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MSJ 500 ▶ 2V 510 Ah

MSJ 500 is a long service life battery up to 20 years expected life under normal float charge. As with all CSB batteries, all are rechargeable, highly efficient, leak proof and maintenance free.



CSB-manufactured **VRLA** (Absorbent Glass Mat type) batteries are UL-recognized components under UL1989.

CSB is also certified by ISO 9001 and ISO 14001.

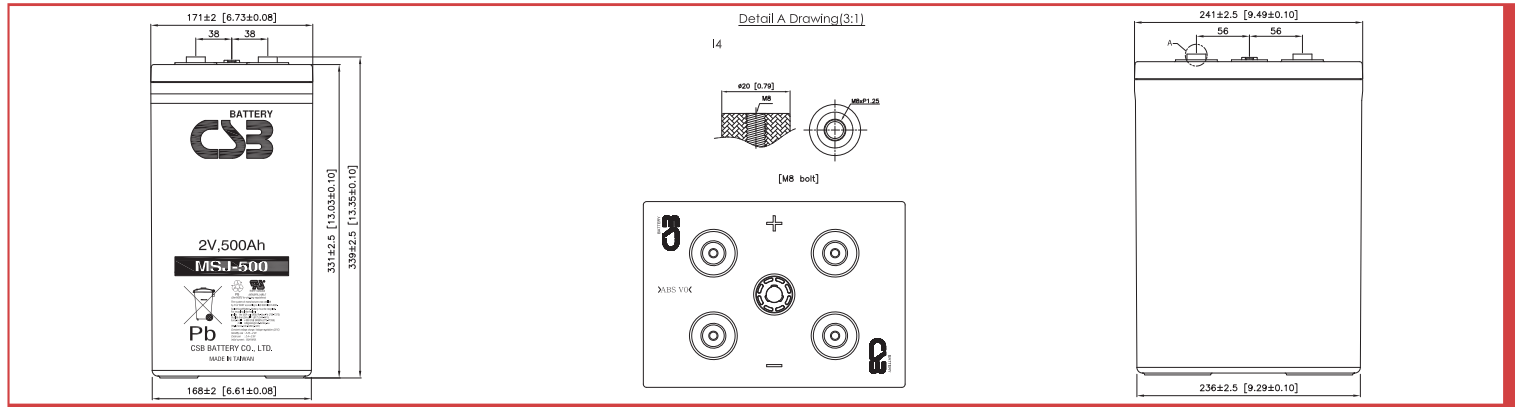
► Specification

Cells Per Unit	1
Voltage Per Unit	2
Capacity	510Ah @ 10hr-rate to 1.80V per cell @25 °C (77°F)
Weight	Approx. 36.5 kg(80.5 lbs)
Maximum Discharge Current	3000A(5sec)
Internal Resistance	Approx. 0.28 mΩ
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	2.23±0.02/Cell at 25 °C (77°F) Temp. Coefficient ±3.3mV/°C (±1.8mV/°F)
Recommended Maximum Charging Current Limit	150A
Equalization / Cycle Use Charging Voltage	2.35V Temps coefficient ±3.3mV/°C (±1.8mV/°F)
Terminal	Pb-Ca-Sn Alloy Recessed Terminal
Container Material	The container and cover are made of flame retardant plastics which meet ABS(UL 94-V0) specifications. The oxygen index level is higher than 28

► Dimensions :

Unit: mm (inch)

Overall Height (H)	Container height (h)	Length (L)	Width (W)
339±2.5 (13.35±0.10)	331±2.5 (13.03±0.10)	241±2.5 (9.49±0.10)	171±2 (6.73±0.08)



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

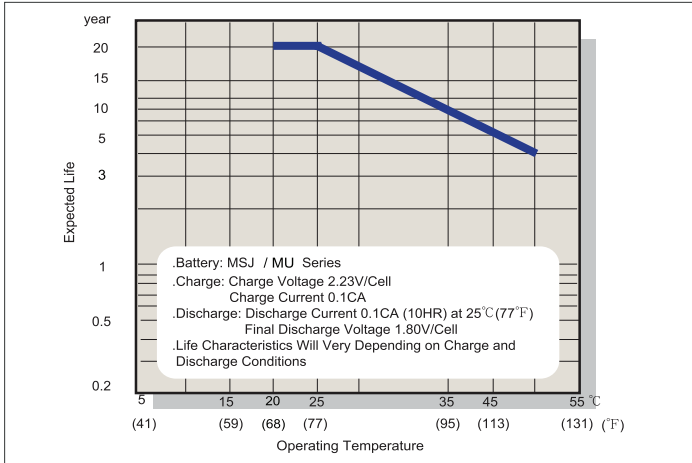
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	927	621	380	217.6	155.9	120.6	98.4	83.3	65.1	53.9
1.67V	830	590	370	215.0	154.3	119.3	97.4	82.5	64.6	53.4
1.70V	780	570	363	213.2	153.3	118.5	96.8	82.0	64.2	53.2
1.75V	702	519	345	208.3	150.5	116.4	95.2	80.7	63.3	52.5
1.80V	600	459	319	199.2	145.2	112.4	92.1	78.5	61.7	51.1
1.83V	530	421	298	190.6	139.5	108.4	89.1	76.2	59.9	49.7

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

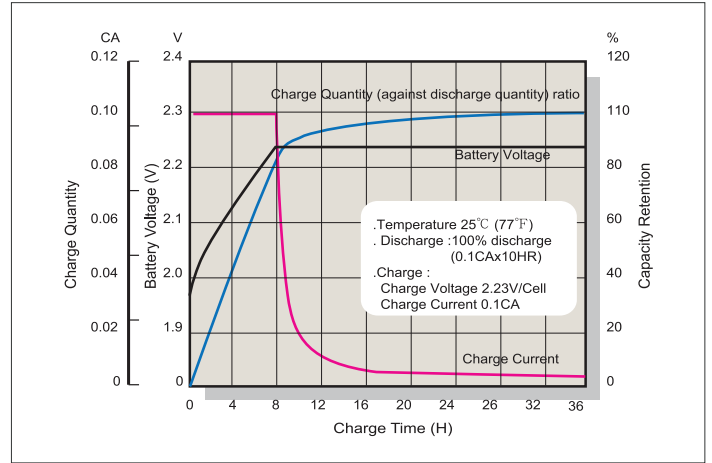
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	1623	1125	691	415.4	297.6	234.9	195.1	167.2	128.1	100.3
1.67V	1508	1082	677	411.3	295.2	233.3	193.9	166.2	127.1	99.5
1.70V	1448	1054	667	408.5	293.5	232.2	193.1	165.5	126.5	99.1
1.75V	1323	986	640	400.1	288.8	229.1	190.7	163.5	124.6	97.7
1.80V	1187	890	597	384.3	279.6	223.1	185.9	159.5	120.9	94.9
1.83V	1070	830	563	369.0	270.3	216.8	180.8	155.5	117.1	92.0

Ratings presented herein are subject to revision without notice. Please refer to www.csb-battery.com to confirm the latest version.

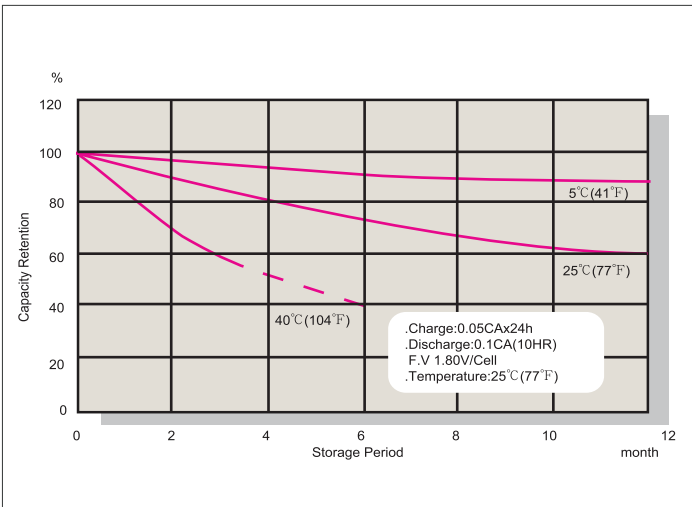
Expected Life V.S Operating Temperature



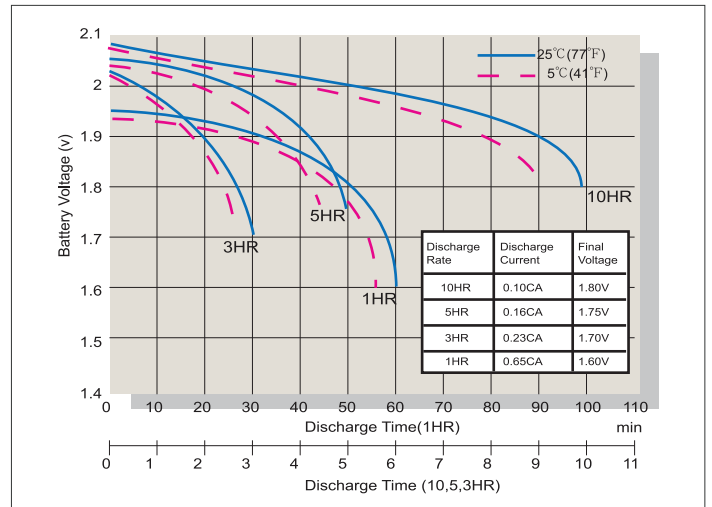
Typical Constant Voltage Charge Characteristics



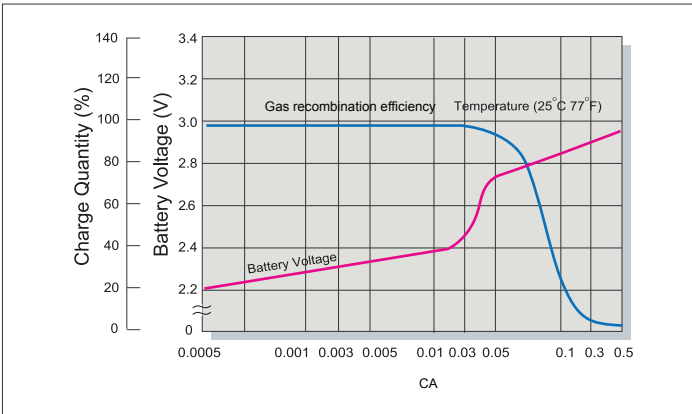
Capacity Retention Characteristics



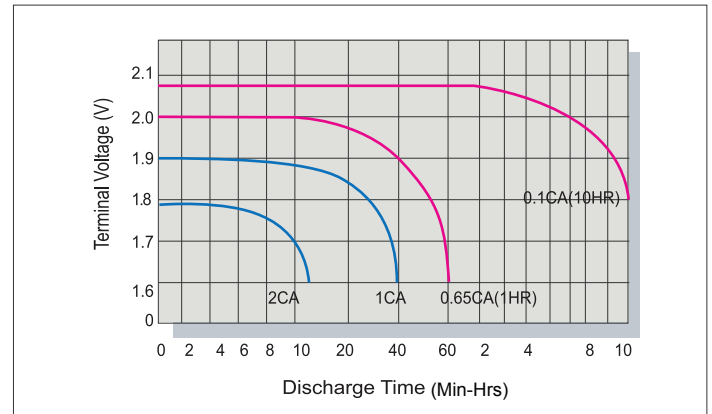
Discharge Characteristics



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
0.40C > A ≥ 0.20C	1.70
A > 0.40C	1.60

Sales Office URL: WWW.CSB-BATTERY.COM

GLOBAL HQ CSB BATTERY CO., LTD. (TAIWAN)

Tel : +886-2-2880-5600
 Fax : +886-2-2888-3300
 mail : service@csb-battery.com.tw

BEIJING OFFICE. (CHINA)

CSB BATTERY TECHNOLOGIES (BEIJING) CO., LTD.
 Tel : +86-10-5820-5336/5338
 Fax : +86-10-58203053
 mail : chinasls@csb-battery.com

AMERICA HQ

CSB BATTERY TECHNOLOGIES INC. (U.S.A)
 Tel : +1-817-244-7777/1-(800)3-CSB-USA(272872)
 Fax : +1-817-244-4445
 mail : csb@csb-battery.com

SHANGHAI OFFICE. (CHINA)

CSB BATTERY LOGISTIC (SHANGHAI) CO., LTD.
 Tel : +86-21-5046-1622/5046-0833
 Fax : +86-21-5064-1046
 mail : chinasls@csb-battery.com

EUROPE HQ

CSB Battery Europe BV.
 Tel : +31(0)-180-418-140
 Fax : +31(0)-180-418-327
 mail : eurosales@csb-battery.eu

SHENZHEN OFFICE. (CHINA)

CSB BATTERY LOGISTIC (SHANGHAI) CO., LTD.
 Tel : +86-755-8831-6488/6396/6356
 Fax : +86-755-8831-6548
 mail : she@csb-battery.com.cn