6FM40 12V 40Ah (20hr) Sealed Lead Acid (SLA) Battery



The rechargeable batteries are lead-lead dioxide systems. The dilute sulfuric acid electrolyte is absorbed by separators and plates and thus immobilized. Should the battery be accidentally overcharged producing hydrogen and oxygen, special one-way valves allow the gases to escape thus avoiding excessive pressure build-up. Otherwise, the battery is completely sealed and is, therefore, maintenance-free, leak proof and usable in any position.

Battery Construction

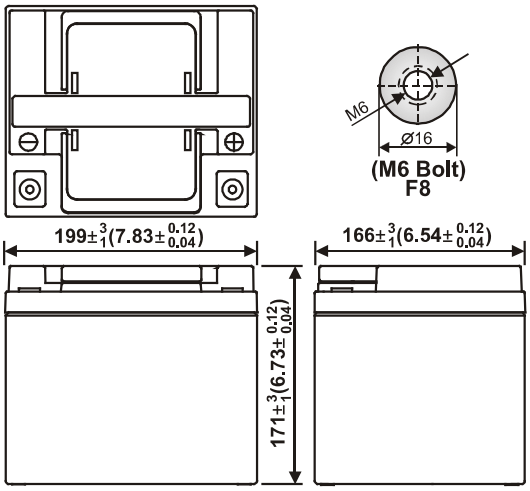
Component	Positive plate	Negative plate	Container&Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS UL94 HB	Rubber	Copper	Fiberglass	Sulfuric acid

General Features

- Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% and freedom from electrolyte maintenance or water adding.
- Positive and negative plates in lead-calcium-tin alloy
- Stable quality & high reliability
- Sealed construction
- Maintenance-free operation
- Low pressure venting system
- Low self discharge
- High rate discharge
- Valve Regulated Lead Acid (VRLA) battery
- V0 Class Flame-Retardant ABS (UL94V-0) container and cover is optional
- Six months shelf life at 25ºC
- Design life 3-5 years depend on temperature, float charging*

Dimensions and Weight

Length(mm / inch)	199 / 7.83
Width(mm / inch)	166 / 6.54
Height(mm / inch)	171 / 6.73
Total Height(mm / inch	171 / 6.73
Approx. Weight(Kg / lbs)	12.6 / 27.7



Performance Characteristics

Nominal Voltage	12V
Number of cell	6
Design Life	8-10 years
Nominal Capacity 77ºF(25°C)	
20 hour rate (2A, 10.5V)	40Ah
10 hour rate (3.8A, 10.5V)	38Ah
5 hour rate (6.8A, 10.2V)	34Ah
1 hour rate (40A, 9.6V)	21.33Ah
Internal Resistance	
Fully Charged battery 77°F(25°C)	≤8 mOhms
Self-Discharge	
3% of capacity declined per month at 25°C (average)	
Operating Temperature Range	
Discharge	-20~60ºC
Charge	-10~60ºC
Storage	-20~60ºC
Max. Discharge Current 77°F(25°C)	480A(5s)
Short Circuit Current	540A
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	14.4-14.8V
Maximum charging current	10.8A
Temperature compensation	-30mV/°C
Standby use	13.5-13.8V
Temperature compensation	-20mV/°C

Discharge Rates in Watts to Various End Voltage at 25ºC(77ºF)

End Voltage	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
10 min	133	149	159	163	163	166
15 min	113	123	128	130	131	132
30 min	73.8	75.8	76.5	76.7	77.0	77.3
60 min	45.8	46.8	47.3	47.5	47.7	47.8
120 min	28.7	29.2	29.5	29.7	29.8	30.0
180 min	19.8	20.2	20.3	20.5	20.5	20.7
300 min	13.6	13.7	13.8	13.9	13.9	14.0
600 min	7.95	8.05	8.13	8.18	8.22	8.27
1200 min	4.00	4.03	4.07	4.08	4.08	4.10

Discharge Rates in Amperes to Various End Voltage at 25ºC(77ºF)

End Voltage	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
10 min	77.0	86.2	92.3	94.2	94.4	96.2
15 min	61.6	66.8	69.6	70.6	71.2	72.2
30 min	37.5	38.5	38.9	39.0	39.1	39.2
60 min	23.5	24.0	24.3	24.4	24.5	24.6
120 min	14.4	14.7	14.8	14.9	15.0	15.1
180 min	10.0	10.1	10.2	10.2	10.3	10.3
300 min	6.76	6.82	6.87	6.90	6.93	6.97
600 min	3.95	4.00	4.04	4.06	4.08	4.10
1200 min	1.98	2.00	2.02	2.02	2.03	2.04

(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.

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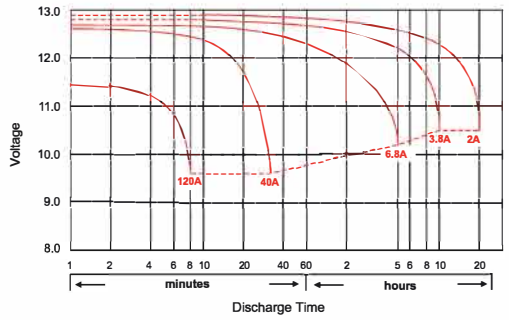
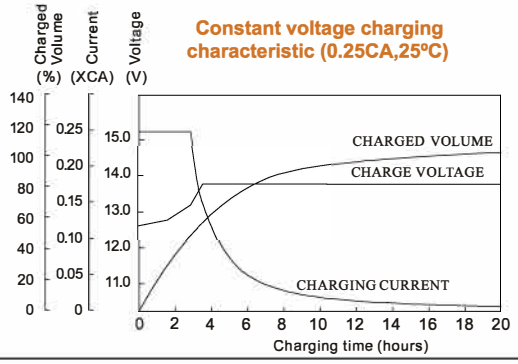
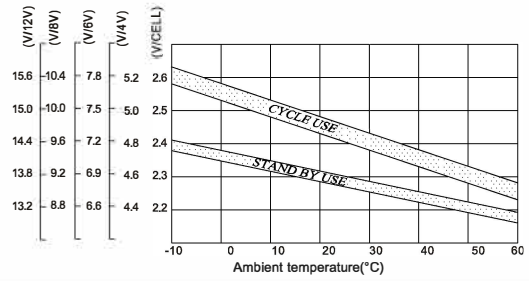
Discharge characteristic (25ºC)



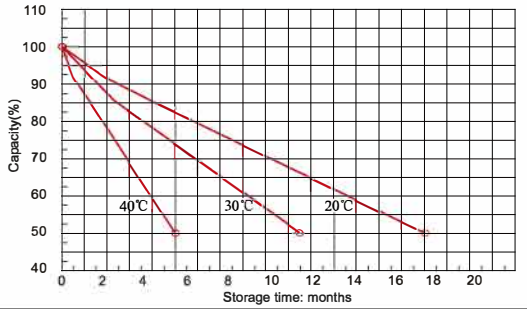
Constant voltage charging characteristic (0.25CA,25ºC)



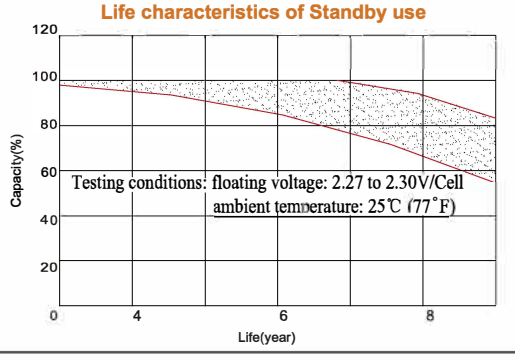
Relationship between charging voltage and temperature



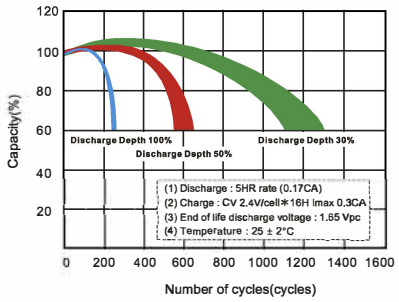
Self-discharge characteristic



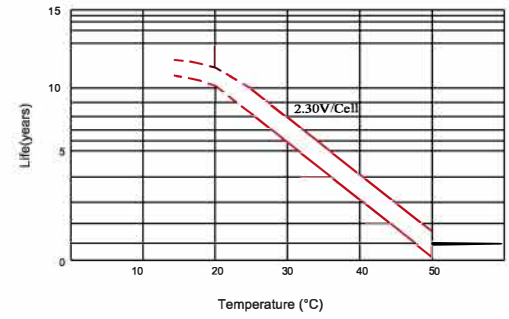
Life characteristics of Standby use



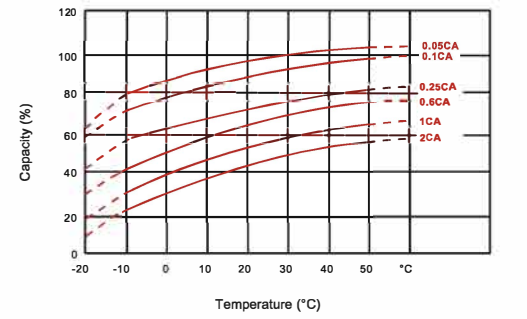
Cycle service life in relation to depth of discharge



Temperature effects on float life



Temperature effects on capacity



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