

NP4-4.5Ah 4V4.5Ah

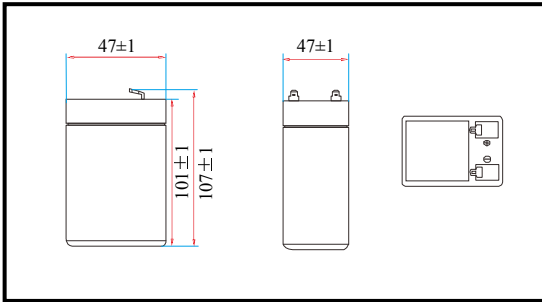
Valve Regulated Lead Acid Battery



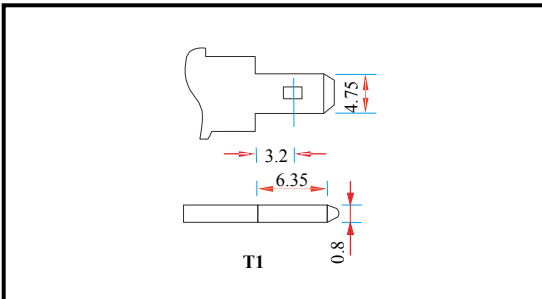
● Specifications

Nominal voltage	4V (2 cells per unit)	
Rated capacity (20HR)	4.5Ah/3.5V	
Dimensions	Length	47±1mm (1.85inch)
	Width	47±1mm (1.85inch)
	Height	101±1mm (3.98inch)
	Total height	107±1mm (4.21inch)
Approx. weight	0.52kg (1.15lbs)±5%	

● Outer dimensions (mm)



● Terminal type (mm)



● Characteristics

Capacity (25°C)	20HR (3.5V)	4.5Ah
	10HR (3.5V)	4.2Ah
	1HR (3.2V)	2.7Ah
Terminal type		T1
Internal resistance (Fully charged, 25°C)		Approx. 15mΩ
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)		4.50 to 4.60V Temperature compensation: -6mV/°C/Block
Cyclic charging voltage (25°C)		4.80 to 5.00V Temperature compensation: -10mV/°C/Block
Maximum charging current		1.35A
Maximum discharge current		68A (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/Block (at 25°C, 77°F)

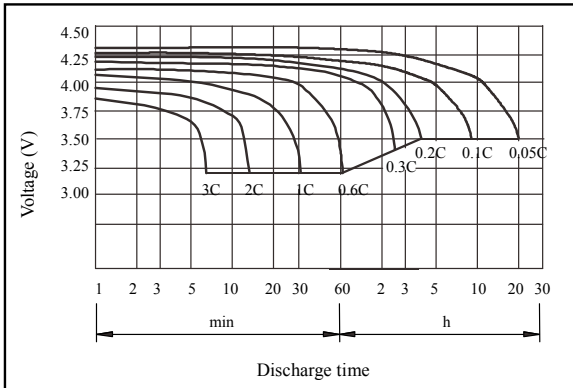
F.V/Time	5min	10min	15min	30min	60min	2h	3h	4h	5h	10h	20h
4.80V	17.2	10.9	8.51	4.79	2.95	1.61	1.12	0.92	0.78	0.43	0.23
4.95V	16.7	10.6	8.30	4.70	2.90	1.60	1.11	0.92	0.78	0.42	0.23
5.10V	16.0	10.1	7.99	4.55	2.83	1.59	1.10	0.91	0.77	0.42	0.23
5.25V	15.3	9.69	7.72	4.44	2.77	1.56	1.09	0.90	0.77	0.42	0.23
5.40V	14.4	9.15	7.31	4.28	2.69	1.52	1.06	0.88	0.75	0.41	0.22

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

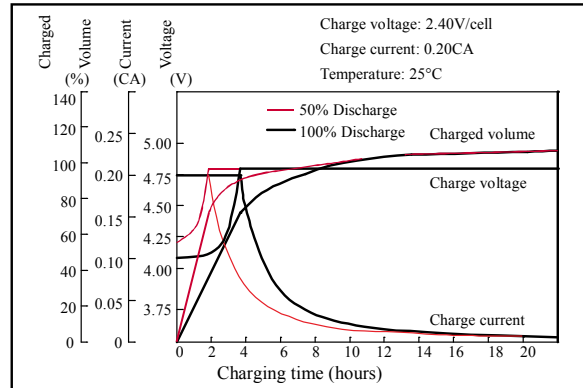
F.V/Time	5min	10min	15min	30min	60min	2h	3h	4h	5h	10h	20h
4.80V	63.9	40.9	32.3	18.3	11.4	6.29	4.42	3.66	3.12	1.70	0.91
4.95V	62.0	39.7	31.5	17.9	11.2	6.25	4.39	3.64	3.11	1.70	0.91
5.10V	59.5	38.1	30.4	17.4	10.9	6.20	4.36	3.62	3.08	1.69	0.91
5.25V	56.9	36.4	29.3	17.0	10.7	6.10	4.33	3.59	3.06	1.68	0.90
5.40V	53.7	34.4	27.8	16.3	10.4	5.95	4.20	3.48	2.97	1.65	0.88

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

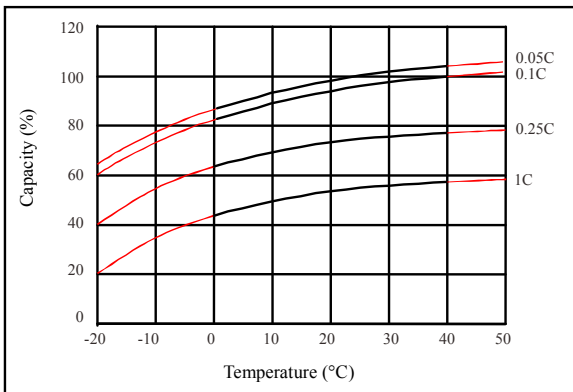
● Discharge characteristics (25°C)



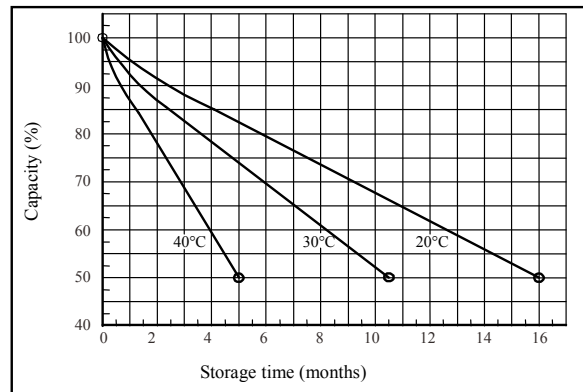
● Charging characteristics (25°C)



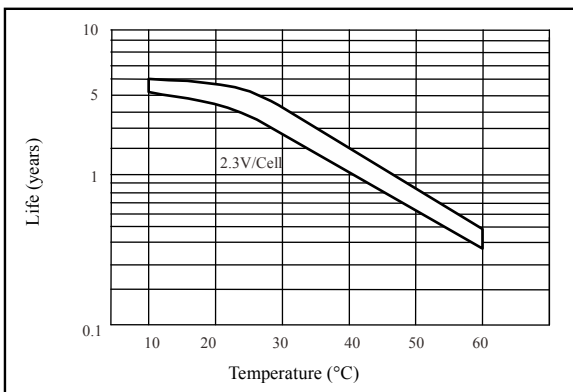
● Temperature effects on capacity



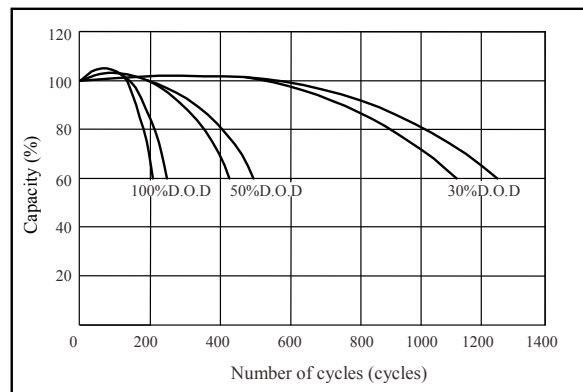
● Self-discharge characteristics



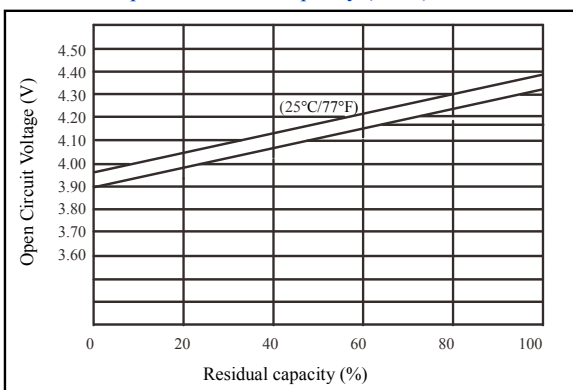
● Floating life on temperature



● Cycle life on D.O.D (25°C)



● Relationship for OCV and capacity (25°C)



● Relationship for charging voltage and temperature

