

### General features for MPb Series (AGM) battery

- \* Stable quality & high reliability.
- \* Unique construction and sealing technique guarantees.
- \* Design life 10years in float service;the battery comply to the most popular international standards,like IEC60896-21/22,etc
- \* Maintenance-free operation.
- \* UL-recognized component.
- \* Heavy duty grids:  
The heavy-duty lead calcium-alloy grids ,provide an extra margin of performance and service life in float & cyclic.
- \* Case and cover are available in both standard and flame retardant ABS.
- \* Low self discharge;low pressure venting system.



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**MP12-33 (12V33Ah)**

### Specifications

Nominal Voltage		12V	
Rated capacity (10 hour rate)		33 Ah	
Dimensions (±2mm)	Total Height	T65	180 mm (7.09 inches)
		T16	168 mm (6.61 inches)
	Height	155 mm (6.10 inches)	
	Length	196 mm (7.70 inches)	
	Width	131mm (5.16 inches)	
Weight Approx (±3%)		9.8 Kg (21.6 lbs)	

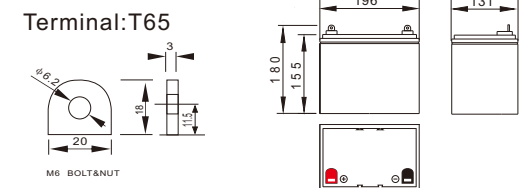
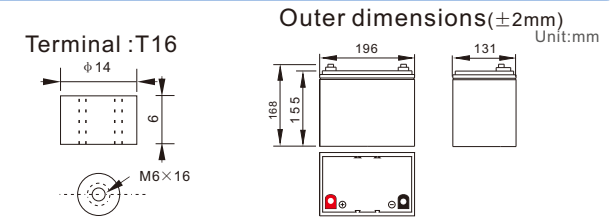
### Battery picture and construction



#### 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



### Characteristics

Capacity 25°C(77°F)	10 hour rate(3.3 A,10.8V) 5 hour rate(5.3A,10.5V) 1 hour rate(19.8 A,9.6V)	33Ah 26.5Ah 19.8Ah
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 10 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 Capacity after 12 month storage	91% 82% 64%
Terminal type	T16 (Option T65)	
Max. Discharge current 25°C/(77°F)	330A (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	Initial Charging Current less than 8.3A Voltage 14.5-14.9V Temperature compensation:-30mV/°C
	Standby use	Voltage 13.5-13.8V Temperature compensation:-18mV/°C

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

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

Unit:A

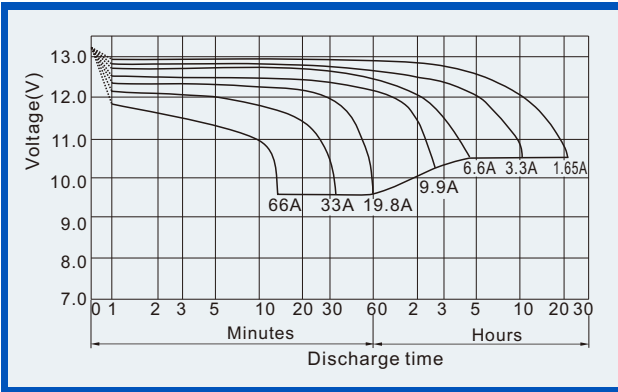
Unit:watts

Time	5min	10min	15min	30min	1h	2h	3h	4h	5h	8h	10h	20h
9.60V	A	122	89	63	38	19.8	12	8.5	6.6	5.4	3.8	1.87
	W	1297	946	666	403	229	134	98	76	63	44	21.7
10.20V	A	108	81	56	36.0	18.6	11.0	8.3	6.4	5.3	3.8	1.82
	W	1194	901	623	399	216	128	96	75	62	43	21.1
10.50V	A	104	77	53	35	18	10.8	8.1	6.3	5.3	3.7	1.80
	W	1175	876	599	397	209	125	93	73	61	43	20.9
10.80V	A	100	73	50	34	17	10.5	7.9	6.2	5.1	3.6	1.78
	W	1160	853	576	396	203	122	91	72	60	42	20.7
11.10V	A	96	69	46	33	17	10.2	7.6	6.0	5.0	3.5	1.69
	W	1139	825	550	393	200	122	90	71	60	42	20.1

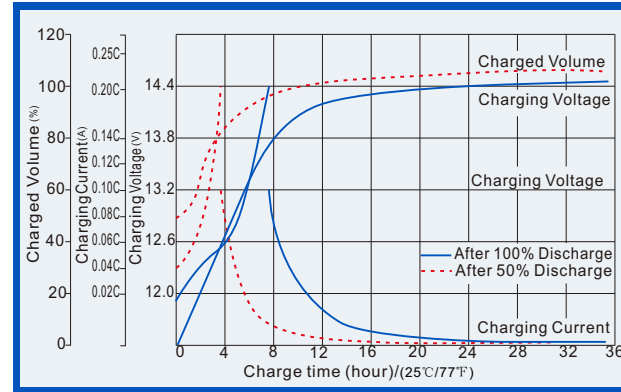
(Above characteristics data are average values obtained within three charge/discharge cycles,not the minimum values.)

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

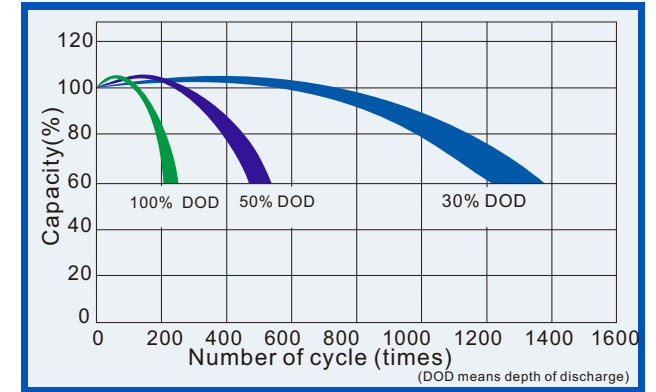
**Discharge characteristics (25°C, 77°F)**



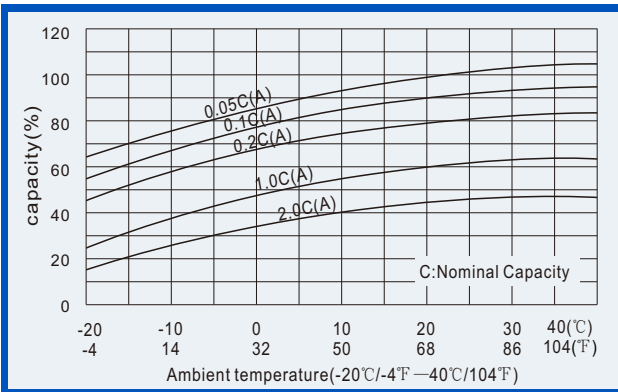
**Charge characteristics (25°C, 77°F)**



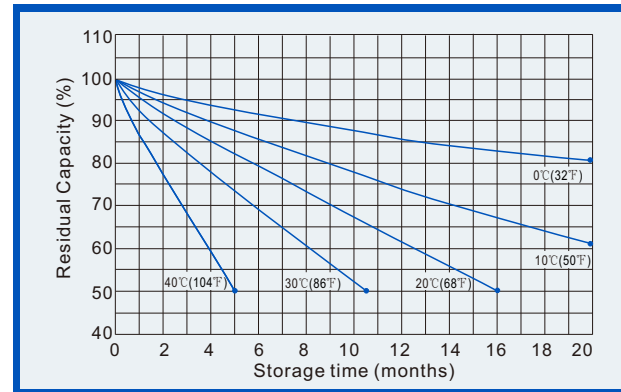
**Life characteristics of Cyclic Use (25°C, 77°F)**



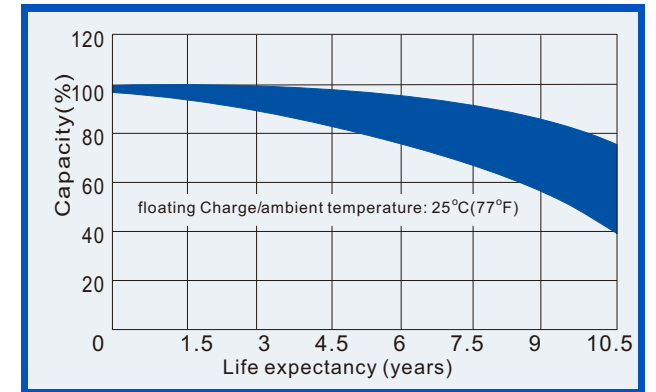
**Effect of Temperature on capacity**



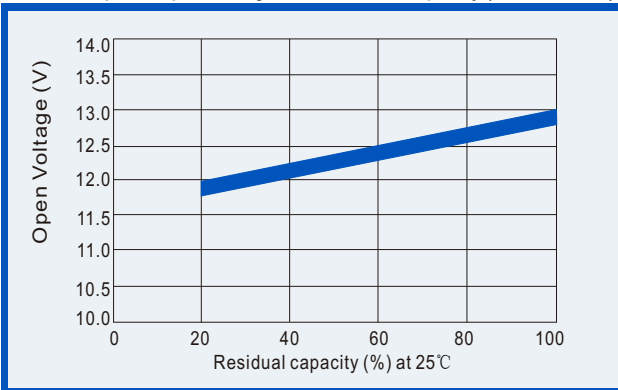
**Self-discharge characteristics**



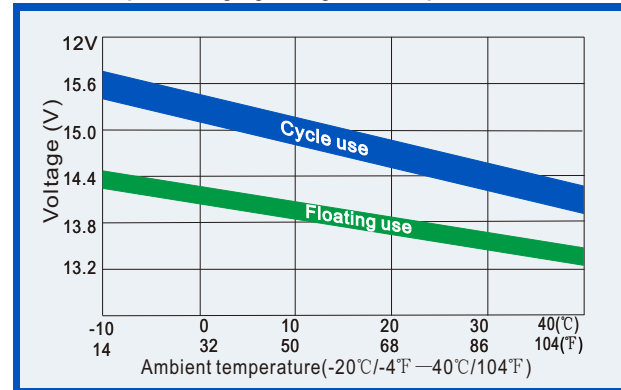
**Life Characteristics of float service (25°C, 77°F)**



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



**Relationship for charging voltage and temperature**



**Temperature effects on floating life**

