

## General features for MPE Series (Deep-cycle) battery

- \* Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% and freedom from electrolyte maintenance or water adding.
- \* Computer designed lead, calcium tin alloy grid for high power density.
- \* UL-recognized component.
- \* Long service life, float or cyclic applications.
- \* Maintenance-free operation.
- \* Low self discharge.
- \* Case and cover are available in both standard and flame retardant ABS (Standard : UL94V0).



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**MPE12-18 (12V18Ah)**

## Specifications

Nominal Voltage		12V
Rated capacity (20 hour rate)		18Ah
Dimensions (±2mm)	Total Height	167 mm (6.57 inches)
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	Length	181 mm (7.13 inches)
	Width	77 mm (3.03 inches)
Weight Approx(±3%)		5.60Kg (12.33lbs)

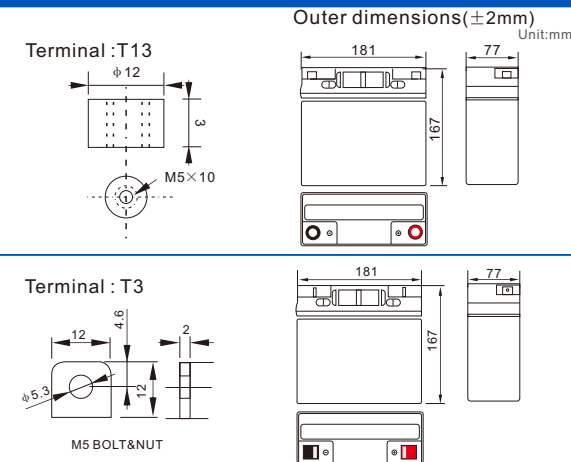
## Battery picture and construction



### Battery Construction

Component	Positive plate	Negative plate	Container	Cover
Raw material	Lead dioxide	Lead	ABS	ABS
Component	Electrolyte	Separator	Safety valve	Terminal
Raw material	Dilute sulfuric acid	Fiberglass	Rubber	Copper

## Outer dimension and terminal



## Characteristics

Capacity 25°C(77°F)	20 hour rate(0.9A,10.5V)	18.0Ah
	10 hour rate(1.66A,10.5V)	16.6Ah
	5 hour rate(3.06A,10.5V)	15.3Ah
	1 hour rate(10.8A,9.6V)	10.8Ah
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 10mΩ
Capacity affected by Temperature (20hour rate)	40°C (104°F)	102%
	25°C (77°F)	100%
	0°C (32°F)	85%
	-15°C (5°F)	65%
Remaining capacity Self-Discharge At 25°C(77°F)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	82%
	Capacity after 12 month storage	64%
Terminal type	T13 (Option T3)	
Max. Discharge current 25°C/(77°F)	270A (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 5.4A Voltage 14.50-15.00V Temperature compensation:-30mV/°C
	Standby use	Voltage 13.50-13.80V Temperature compensation:-18mV/°C

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

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

Unit:A

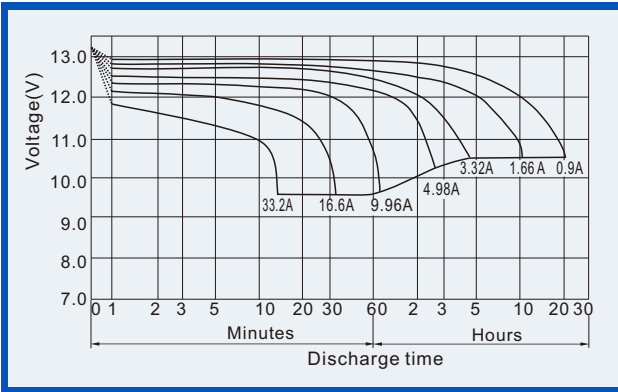
Unit:watts

Constant Current(Amp) and Constant Power(Watt) Discharge Table at 25°C(77°F)													
Time		5min	10min	15min	30min	1h	2h	3h	4h	5h	8h	10h	20h
9.60V	A	64.8	42.5	31.5	20.7	10.8	6.30	4.64	3.72	3.16	2.08	1.70	0.93
	W	764.2	480.0	363.0	219.7	124.5	72.9	53.63	43.05	36.53	24.08	19.72	10.80
10.20V	A	59.4	40.6	28.9	19.7	10.1	6.04	4.50	3.60	3.10	2.05	16.73	0.91
	W	719.2	454.5	341.2	218.3	117.0	70.0	52.12	41.70	35.85	23.70	19.35	10.50
10.50V	A	54.1	38.0	27.0	19.0	9.81	5.93	4.42	3.42	3.08	2.03	1.66	0.90
	W	694.5	441.0	326.3	216.0	113.5	68.6	51.22	39.60	35.63	23.48	19.20	10.43
10.80V	A	52.0	36.3	25.2	18.5	9.48	5.77	4.35	3.36	2.93	1.97	1.61	0.88
	W	609.0	427.5	314.2	215.2	110.3	67.2	50.63	39.11	34.05	22.50	18.75	10.20
11.10V	A	48.1	34.2	23.4	18.0	9.15	5.63	4.13	3.30	2.80	1.92	1.58	0.86
	W	588.7	413.2	299.3	213.8	108.8	66.7	49.13	39.00	33.30	21.75	18.37	10.13

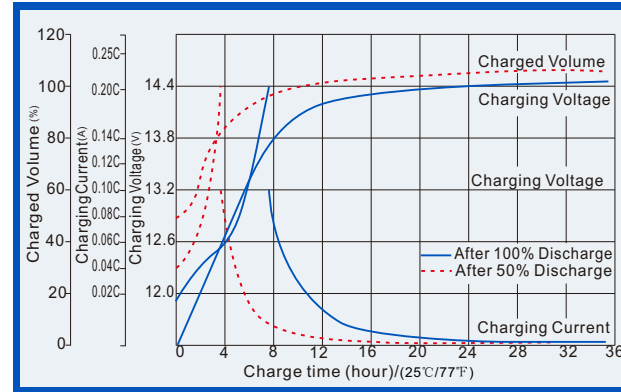
(Above characteristics data are average values obtained within three charge/discharge cycles, not the minimum values.)

# Deep Cycle Battery (VRLA Battery, AGM technology) Maintenance-free Sealed Lead Acid Rechargeable Battery

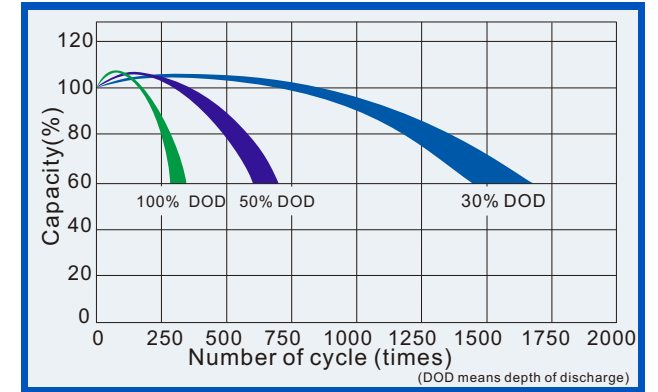
**Discharge characteristics (25°C, 77°F)**



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



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



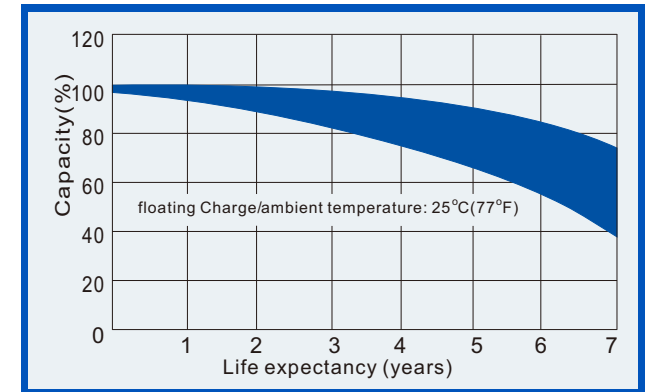
**Effect of Temperature on capacity**



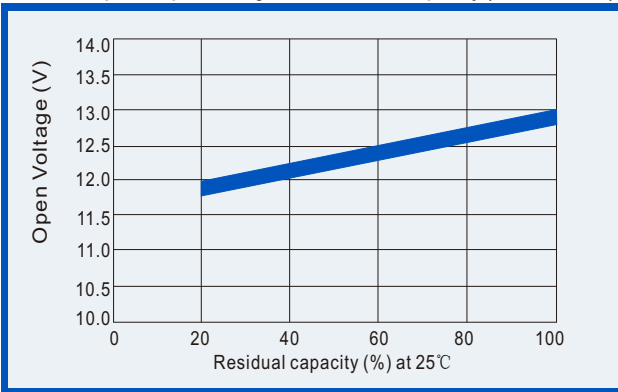
**Self-discharge characteristics**



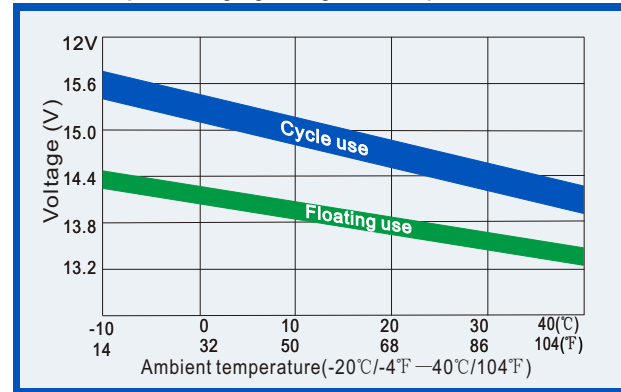
**Life Characteristics of standby use (25°C, 77°F)**



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



**Relationship for charging voltage and temperature**



**Temperature effects on floating life**

