



MSJ 2000

2V 2000Ah

MSJ-2000 is a Long service life battery with 15~20 years expected life under normal float charge. As with all CSB batteries, all are rechargeable, highly efficient, leak proof and maintenance free.



Specification

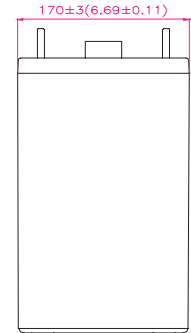
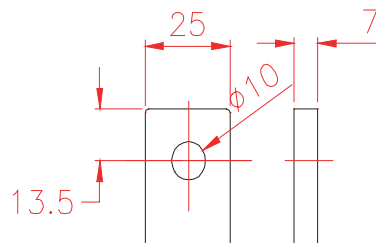
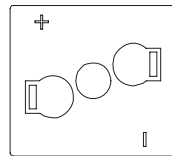
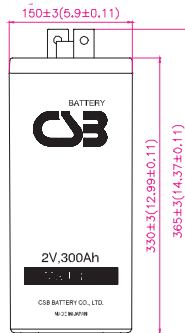
Cells Per Unit	1
Voltage Per Unit	2
Capacity	2000Ah @ 10hr-rate to 1.80V per cell @25 °C(77°F)
Weight	Approx. 140kg(308.0 lbs)
Maximum Discharge Current	1200A(5sec)
Internal Resistance	Approx. 0.29 mΩ
Operating Temperature Range	Discharge: -15°C~50°C (5°F~122°F) Charge: -15~40°C (5°F~104°F) Storage: -15°C~40°C (5°F~104°F)
Nominal Operating Temperature Range	25°C±3°C(77°F±5°F)
Float Charging Voltage	2.23±0.02/Cell AT25°C(77°F) Temp. Coefficient-3.3mV/°C(-1.8mV/°F)
Recommended Maximum Charging Current Limit	600A
Equalization and Cycle Service	2.35V Temps coefficient -3.3mV/°C(-1.8mV/°F)
Terminal	Pb-Ca-Sn Alloy
Container Material	The container and cover are made of flame retardant plastics which meet UL-94V-0 specifications. The oxygen index level is higher than 28.



CSB-manufactured batteries are UL-recognized components under UL924 and UL1989. CSB is also certified by ISO 9001 and ISO 14001.

Dimensions

Unit:(mm)



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

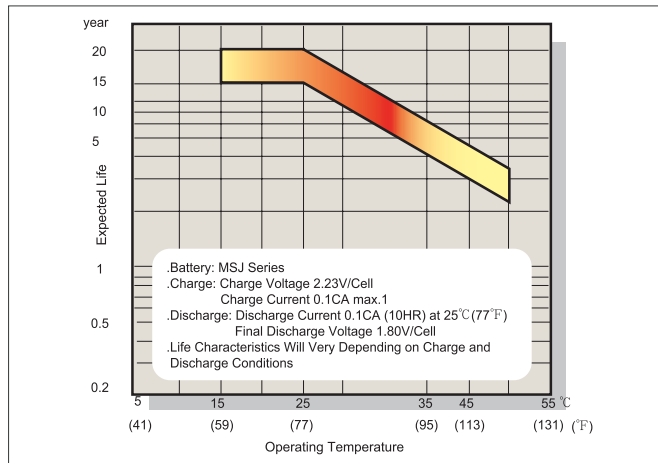
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.83V	1876.00	1453.00	1019.00	669.00	510.00	397.00	342.00	291.00	232.00	194.00
1.80V	2219.00	1613.00	1105.00	712.00	536.00	432.00	360.00	308.00	244.00	200.00
1.75V	2570.00	1743.00	1174.00	744.00	557.00	447.00	370.00	319.00	251.00	207.00
1.70V	2896.00	1961.00	1274.00	788.00	588.00	472.00	390.00	336.00	260.00	215.00
1.65V	3116.00	2086.00	1301.00	801.00	601.00	485.00	398.00	342.00	263.00	218.00
1.60V	3276.00	2174.00	1360.00	833.00	629.00	500.00	414.00	354.00	274.00	224.00

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

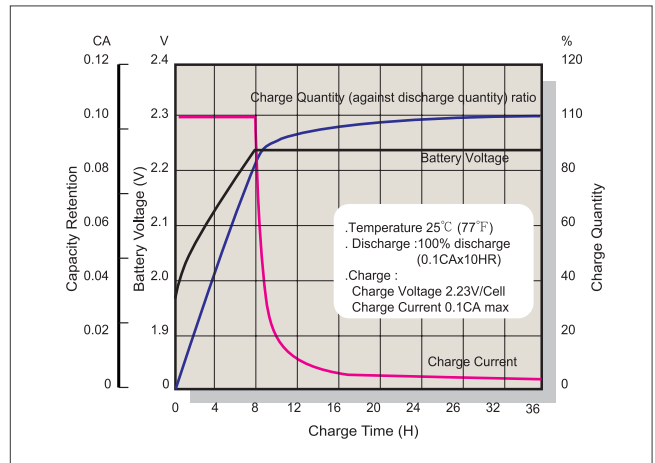
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.83V	3263.00	2556.00	1830.00	1227.00	942.00	738.00	639.00	548.00	439.00	367.00
1.80V	3860.00	2836.00	1984.00	1304.00	988.00	804.00	672.00	580.00	460.00	380.00
1.75V	4320.00	2962.00	2095.00	1357.00	1023.00	839.00	684.00	596.00	475.00	388.00
1.70V	4805.00	3288.00	2244.00	1420.00	1064.00	864.00	712.00	624.00	488.00	400.00
1.65V	5507.00	3680.00	2335.00	1440.00	1099.00	866.00	730.00	628.00	492.00	405.00
1.60V	5656.00	3747.00	2344.00	1464.00	1112.00	876.00	740.00	636.00	496.00	408.00

● All mentioned values are average values.

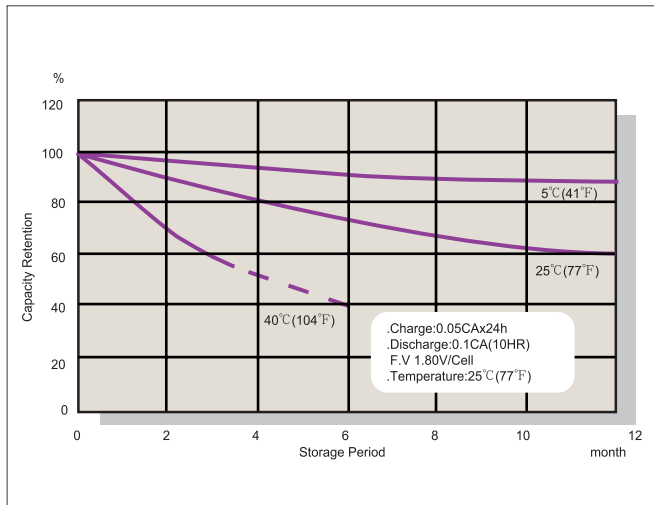
Expected Life V.S Operating Temperature



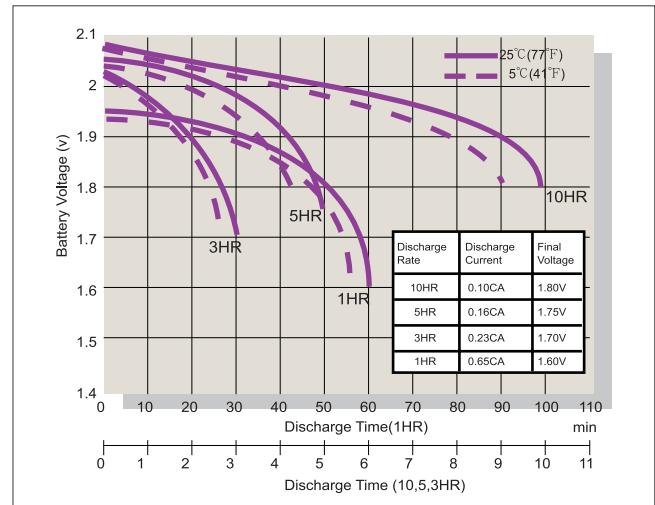
Typical Constant Voltage Charge Characteristics



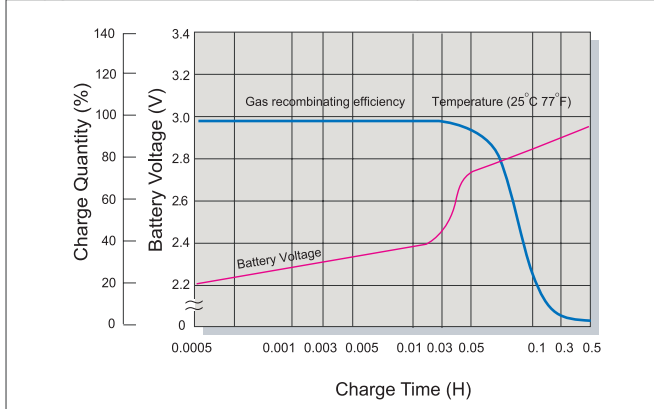
Capacity Retention Characteristics



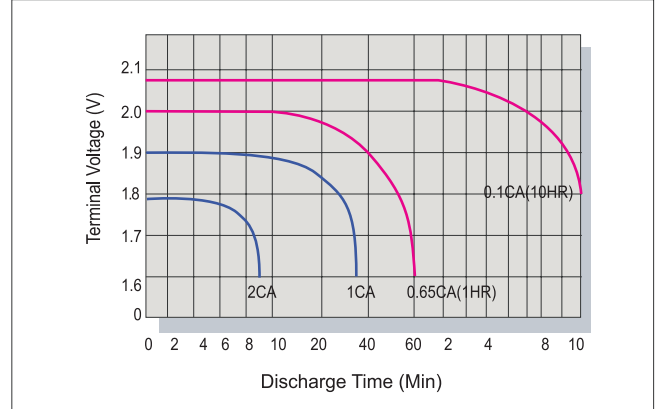
Discharge Characteristics



Oxygen Recombination Efficiency Chart



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	
Standby	25°C (77°F)	2.23	2.21~2.25	0.3C

Discharge Current VS. Discharge Voltage

Discharge Current (A)	Final Discharge Voltage (V/Cell)
0.05C > A	1.90
0.15C > A ≥ 0.05C	1.80
0.20C > A ≥ 0.15C	1.75
0.40 C > A ≥ 0.20C	1.70
A > 0.40 C	1.60

Sales Office URL: WWW.CSB-BATTERY.COM

CSB BATTERY CO., LTD.
 TAIWAN OFFICE
 Tel: +886-2-8751-5000
 Fax: +886-2-8751-6161
 E-mail: service@csb-battery.com.tw

CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.
 SHANGHAI OFFICE
 Tel: +86-21-5046-1622, 5046-0833
 Fax: +86-21-5064-3314

CSB BATTERY TECHNOLOGIES, INC
 USA OFFICE
 Tel: +1-817-244-7777/1-8003 CSBUSA(272872)
 Fax: +1-817-244-4445
 E-mail: csb@csb-battery.com

CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.
 BEIJING OFFICE
 Tel: +86-10-6597-8060, 6597-8070
 Fax: +86-10-6597-8050
 E-mail: chinasis@csb-battery.com

CSB BATTERY OF NETHERLANDS B.V
 NETHERLANDS OFFICE
 Tel: +31(0) 180 418 140
 Fax: +31(0) 180 418 327
 E-mail: eurosales@csb-battery.com

CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.
 SHENZHEN OFFICE
 Tel: +86-755-88316356 88316488 88316396
 Fax: +86-755-88316548
 E-mail: she@csb-battery.com