



HC 1228W

12V 28W

HC 1228W is specially designed for high efficient discharge application. Its invisible terminal can be inserted PC board directly. HC series battery can serve more than 260 cycles at 100% discharge in cycle service, or three to five years in standby service.



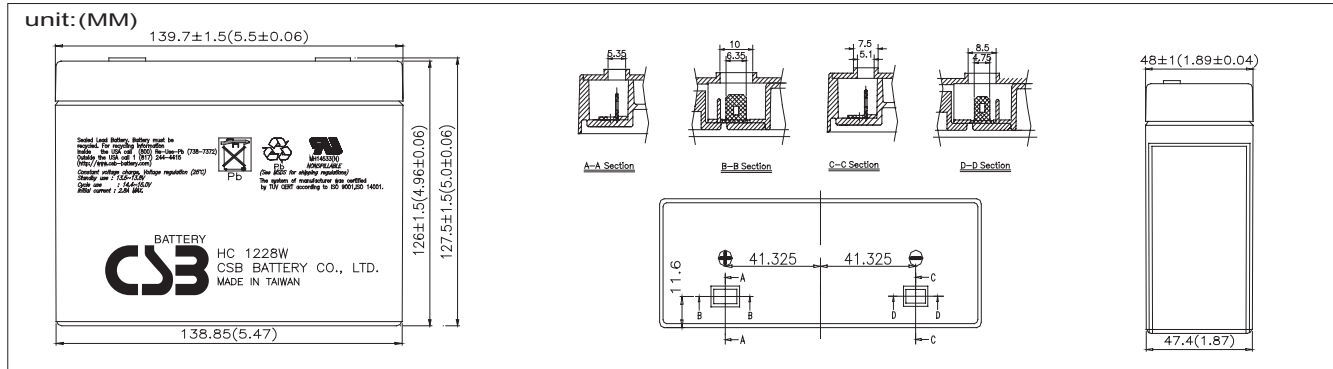
Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	28W @ 15minute-rate to 1.67V per cell @25 °C(77°F)
Weight	Approx. 2.60kg(5.73 lbs)
Maximum Discharge Current	60A(5sec)
Internal Resistance	Approx. 22mΩ
Operating Temperature Range	Discharge: -20°C~50°C(-4°F~122°F) Charge: 0°C~40°C(32°F~104°F) Storage: -20°C~40°C(-4°F~104°F)
Nominal Operating Temperature Range	25°C±3°C(77°F±5°F)
Float Charging Voltage	13.5 to 13.8 VDC/unit Average at 25°C(77°F)
Recommended Maximum Charging Current Limit	2.8A
Equalization and Cycle Service	14.4 to 15.0 VDC/unit Average at 25°C(77°F)
Self Discharge	CSB Batteries can be stored for more than 6 months at 25°C(77°F). Please charge batteries before using. For higher temperatures the time interval will be shorter.
Terminal	Faston Tab 187/250
Container Material	-ABS (UL94-HB)*Flammability resistance of UL94-V2 can be available upon request.



CSB-manufactured batteries are UL-recognized components under UL924 as well as certified by ISO 9001 and ISO 14001.

Dimensions



Constant Current Discharge Characteristics Unit:A (25°C, 77°F)

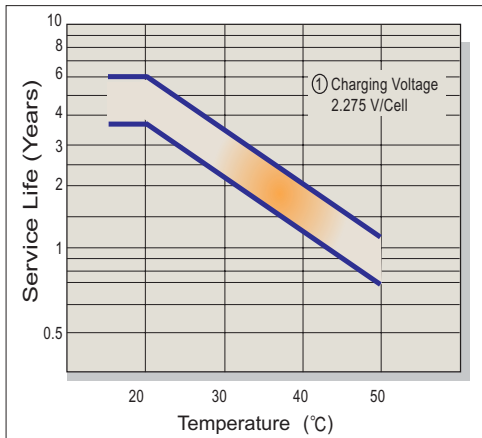
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	48.6	38.2	31.3	27.2	23.3	17.3	15.4	11.6	7.71	4.75
1.67V	46.9	36.6	29.9	26.1	22.6	16.7	14.9	11.4	7.58	4.53
1.70V	46.3	35.9	29.3	25.7	22.3	16.5	14.7	11.3	7.53	4.43
1.75V	44.0	34.3	28.2	24.5	21.5	16.1	14.5	11.3	7.51	4.29
1.80V	41.7	32.6	27.1	23.4	20.7	15.8	14.3	11.2	7.49	4.14
1.85V	39.4	30.9	26.0	22.3	19.9	15.4	14.0	11.1	7.47	4.00

Constant Power Discharge Characteristics Unit:W (25°C, 77°F)

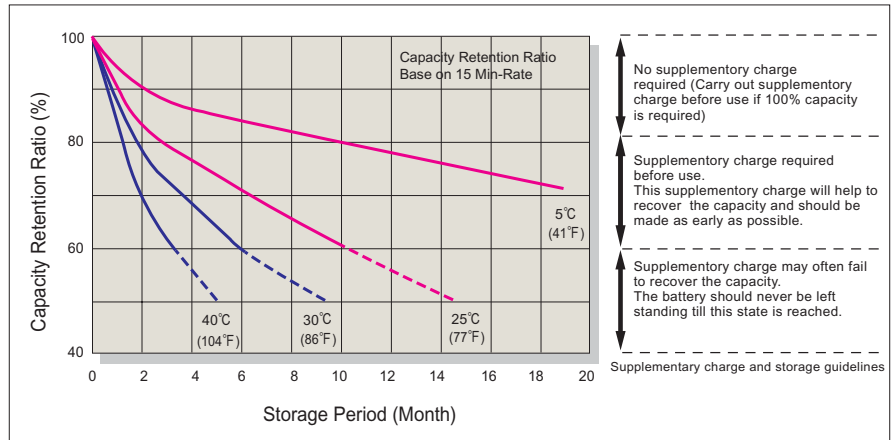
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	583	458	375	326	280	208	185	139	92.5	57.0
1.67V	563	439	359	313	271	201	179	137	91.0	54.3
1.70V	555	431	352	308	267	198	176	136	90.4	53.2
1.75V	528	411	339	295	258	194	174	135	90.2	51.5
1.80V	500	391	325	281	248	189	171	134	89.9	49.7
1.85V	473	371	312	268	239	185	169	133	89.7	48.0

- All mentioned values are average values.
- Low rate discharge mode (over 90 min.) is not recommended.

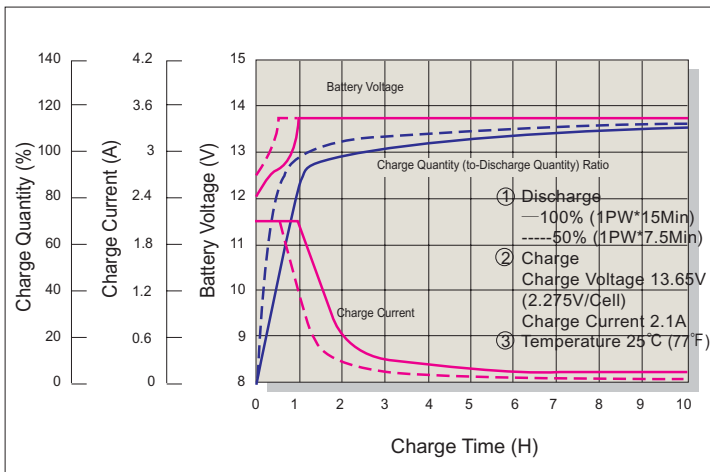
Trickle (or Float) Service Life



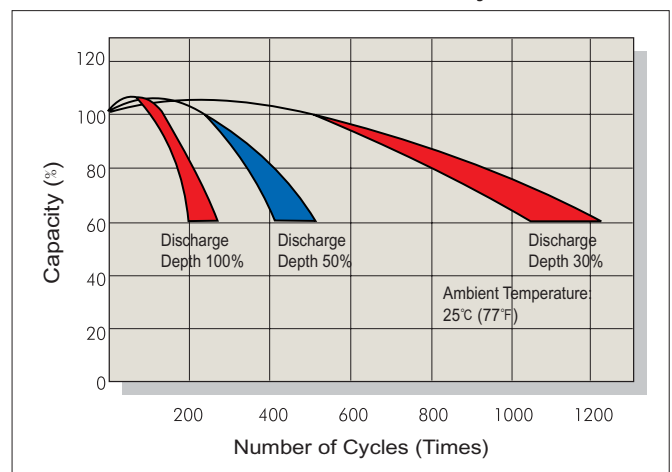
Capacity Retention Characteristic



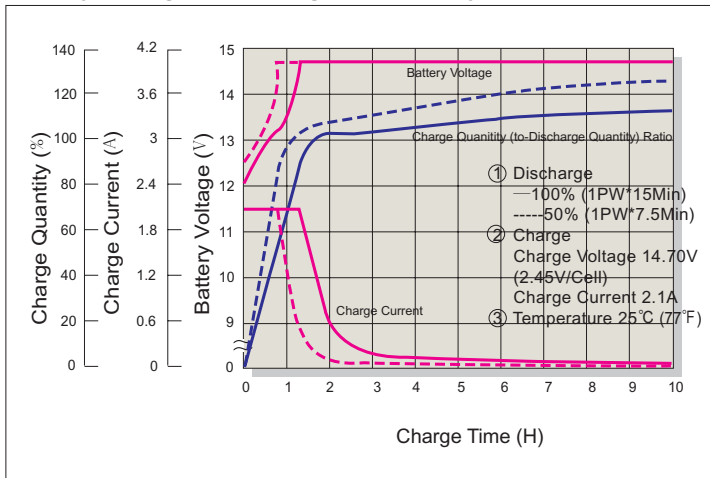
Battery Voltage and Charge Time for Standby Use



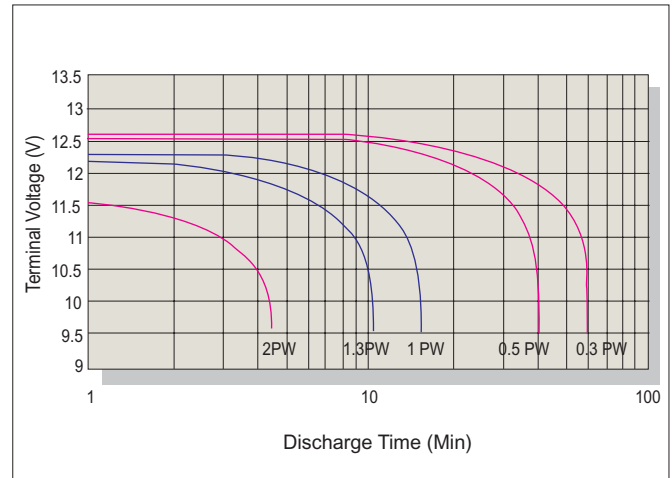
Cycle Service Life



Battery Voltage and Charge Time for Cycle Use



Terminal Voltage (V) and Discharge Time (25°C 77°F)



Charging Procedures

Application	Charge Voltage (V/Cell)			Max. Charge Current
	Temperature	Set Point	Allowable Range	
Cycle Use	25°C (77°F)	2.45	2.40~2.50	0.3C
Standby	25°C (77°F)	2.275	2.25~2.30	

Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/Cell	1.75	1.70	1.55	1.30
Discharge Current (A)	0.2C>(A)	0.2C<(A)<0.5C	0.5C<(A)<1.0C	(A)>1.0C