

## Introduction

Our batteries are manufactured under the guidelines of ISO 9002. Each battery undergoes a series of rigid manufacturing and quality control before the battery leaves the factory.

## Features

•Maintenance-free operation/ Seal construction

Our batteries have been classified as “Non-spillable.” During the expected services life of our batteries, there is no need to check the specific gravity of the electrolyte, or add water. The unique construction and sealing technique guarantee that no electrolyte leakage can occur from the terminals or case of any battery. These ensure the battery can operate safely in vertical or horizontal position.

• Wide operating temperature range:

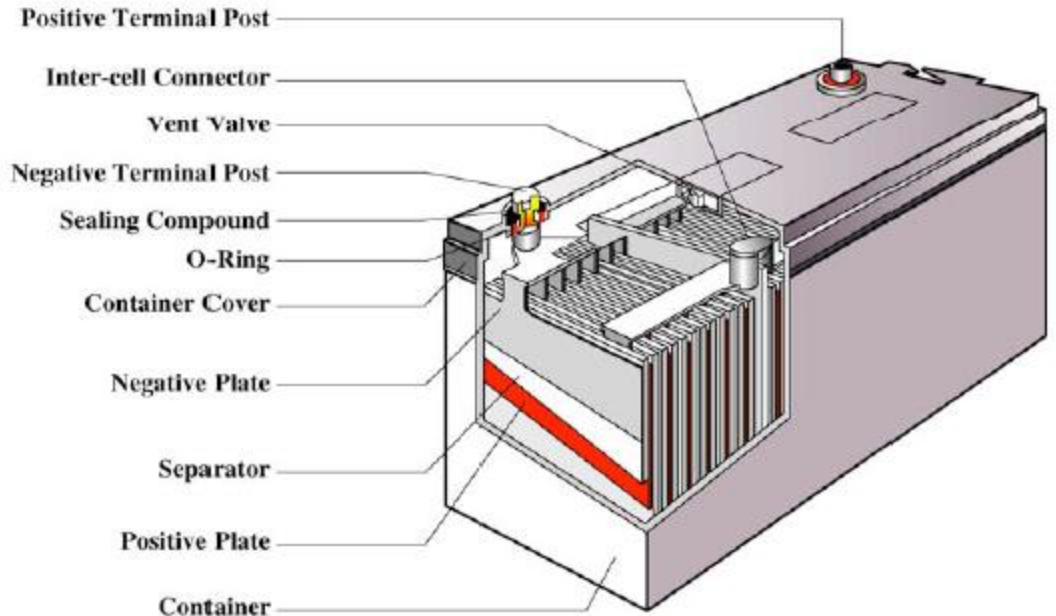
Our battery will operate from -30C to (-22F) to 60C when it is fully charged.

• Long service life: Thick calcium grids extend service life.

• Low internal resistance and high discharge rate: Our SLA battery has low internal resistance when it is fully charged, therefore has a high discharge rate.

• Working safely: Our battery equipped with a safe, low pressure venting system. Which operates at 1 psi to 6 psi, designed to release excess gas and reseal automatically in the event that gas pressure to a level above the normal rate. Thus, there is no excessive buildup of gas in the batteries.

## Battery Construction



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## Approvals

Our batteries are certified for Certificate of CE, Certificate of UL



# AGM

TECHNOLOGY

## Applications

- Solar power / Photovoltaic System
- Telecommunications
- UPS Standby
- Power Station Switching / Tripping
- Fire Alarms
- Security Camera / Alarm Standby
- Elevators
- Generator Starting
- Emergency Lighting
- Portable Electric Toys
- Electric Wheelchair / Electric Bicycles
- Automatic Gates
- Power Tools

Model	Voltage	Capacity @ 20hr	Dimension (mm)	Weight (kg)	Int. Res.	Ter./hole size
SPM004SB	6V	4.5Ah	47L x 70W x 99H, 105H	0.67	22mΩ	T1
SPM007SB	12V	7.6Ah	151L x 65W x 95H, 101H	2.80	20mΩ	T2
SPM012SB	12V	12Ah	151L x 98W x 95H, 101H	4.20	16mΩ	T2
SPM018SB	12V	18Ah	182L x 78W x 168H, 168H	5.50	8mΩ	T3/M5/12
SPM026SB	12V	26Ah	166L x 175W x 125H, 126H	8.1	8mΩ	T2/M5/12
SPM040SB	12V	40Ah	197L x 166W x 170H, 170H	12.2	7mΩ	M6/16
SPM065B	12V	65Ah	348L x 167W x 178H, 178H	19.30	5.5mΩ	M6/16
SPM100SB	12V	100Ah	333L x 173W x 210H, 220H	28.00	4.5mΩ	M6/16
SPM200SB	12V	200Ah	535L x 205W x 222H, 222H	53.00	2.7mΩ	M8/20



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## AGM Technology

AGM (Absorption Glass Mat) sealed battery technology was originally developed in 1985 for military aircraft where power, weight, safety, and reliability were paramount considerations.

AGM battery technology has continued to develop and offer improvements over other sealed battery technologies. AGM technology has become the next step in the evolution of both starting and deep cycle sealed batteries for marine, RV, and aviation applications. This "next generation" technology delivers increased safety, performance, and service life over all other existing sealed battery types, including gel technology.

In AGM sealed batteries, the acid is absorbed between the plates and immobilized by a very fine fiberglass mat. No silica gel is necessary. This glass mat absorbs and immobilizes the acid while still keeping the acid available to the plates. This allows a fast reaction between acid and plate material.

The AGM battery has an extremely low internal electrical resistance. This, combined with faster acid migration, allows the AGM batteries to deliver and absorb higher rates of amperage than other sealed batteries during discharging and charging. In addition, AGM technology batteries can be charged at normal lead-acid regulated charging voltages, therefore, it is not necessary to recalibrate charging systems or purchase special chargers.

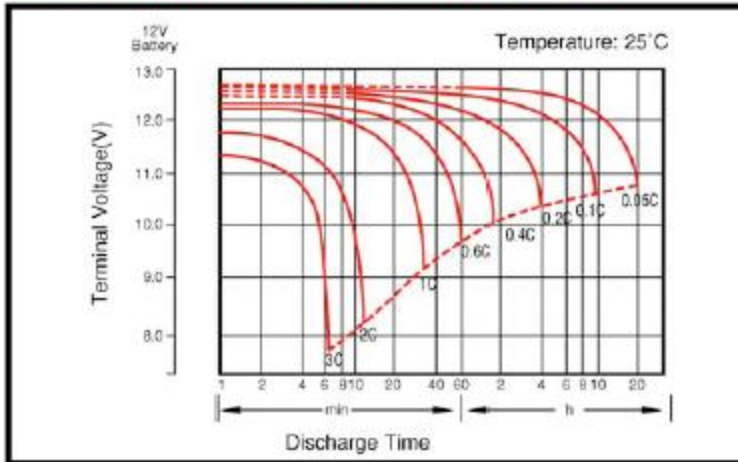
**AGM**  
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Description	Technical Specification
Positive Plates	Grid Plates
Negative Plates	Grid Plates
Separator	Absorbed Glass Matt (AGM)
Terminals	Extruded Copper Clip, Copper Inserts
Type of Connection	Clip on, Screwed
Cell Container	ABS
Design Life	Life Expectancy 5 years @ 25C
Float Charge	2.23-2.25 VPC
Boost Charge	2.35VPC

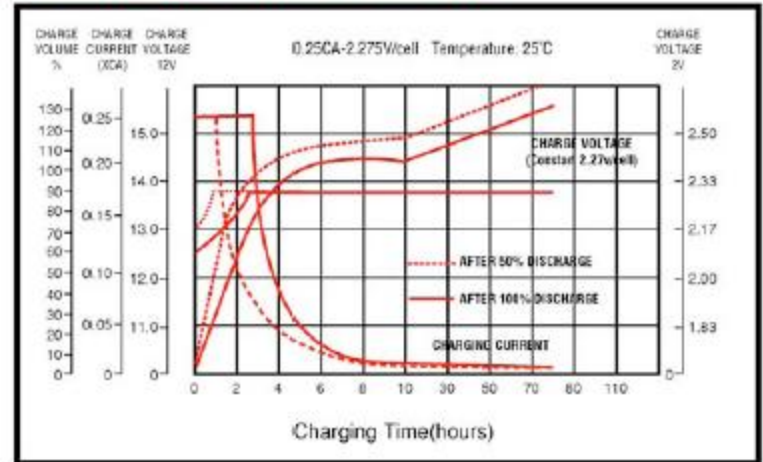
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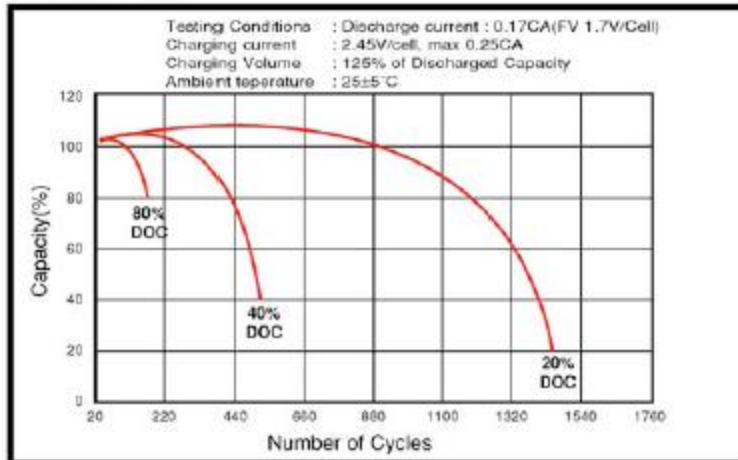
## Discharging characteristics curves



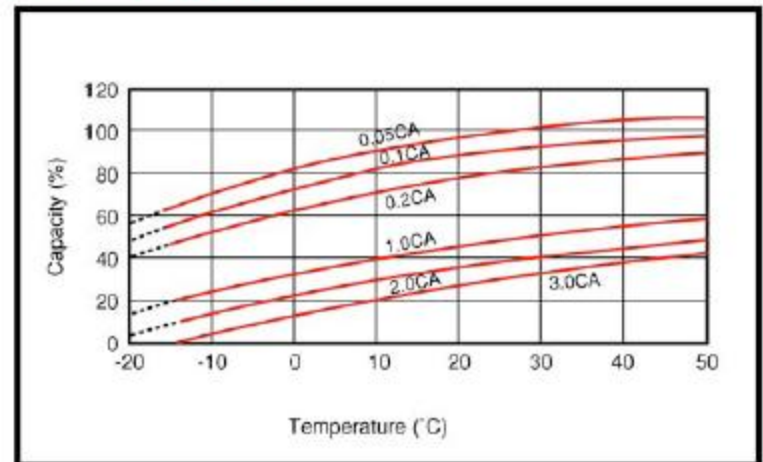
## Discharging characteristics



## Cycle Service Life in Relation to Depth of Discharge



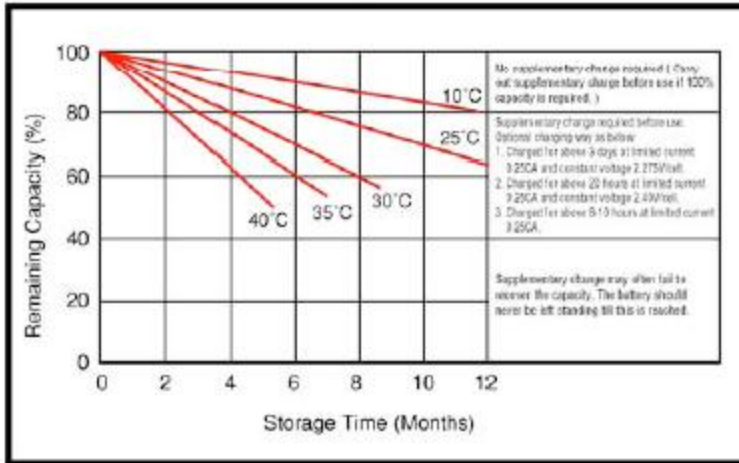
## Temperature effects in relation to battery capacity



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## Self discharging characteristics and complementary charge methods



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**Solar Power Mart**  
*Harvest the Sunpower!*



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## Product Safety and Handling

### Inspection and Maintenance

It is advisable to perform periodical check and maintenance on battery.

- a) Measure the total voltage of the batteries during trickle charge (or float charge). If the charge equipment provides an irregular or incorrect reading, be certain to investigate the cause of any deviations from the specified voltage range.
- b) Check the batteries for any sign of irregularities in appearance. If any damage such as crack and deformation, or electrolyte leakage is found on the case, cover, etc., the batteries must be replaced with a new one. Also, clean the batteries if there are dirt and dust.
- c) Use soft cloth for cleaning batteries. Avoid contact with soft polyvinyl chloride or the like; organic solvents such as gasoline, thinner, or oil.
- d) Do not mix usage of batteries with different capacity, type, manufacturer, or history of use (charge/ discharge operation).

Proper cushion should be available if batteries are used in vibration conditions such as motor cycles, engine driven lawnmowers, etc.

Batteries should always be mounted at upright position.

A back-up system other than the main batteries should be available for medical equipments in the event of power failure.

### Exposure Controls and Personal Protection

- a) CAUTION: If a voltage over 150 volts exists between 2 terminals which can be touched simultaneously by inadvertence, it is necessary to use rubber insulated gloves as well as an insulated carpet, and to be accompanied by another person.
- b) Do not disassemble the batteries. Avoid contact with sulfuric acid leaked from broken batteries.
- c) If body contacts with sulfuric acid, change contaminated clothing as soon as possible, and thoroughly flush affected area with cool water, consult physician immediately.
- d) Do not inhale gases emitted from batteries. Move the person exposed to sulfuric fume to well ventilated area, and consult physician immediately.
- e) If eyes contact with sulfuric acid, wash eyes with plenty of clean water, consult physician immediately.
- f) Do not dispose batteries into fire.
- g) Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Determine the need to evacuate or isolate the area according to your local emergency plan.

### Storage

- a) Store the batteries in an upright position.
- b) Store the batteries starting from the fully charged state.
- c) Charge the batteries, at least once, every six months during storage below 77 F (25 C). The interval of this charge must be shortened to half by temperature rising of every 50 F (10 C).
- d) Batteries should be used as quickly as possible.



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## Usage Precaution

- a) Do not use batteries for applications other than those specified in this specification.
- b) Take batteries damage modes into consideration when designing/ using chargers.
- c) Provide protection against short circuits, and charger output.
- d) Mount batteries in an upright position, otherwise internal short circuit, internal breaks, and electrolyte leakage might occur.
- e) Position batteries at the lowest part of the equipments whenever possible.
- f) Study and test the batteries connectors to ensure good function.
- g) Secure batteries firmly to prevent free movement, vibration, or shock on batteries.
- h) Do not position batteries anywhere near a heat generating device, and sparks i.e. transformer, switch, and fuse.
- i) Do not position batteries near fire or heat.
- j) Ensure sufficient insulation of the lead wires between batteries and the intended application.
- k) When more than one battery is used, ensure batteries mutual connection is completed before connecting batteries strings with the charger or the load.

## Transportation

- a) Heavy batteries must be handles with care. Always use proper lifting equipment in order to prevent injuries.
- b) Avoid moisture or rain on the batteries.
- c) Keep batteries in the upright position during transportation. Avoid strong impact or vibration on the batteries.

## Disposal Consideration

- a) Disposal must be made according to official regulations.
- b) Recycling logo or written information must be placed on the application products, the packages, the cartons, and the batteries where legal or voluntary regulations on batteries recycling are imposed.

## Other Information

All information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

The above information is not intended for use in preparing product specifications. Please contact Solar Power Mart before writing specifications.



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