Gel Battery For Solar and Remote Area Power Systems

MH27867

GEL TECHNOLOGY
FSG SERIES

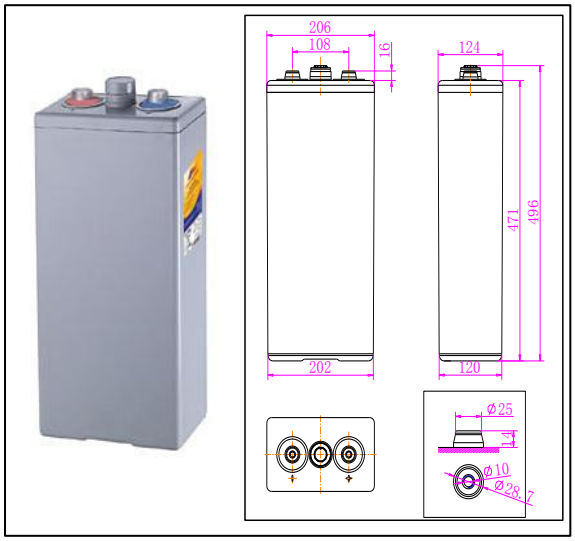
FSG450-2(2V450AH/100 HR)

FSG series batteries using revolutionary Solar-GEL long life plate technology has been designed specifically for solar applications. Solar applications are often remotely located and installed in the most extreme environmental conditions. To deliver a reliable service with a long operating life requires a unique blend of physical, structural and chemical characteristics. For this reason FSG series batteries is possibly the world's best solar battery.

General Features

(1) Superior low current discharge performance.
(2) Excellent Recovery from deep discharge and good deep discharge cycle capability.
(3) The battery has a low self-discharge,keep over 60% of the rated capacity after 2years stored under 25℃.
(4) Compliance with IEC61427 (1999) , AS 4086.1 (1993).

Outer Dimensions



Dimensions and Weight

Total Height..... 496 ±2mm (19.5 inches)
Height.....471 ±2mm (18.5 inches)
Length..... 124 ±2mm (4.9 inches)
Width.....206 ±2mm (8.1 inches)
Weight.....Approx. 24.4 Kg (53.8 lbs)

Performance Characteristics

Nominal Voltage.....2V
Nominal of cell..... 1
Design life..... 20 years
Nominal Capacity 77°F(25°C)
100 hour rate (4.5A,1.80V)..... 450 AH
72 hour rate (6.04A, 1.80V)..... 435 AH
20 hour rate (16.3A, 1.80V)..... 326 AH
10 hour rate (30.5A, 1.80V)..... 310 AH
Safety vent.....Self resealing 150 mbar
Self-Discharge
.....1.5% of capacity declined per month at 25℃ (77℉)
Operating Temperature Range
Discharge ..... -40℃ to 55℃ (-40℉-131℉)
Charge ..... -10℃ to 50℃ (14℉-122℉)
Storage ..... -20℃ to 40℃ (-4℉-104℉)
Nominal Operating Temperature Range.....25±3°C
Max.Discharge Current 77°F(25°C)..... 2000 A(5S)
Short Circuit Current..... 3337 A
Internal Resistance 0.62mΩ
Container Material .....
.....ABS, Flame retardant to UL94V-O and BS6334 FVO
Terminal.....Threaded insert terminal M10

Charging Methods

Application	Charging method	Charging voltage at 25 ℃	Temperature compensation coefficient of charging voltage	Max. charging current	Charging time 25℃(h)	
					100% discharge	50% discharge
For standby power source	Constant voltage &Constant current charging(with current restriction)	2.25～2.30V	-3mV/℃	0.125C10	36	30
For Cycle service		2.40～2.45V	-4mV/℃	0.125C10	24	20

*Temperature compensation of charging voltage is not needed.when using the batteries within 5°C to 35°C range.

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FSG Series: FSG450-2

2V450Ah/100Hr

Constant Current Discharge Characteristics: A(25℃)

F.V/Time	1h	2h	3h	5h	8h	10h	12h	24h	48h	72h	100h	120h
1.9	94.5	76.7	59.9	43.0	31.2	26.4	22.2	12.6	7.6	5.53	4.12	3.54
1.87	99.9	80.3	64.4	44.8	31.9	26.9	22.8	12.9	7.8	5.68	4.26	3.68
1.85	112.5	89.7	73.7	49.9	35.0	29.4	23.6	13.4	8.1	5.89	4.43	3.83
1.83	123.0	92.1	73.8	50.3	35.1	29.6	25.9	13.6	8.2	5.97	4.45	3.90
1.8	138.6	98.3	77.0	52.6	36.7	31.0	26.1	13.6	8.4	6.05	4.49	3.98
1.75	160.2	103.6	78.5	52.8	36.9	31.2	---	---	---	---	---	---
1.7	166.4	108.4	79.9	53.1	37.1	31.2	---	---	---	---	---	---
1.65	172.5	111.1	82.0	53.3	37.1	31.2	---	---	---	---	---	---

Constant Power Discharge Characteristics: W/cell(25℃)

F.V/Time	1h	2h	3h	5h	8h	10h	12h	24h	48h	72h	100h	120h
1.9	185.3	151.1	118.2	85.1	62.2	53.0	45.9	24.1	14.7	10.50	7.96	6.90
1.87	203.3	163.6	132.1	92.3	66.1	56.2	46.6	24.4	14.9	10.69	8.22	7.18
1.85	217.2	172.9	143.3	97.7	68.6	58.3	48.7	25.5	15.6	11.06	8.55	7.47
1.83	235.4	177.2	143.2	99.0	69.7	58.8	49.8	26.1	15.9	11.28	8.68	7.61
1.8	263.2	188.7	149.0	100.2	70.8	59.2	50.6	26.4	16.2	11.72	8.73	7.80
1.75	302.7	197.7	149.8	101.4	71.5	60.6	---	---	---	---	---	---
1.7	309.4	203.9	151.8	102.7	72.1	61.2	---	---	---	---	---	---
1.65	319.2	206.7	153.4	103.1	72.2	61.4	---	---	---	---	---	---

Design Life and Temperature

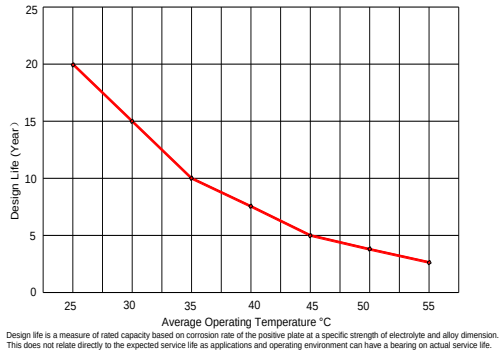

Figure 1: Design Life Vs. Temperature

Capacity and Temperature

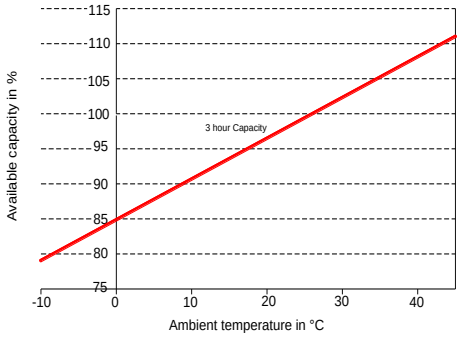

Figure 2: Capactiy Vs Ambient temperature

Capacity Retention Characteristic

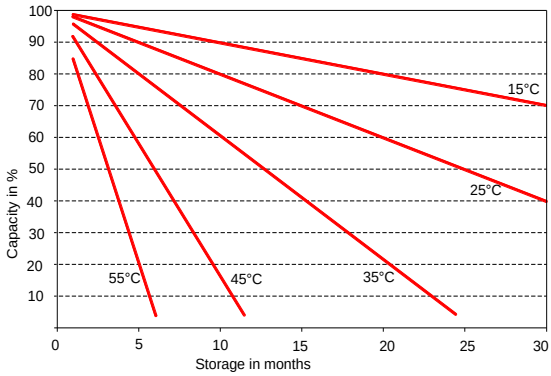

Figure 3. Self-discharge in relation to the storage temperature.

Cycle Service Life

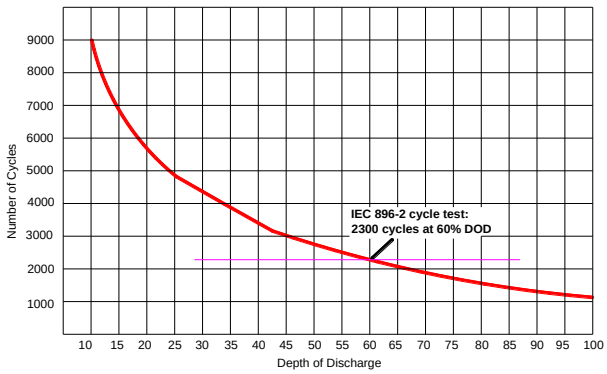

Figure 4. FSG Series, Number of Cycles vs. Depth of Discharge (DOD)

Contact Information

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Other Fullriver battery ranges:

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HC Series *: AGM Battery For High Cranking service*
HGXL Series *: 2V AGM Stationary batteries*
HGHL Series *: AGM Batteries for High Rate Service*
FAT Series *: Front Access Terminal Batteries for Telecom/IT Applications*
DCG Series *: Gel Battery For Deep Cycle service*