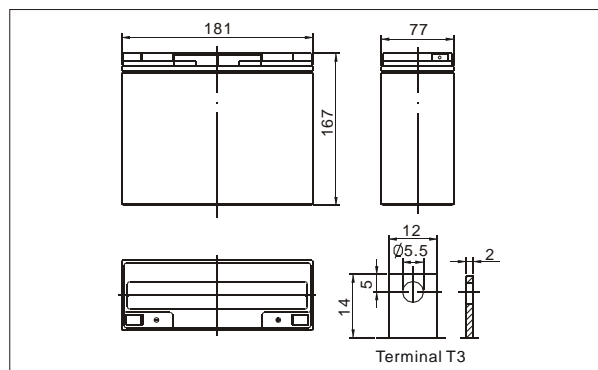


Outer dimensions (mm)


TianChang sealed lead-acid rechargeable battery (VRLA battery) is leak-proof and maintenance free. The Superiority of VRLA battery is derived from its uniquely efficient oxygen recombination technology. The oxygen evolved from the positive plates diffuses through the micro porous glass fiber mat to the negative plates where it is changed back to water by recombination reaction, eliminating the need for water addition. The result is a maintenance free battery.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	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.
- Not restricted for air transport-complies with IATA/ICAO Special Provision A67.
- UL-recognized component.
- Can be mounted in any orientation.
- Computer designed lead, calcium tin alloy grid for high power density.
- Long service life, float or cyclic applications.
- Maintenance-free operation.
- Low self discharge.

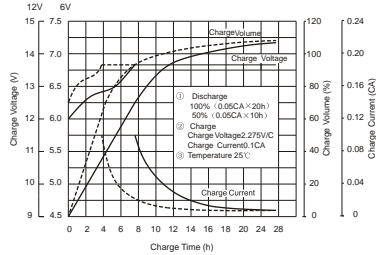
Application

- Electric powered vehicles
- Golf cars and buggies
- PDA equipment as laptop computer,
- Camera, phone sets, medical sets
- Power tools, Lawn mowers, vacuum cleaners
- Electric Powered Toys
- Wheel Chairs

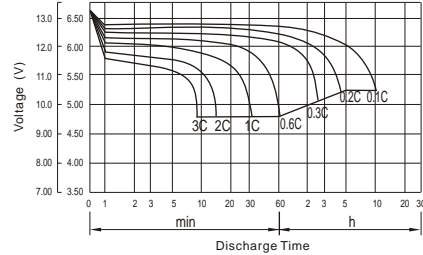
Specifications

Nominal Voltage	12V	
Capacity (20 hr 25°C)	15Ah	
Design Life	5 Years	
Dimensions	Length	181mm (7.13 inch)
	Width	77mm (3.03 inch)
	Height	167 mm (6.57 inch)
	Total Height	167mm (6.57 inch)
Approx. Weight	4.70 Kg (10.4 lbs)	
Capacity 25°C (77°F)	20 hr rate	15Ah
	10 hr rate	13.95Ah
	5 hr rate	12.75Ah
	1 hr rate	9Ah
Internal Resistance (Full charged Battery at 25°C (77°F))	18m Ω	
Capacity affected by Temperature (20hr)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self-Discharge at 25°C	3 month	Remaining capacity: 91%
	6 month	Remaining capacity: 82%
	12 month	Remaining capacity: 65%
Normal operating temperature	25°C ±3°C (77°F ±5°F)	
Operating temperature range	-15°C ~50°C (5~122°F)	
Float charging voltage (25°C)	13.6 to 13.8V	
Cyclic charging voltage (25°C)	14.5 to 14.9V	
Maximum charging current	6A	
Terminal material	Copper	
Maximum Discharge current	225A (5sec)	

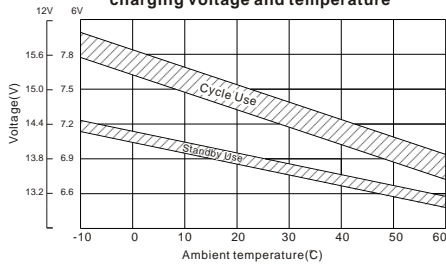
Charge characteristic Curve for standby use



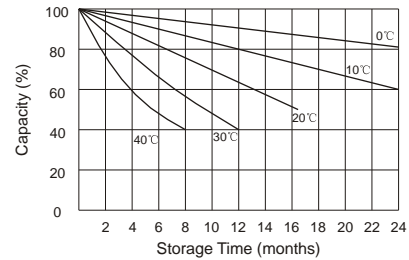
Discharge characteristic (25°C/77°F)



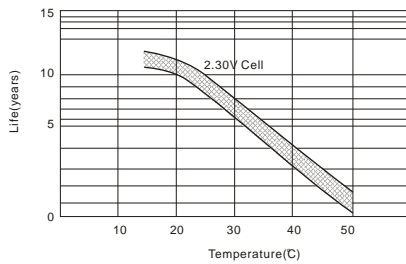
Relationship between charging voltage and temperature



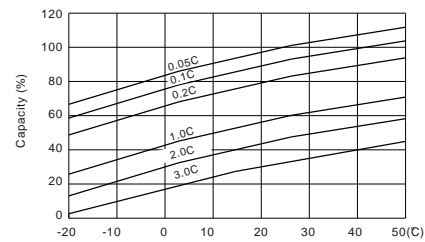
Self-discharge characteristic



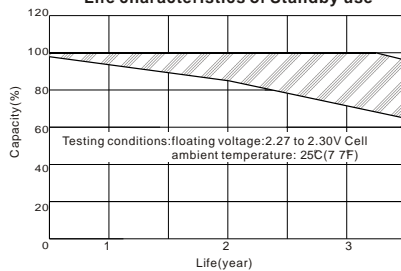
Temperature effects on float life



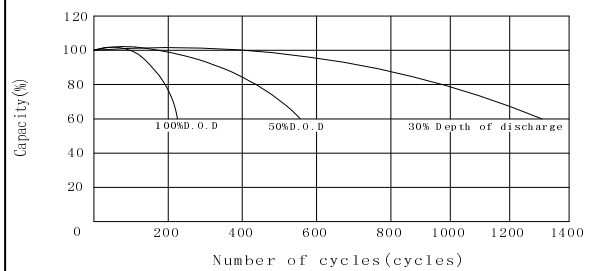
Temperature effects on capacity



Life characteristics of Standby use



Cycle service life in relation to depth of discharge



Discharge Constant Current (Amperes at 77°F/25°C)

End Point Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60V	60.3	40.5	31.0	17.2	10.30	4.15	2.71	1.49	0.78
1.65V	57.2	38.6	29.7	16.6	9.97	4.02	2.65	1.46	0.77
1.70V	53.9	36.6	28.2	15.8	9.57	3.88	2.58	1.43	0.76
1.75V	50.6	34.5	26.8	15.1	9.15	3.72	2.50	1.40	0.75
1.80V	47.2	32.4	25.3	14.3	8.71	3.56	2.41	1.36	0.74

Discharge Constant Power (Watts at 77°F/25°C)

End Point Volts/Cell	5min	10min	15min	30min	45min	1h	2h	3h	5h
1.60V	108	73.6	59.2	34.0	25.0	20.2	12.3	8.25	5.41
1.65V	101	69.3	56.0	32.3	23.8	19.4	11.9	8.05	5.31
1.70V	94.4	65.0	52.7	30.6	22.6	18.5	11.5	7.83	5.21
1.75V	87.8	60.7	49.4	28.8	21.4	17.5	11.0	7.60	5.10
1.80V	81.3	56.5	46.2	27.0	20.2	16.6	10.6	7.34	4.97