

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.



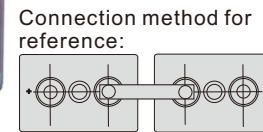
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MPPS2-490 (2V490Ah)

Specifications

Nominal Voltage		2 V
Rated capacity (10 hour rate)		490 Ah
Dimensions (±3mm)	Total Height (Include terminal)	525mm (20.7inches)
	Height	470mm (18.5inches)
	Length	166mm (6.54inches)
	Width	206mm (8.11inches)
Approx Weight (±5%)	Without electrolyte	26.0Kg (57.2lbs)
	With Electrolyte	36.0Kg (79.2lbs)
	Electrolyte weight (d=1.25kg/l)	Approx 10Kg (22.0lbs)

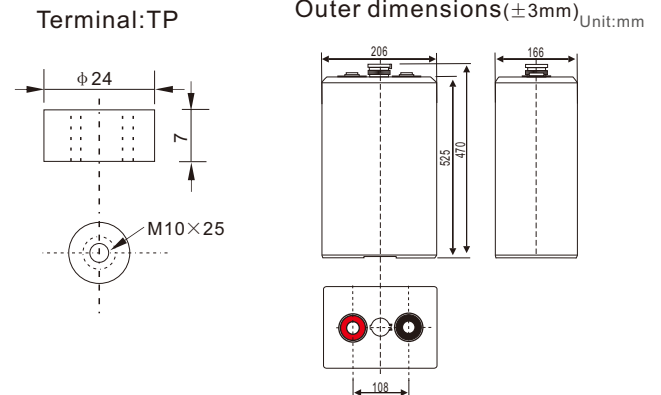
Battery picture and construction



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(49A, 1.8V) 3 hour rate(125.9A, 1.75V) 1 hour rate(274A, 1.60V)	490Ah 377.7Ah 274Ah
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 0.73mΩ
Capacity affected by Temperature (10hour rate)	40°C (104°F) 25°C (77°F) 0°C (32°F) -15°C (5°F)	103% 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 (copper)	
Max. Discharge current 25°C/(77°F)	2450A (5Seconds)	
Nominal operating temperature	25°C ± 5°C(77°F ± 9°F)	
Operating Temperature Range	Discharge Charge Storage	-15°C ~ 50°C (5°F ~ 122°F) 0°C ~ 45°C (32°F ~ 113°F) -15°C ~ 45°C (5°F ~ 113°F)
Charge methods (constant Voltage) At 25°C(77°F)	Boost charge Floating charge	Initial Charging Current less than 123A Voltage 2.35-2.45V Temperature compensation:-3mV/°C Voltage 2.25-2.30V Temperature compensation:-3mV/°C

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

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

Unit:A

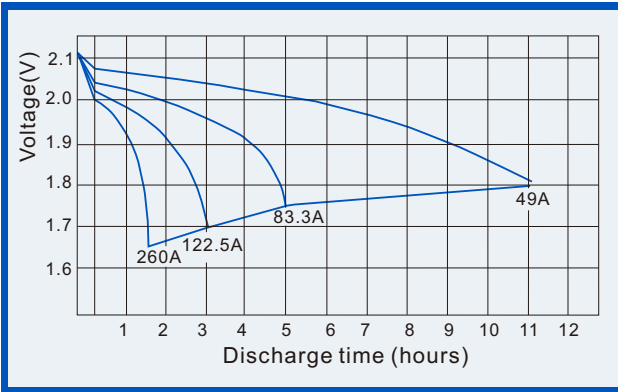
Unit:watts

Constant Current(Amp) and Constant Power(Watt) Discharge Table at 25°C(77°F)

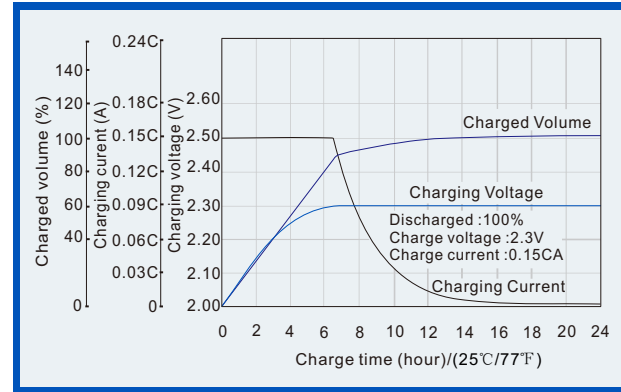
Time		30min	1h	2h	3h	5h	6h	8h	10h	20h	24h	48h	100h
1.65V	A	349.6	271.0	178.0	133.8	91.3	73.9	62.7	51.8	28.0	23.4	12.5	6.2
	W	733	554	400	268	180	166	142	103	53.3	48.0	31.8	16.5
1.70V	A	335.4	259.8	174.0	130.1	89.3	72.5	61.5	51.0	27.7	23.4	12.5	6.2
	W	681	538	396	266	176	162	140	101	52.8	47.5	31.7	16.4
1.75V	A	310.5	246.7	164.2	125.9	87.1	70.8	60.5	50.1	27.2	23.3	12.3	6.1
	W	609	521	394	262	174	158	137	100	52.2	47.0	31.6	16.3
1.80V	A	276.0	227.0	155.2	119.6	83.3	69.2	57.7	49.0	26.5	23.2	12.2	6.1
	W	500	472	385	253	171	157	132	98	51.7	46.6	31.5	16.2
1.85V	A	220.5	194.4	142.1	109.4	78.2	65.9	54.4	46.3	25.0	22.1	12.2	6.1
	W	368	415	351	234	165	154	127	96	51.0	44.5	31.4	16.2

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

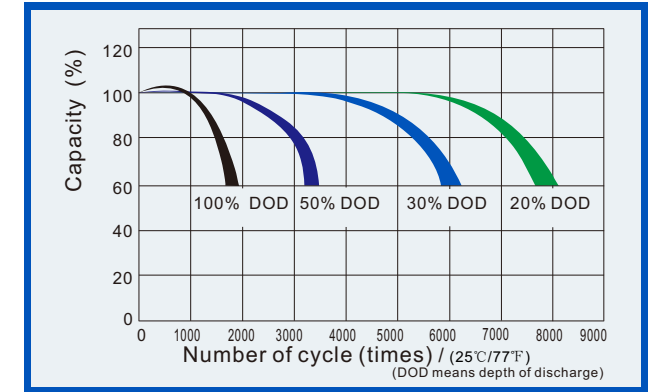
Discharge characteristics (25°C, 77°F)



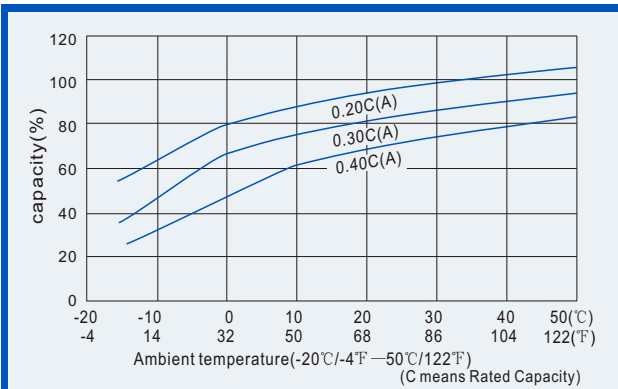
Charge characteristics (25°C, 77°F)



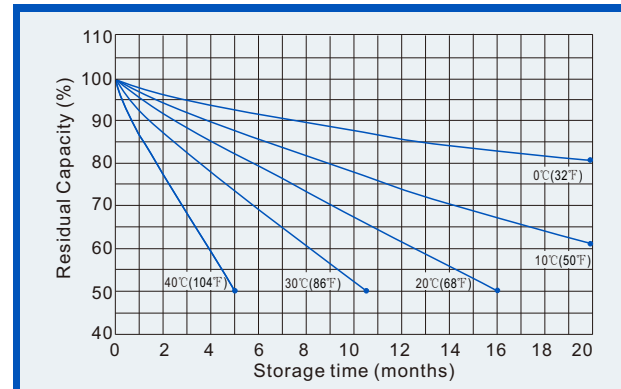
Life characteristics of Cyclic Use (25°C, 77°F)



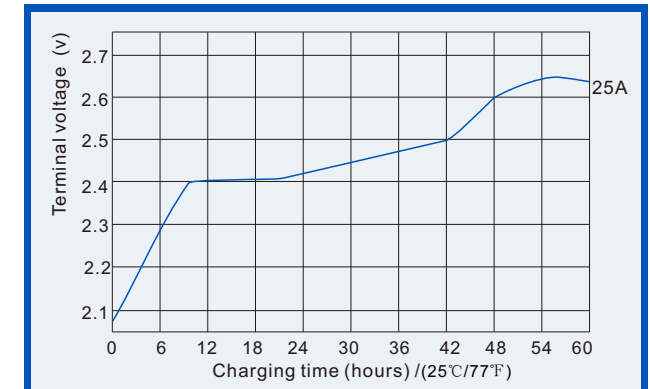
Effect of Temperature on capacity



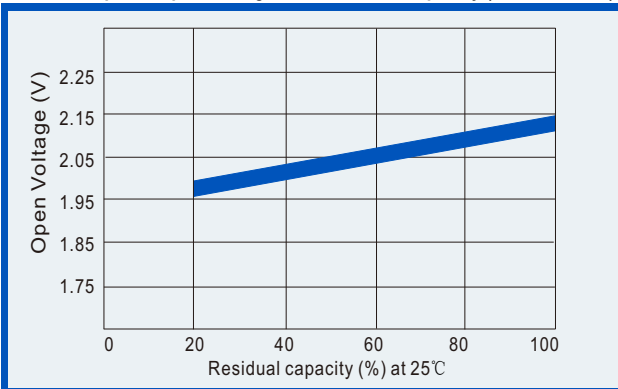
Self-discharge characteristics (with full charging)



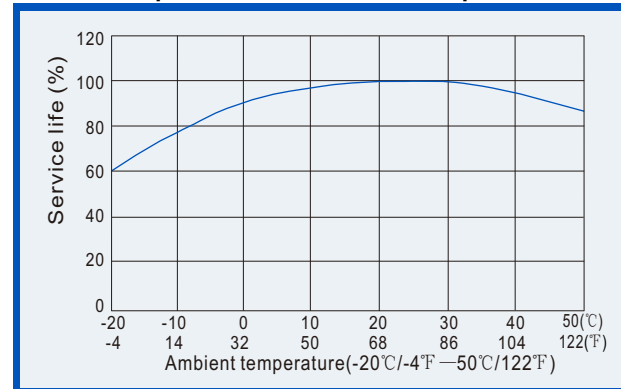
Initial charging characteristics



Relationships for open voltage and remained capacity (for reference)



Relationship for service life and temperature



Effect of discharge rate on capacity

