

#### MHB MS Series--Small-size batteries

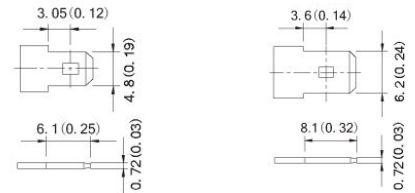
- 100% before shipment testing, stable and reliable long-term quality
- patented grid alloy formula and updated manufacturing technique
- completely sealed and maintenance-free, low self-discharge
- Excellent charging and re-charging acceptance
- Cycle use: More than 260 cycles at 100% DOD
- Floating & standby use: 3-5 years

#### Application:

- Alarm System
- Cable Television
- Communication Equipment
- Emergency Power System
- Security System
- Medical Equipment
- UPS
- Power tools
- Control Equipment
- Toys

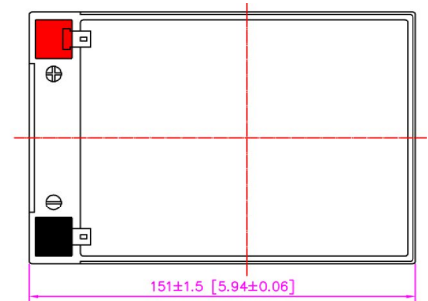
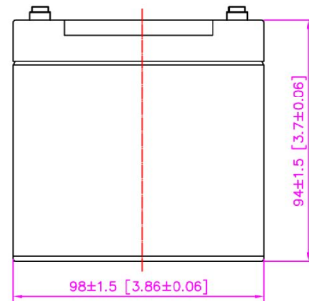
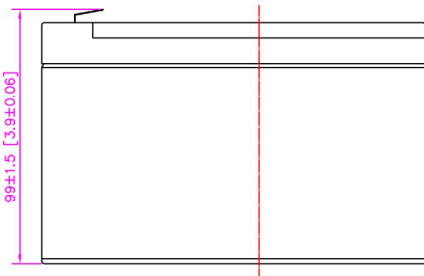
#### Construction:

- Component .....Raw material
- Positive .....Lead dioxide
- Negative .....Lead
- Container .....ABS
- Cover .....ABS
- Sealant .....Epoxy
- Safety valve .... Rubber
- Terminal .....Copper
- Separator .....Fiber glass
- Electrolyte .....Sulfuric acid



F1 Terminal

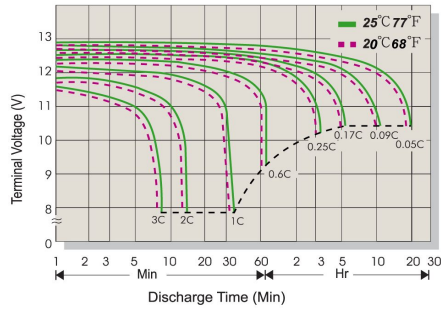
F2 Terminal



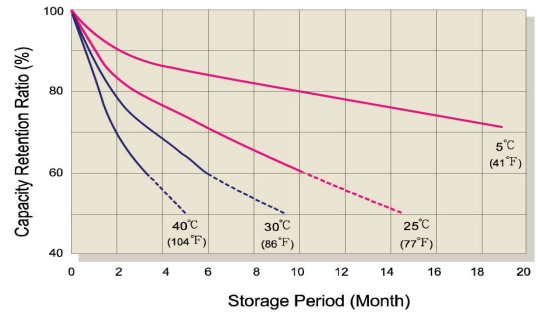
#### Speification:

Battery Model	MS 12-12 12V12AH			
Designed Floating Life	3~5 Years			
Capacity (25°C)	20HR(0.60A,10.5V)	10HR(1.155A,10.5V)	5HR(2.16A,10.5V)	1HR(7.23A,10.5V)
	12.00AH	11.55AH	10.80AH	7.23AH
Dimensions	Length	Width	Height	Total Height
	151mm (5.94inch)	98mm (3.86inch)	94mm (3.70inch)	98mm (3.86inch)
Approx. Weight	3.45Kg (7.61 lbs) ±5%			
Internal Resistance	Full charged at 25°C : ≤16.5mΩ			
Self Discharge	3% of capacity declined per month at (25°C)			
Capacity Affected by Temp.(20HR)	40°C	25°C	0°C	-15°C
	102%	100%	85%	65%
Charge Voltage(25oC)	Cycle use		Float use	
	14.4-15.0V(-30mV/°C), max. Current: 3.60A		13.6-13.8V (-20mV/°C)	

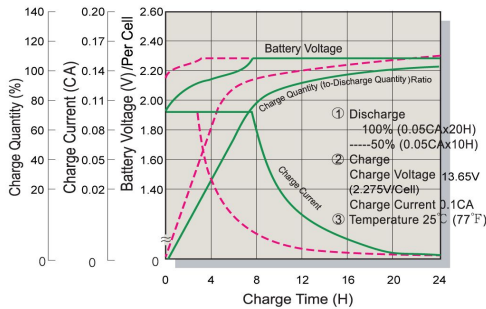
### Terminal Voltage (V) and Discharge Time



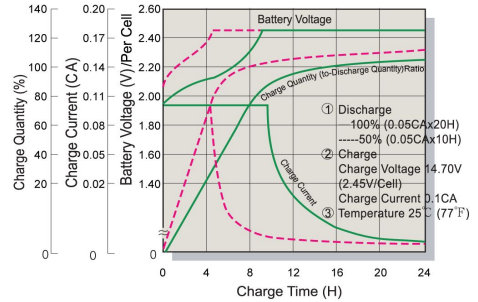
### Capacity Retention Characteristic



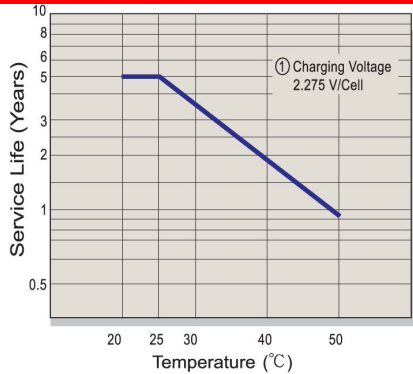
### Battery Voltage and Charge Time for Standby Use



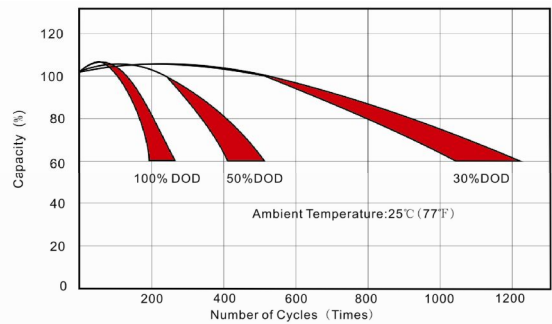
### Battery Voltage and Charge Time for Cycle Use



### Tickle(or Float) Service Life



### Cycle Service Life



### Constant Current Discharge (CC, Unit: A) at 25°C (77°F)

F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	10Hr	20Hr
1.85V/Cell	39.45	23.29	18.31	11.93	6.96	4.03	3.09	2.538	2.080	1.696	1.112	0.578
1.80V/Cell	40.21	23.74	18.65	12.16	7.10	4.10	3.15	2.587	2.120	1.728	1.133	0.589
1.75V/Cell	40.96	24.18	19.00	12.39	7.23	4.18	3.21	2.635	2.160	1.761	1.155	0.600
1.70V/Cell	44.65	25.63	20.14	12.88	7.36	4.25	3.27	2.682	2.198	1.792	1.175	0.611
1.67V/Cell	49.15	27.81	21.86	13.60	7.44	4.30	3.30	2.711	2.221	1.811	1.187	0.617
1.60V/Cell	53.25	29.26	23.00	14.18	7.52	4.34	3.34	2.740	2.245	1.830	1.200	0.624

### Constant Power Discharge (CP, Unit: W) at 25°C (77°F)

F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	10Hr	20Hr
1.85V/Cell	76.94	45.42	35.69	23.27	13.58	7.85	6.03	4.95	4.06	3.31	2.17	1.13
1.80V/Cell	78.40	46.28	36.38	23.71	13.84	8.00	6.14	5.04	4.13	3.37	2.21	1.15
1.75V/Cell	79.87	47.15	37.06	24.16	14.10	8.15	6.26	5.14	4.21	3.43	2.25	1.17
1.70V/Cell	87.06	49.98	39.28	25.12	14.35	8.29	6.37	5.23	4.29	3.49	2.29	1.19
1.67V/Cell	95.85	54.22	42.62	26.52	14.50	8.38	6.44	5.29	4.33	3.53	2.32	1.20
1.60V/Cell	103.84	57.05	44.84	27.66	14.66	8.47	6.51	5.34	4.38	3.57	2.34	1.22