

General features for MPG (GEL) battery

- * Nanometer SiO₂ and H₂SO₄ gelled electrolyte technology for 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.
- * Not restricted for air transport-complies with IATA/ICAO Special Provision A67.UL-recognized component.
- * Long service life, float or cyclic applications, specially suitable for motive power applications, such as golf trailer, sruubber, folklift, etc.
- * Maintenance-free operation. Lower self discharge.
- * Case and cover available in both standard and flame retardant ABS.
- * The design life to 12V GEL battery is 15years, the deep discharge cycles increased over 50% as compared with the AGM battery.



Maxton Power Tech Co., Ltd
www.maxtonpower.com
info@maxtonpower.com

MPG12-31 (12V31Ah)

Specifications

Nominal Voltage		12V
Rated capacity (20 hour rate)		31 Ah
Dimensions (±2mm)	Total Height	162 mm (6.37 inches)
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	Length	197 mm (7.74 inches)
	Width	131mm (5.16 inches)
Weight Approx (±3%)		9.80 Kg (21.6 lbs)

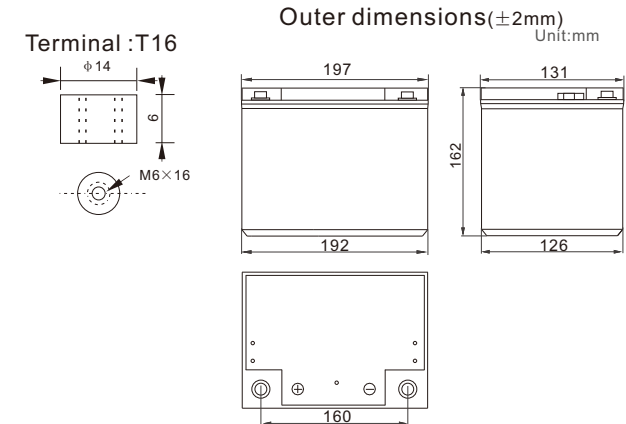
Battery picture and construction



Battery Construction

Component	Positive plate	Negative plate	Container	Cover
Raw material	Lead dioxide	Lead	ABS	ABS
Component	Electrolyte	Separator	Safety valve	Terminal
Raw material	Gelled acid	PVC	Rubber	Copper

Outer dimension and terminal



Characteristics

Capacity 25°C(77°F)	20 hour rate(1.55A, 10.5V) 10 hour rate(2.9A, 10.5V) 5 hour rate(5A, 10.5V) 1 hour rate(18.6A, 9.6V)	31Ah 29Ah 25Ah 18.6Ah
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 11.5mΩ
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	T16 (Option T65)	
Max. Discharge current 25°C/(77°F)	310A (5Seconds)	
Nominal operating temperature	25°C ±5°C(77°F ±9°F)	
Operating Temperature Range	Discharge Charge Storage	-20°C ~55°C (-4°F ~131°F) -10°C ~55°C (14°F ~131°F) -20°C ~55°C (-4°F ~131°F)
Charge methods (constant Voltage) At 25°C(77°F)	Cycle use	Initial Charging Current less than 9.3A Voltage 14.5-15.0V Temperature compensation:-20mV/°C
	Standby use	Voltage 13.5-13.8V Temperature compensation:-30mV/°C

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

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

Unit:A

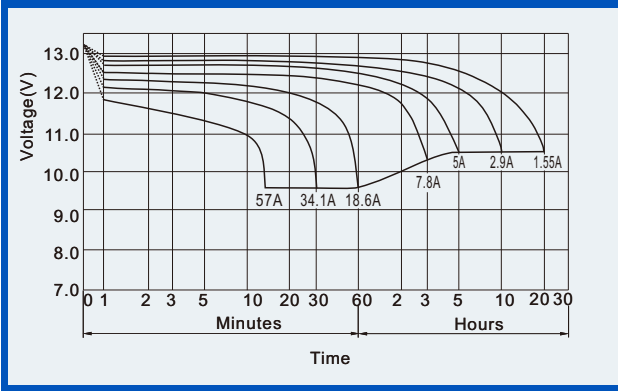
Unit:watts

Constant Current(Amp) and Constant Power(Watt) Discharge Table											
Time		10min	30min	1h	2h	3h	4h	5h	8h	10h	20h
9.60V	A	62.0	34.1	18.6	10.9	8.0	6.2	5.1	3.5	2.9	1.6
	W	657	363	199	117	87	68	56.4	39.2	32.7	18.1
10.20V	A	58.9	34.4	17.5	10.4	7.8	6.0	5.0	3.5	2.9	1.6
	W	648	380	194	116	88	69	57	40	33.1	17.8
10.50V	A	55.8	31.6	17.1	10.1	7.6	6.0	5.0	3.4	2.9	1.6
	W	625	356	193	115	87	68	57	40	33.2	17.8
10.80V	A	52.7	29.1	16.4	9.9	7.4	5.9	4.8	3.4	2.9	1.5
	W	598	332	188	114	86	68	56	39	33.2	17.6
11.10V	A	49.6	26.0	15.5	9.6	7.1	5.7	4.7	3.3	2.7	1.5
	W	570	301	180	112	84	67	56	39	32.0	17.4

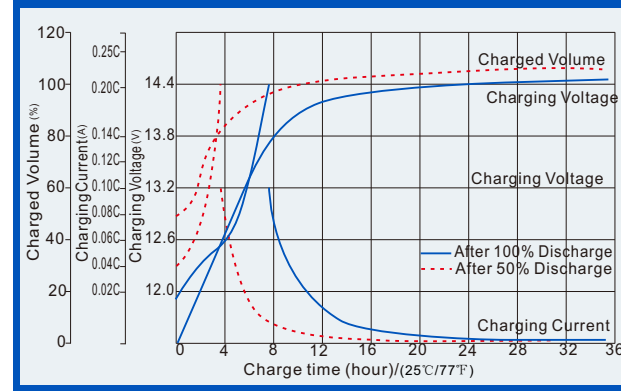
(Above characteristics data are average values obtained within three charge/discharge cycles, not the minimum values.)

GEL Battery (GEL technology) Maintenance-free Sealed Lead Gel Rechargeable Battery

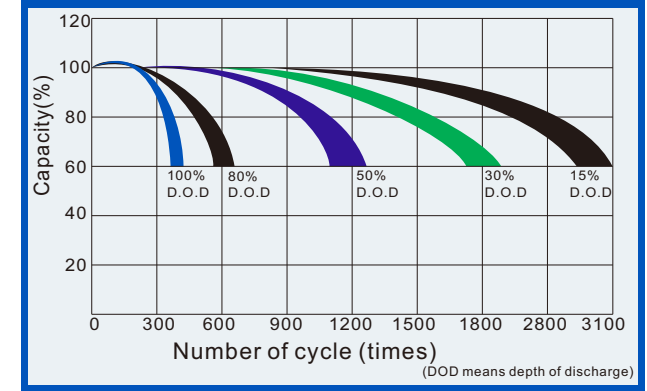
Discharge characteristics (25°C, 77°F)



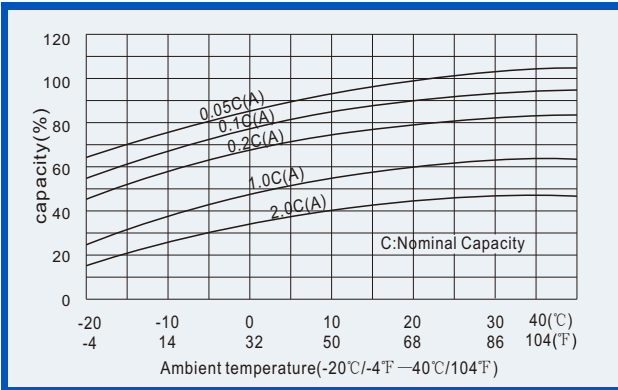
Charge characteristics (25°C, 77°F)



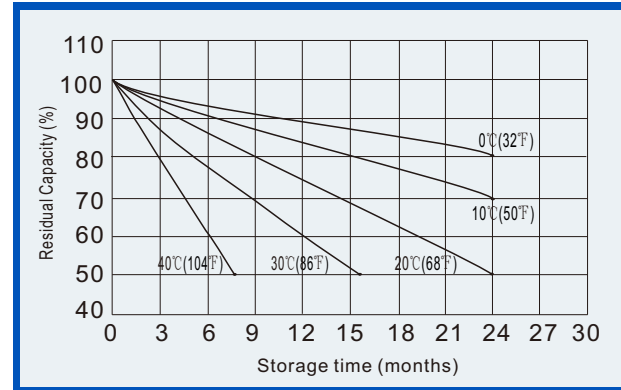
Life characteristics of Cyclic Use (25°C, 77°F)



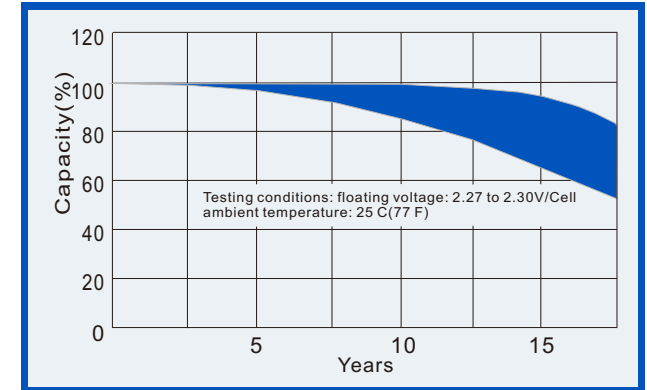
Effect of Temperature on capacity



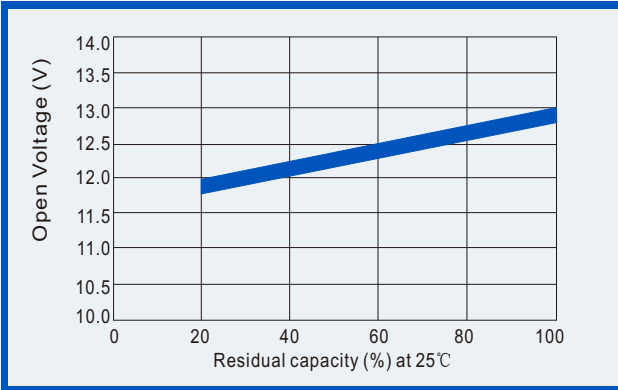
Self-discharge characteristics



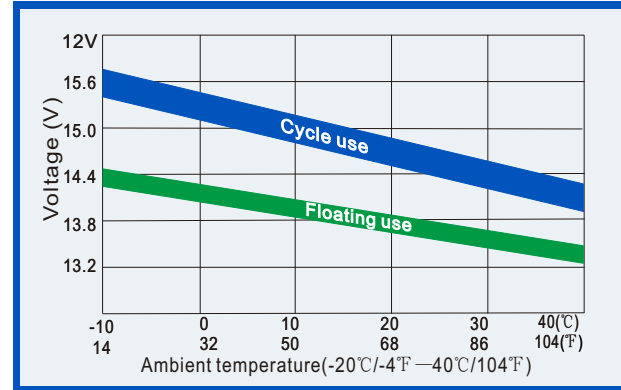
Life Characteristics of float service (25°C, 77°F)



Relationships for open voltage and remained capacity (for reference)



Relationship for charging voltage and temperature



Temperature effects on floating life

