

### MS Series SLA Battery

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

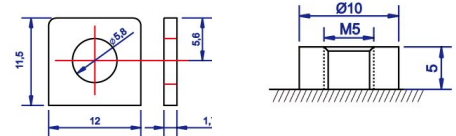
- 100% before shipment testing, stable and reliable long-term quality
- patented grid alloy formula and updated manufacturing technique
- completely sealed and maintenance-free, low self-discharge
- Excellent charging and re-charging acceptance
- Cycle use: More than 260 cycles at 100% DOD
- Floating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

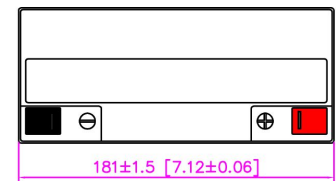
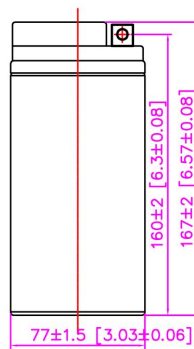
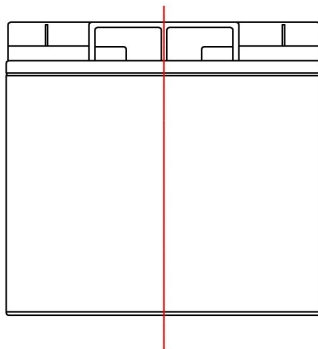


M5 Bolt & Nut

M5 Bolt

T1 Terminal

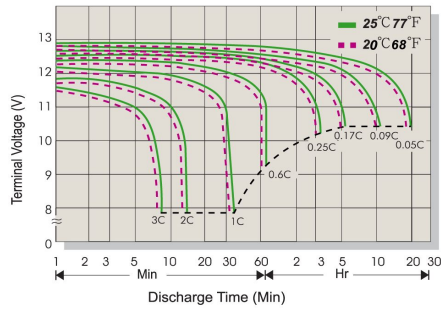
B1 Terminal



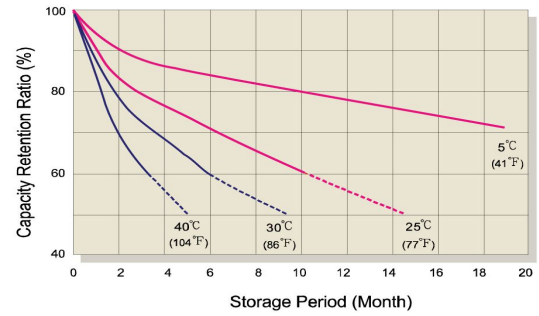
#### Speification:

Battery Model	MS22-12 12V22AH			
Designed Floating Life	3~5 Years			
Capacity (25°C)	20HR(1.100A,10.5V)	10HR(2.128A,10.5V)	5HR(4.179A,10.5V)	1HR(14.278A,10.5V)
	22.00 AH	21.28 AH	20.90 AH	14.28 AH
Dimensions	Length	Width	Height	Total Height
	181 mm	77 mm	167 mm	167 mm
Approx. Weight	6.20Kg ±3%			
Internal Resistance	Full charged at 25°C : ≤16.00 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(25oC)	Cycle use		Float use	
	14.4-15.0V(-30mV/°C), max. Current:5.00A		13.5-13.8V (-20mV/°C)	

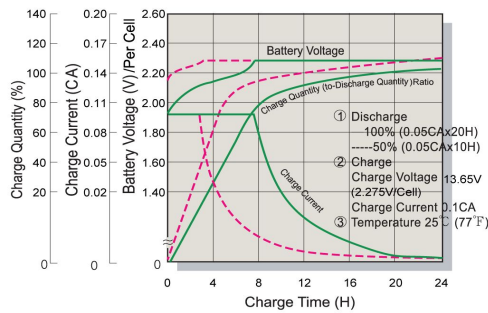
### Terminal Voltage (V) and Discharge Time



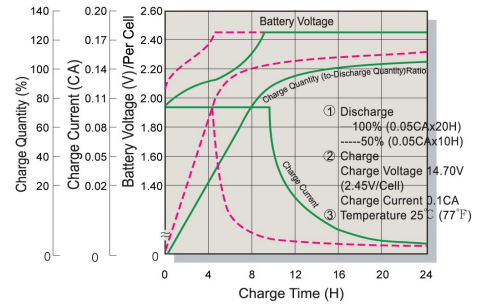
### Capacity Retention Characteristic



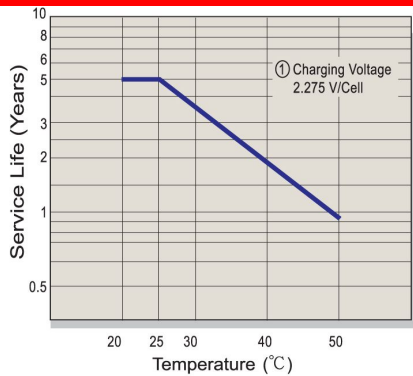
### Battery Voltage and Charge Time for Standby Use



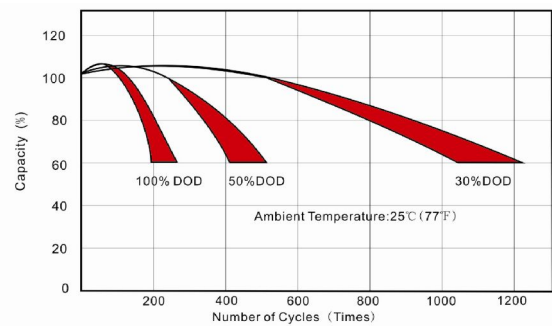
### Battery Voltage and Charge Time for Cycle Use



### 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	71.55	49.67	40.80	24.45	14.015	7.521	6.208	4.743	4.102	3.276	2.088	1.080
1.75V/Cell	72.90	50.60	41.57	24.91	14.278	7.662	6.324	4.832	4.179	3.338	2.128	1.100
1.70V/Cell	75.08	52.12	42.81	25.66	14.706	7.892	6.514	4.977	4.305	3.438	2.191	1.133
1.67V/Cell	78.00	54.14	44.48	26.66	15.277	8.199	6.767	5.170	4.472	3.571	2.277	1.177
1.60V/Cell	82.37	57.18	46.97	28.15	16.134	8.658	7.146	5.460	4.723	3.772	2.404	1.243

### 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	139.5	96.85	79.56	47.68	27.33	14.67	12.10	9.25	8.00	6.39	4.07	2.11
1.75V/Cell	142.1	98.67	81.06	48.58	27.84	14.94	12.33	9.42	8.15	6.51	4.15	2.15
1.70V/Cell	146.4	101.6	83.49	50.04	28.68	15.39	12.70	9.70	8.39	6.70	4.27	2.21
1.67V/Cell	152.1	105.6	86.73	51.98	29.79	15.99	13.19	10.08	8.72	6.96	4.44	2.30
1.60V/Cell	160.6	111.5	91.59	54.89	31.46	16.88	13.93	10.65	9.21	7.35	4.69	2.42