

## General features for MPPS Series battery (OPzS)

- \* Tubular positive plate; separator with the combined application of porous rubber and porous PVC, separator is with a high porosity & good corrosion resistance.
- \* Computer designed lead, calcium tin alloy grid for high power density.
- \* Long service life, float or cyclic applications: designed floating life is 20 years at 25°C; Designed cycle life more than 1200 cycles at 80% DOD at 25°C/77°F.
- \* Acid-proof bolt: It is of a special shape of funnel having the function of filtering acid smog and retarding flame, it can measure the density and temperature of electrolyte.
- \* Ensuring sufficient electrolyte for battery discharge.
- \* Battery container is transparent, easy checks electrolyte.



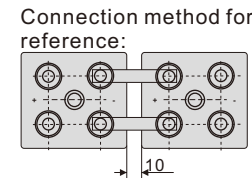
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**MPPS2-1000 (2V1000Ah)**

## Specifications

Nominal Voltage		2 V
Rated capacity (10 hour rate)		1000 Ah
Dimensions (±3mm)	Total Height (Include terminal)	701mm (27.60 inches)
	Height	646mm (25.43 inches)
	Length	233mm (9.17 inches)
	Width	210mm (8.27 inches)
Approx Weight (±5%)	Without electrolyte	52.0Kg (114.7lbs)
	With Electrolyte	72.0Kg (158.8lbs)
	Electrolyte weight (d=1.24kg/l)	Approx 10.0Kg (22.0lbs)

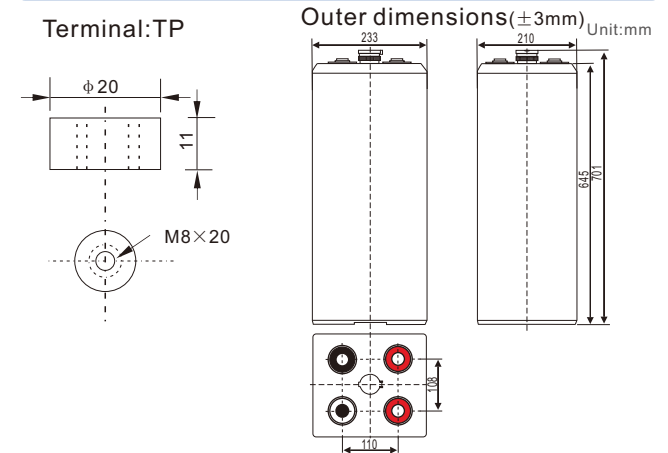
## Battery picture and construction



### Battery Construction

Component	Positive plate	Negative plate	Container	Cover
Raw material	Lead dioxide	Lead	SAN transparent	ABS
Component	Electrolyte	Separator	Safety valve	Terminal
Raw material	Dilute sulfuric acid	PVC	Porous rubber	Copper

## Outer dimension and terminal



## Characteristics

Capacity 25°C(77°F)	10 hour rate(100A, 1.8V) 3 hour rate(255A, 1.75V) 1 hour rate(560A, 1.60V)	1000Ah 765Ah 560Ah
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 0.45 mΩ
Capacity affected by Temperature (10hour rate)	40°C (104°F) 25°C (77°F) 0°C (32°F) -15°C (5°F)	102% 100% 85% 65%
Remaining capacity Self-Discharge At 25°C(77°F)	Capacity after 3 month storage Capacity after 6 month storage	88% 76%
Terminal type	TP	
Max. Discharge current 25°C/(77°F)	2000A (5Seconds)	
Nominal operating temperature	25°C ±5°C(77°F ±9°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)	
Charge methods (constant Voltage) At 25°C(77°F)	Cycle use: Initial Charging Current less than 250A Voltage 2.40-2.45V Temperature compensation: -5mV/°C Standby use: Voltage 2.25-2.30V Temperature compensation: -3mV/°C	

## Constant current discharge (25°C , 77 °F)

Unit:A

Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60V	820	560	335	262	211	185	157	120	102	55.0
1.65V	804	552	333	260	209	184	156	119	102	54.9
1.70V	779	538	330	257	206	181	154	118	101	54.7
1.75V	760	527	325	255	205	180	153	117	101	54.4
1.80V	732	511	317	247	199	175	148	113	100	54.0

(Above characteristics data are average values obtained within three charge/discharge cycles, not the minimum values.)

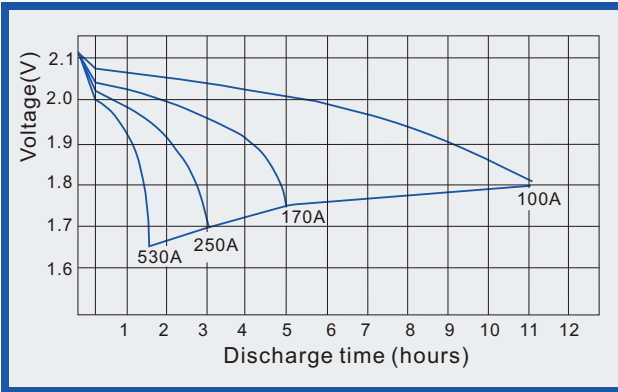
## Constant power discharge (25°C , 77 °F)

Unit:watts

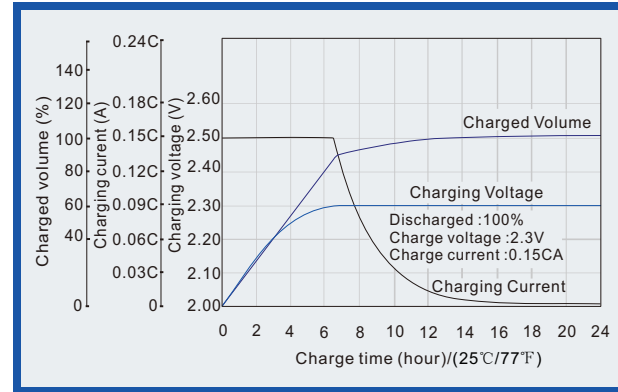
Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60V	1533	1064	646	513	413	364	310	238	203	110
1.65V	1503	1048	643	510	410	362	308	237	202	110
1.70V	1457	1021	637	503	405	357	304	233	202	109
1.75V	1421	1001	627	500	402	355	301	232	200	109
1.80V	1369	970	611	485	390	344	292	225	199	108

(Above characteristics data are average values obtained within three charge/discharge cycles, not the minimum values.)

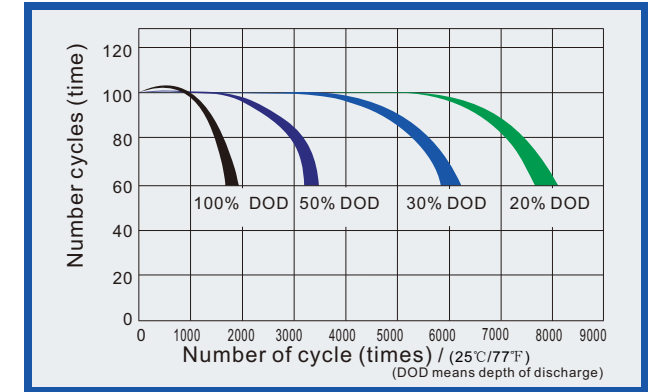
**Discharge characteristics (25°C, 77°F)**



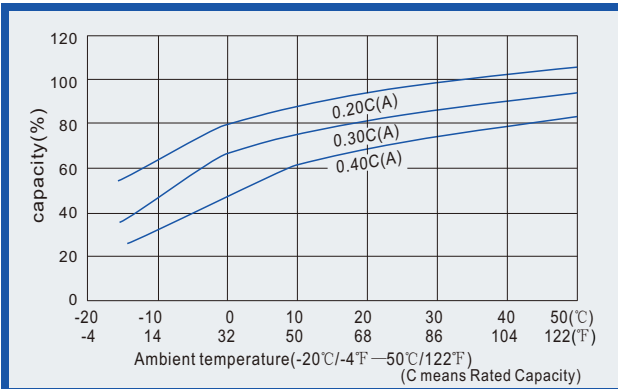
**Charge characteristics (25°C, 77°F)**



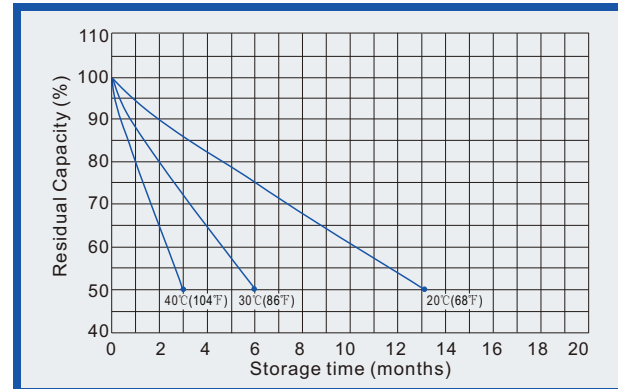
**Life characteristics of Cyclic Use (25°C, 77°F)**



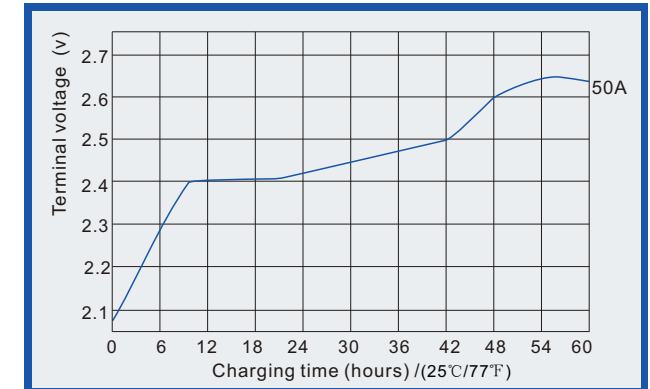
**Effect of Temperature on capacity**



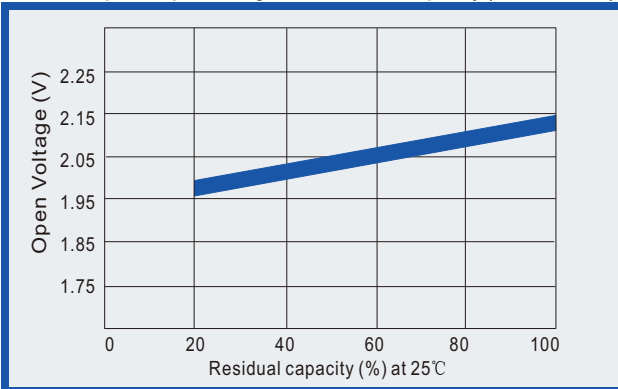
**Self-discharge characteristics (with full charging)**



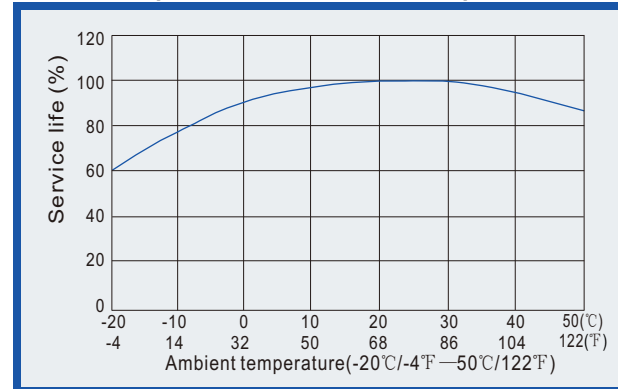
**Initial charging characteristics**



**Relationships for open voltage and remained capacity (for reference)**



**Relationship for service life and temperature**



**Effect of discharge rate on capacity**

