



# 12V 9Ah F2



## Applications

- ◆ All purpose
- ◆ Uninterruptable Power Supply (UPS)
- ◆ Electric Power System (EPS)
- ◆ Emergency backup power supply
- ◆ Emergency light
- ◆ Railway signal
- ◆ Aircraft signal
- ◆ Alarm and security system
- ◆ Electronic apparatus and equipment
- ◆ Communication power supply
- ◆ DC power supply
- ◆ Auto controlsystem

<b>ISO</b> 9001	<b>ISO</b> 14001	<b>OHSAS</b> 18001	
<b>CE</b>	<b>RoHS</b>		

## Specification

Nominal Voltage	12V	
Nominal Capacity(20HR)	9.0AH	
Dimension	Length	151±1mm (5.95 inches)
	Width	65±1mm (2.56inches)
	Container Height	94.5±1mm(3.72inches)
	Total Height (with Terminal)	100±1mm (3.94inches)
Approx Weight	Approx 2.5kg (5.5lbs)	
Terminal	T1 / T2	
Container Material	ABS	
	9.20 AH/0.46A	(20hr,1.75V/cell,25°C/77°F)
	9.00 AH/0.90A	(10hr,1.75V/cell,25°C/77°F)
	7.90 AH/1.58A	(5hr,1.75V/cell,25°C/77°F)
	6.96 AH/2.32A	(3hr,1.75V/cell,25°C/77°F)
Rated Capacity	5.66 AH/5.66A	(1hr,1.60V/cell,25°C/77°F)
	Max. Discharge Current	134A (5s)
	Internal Resistance	Approx 1.9mΩ
Operating Temp.Range	Discharge : -15~50°C (5~122°F)	
	Charge : 0~40°C (32~104°F)	
	Storage : -15~40°C (5~104°F)	
Nominal Operating Temp. Range	25±3°C (77±5°F)	
Cycle Use	Initial Charging Current less than 2.7A.Voltage	
	14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C	
Standby Use	No limit on Initial Charging Current Voltage	
	13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C	
Capacity affected by Temperature	40°C (104 °F)	103%
	25°C ( 77 °F)	100%
	0°C ( 32 °F)	86%
Self Discharge	batterys may be stored for up to 6 months at 25°C(77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter.	

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

F.V/Time	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.80V/cell	27.564	19.558	14.766	9.579	5.368	2.248	1.546	0.887	0.459
1.75V/cell	28.349	20.264	15.064	9.765	5.580	2.325	1.581	0.902	0.465
1.70V/cell	30.314	21.495	15.660	9.905	5.602	2.348	1.606	0.921	0.477
1.65V/cell	31.132	21.928	16.057	9.998	5.630	2.383	1.636	0.944	0.493
1.60V/cell	32.736	22.794	16.554	9.951	5.669	2.441	1.692	0.983	0.512

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

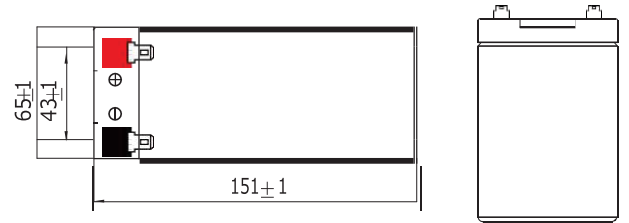
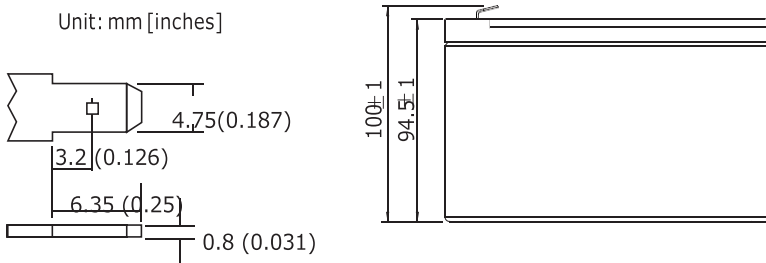
F.V/Time	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.80V/cell	49.201	35.419	27.288	17.779	10.001	4.216	2.933	1.742	0.905
1.75V/cell	51.482	37.002	28.095	18.348	10.502	4.394	3.026	1.786	0.925
1.70V/cell	55.565	39.723	29.457	18.769	10.695	4.502	3.113	1.846	0.956
1.65V/cell	57.438	40.808	30.557	19.155	10.286	4.614	3.201	1.915	1.004
1.60V/cell	60.627	42.739	31.701	19.225	11.044	4.765	3.333	2.017	1.056

**Note** The above data are average values, and can be obtained with 3 charge/discharge cycles. These are not minimum values.

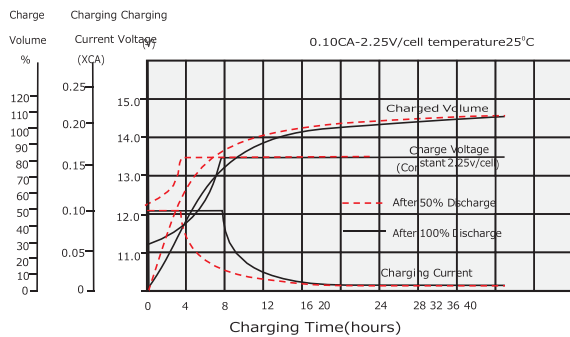
## Dimensions

### T1 Terminal

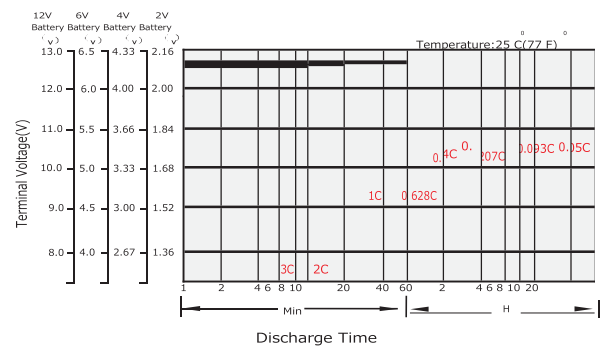
Unit: mm [inches]



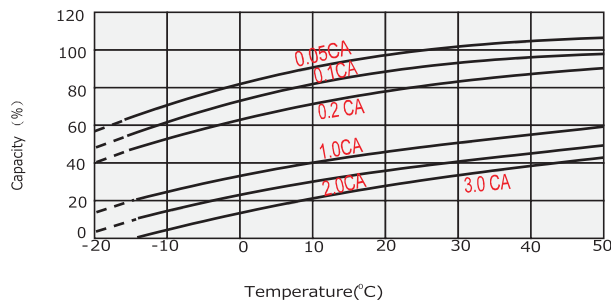
## Float Charging Characteristics



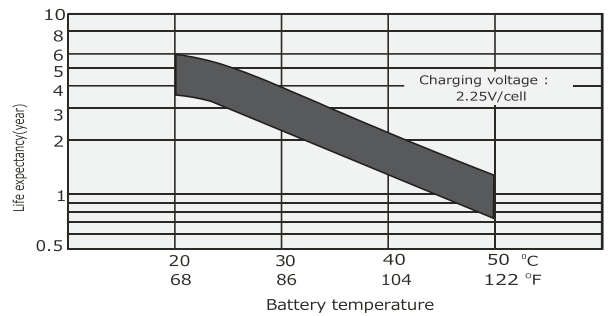
## Discharge Characteristics



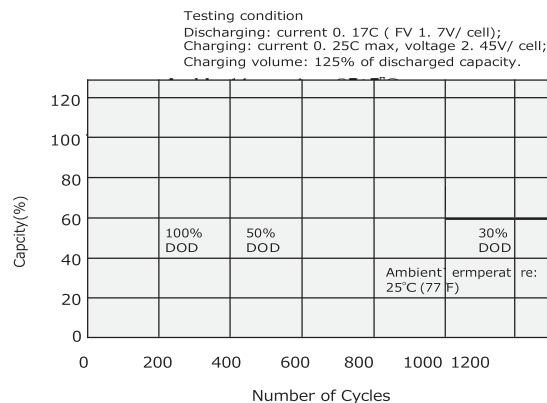
## Temperature Effects in Relation to Battery Capacity



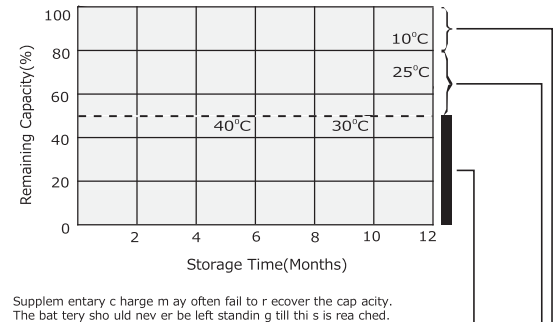
## Effect of Temperature on Long Term Float Life



## Cycle Life in Relation to Depth of Discharge



## Self Discharge Characteristics



Supplementary charge is required before use. Optional charging may be as below:  
 1. Charged for a above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.  
 2. Charged for a above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.  
 3. Charged for 8~10 hours at limited current 0.05CA.

No supplementary charge required  
 (Carry out supplementary charge before use if 100% capacity is required.)