

## 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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**MPE12-7 (12V7Ah)**

## Specifications

Nominal Voltage	12V	
Rated capacity (20 hour rate)	9.0Ah	
Dimensions (±1.5mm)	Total Height	100 mm (3.94 inches)
	Height	94 mm (3.70 inches)
	Length	151 mm (5.94 inches)
	Width	65 mm (2.56 inches)
Weight Approx(±3%)	2.15Kg (4.73 lbs)	

## Battery picture and construction



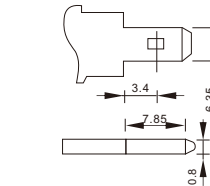
### Battery Construction

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

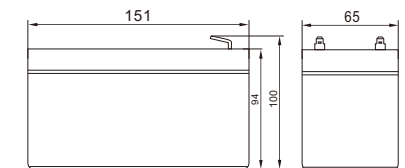
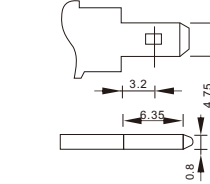
## Outer dimension and terminal

Outer dimensions(±1.5mm)  
Unit:mm

Terminal :T2



Terminal :T1



## Characteristics

Capacity 25°C(77°F)	20 hour rate(0.35 A, 10.5V) 10 hour rate(0.64A, 10.5V) 5 hour rate(1.2A, 10.5V) 1 hour rate(4.2A, 9.6V)	7.0Ah 6.4Ah 6.0Ah 4.2Ah
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 22 mΩ
Capacity affected by Temperature (20hour 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 Capacity after 12 month storage	91% 82% 64%
Terminal type	T2 (Option T1)	
Max. Discharge current 25°C/(77°F)	105A (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) -10°C ~50°C (14°F ~122°F) -20°C ~50°C (-4°F ~122°F)
Charge methods (constant Voltage) At 25°C(77°F)	Cycle use Standby use	Initial Charging Current less than 2.1 A Voltage 14.50-15.00V Temperature compensation:-30mV/°C Voltage 13.50-13.80V Temperature compensation:-18mV/°C

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

Unit:A

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

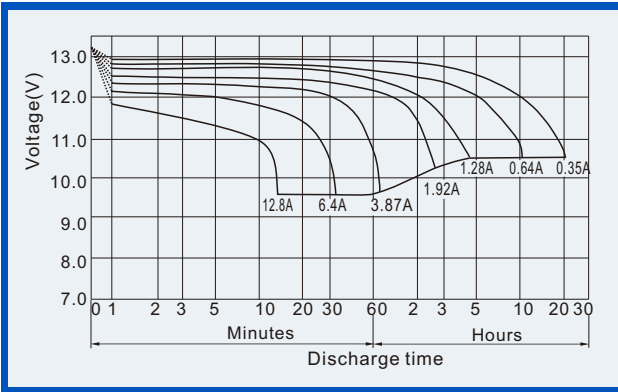
Unit:watts

Time	5min	10min	15min	30min	1h	2h	3h	4h	5h	8h	10h	20h
9.60V	A	25.2	16.5	12.3	8.05	4.20	2.45	1.80	1.45	1.23	0.81	0.36
	W	297.2	186.7	141.2	85.5	48.4	28.4	20.85	16.74	14.20	9.36	4.20
10.20V	A	23.1	15.8	11.3	7.64	3.94	2.35	1.75	1.40	1.20	0.80	0.35
	W	279.7	176.8	132.7	84.9	45.5	27.2	20.27	16.22	13.94	9.22	4.08
10.50V	A	21.0	14.8	10.5	7.41	3.82	2.30	1.72	1.33	1.20	0.79	0.35
	W	270.1	171.5	126.9	84.0	44.2	26.7	19.92	15.40	13.85	9.13	4.05
10.80V	A	20.2	14.1	9.80	7.20	3.69	2.25	1.69	1.31	1.14	0.77	0.34
	W	236.8	166.3	122.2	83.7	42.9	26.1	19.69	15.21	13.24	8.75	3.97
11.10V	A	18.7	13.3	9.10	7.00	3.56	2.19	1.60	1.28	1.09	0.75	0.33
	W	229.0	160.7	116.4	83.1	42.3	26.0	19.10	15.17	12.95	8.46	3.94

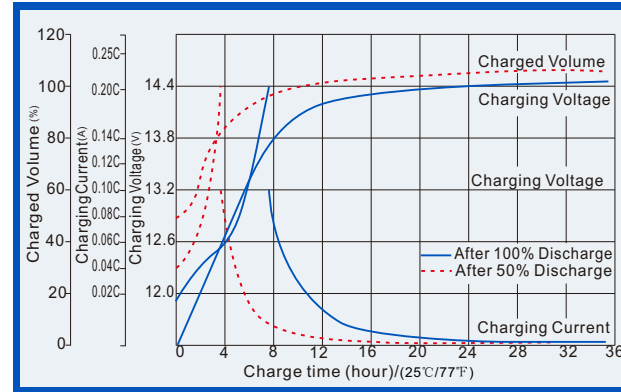
(Above characteristics data are average values obtained within three charge/discharge cycles, not the minimum values.)

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

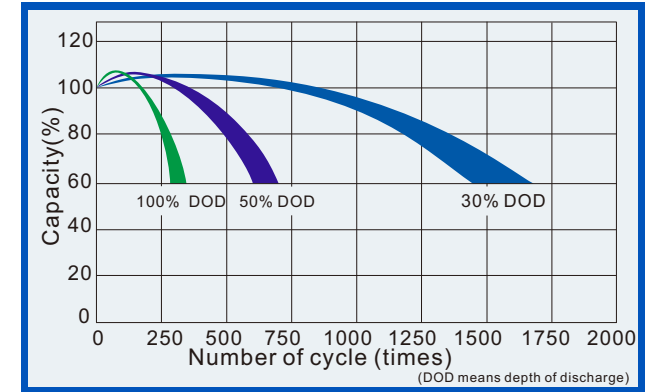
**Discharge characteristics (25°C, 77°F)**



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



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



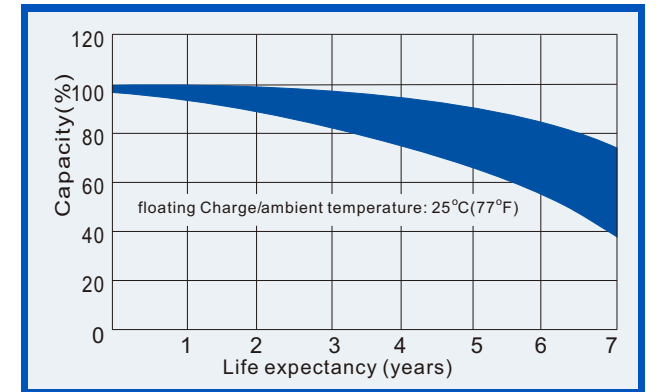
**Effect of Temperature on capacity**



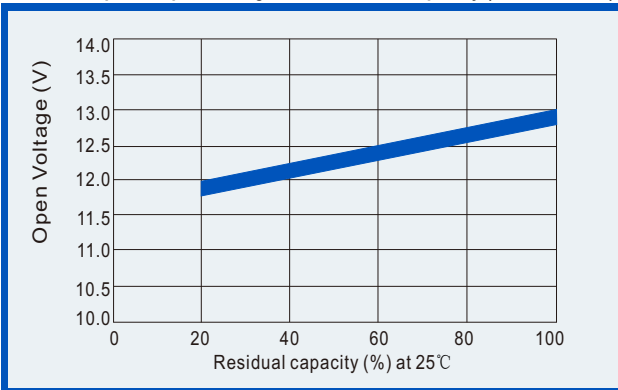
**Self-discharge characteristics**



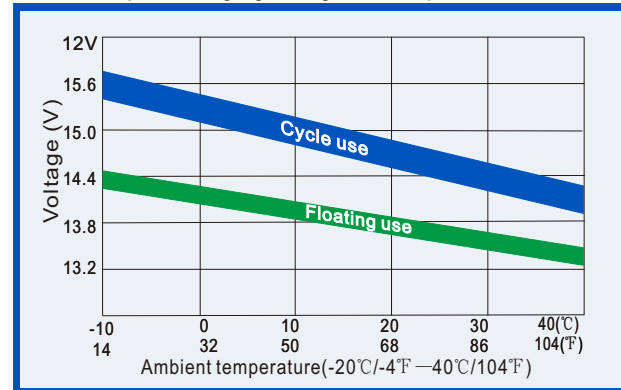
**Life Characteristics of standby use (25°C, 77°F)**



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



**Relationship for charging voltage and temperature**



**Temperature effects on floating life**

