

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

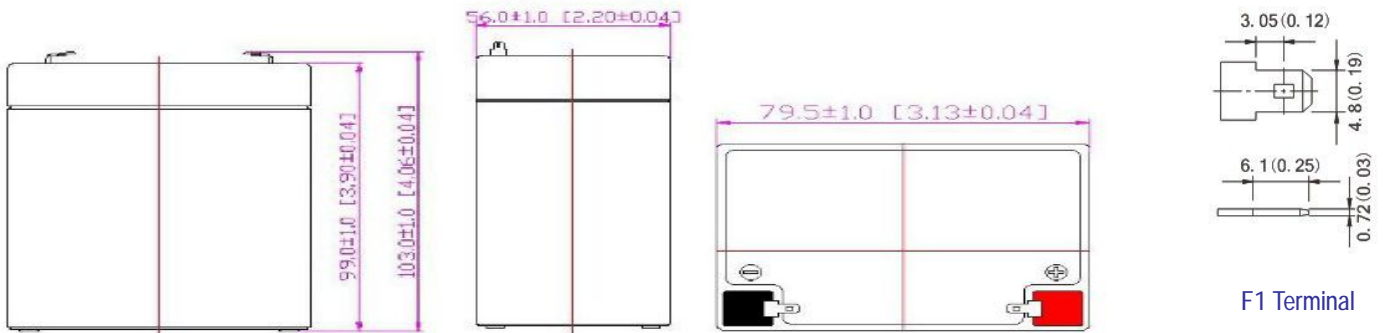
- 100% before shipment testing, stable and reliable long-term quality
- patented grid alloy formula and updated manufacturing technique
- completely sealed and maintenance-free, low self-discharge
- Excellent charging and re-charging acceptance
- Cycle use: More than 260 cycles at 100% DOD
- Floating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

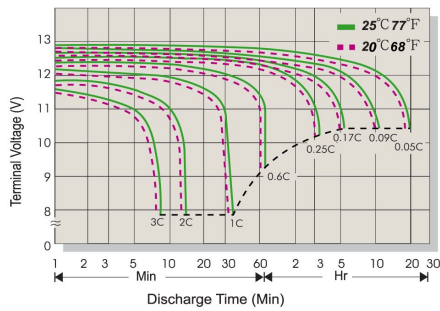
- Component .....Raw material
- Positive .....Lead dioxide
- Negative .....Lead
- Container .....ABS
- Cover .....ABS
- Sealant .....Epoxy
- Safety valve .... Rubber
- Terminal .....Copper
- Separator .....Fiber glass
- Electrolyte .....Sulfuric acid



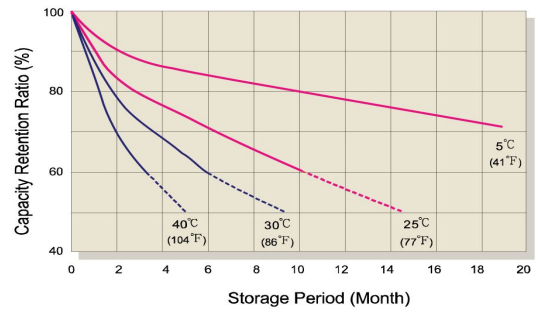
#### Specification:

Battery Model	MS 2.9-12 12V2.9AH			
Designed Floating Life	3~5 Years			
Capacity (25°C)	20HR(0.145A,10.5V)	10HR(0.275A,10.5V)	5HR(0.493A,10.5V)	1HR(1.680A,10.5V)
	2.90 AH	2.75AH	2.47AH	1.68 AH
Dimensions	Length	Width	Height	Total Height
	80 mm	56 mm	99 mm	103 mm
Approx. Weight	1.20Kg ±3%			
Internal Resistance	Full charged at 25°C : ≤60.00 mΩ			
Self Discharge	2% 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(25°C)	Cycle use		Float use	
	14.4-15.0V(-30mV/°C), max. Current:0.70A		13.5-13.8V (-20mV/°C)	

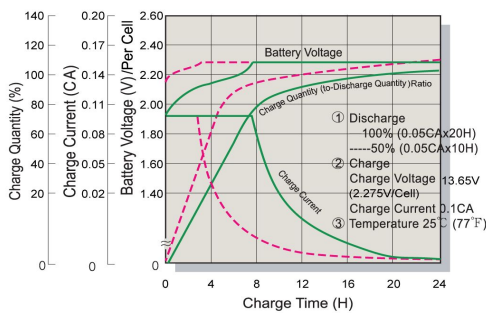
### Terminal Voltage (V) and Discharge Time



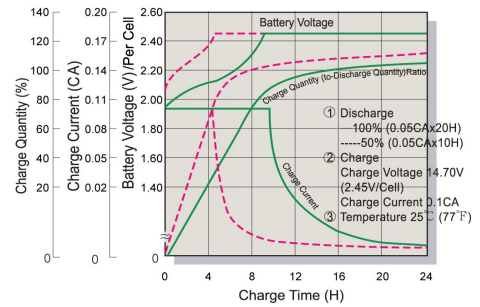
### Capacity Retention Characteristic



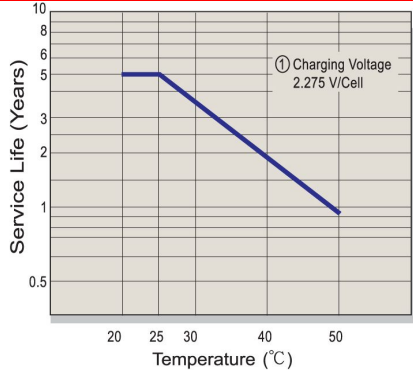
### Battery Voltage and Charge Time for Standby Use



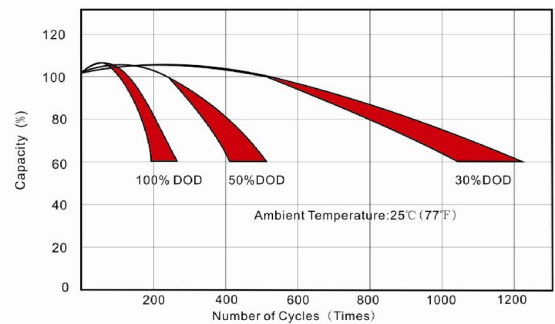
### Battery Voltage and Charge Time for Cycle Use



### 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
1.80V/Cell	9.43	6.51	4.51	2.80	1.65	0.96	0.73	0.582	0.484	0.413	0.270	0.142
1.75V/Cell	9.61	6.63	4.59	2.85	1.68	0.98	0.75	0.593	0.493	0.421	0.275	0.145
1.70V/Cell	9.90	6.83	4.87	2.96	1.71	1.00	0.76	0.604	0.502	0.429	0.279	0.148
1.67V/Cell	10.19	7.03	5.28	3.13	1.73	1.01	0.77	0.610	0.507	0.433	0.282	0.149
1.60V/Cell	10.47	7.23	5.56	3.26	1.75	1.02	0.78	0.617	0.512	0.438	0.286	0.151

### 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
1.80V/Cell	18.4	12.70	8.79	5.45	3.21	1.88	1.43	1.14	0.94	0.81	0.53	0.28
1.75V/Cell	18.7	12.93	8.96	5.56	3.27	1.91	1.46	1.16	0.96	0.82	0.54	0.28
1.70V/Cell	19.3	13.32	9.49	5.78	3.33	1.95	1.48	1.18	0.98	0.84	0.55	0.29
1.67V/Cell	19.9	13.71	10.30	6.10	3.37	1.97	1.50	1.19	0.99	0.84	0.55	0.29
1.60V/Cell	20.4	14.10	10.84	6.36	3.40	1.99	1.51	1.20	1.00	0.85	0.56	0.29