

## 6FM33HD-X 12V 33Ah(10hr)

VISION Deep Cycle series batteries(D Type, " D"behind the model name stands for deep-cycle application) are designed to have a large amount of stored current discharged between charging sessions, with very heavy non-porous battery plates to withstand repeated major discharging and charging cycle(deep cycle). The VISION Deep-cycle battery uses a different chemistry for the plates active paste material, and a slightly stronger electrolyte than normal battery electrolyte, which allows for a much longer life in deep cycle applications.



### Battery Construction

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

### General Features

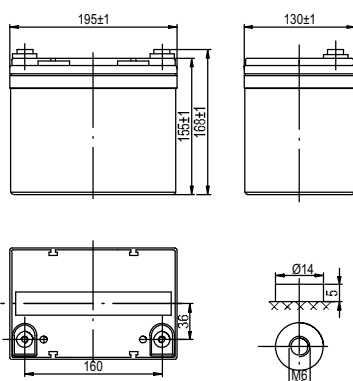
- Environmentally friendly.
- High Reliability and Good Quality.
- Deep Discharge Recovery.
- High Power Density.
- Long Service Life, in Float or Cyclic.
- International Standard, JIS and DIN.

### Applications

- Solar Systems.
- Wheelchair.
- Golf Cart.
- Marine Equipment.
- Power Station.
- Railway Systems.
- Telecom Systems.
- Cable TV Systems.
- Emergency Power System.

### Dimensions and Weight

Length(mm / inch)	195 / 7.68
Width(mm / inch)	130 / 5.12
Height(mm / inch)	155 / 6.10
Total Height(mm / inch)	168 / 6.61
Approx. Weight(Kg / lbs)	10.4/ 22.9



### Performance Characteristics

Nominal Voltage	12V
Number of cell	6
Design Life	10 years
Nominal Capacity 77°F(25°C)	
10 hour rate (3.30A, 10.8V)	33.0Ah
5 hour rate (5.58A, 10.5V)	27.9Ah
1 hour rate (22.4A, 9.6V)	22.4Ah
Internal Resistance	
Fully Charged battery 77°F(25°C)	10mOhms
Self-Discharge	
3% of capacity declined per month at 20°C(average)	
Operating Temperature Range	
Discharge	-20~60°C
Charge	-10~60°C
Storage	-20~60°C
Max. Discharge Current 77°F(25°C)	330A(5s)
Short Circuit Current	850A
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	9.9A
Temperature compensation	-30mV/°C
Standby use	2.20-2.27VPC
Temperature compensation	-20mV/°C

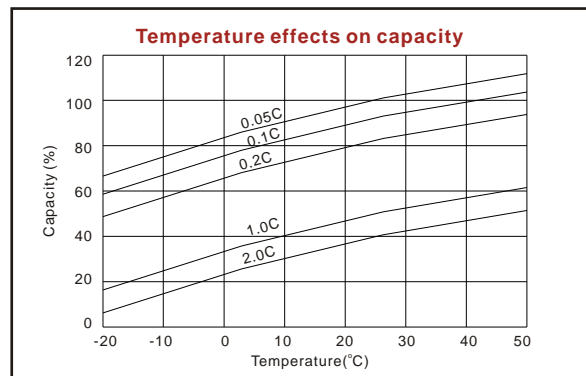
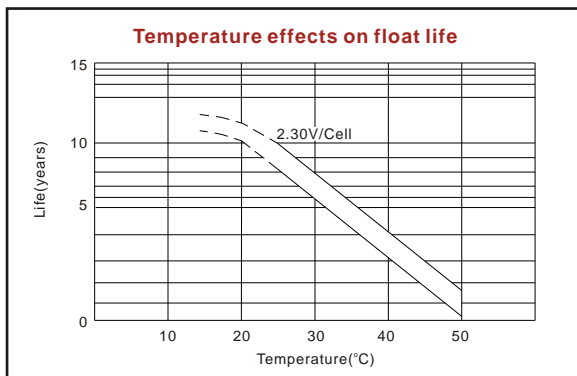
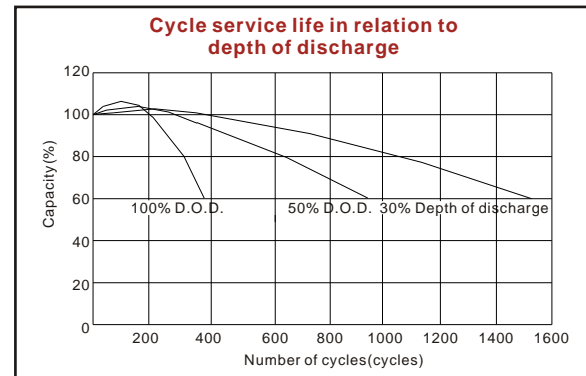
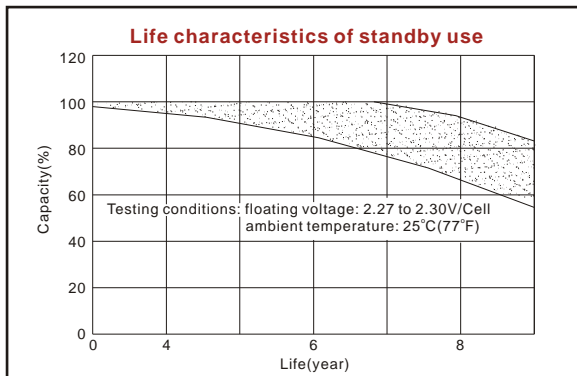
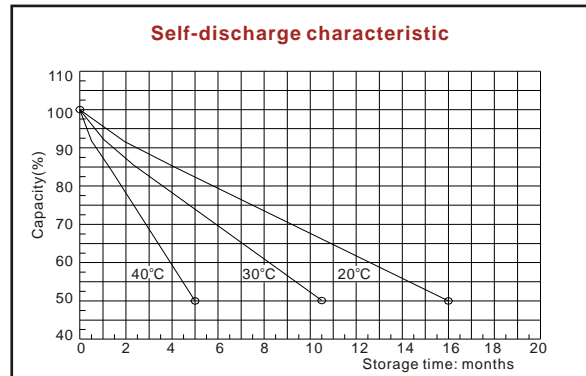
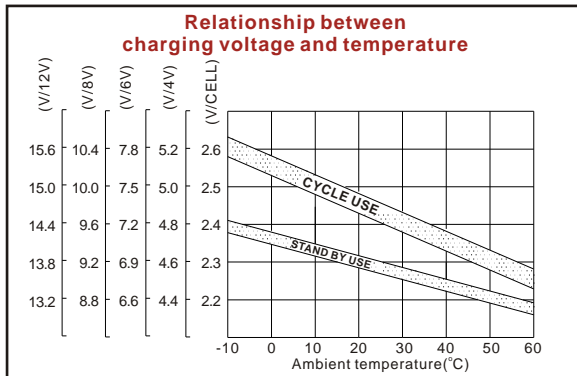
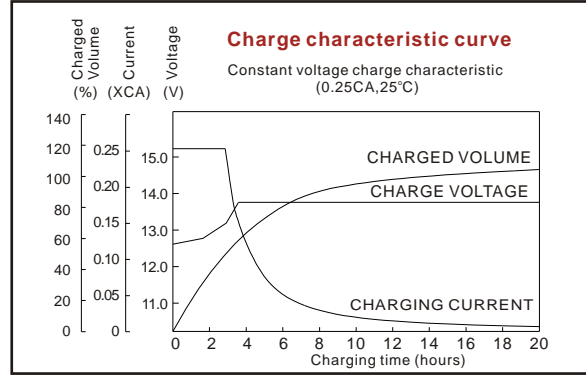
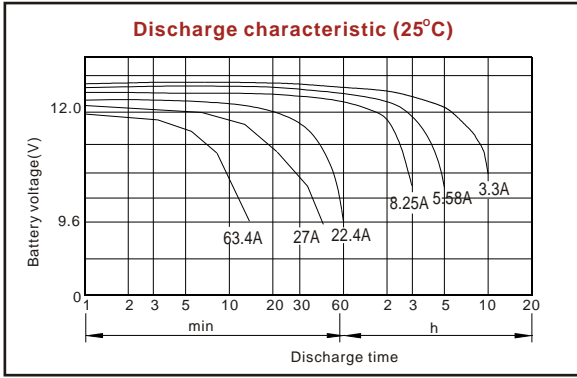
### Discharge Constant Current (Amperes at 77°F25°C)

End Point Volts/Cell	5min	10min	15min	30min	45min	1h	3h	5h	10h
1.60V	120	80.2	63.5	38.0	27.0	22.4	9.08	6.31	3.36
1.65V	110	77.3	59.9	36.3	26.0	21.9	8.97	6.25	3.35
1.70V	104	73.9	55.5	34.1	25.2	21.2	8.45	6.15	3.32
1.75V	91.0	69.0	52.8	32.8	24.5	20.3	8.25	5.58	3.31
1.80V	82.1	61.7	49.5	31.9	23.8	19.8	8.18	5.50	3.30

### Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	5min	10min	15min	30min	45min	1h	2h	3h	5h
1.60V	217	152	119	73.4	53.9	41.0	23.4	17.6	12.3
1.65V	209	146	112	70.3	53.4	40.6	23.1	17.3	11.9
1.70V	186	136	108	65.5	51.3	39.9	22.7	16.8	11.5
1.75V	173	134	104	63.7	49.2	39.1	21.8	16.1	11.3
1.80V	157	117	97.9	61.5	48.9	38.3	21.0	15.2	11.0

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



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