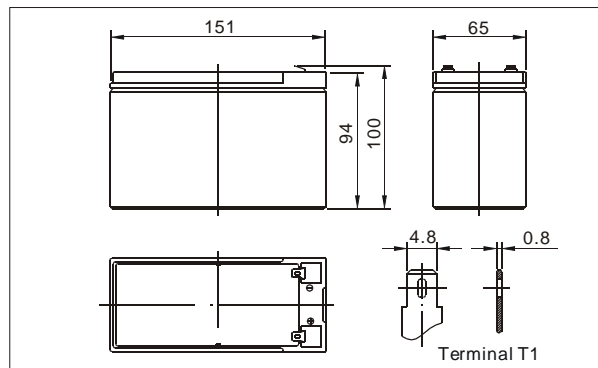


Outer dimensions (mm)


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

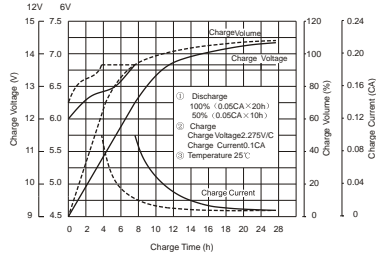
- Electric powered vehicles
- Golf cars and buggies
- PDA equipment as laptop computer,
- Camera, phone sets, medical sets
- Power tools, Lawn mowers, vacuum cleaners
- Electric Powered Toys
- Wheel Chairs

Specifications

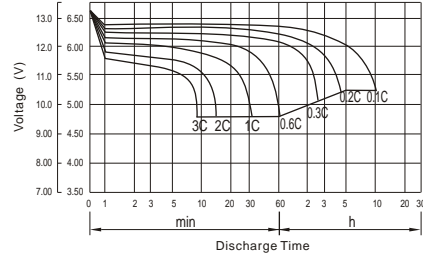
Nominal Voltage		12V
Capacity (20 hr 25°C)		9Ah
Design Life		5 Years
Dimensions	Length	151 mm (5.94 inch)
	Width	65 mm (2.56 inch)
	Height	94 mm (3.70 inch)
	Total Height	100 mm (3.94 inch)
Approx. Weight		2.60 Kg
Capacity 25°C (77°F)	20 hr rate	9.0Ah
	10 hr rate	8.37Ah
	3 hr rate	7.65Ah
	1 hr rate	5.4Ah
Internal Resistance (Full charged Battery at 25°C (77°F))		18 mΩ

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		3.6A
Terminal material		Copper
Maximum Discharge current		135A (5sec)

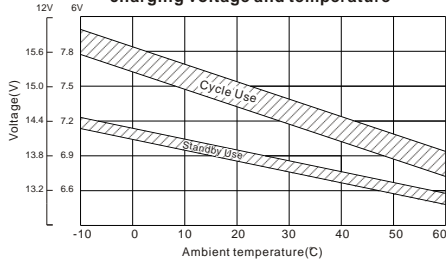
Charge characteristic Curve for standby use



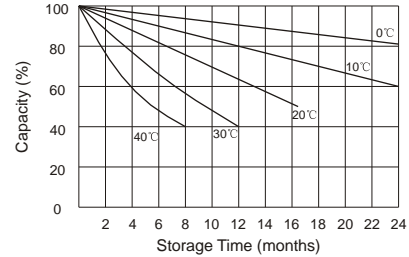
Discharge characteristic (25°C/77°F)



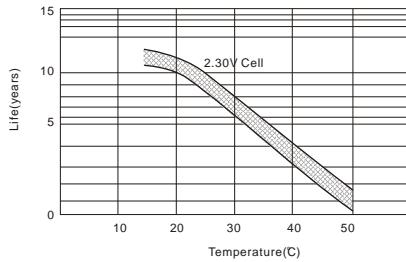
Relationship between charging voltage and temperature



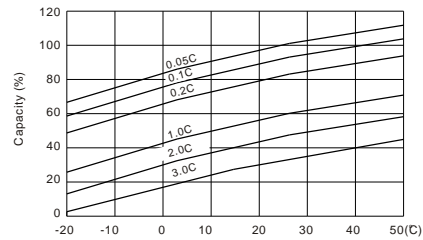
Self-discharge characteristic



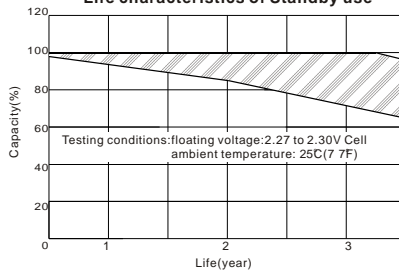
Temperature effects on float life



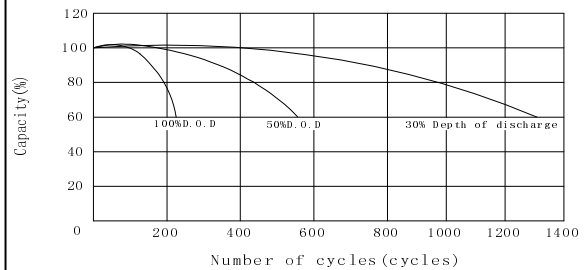
Temperature effects on capacity



Life characteristics of Standby use



Cycle service life in relation to depth of discharge



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

End Point Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60V	33.0	24.2	17.0	9.90	5.80	2.33	1.60	0.87	0.47
1.65V	32.1	23.6	16.5	9.79	5.75	2.29	1.56	0.86	0.46
1.70V	30.9	22.9	16.1	9.36	5.71	2.25	1.55	0.84	0.46
1.75V	30.3	22.1	14.6	8.91	5.66	2.20	1.54	0.82	0.45
1.80V	29.6	21.0	13.9	8.45	5.51	2.14	1.53	0.82	0.44

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

End Point Volts/Cell	5min	10min	15min	30min	45min	1h	2h	3h	5h
1.60V	71.7	44.8	33.6	19.6	14.5	11.5	6.30	4.34	3.10
1.65V	68.3	44.3	33.1	19.1	14.2	11.2	6.23	4.29	3.04
1.70V	64.8	42.9	31.1	18.5	13.7	11	6.08	4.20	2.98
1.75V	61.4	41.1	30.2	17.6	12.9	10.7	5.94	4.08	2.92
1.80V	58.0	39.2	28.4	16.6	12.2	10.4	5.77	3.92	2.85