



# Valve Regulated Lead-Acid Rechargeable Battery



## SH4.5-12

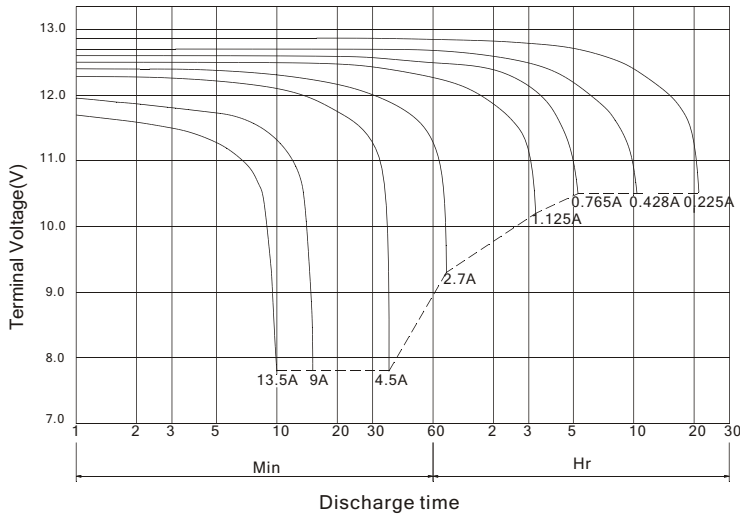
For High Rate Discharge

The battery is constructed by plates, separators, safety valves and container. Since the electrolyte is held by a glass-mat separator and plates, the battery can be used in any direction and position without leakage.

### PERFORMANCE SPECIFICATIONS

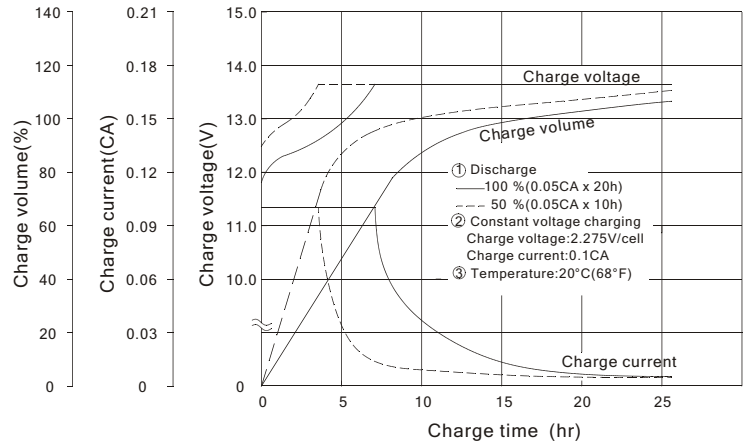
Nominal Voltage(V).....	12 volts(6cells in series)
Nominal Capacity(AH)	
20 hour rate F.V.(1.75V/cell) (225mA to 10.50volts) .....	4.5A.H.
10 hour rate F.V.(1.75V/cell) (428mA to 10.50volts) .....	4.28A.H.
5 hour rate F.V.(1.75V/cell) (765mA to 10.50volts) .....	3.83 A.H.
1 hour rate F.V.(1.55V/cell) (2700mA to 9.30volts).....	2.7 A.H.
15 Min rate F.V.(1.30V/cell) (108W to 7.80volts).....	2.25 A.H.
3C rate F.V.(1.75V/cell) (13.5Ato 10.50volts).....	1.91 A.H.
Approximate Weight.....	1530g(3.37 lbs.)
Terminal	
Standard.....	Type T1
Optional.....	Type T2
Internal Resistance (Fully Charged Battery).....	<42m Ω
Maximum Discharge Current For 5 sec.(A).....	67.5 A
Maximum Charge Current(A).....	1.35 A
Ambient Temperature	
Charge.....	0°C(32°F)~40°C(104°F)
Discharge.....	-20°C(-4°F)~50°C(122°F)
Storage.....	-20°C(-4°F)~40°C(104°F)
Vibration test:	
Frequency: 16.7HZ	
Amplitude: 4mm	
Vibrate the battery horizontally or vertically for 60 minutes. The battery have no abnormality.	
Case.....	ABS
Dimension(mm/inch)	
Length           ±1.5mm.....	90/3.54
Width           ±1.5mm.....	70/2.76
Container Height ±1.5mm.....	102/4.02
Total Height   ±2mm.....	106/4.17
Application.....	Electronic Doorbells, Toy-Cars, Fans, UPS.

## SH4.5-12 Battery discharge characteristics (25°C/77°F)



## Battery Charging Characteristics

(Typical example of the charge characteristics for the standby use)

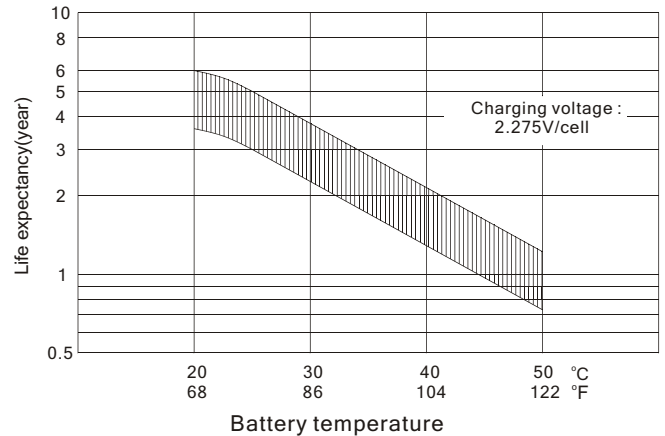


## Charging Procedure

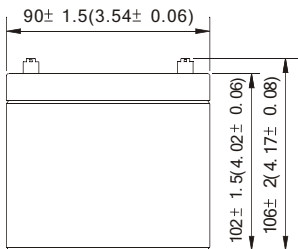
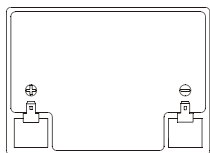
Application	Charging method	Charging Voltage at 20°C (V/cell)	Temperature compensation coefficient of charging voltage (mV/°C/cell)	Max. charging current (CA)	Charging time 0.1CA, 20°C (h)		Temp (°C)
					100% discharge	50% discharge	
For standby power Source	Constant voltage & Constant current charging (with current restriction)	2.25~2.30	-3	0.3	24	20	0~40 (32~104°F)
For cycle service		2.40~2.50	-4	0.3	16	10	

\*Temperature compensation of charging voltage is not needed, when using the batteries within 5°C to 35°C range.

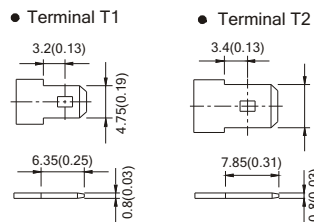
## Effect of Temperature on Long Term Float Life



## OUTER DIMENSIONS



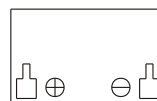
## TERMINAL TYPE mm(inch)



## Constant power discharge characteristics at 25°C/77°F

Final Voltage	Discharge time							
	5Min	10Min	15Min	30Min	1Hr	3Hr	5Hr	10Hr
10.80V	160.4	122.7	94.8	54.4	29.17	12.37	8.79	4.94
10.50V	184.9	130.6	98.3	56.8	30.49	12.55	8.91	5.02
10.20V	198.5	134.9	101.7	57.2	31.45	12.64	8.96	5.06
9.90V	206.9	138.5	104.8	58.4	32.13	12.71	8.99	5.08
9.60V	213.2	141.0	107.5	59.2	32.50	12.75	9.02	5.09
7.80V	213.5	141.2	108.0	59.5	32.52	12.76	9.02	5.09

## TERMINAL POSITION



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