

BATTERY
CS3



MSVseries
Large Capacity
Long Life

ENERGY OF INFINITY ▼

Confidence & Creativity
Service & Sincerity
Belief & Bravery

MSV

MSV series



Applications

- Telecom Systems.
- With new VRLA technology.
- Power Equipment.
- Fire Alarm/Security Systems.
- Emergency Lighting.
- UPS.
- Solar Battery Systems.
- Back-up Power for Testing and Measuring Instruments.
- Replacement for flooded stationary lead acid battery.
- Service life is up to 15 years in standby use.



Features

- Longer service life [up to 15 years life in float service at 25°C (77°F) temperature] through newly formulated lead-calcium-tin alloy with high corrosion resistance. CSB's MSV series battery range is in line with EURO BAT specifications for "High Integrity". (Over 10 years of service life in floating charge conditions).
- Water adding and specific gravity measurements are not required. There is also no need for an equalization charge, which reduces maintenance costs.
- CSB's MSV series battery is manufactured in accordance with JIS C8704 and qualified by the Battery Equipment Approval Committee of Japan for use in fire alarms, security systems and emergency lighting systems (Approval No. 00C248).
- CSB's MSV series meets the NQAS requirements specified by NTT (Approval No. NQAS 0008).
- Proven service and supply records for telecommunications.
- CSB's MSV series battery has a long expected service life of up to 15 years.

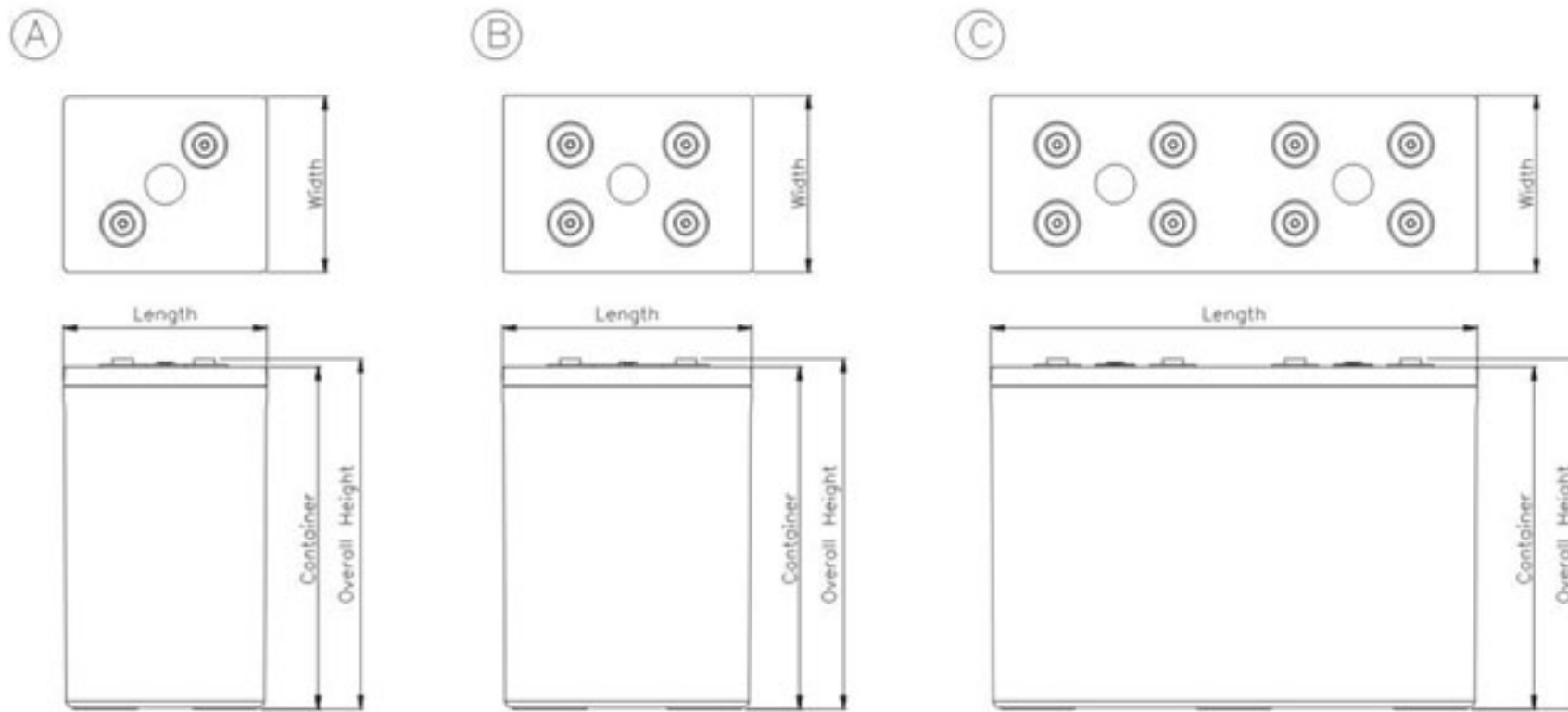
Specifications

Battery Type	Nominal Voltage (V)	Nominal Capacity (10Hr)(Ah)	Weight (Approx. Kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx (mΩ)	Max Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)			Kgf-cm/lbf-in	N-m
MSV200	2	200	13.70	67.1	29.20	0.40	1,200	339±3.0	331±3.0	170±3.0	106±3.0	A	60.00	286/248	28.05
MSV300	2	300	18.40	71.1	32.61	0.40	1,800	339±3.0	331±3.0	170±3.0	150±3.0	A	90.00	286/248	28.05
MSV400	2	400	24.70	72.2	32.39	0.40	2,400	339±3.0	331±3.0	197±3.0	170±3.0	A	120.00	286/248	28.05
MSV500	2	500	32.20	73.3	31.06	0.40	3,000	339±3.0	331±3.0	241±3.0	171±3.0	B	150.00	286/248	28.05
MSV650	2	650	41.40	74.8	31.40	0.40	3,900	339±3.0	331±3.0	307±3.0	171±3.0	B	195.00	286/248	28.05
MSV800	2	800	50.60	74.5	31.62	0.40	4,800	339±3.0	331±3.0	373±3.0	174±3.0	B	240.00	286/248	28.05
MSV1000	2	1000	64.40	75.0	31.06	0.40	6,000	339±3.0	331±3.0	471±3.0	171±3.0	C	300.00	286/248	28.05

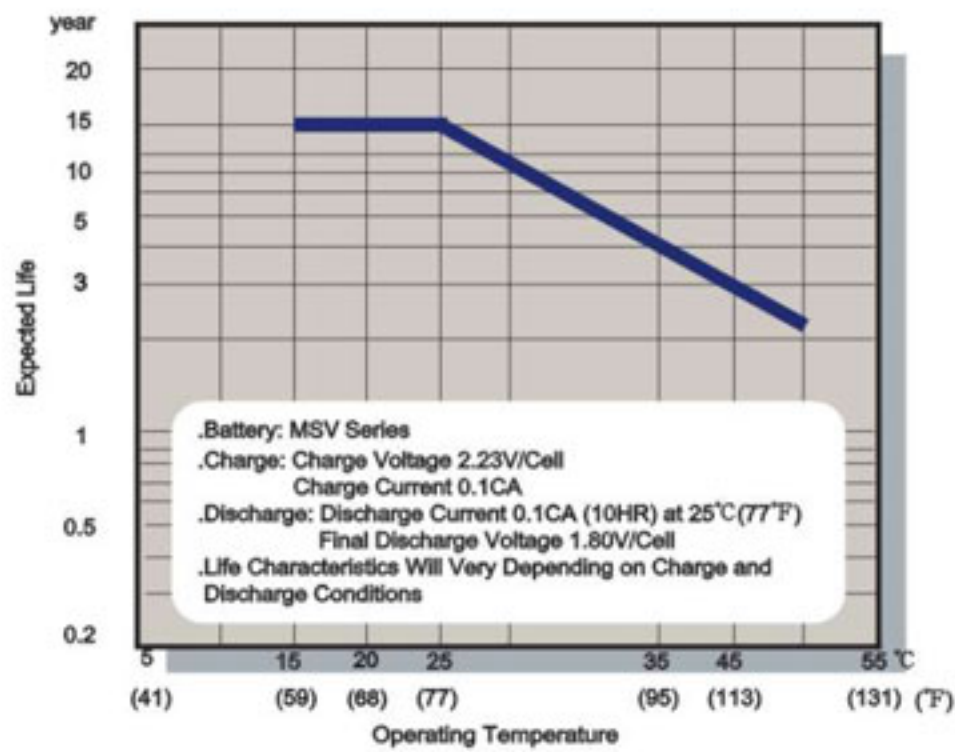
Charging(V) : • Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C

• Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

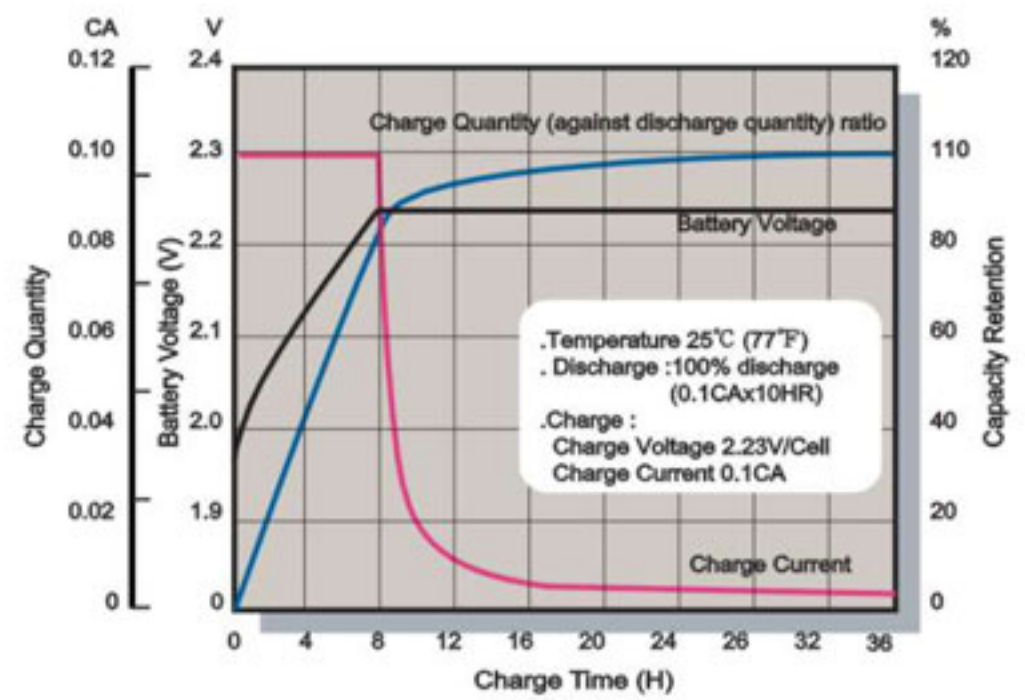
Terminal Position



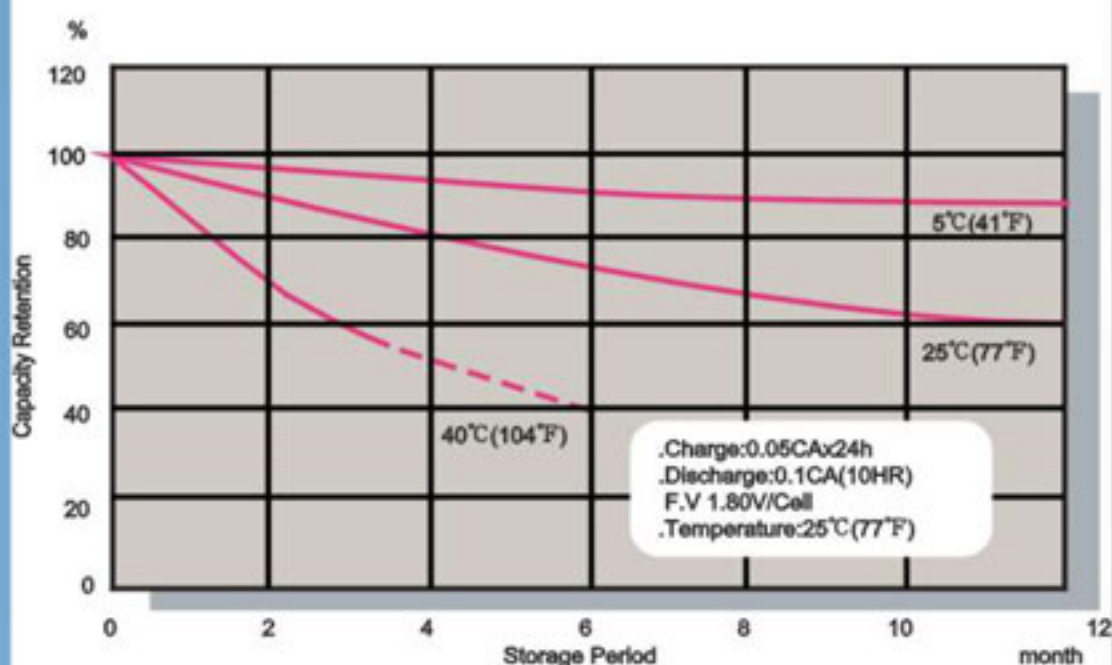
Expected Life V.S Operating Temperature



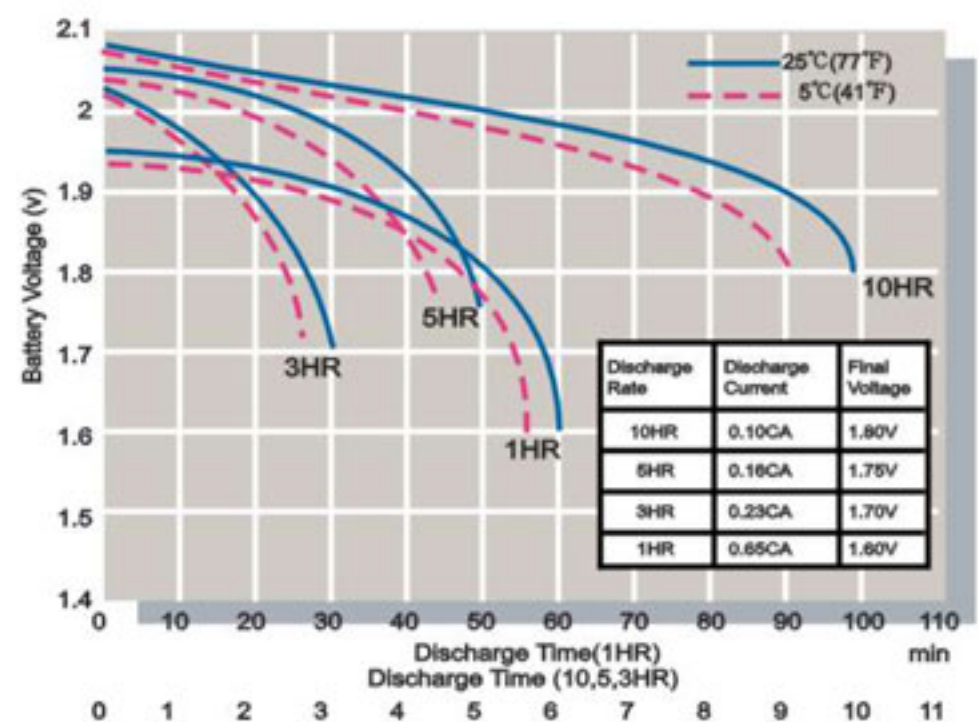
Typical Constant Voltage Charge Characteristics



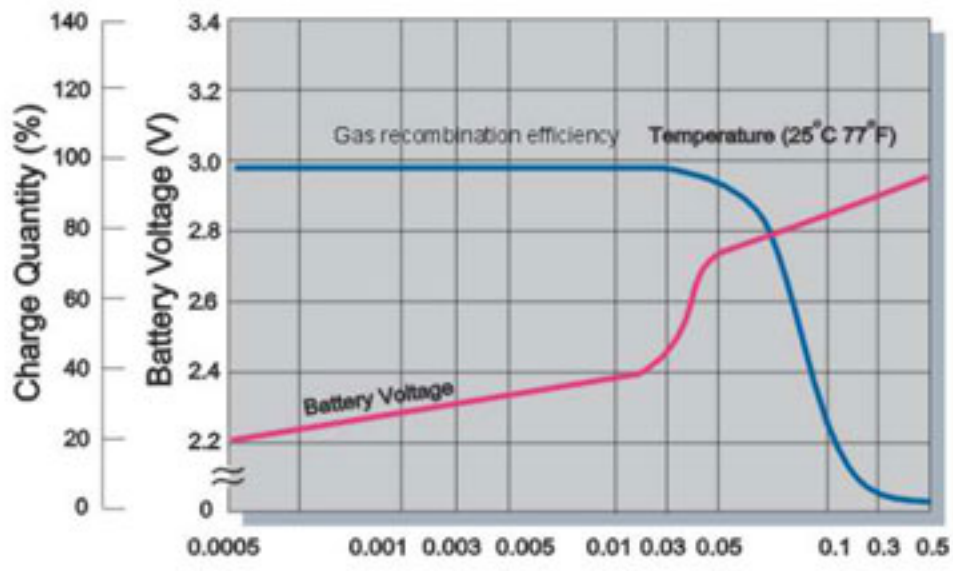
Capacity Retention Characteristics



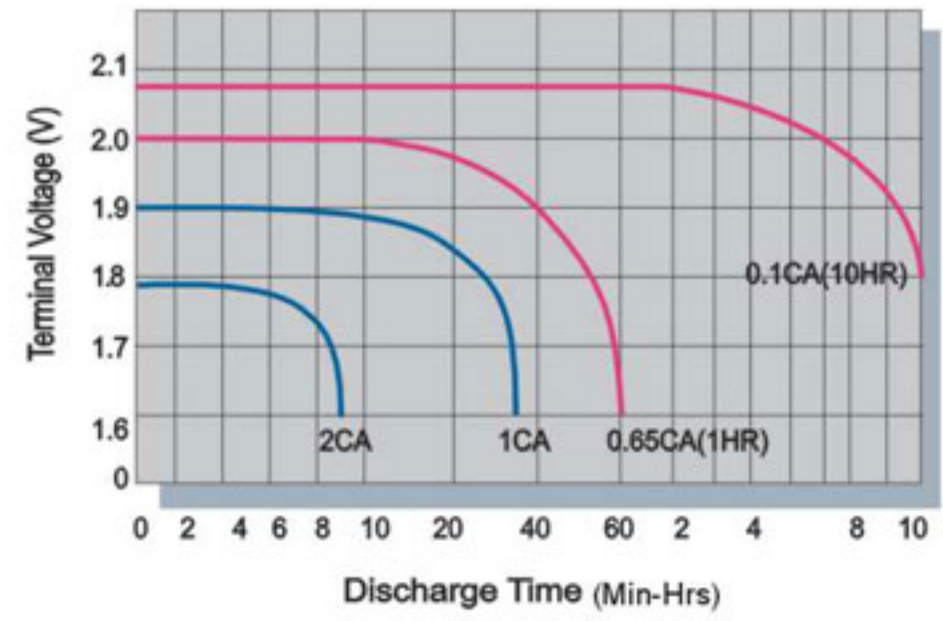
Discharge Characteristics



Oxygen Recombination Efficiency Chart



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



MSV200

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

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	285	196	130	76.5	57.5	45.5	38.5	33.5	26.5	22.5
1.67V	260	187	124	74.0	54.5	44.0	37.0	32.0	26.0	22.0
1.70V	241	182	122	72.5	54.0	43.5	36.5	31.5	25.5	21.5
1.75V	210	168	112	68.5	50.5	41.1	34.5	30.0	24.5	20.5
1.80V	183	147	106	66.0	48.5	39.5	33.5	29.5	24.0	20.0
1.83V	159	130	97.5	62.0	46.5	37.5	32.0	28.0	22.8	19.5

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

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	466	344	231	139	104	83.5	70.5	62.0	50.0	42.0
1.67V	427	330	230	138	103	82.5	70.0	61.5	49.5	41.5
1.70V	407	319	223	135	101	82.0	69.5	60.5	48.5	41.0
1.75V	368	298	208	129	96.5	78.5	66.5	58.0	47.5	40.0
1.80V	336	267	196	124	92.5	75.5	64.5	56.5	46.0	39.5
1.83V	286	231	181	116	88.5	71.9	61.5	54.0	44.0	38.0

MSV300

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

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	427	294	194	115	86.3	68.3	57.8	50.3	39.8	33.8
1.67V	389	280	185	111	81.8	66.0	55.5	48.0	39.0	33.0
1.70V	362	273	182	109	81.0	65.3	54.8	47.3	38.3	32.3
1.75V	316	252	168	103	75.8	61.7	51.8	45.0	36.8	30.8
1.80V	274	220	158	99.0	72.8	59.3	50.3	44.3	36.0	30.0
1.83V	238	195	146	93.0	69.8	56.3	48.0	42.0	34.2	29.3

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

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	700	517	346	208	156	125	106	93.0	75.0	63.0
1.67V	640	494	345	206	154	124	105	92.3	74.3	62.3
1.70V	610	479	334	202	151	123	104	90.8	72.8	61.5
1.75V	552	447	312	193	145	118	100	87.0	71.3	60.0
1.80V	504	400	294	185	139	113	96.8	84.8	69.0	59.3
1.83V	429	347	271	174	133	108	92.3	81.0	66.0	57.0

MSV400

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

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	569	392	259	153	115	91.0	77.0	67.0	53.0	45.0
1.67V	519	373	247	148	109	88.0	74.0	64.0	52.0	44.0
1.70V	482	364	243	145	108	87.0	73.0	63.0	51.0	43.0
1.75V	421	336	224	137	101	82.2	69.0	60.0	49.0	41.0
1.80V	366	294	211	132	97.0	79.1	67.0	59.0	48.0	40.0
1.83V	318	259	195	124	93.0	75.0	64.0	56.0	45.6	39.0

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

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	933	689	461	277	208	167	141	124	100	84.0
1.67V	854	659	460	275	205	165	140	123	99.0	83.0
1.70V	813	638	445	269	201	164	139	121	97.0	82.0
1.75V	737	596	416	257	193	157	133	116	95.0	80.0
1.80V	671	533	392	247	185	151	129	113	92.0	79.0
1.83V	572	462	361	232	177	144	123	108	88.0	76.0

MSV500**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	711	490	324	191	144	114	96.3	83.8	66.3	56.3
1.67V	649	466	309	185	136	110	92.5	80.0	65.0	55.0
1.70V	603	455	304	181	135	109	91.3	78.8	63.8	53.8
1.75V	526	420	280	171	126	103	86.3	75.0	61.3	51.3
1.80V	457	367	264	165	121	98.8	83.8	73.8	60.0	50.0
1.83V	397	324	244	155	116	93.8	80.0	70.0	57.0	48.8

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

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	1166	861	576	346	260	209	176	155	125	105
1.67V	1067	824	575	344	256	206	175	154	124	104
1.70V	1017	798	556	336	251	205	174	151	121	103
1.75V	921	744	520	321	241	196	166	145	119	100
1.80V	839	667	490	309	231	189	161	141	115	98.8
1.83V	715	578	451	290	221	180	154	135	110	95.0

MSV650**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	925	636	421	249	187	148	125	109	86.1	73.1
1.67V	844	606	401	241	177	143	120	104	84.5	71.5
1.70V	784	591	395	236	176	141	119	102	82.9	69.9
1.75V	684	545	364	223	164	134	112	97.5	79.6	66.6
1.80V	594	477	343	215	158	128	109	95.9	78.0	65.0
1.83V	517	422	317	202	151	122	104	91.0	74.1	63.4

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

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	1516	1119	749	450	338	271	229	202	163	137
1.67V	1387	1071	748	447	333	268	228	200	161	135
1.70V	1322	1037	723	437	327	267	226	197	158	133
1.75V	1197	968	676	418	314	255	216	189	154	130
1.80V	1091	866	637	401	301	245	210	184	150	128
1.83V	929	751	587	377	288	234	200	176	143	124

MSV800**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	1138	783	518	306	230	182	154	134	106	90.0
1.67V	1038	746	494	296	218	176	148	128	104	88.0
1.70V	964	728	486	290	216	174	146	126	102	86.0
1.75V	842	671	448	274	202	164	138	120	98.0	82.0
1.80V	732	587	422	264	194	158	134	118	96.0	80.0
1.83V	636	519	390	248	186	150	128	112	91.2	78.0

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

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	1865	1378	922	554	416	334	282	248	200	168
1.67V	1707	1318	920	550	410	330	280	246	198	166
1.70V	1627	1276	890	538	402	328	278	242	194	164
1.75V	1473	1191	832	514	386	314	266	232	190	160
1.80V	1343	1066	784	494	370	302	258	226	184	158
1.83V	1144	925	722	464	354	288	246	216	176	152

MSV1000**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	1423	979	648	383	288	228	193	168	133	113
1.67V	1298	933	618	370	273	220	185	160	130	110
1.70V	1206	910	608	363	270	218	183	158	128	108
1.75V	1052	839	560	343	253	206	173	150	123	103
1.80V	915	734	528	330	243	198	168	148	120	100
1.83V	795	649	488	310	233	188	160	140	114	97.5

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

F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	2332	1722	1153	693	520	418	353	310	250	210
1.67V	2134	1648	1150	688	513	413	350	308	248	208
1.70V	2033	1595	1113	673	503	410	348	303	243	205
1.75V	1842	1489	1040	643	483	393	333	290	238	200
1.80V	1679	1333	980	618	463	378	323	283	230	198
1.83V	1430	1156	903	580	443	360	308	270	220	190

BATTERY



SALES OFFICE

GLOBAL HQ

CSB BATTERY CO., LTD.
5F-1, No.36, Nanjing W. Rd.,
Datong District,
Taipei City 10352 ,
Taiwan (R.O.C.),
Tel: +886-2-2555-5600
Fax: +886-2-2555-3300
E-mail: service@csb-battery.com.tw

AMERICA HQ

CSB BATTERY TECHNOLOGIES, INC.
2901, White Settlement Rd.
Ft. Worth TX 76107.
U.S.A.
Tel: +1-817-244-7777/1-(800)3
CSBUSA(272872)
Fax: +1-817-244-4445
E-mail: csb@csb-battery.com

EUROPE HQ

CSB BATTERY EUROPE B.V
Ridderhaven 32
2984BT Ridderkerk
The Netherlands
Tel: +31(0)180418140
Fax: +31(0)180418327
E-mail: eurosales@csb-battery.eu

FRANCE OFFICE

CSB BATTERY FRANCE S.A.R.L
10, rue Boris Vian
95310 Saint Ouen l'Aumone
France
Tel: +33(0)134201746
Fax: +33(0)134201748
Emai: eurosales@csb-battery.eu

BENELUX OFFICE

CSB BATTERY BENELUX B.V
Ridderhaven 32
2984BT Ridderkerk
The Netherlands
Tel: +31(0)180418140
Fax: +31(0)180418327
E-mail: eurosales@csb-battery.eu

UK OFFICE

CSB BATTERY UK LTD
1 Riverwalk Business Park
Jeffreys Road. EN3 7QN
United Kingdom
Tel: +44(0)2088042991
Fax: +44 (0) 2088058056
E-mail: eurosales@csb-battery.eu

IBERICA OFFICE

CSB BATTERY IBERICA S.L
Gran Canaria 37
28970 Humanes de Madrid. Madrid
Spain
Tel: +34 - 916905437
Fax: +34 - 914920471
E-mail: eurosales@csb-battery.eu

GERMANY OFFICE

CSB BATTERY DEUTSCHLAND GMBH
Richtweg 56
90530 Wendelstein
Germany
Tel: +49 - 91294055642
Fax: +49 - 912909056361
E-mail: eurosales@csb-battery.eu

ITALY OFFICE

CSB BATTERY ITALIA S.R.L
Via Cà Nova Zampieri, 18/B
37057 San Giovanni Lupatoto
Verona, Italia
Tel: +39 045 92 50 870
Fax: +39 045 97 82 576
E-mail: eurosales@csb-battery.eu

BEIJING OFFICE

CSB BATTERY TECHNOLOGIES (BEIJING) CO., LTD.
2th Fl. 7G, Future Business Center, Chaoyang
North Rd., Chaoyang District
Beijing, China
Zipcode: 100024
Tel: +86-10-5962-1300 / 1301 / 1302 / 1303
Fax: +86-10-5962-1304
E-mail: chinasl@csb-battery.com

SHANGHAI OFFICE

CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.
Sec. A, 3Fl., No.6 Building, No.350, Xiya Rd.,
Shanghai Waigaoqiao Trade Zone.
Shanghai, China
Zipcode: 200131
Tel: +86-21-5046-1622, 5046-0833
Fax: +86-21-5064-3314
E-mail: chinasl@csb-battery.com.tw

SHENZHEN OFFICE

CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.
Room 2103-2105, Block East,
City Professional Hub, Shennan Avenue, Futian
Shenzhen, China
Zipcode: 518053
Tel: + 86-755-2694-2788/2606/2706
Fax: + 86-755-2694-2748
E-mail: she@csb-battery.com.tw

MANUFACTURING SITE

CHINA FACTORY

CSB BATTERY GUANGZHOU CO., LTD.
No 97, Tianyuan Road, Yonghe Area,
Guangzhou Economic Technology Development
Zone, P.R.C.
Postcode: 511356
Tel: +86-20-8297-9716
Fax: +86-20-8297-9719

TAIWAN FACTORY

CSB GUAN TYAN FACTORY (TAIWAN)
No. 16, Gong Yeh West Rd., Ell Jenn Tsuen,
Guan Tyan Hsiang, Tainan Hsien,
Taiwan.
Tel: +886-6-698-7600
Fax: +886-6-698-5734

VIETNAM FACTORY

CSB Battery (Viet Nam) CO., LTD.
Nhon Trach 3 IP, Second Phase ,
Nhon Trach District , Dong Nai Province
Viet Nam
Tel: +84-61-3569120
Fax: +84-61-3569121