.22	4.49	3.61	3.11

Note 1: Above characteristics data can be obtained within three charge and discharge cycles.

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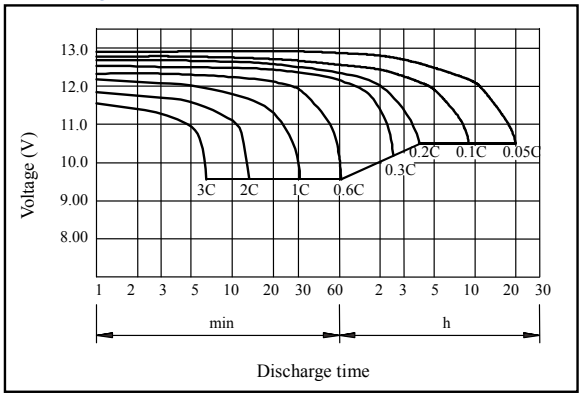
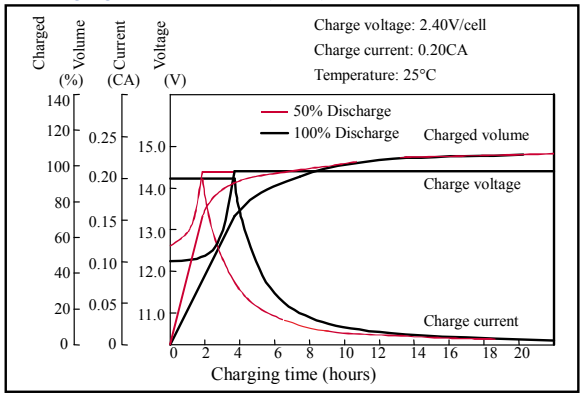
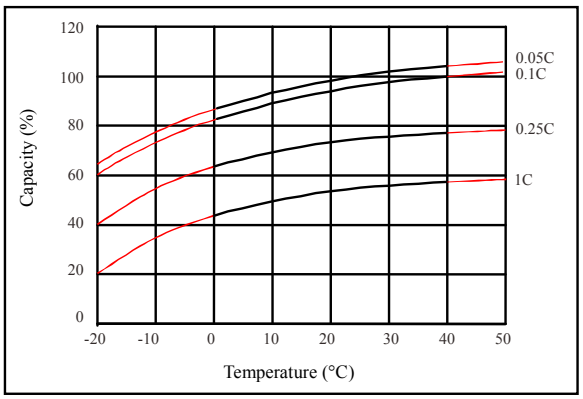
Discharge characteristics (25°C)



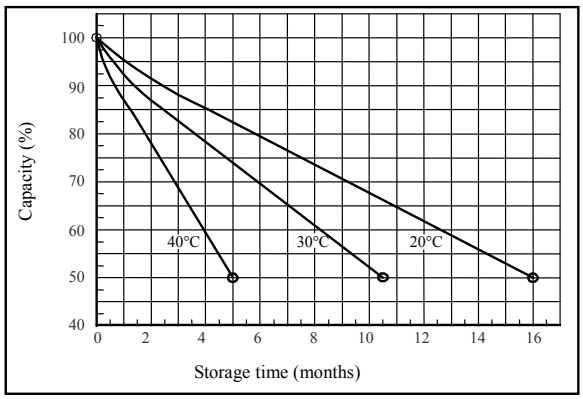
Charging characteristics (25°C)



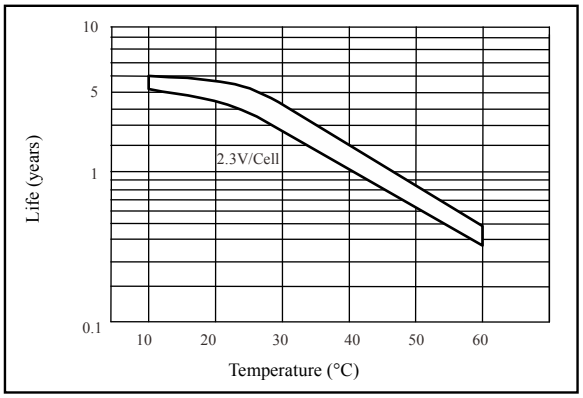
Temperature effects on capacity



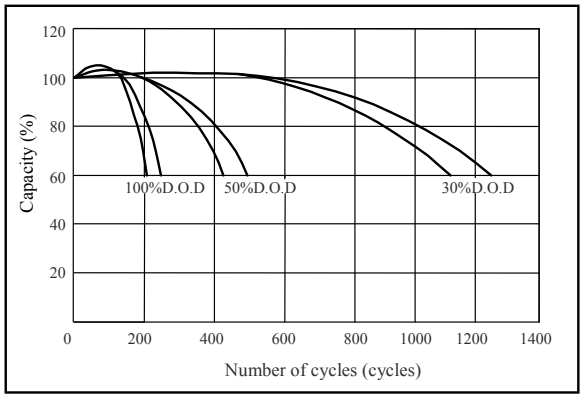
Self-discharge characteristics



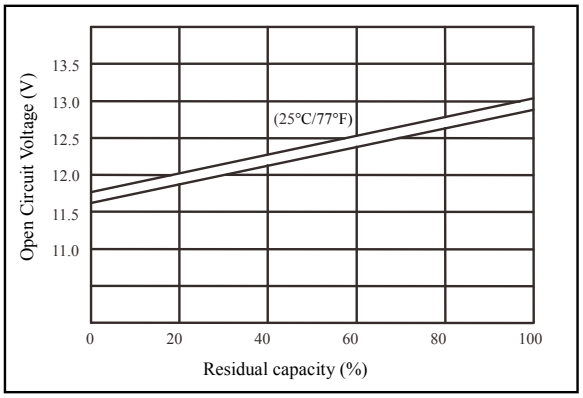
Floating life on temperature



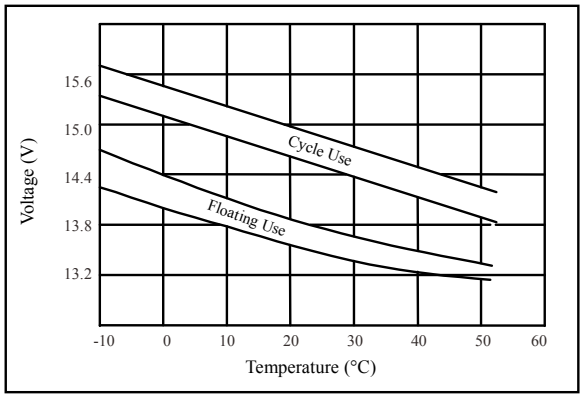
Cycle life on D.O.D (25°C)



Relationship for OCV and capacity (25°C)



Relationship for charging voltage and temperature



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