SB6-225D - 6V225Ah - EV/DC Series

The SB6-225D , a group GC2 format, is a valve regulated AGM technology based battery specifically designed for high cycling applications. With a higher tin content, special thick plate structure and a special paste formulation. The EV/DC Series will provide a much longer cycle life compared to general purpose AGM batteries in cyclic applications such as mobility / electric vehicles, renewable energy, recreational vehicles and marine applications. An additional feature of the EV/DC Series, compared to general purpose AGM batteries, is the use of much thicker inter-cell connections within the battery. This additional feature is a must for high vibration applications such as mobility and material handling applications.

Specifications

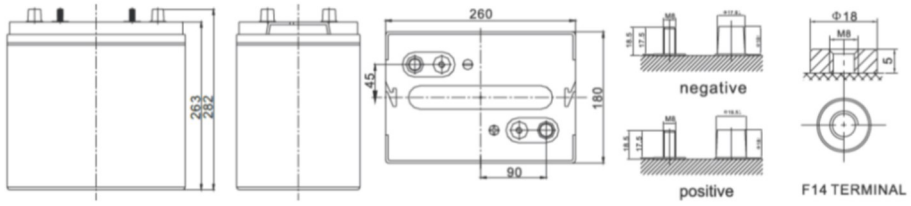
- Nominal Voltage: 6 volts
- Nominal Capacity at 77°F/25°C
  20 Hour rate 200 Ah
  10 Hour rate 226 Ah
  5 Hour rate 220 Ah
  1 Hour rate 125.7 Ah
- Number of cells - 3
- Internal resistance - ±2 mΩ
- Operating Temperature Range - (See Charging recommendations)
  Discharge: -40°C to 60°C
  Charge: -20°C to 50°C
  Storage: -20°C to 60°C
- Max. Discharge current - 2250 A (5sec)
- Float Charge - 6.8 to 6.9 Volts @ 25°C
- Cyclic charge - 7.3 to 7.4 Volts @ 25°C
- Terminal configuration - F22(M8)
- Self discharge rate at 25°C - 3% per month

General Features

- AGM technology also called VRLA (Valve Regulated Lead Acid) has an efficient gas recombination process which allows for a maintenance free battery.
- Not restricted for air transport and complies with IATA/ICAO Special Privision A67.
- UL-recognized component (MH60449)
- Manufactured in a plant with the following standards:
  ISO 9001:2008
  ISO 14001:2004
  OHSAS 18001:2007
- Can be mounted in any orientation, but not to be charged in a inverted position.
- Computer designed lead/calcium/tin alloy grids for high power density. The lead is virgin lead of the highest purity.
- Long service life (years) designed for float/standby applications.
- Low self discharge rate.

MH60449

Dimensions: 260(L)x180(W)x263(H) mm/10.2 x7.09x10.4 inches **Weight:** Approx. 32 kg



Constant Current Discharge Characteristics: Amps @ 25°C

F.V/Time	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	224.0	136.4	81.5	62.0	49.3	41.7	27.7	22.9	11.7
1.65V	219.3	133.8	80.1	61.1	48.6	41.2	27.3	22.7	11.6
1.70V	213.1	130.4	78.3	59.8	47.7	40.5	26.9	22.4	11.4
1.75V	204.6	125.7	75.8	58.1	46.5	39.6	26.4	22.0	11.3
1.80V	193.0	119.3	72.3	55.7	44.8	38.2	25.6	21.4	11.0
1.85V	176.6	110.2	67.3	52.2	42.3	36.3	24.4	20.5	10.6

Constant Power Discharge Characteristics: Watts @ 25°C

F.V/Time	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	407	255	154	118	94.7	80.4	54.0	45.1	23.0
1.65V	404	253	153	117	93.9	79.8	53.6	44.7	22.9
1.70V	395	247	150	115	92.3	78.7	52.8	44.2	22.6
1.75V	383	240	146	112	90.3	77.1	51.8	43.4	22.2
1.80V	365	228	140	108	87.2	74.8	50.4	42.2	21.7
1.85V	337	212	131	102	82.7	71.3	48.2	40.6	21.0

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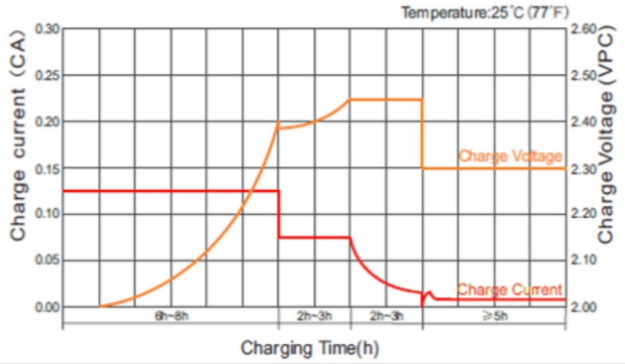
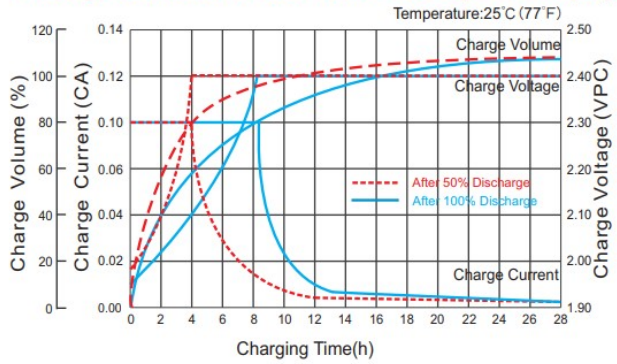
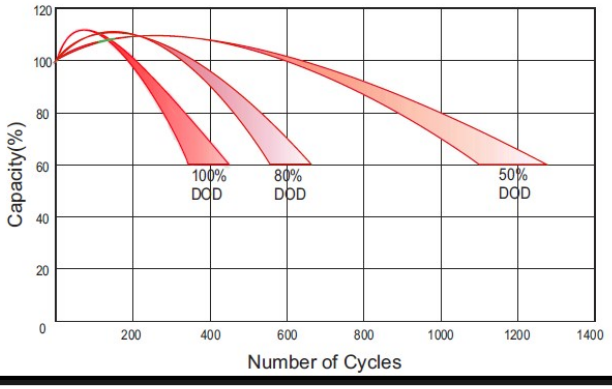
Charge Characteristic Curve for Cycle Use(IIUU)



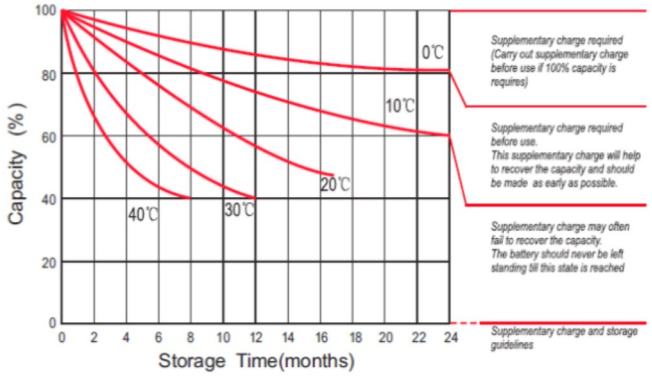
Charge Characteristics Curve for Cycle Use(IU)



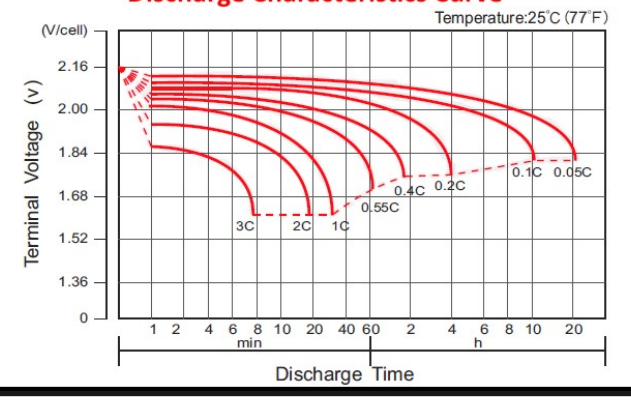
Cycle Life in Relation to Depth of Discharge



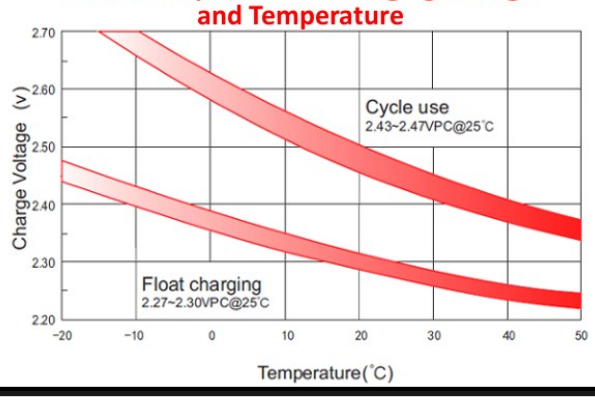
Storage Characteristics



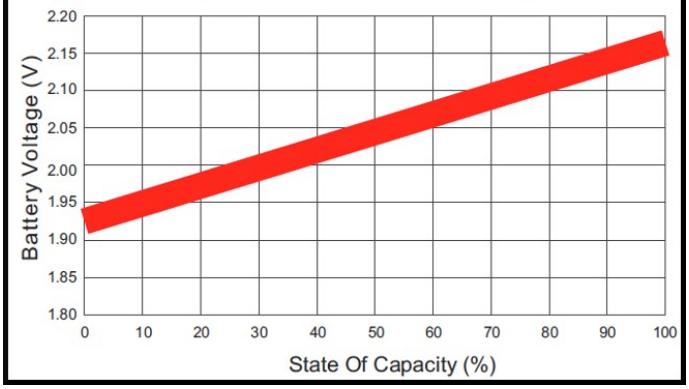
Discharge Characteristics Curve



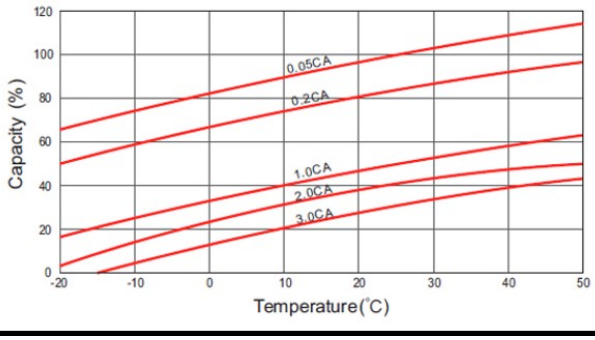
Relationship Between Charging Voltage and Temperature



Relationship of OCV And State of Charge(20℃)



Temperature Effects on Capacity



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Charging Recommendations

- For standby (float) use 2.27 to 2.3 volts per cell (@ 25°C).
- For cyclic use 2.43 to 2.47 volts per cell (@25°C)
- Recommended maximum charging current limit is 67.5 Amp.
- Charging voltage should be regulated in relation to the ambient temperature. When the temperature is higher, the charging voltage should be lower. Where the temperature is lower, the charging voltage be higher. (3 mVolts per °C per cell in standby applications and 4 mVolts per °C per cell in cyclic applications). Typical applications in a range of 0°C-30°C do not require this compensation.
- It is recommended that "refresh charging" be applied to any battery which has been stored for a long period of time, prior to putting the batteryinto service and/or within 6 months after manufacture.
- To obtain the optimum standby performance it is vital that the correct charging profile is utilised (see Charge Characteristics figures)
- Typically it takes more energy to recharge a battery that it has expended. The ratio is 1.1 - 1.15 has to get into battery for every 1.0 that was supplied by the battery.

Service Life

- Please refer to the life curves provided. These curves represent typical results under optimum operating conditions. Actual life will vary due to variability of these conditions.
- Improper charging (overcharging and lack of charging) is the *number on* reason why AGM/VRLA batteries fail prematurely. Follow charging guidelines found on this specification sheet.
- Elements that affect Cycle Life: There are various factors that will have an effect on the service life of AGM/VRLA battteries in cyclic applications; ambient operation temperature, discharge rate, depth of discharge, the manner in which the battery is recharged, and the timeliness of the recharge, to obtain maximum service life it is recommended not to go beyond 80% DOD (Depth Of Discharge) and if all possible limit it to 50 % DOD. At 50 % you will obtain the ideal trade-off for life expectancy for AGM batteries. This recommendation goes for all brands of AGM batteries.
- Elements that affect standby life: All the same factors are responsible but the most important in this case is the ambient temperature followed closely by the charging parameters. For example - in an enclosed UPS cabinet with no ventilation temperatures, are most ofter than not well above 25°C, henceforth battery life is severely affected.

Warnings

- Never install AGM/VRLA batteries in an airtight container.
- Keep away from sparks, and any source of flames.
- Connect cables tightly to avoid sparks at terminales.
- The electrolytes contains sulfuric acid which can cause serious damage to eyes and skin. Should this occur, flush profusely with water and seek medical attention.
- Do not short circuit AGM/VRLA terminals with metal object, they are capable of generating hundreds of amperes, you can seriously burn yourself in short circuiting a battery.
- Mixing batteries of different capacities, age and/or manufacturer is not recommended.