



valve regulated
sealed lead acid type
rechargeable battery

sunbattery®

MB12-5HR(12V5AH)





Specification

Nominal Voltage	12V	
Watts(15min Rate)	20.7 Watts at 1.67V/cell	
Dimension	Length	90 ± 1mm (3.54 inches)
	Width	70 ± 1mm (2.76 inches)
	Container Height	101 ± 2mm (3.98 inches)
	Total Height (with Terminal)	107 ± 2mm (4.21 inches)
Approx Weight	Approx 1.77 kg (3.90lbs)	
Terminal	T2	
Container Material	ABS Standard ABS UL94 HB Optional ABS UL94 V0	
Rated Capacity	5.00 AH/0.50A	(10hr, 1.80V/cell, 25°C/77°F)
	4.85 AH/0.606A	(8hr, 1.75V/cell, 25°C/77°F)
	4.47 AH/0.894A	(5hr, 1.75V/cell, 25°C/77°F)
	4.05 AH/1.35A	(3hr, 1.75V/cell, 25°C/77°F)
	3.74 AH/3.74A	(1hr, 1.60V/cell, 25°C/77°F)
Max. Discharge Current	81A (5s)	
Internal Resistance	Approx 25mΩ	
Operating Temp. Range	Discharge	-15 ~ 50°C (5 ~ 122°F)
	Charge	0 ~ 40°C (32 ~ 104°F)
	Storage	-15 ~ 40°C (5 ~ 104°F)
Nominal Operating Temp. Range	25 ± 3°C (77 ± 5°F)	
Cycle Use	Initial Charging Current less than 1.62A. Voltage	
	14.4V ~ 15.0V at 25°C (77°F) Temp. Coefficient -30mV/°C	
Standby Use	No limit on Initial Charging Current Voltage	
	13.5V ~ 13.8V at 25°C (77°F) Temp. Coefficient -20mV/°C	
Capacity affected by Temperature	40°C (104°F)	103%
	25°C (77°F)	100%
	0°C (32°F)	86%
Self Discharge	MB series batteries may be stored for up to 6 months at 25°C (77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter.	
Life expectancy	3-5 years at 25°C with charge voltage 2.25V/cell.	



Applications

- ◆ UPS (High rate)
- ◆ High power backup supply
- ◆ Emergency power supply
- ◆ Starting system
- ◆ Power tools
- ◆ Emergency lighting
- ◆ Electric starting

 MH45680	 ETL SEMKO	
 ISO14001	 ISO9001	

Conform to:
IEC60896-21&22 and/or IEC61427

Constant Current Discharge (Amperes) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	17.9	12.0	9.35	7.78	5.80	4.21	3.29	1.78	1.27	1.01	0.839	0.728	0.582	0.487	0.265
1.80V/cell	20.2	13.1	10.1	8.27	6.08	4.36	3.41	1.84	1.31	1.03	0.866	0.752	0.606	0.501	0.270
1.75V/cell	22.1	13.9	10.7	8.69	6.32	4.52	3.52	1.90	1.35	1.07	0.894	0.775	0.621	0.514	0.275
1.70V/cell	23.6	14.6	11.2	9.02	6.57	4.66	3.61	1.95	1.39	1.10	0.918	0.794	0.632	0.524	0.279
1.67V/cell	24.7	15.1	11.5	9.30	6.73	4.77	3.68	1.99	1.42	1.12	0.934	0.807	0.640	0.529	0.281
1.60V/cell	25.5	15.5	11.8	9.49	6.83	4.85	3.74	2.02	1.43	1.14	0.946	0.818	0.646	0.534	0.282

Constant Power Discharge (Watts/cell) at 25 °C (77°F)

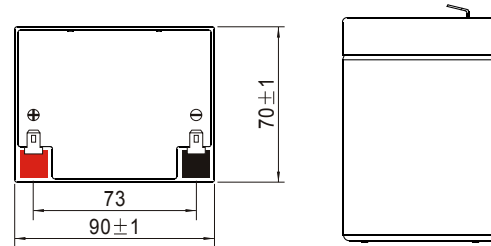
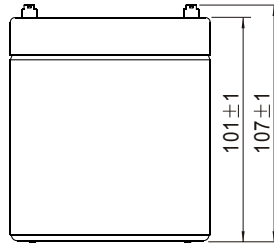
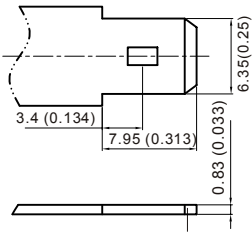
F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	33.5	22.4	17.6	14.7	11.0	8.08	6.35	3.47	2.48	1.97	1.64	1.43	1.15	0.964	0.524
1.80V/cell	36.5	24.1	18.6	15.5	11.5	8.30	6.54	3.55	2.54	2.01	1.69	1.47	1.19	0.989	0.534
1.75V/cell	39.6	25.2	19.6	16.1	11.8	8.56	6.73	3.65	2.61	2.07	1.74	1.51	1.22	1.015	0.544
1.70V/cell	41.7	26.2	20.3	16.6	12.2	8.77	6.88	3.75	2.68	2.13	1.78	1.55	1.24	1.034	0.551
1.67V/cell	43.0	26.7	20.7	16.9	12.4	8.92	6.97	3.81	2.72	2.16	1.81	1.57	1.25	1.043	0.554
1.60V/cell	43.5	27.0	20.8	17.0	12.4	8.99	7.04	3.85	2.74	2.18	1.82	1.58	1.26	1.049	0.556



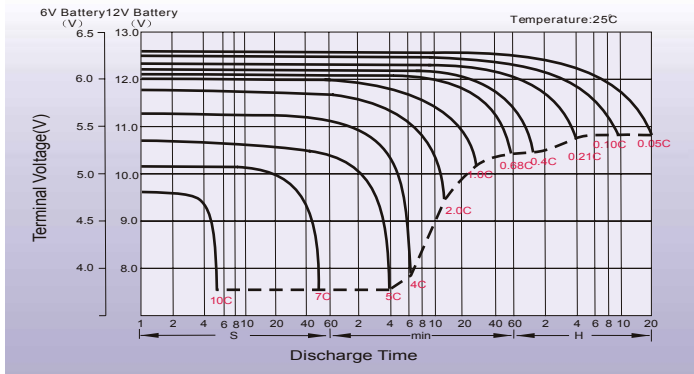
Dimensions

T2 Terminal

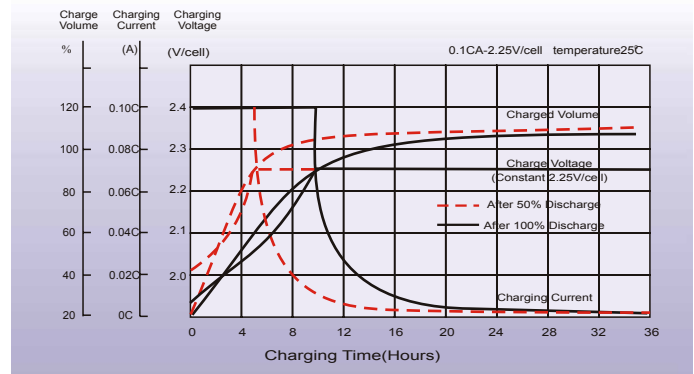
Unit: mm [inches]



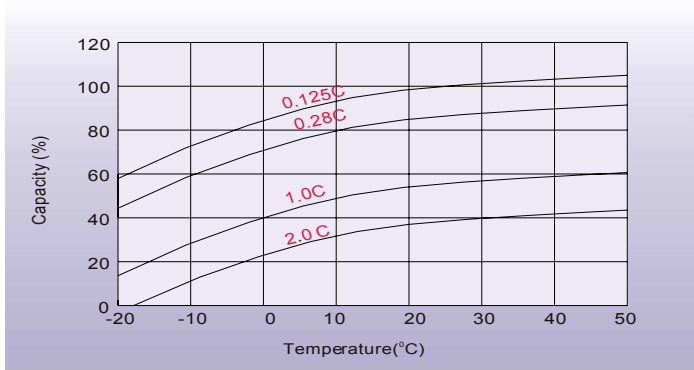
Discharge Characteristics



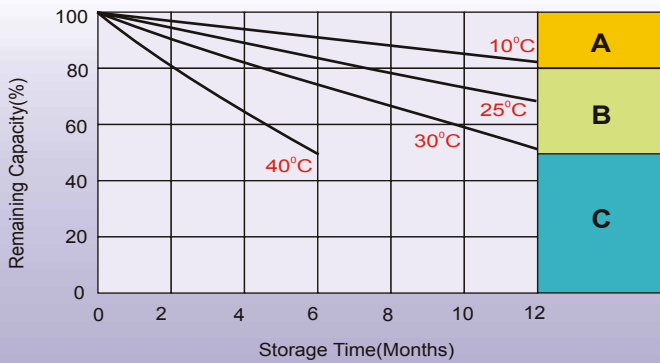
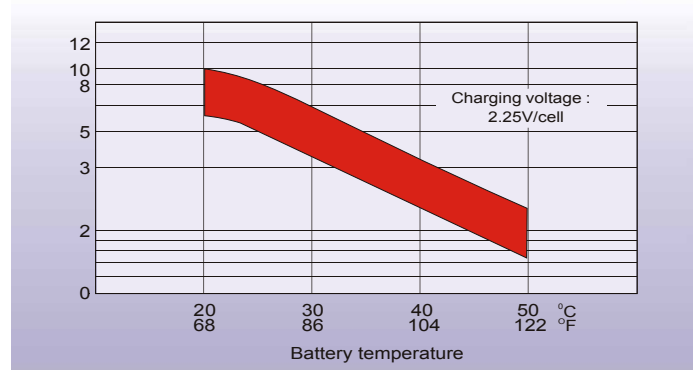
Float Charging Characteristics



Temperature Effects in Relation to Battery Capacity



Effect of Temperature on Long Term Float Life



Self Discharge Characteristics

- A** No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optional charging way as below:
 1. Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
 2. Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.
 3. Charged for 8-10 hours at limited current 0.05CA.
- C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.