

LL SERIES-Long Life

LL12033(12V33AH)

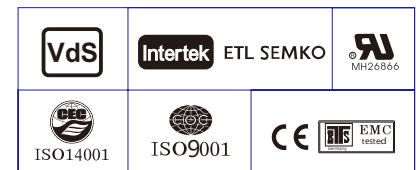
Specification

Nominal Voltage	12V		
Nominal Capacity(20HR)	33.0AH		
Dimensions	Length	195±2mm (7.68 inches)	
	Width	130±2mm (5.12 inches)	
	Container Height	164±2mm (6.46 inches)	
	Total Height (with Terminal)	167±2mm (6.57 inches)	
	Approx Weight	Approx 11.2 kg (24.7lbs)	
Terminal	T6-I		
Container Material	ABS		
Rated Capacity	32.6 AH/1.63A	(20hr , 1.80V/cell,25°C/77°F)	
	30.9 AH/3.09A	(10hr, 1.80V/cell,25°C/77°F)	
	28.4 AH/5.68A	(5hr, 1.75V/cell,25°C/77°F)	
	25.5 AH/8.51A	(3hr, 1.75V/cell,25°C/77°F)	
	22.4 AH/22.4A	(1hr, 1.60V/cell,25°C/77°F)	
Max. Discharge Current	495A (5s)		
Internal Resistance	Approx 10mΩ		
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 9.9A.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	LL series batteries may be stored for up to 6 months at 20°C(68°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter.		



Applications

- ◆ UPS and EPS
- ◆ Emergency light
- ◆ Railway signal and aircraft signal system
- ◆ Marine and power stations Alarm and security system
- ◆ Electronic apparatus and equipment
- ◆ Communication power supply, DC power supply



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

F.V/Time	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	59.2	45.6	36.8	33.9	24.8	20.3	11.6	8.24	6.50	5.53	4.73	3.73	3.05	1.61
1.80V/cell	62.7	47.8	38.3	35.0	25.4	20.8	11.8	8.38	6.59	5.61	4.81	3.78	3.09	1.63
1.75V/cell	65.2	49.4	39.4	35.9	26.0	21.2	12.0	8.51	6.68	5.68	4.87	3.83	3.12	1.65
1.70V/cell	76.4	57.4	45.6	36.8	26.6	21.6	12.2	8.64	6.77	5.76	4.92	3.87	3.15	1.66
1.65V/cell	78.5	58.8	46.5	37.4	27.0	21.9	12.3	8.72	6.84	5.81	4.97	3.89	3.18	1.68
1.60V/cell	81.8	60.9	47.9	38.4	27.7	22.4	12.5	8.88	6.96	5.90	5.03	3.95	3.22	1.69

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

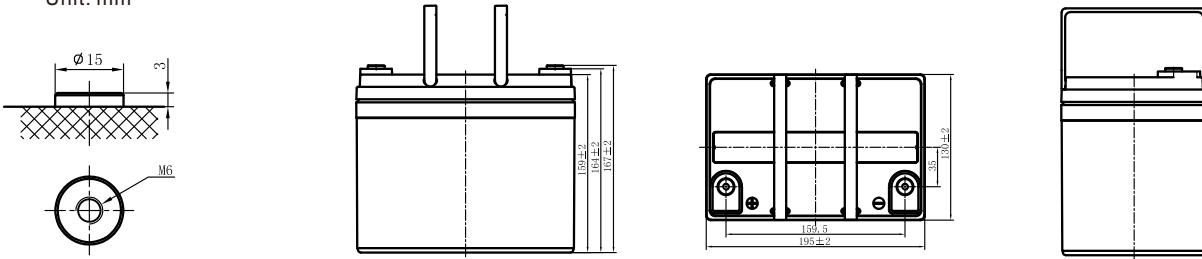
F.V/Time	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	123.9	109.0	88.7	65.5	48.1	39.5	22.6	16.2	12.8	10.9	9.36	7.39	6.06	3.23
1.80V/cell	130.4	113.7	91.8	67.3	49.2	40.3	23.0	16.4	13.0	11.1	9.50	7.50	6.14	3.26
1.75V/cell	134.7	116.8	93.8	68.7	50.1	41.0	23.3	16.7	13.1	11.2	9.60	7.57	6.19	3.30
1.70V/cell	139.1	119.9	96.0	70.1	51.0	41.6	23.6	16.9	13.3	11.3	9.69	7.64	6.25	3.33
1.65V/cell	142.2	122.5	97.8	71.2	51.7	42.2	23.8	17.0	13.4	11.4	9.78	7.69	6.29	3.35
1.60V/cell	146.4	125.9	100.2	72.8	52.6	42.9	24.2	17.3	13.6	11.6	9.89	7.80	6.37	3.39



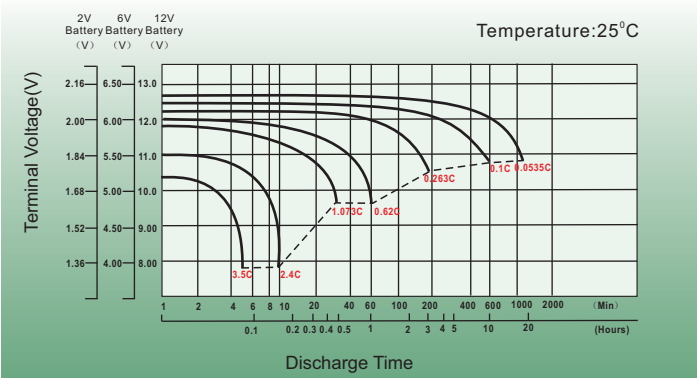
Dimensions

T6-I Terminal

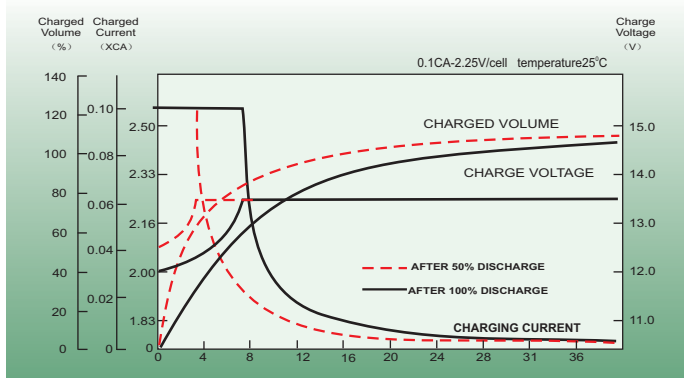
Unit: mm



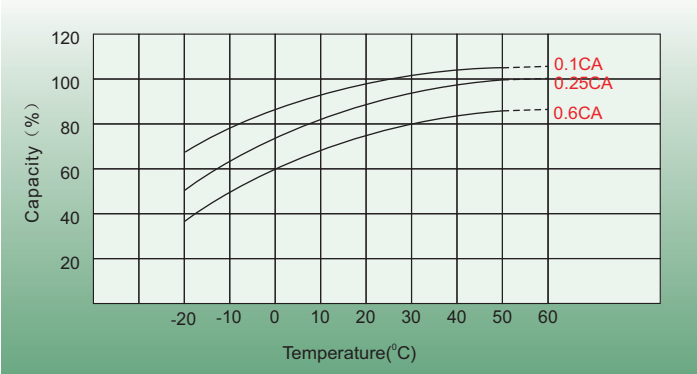
Discharge Characteristics



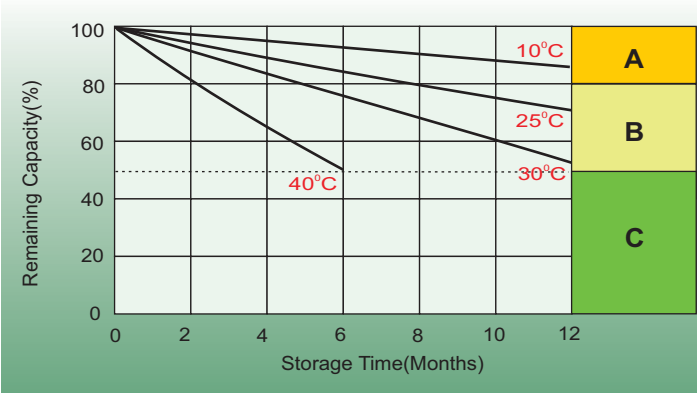
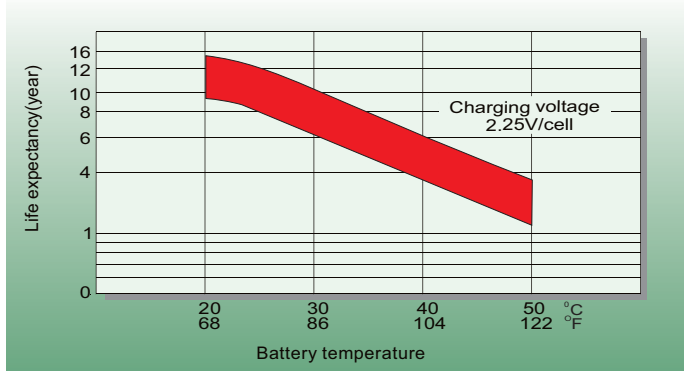
Float Charging Characteristics



Temperature Effects in Relation to Battery Capacity



Effect of Temperature on Long Term Float Life



Self Discharge Characteristics

- A** No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optional charging way as below:
 1. Charged for above 3 days at limited current 0.25CA and constant volatge 2.25V/cell.
 2. Charged for above 20hours at limited current 0.25CA and constant volatge 2.45V/cell.
 3. Charged for 8~10hours at limited current 0.05CA .
- C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.