



HRL 1223W

12V 23W

HRL 1223W is specially designed for high efficient discharge application. Its characteristics are high energy density, small footprint and high discharge efficiency. It can be used for more than 260 cycles at 100% discharge in cycle service, up to 8 years in standby service.



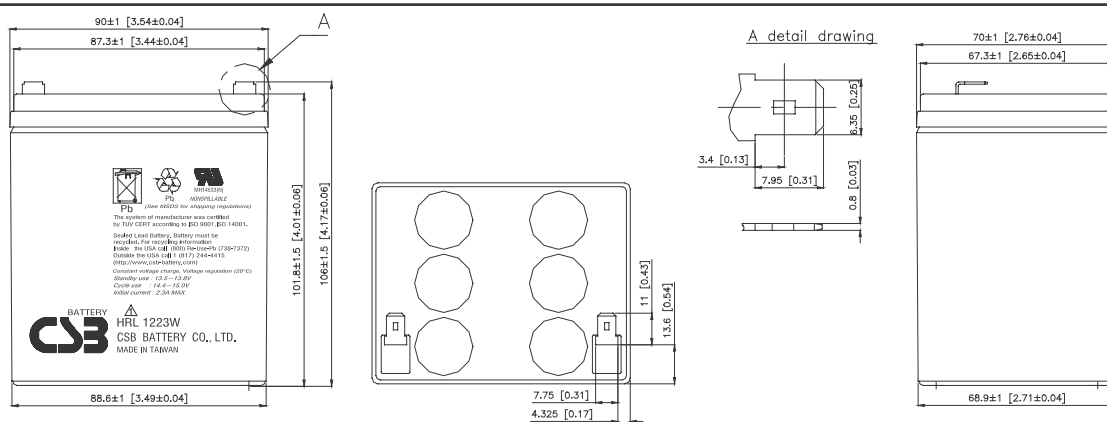
Specification

Cells per unit	6
Voltage per unit	12
Capacity	23W @15 min-rate to 1.67V per cell @25°C (77°F) 6Ah @ 20hr-rate to 1.75V per cell @25°C(77°F)
Weight	Approx. 2.1 kg(4.63 lbs)
Maximum Discharge Current	130A(5sec)
Internal Resistance	Approx. 19mΩ
Operating Temperature Range	Discharge: -15°C~50°C(5°F~122°F) Charge: -15°C~40°C(5°F~104°F) Storage: -15°C~40°C(5°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	2.3A
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	F2-Faston Tab 250
Container Material	ABS(UL 94-HB/File E50263)*Flammability resistance of (UL 94-V0/File E88637) can be available upon request.



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

Dimensions unit:(MM)



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

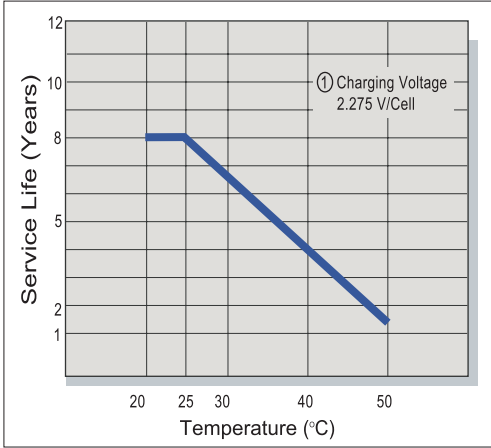
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	48.2	34.8	28.3	23.2	19.5	14.0	11.2	8.28	4.40	3.22
1.67V	44.9	32.7	27.0	22.1	18.7	13.6	11.0	8.05	4.26	3.10
1.70V	43.5	31.9	26.2	21.7	18.3	13.3	10.8	7.88	4.20	3.05
1.75V	41.3	30.4	25.2	20.9	17.6	12.9	10.7	7.87	4.18	2.95
1.80V	39.1	28.9	24.0	20.2	17.1	12.5	10.5	7.85	4.16	2.85
1.85V	36.9	27.4	22.9	19.4	16.4	12.1	10.3	7.84	4.14	2.75

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

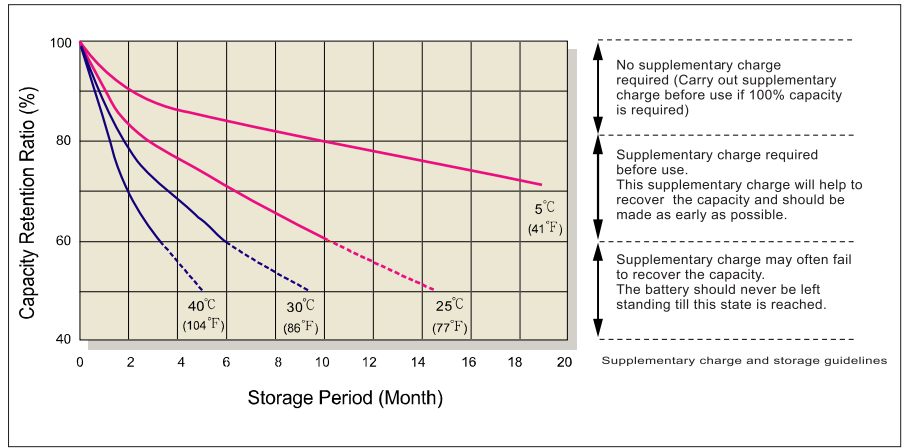
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	540	390	317	260	218	161	132	99.1	51.9	38.0
1.67V	503	367	302	247	209	156	128	95.0	50.3	36.6
1.70V	489	357	294	242	205	152	126	93.0	49.6	36.0
1.75V	463	341	281	234	197	147	123	92.8	49.4	34.8
1.80V	438	324	271	227	192	143	121	92.4	49.1	33.6
1.85V	413	307	260	218	186	139	119	91.8	48.9	32.5

• All mentioned values are average values.

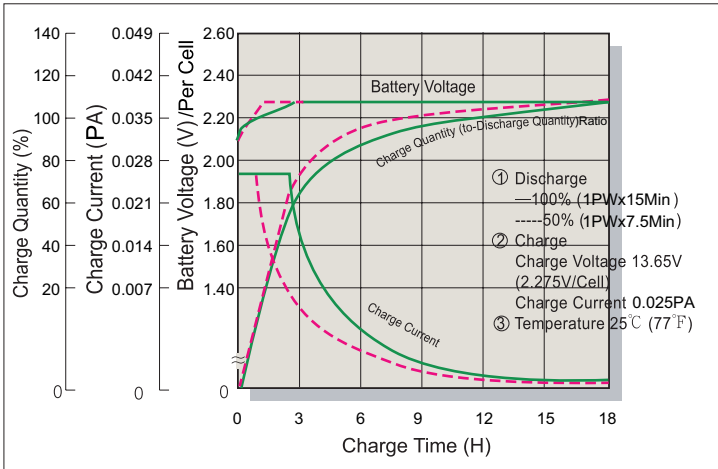
Trickle (or Float) Service Life



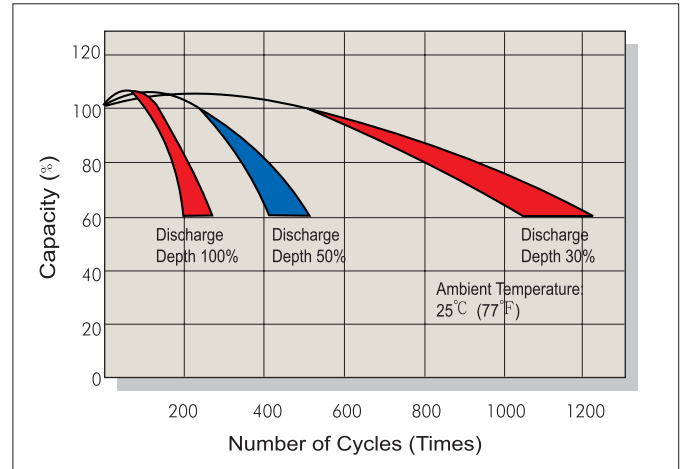
Capacity Retention Characteristic



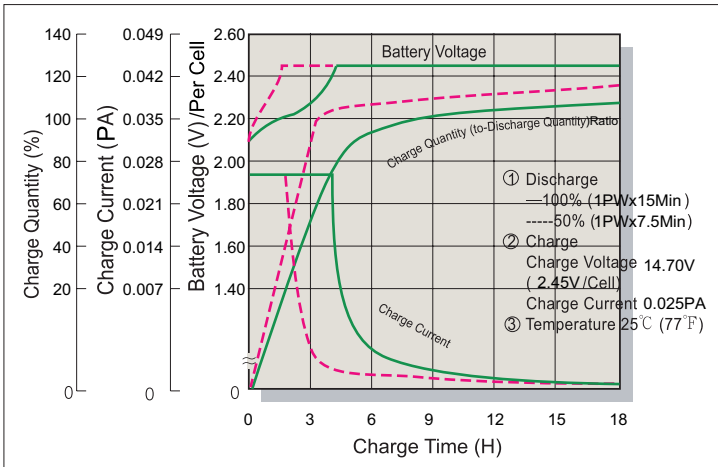
Battery Voltage and Charge Time for Standby Use



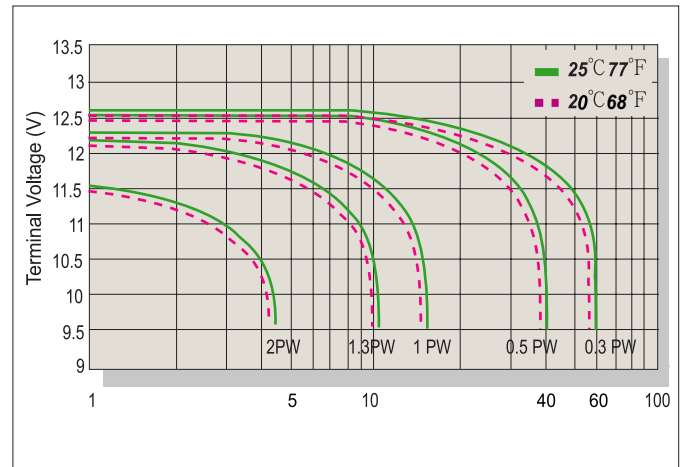
Cycle Service Life



Battery Voltage and Charge Time for Cycle Use



Terminal Voltage (V) and Discharge Time



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	0.1PA
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	1.60	1.30
Discharge Power(W)	0.1P>(W)	0.1P≤(W)<0.25P	0.25P≤(W)<1.0P	(W)≥1.0P

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