

MSJ400												
Constant Current Discharge Characteristics Unit: A (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	711	544	316	180	129	99.6	81.2	68.7	54.8	46.1	23.1	19.2
1.67V	637	517	308	178	128	98.6	80.4	68.0	54.4	45.8	22.9	19.1
1.70V	599	500	302	177	127	97.9	79.9	67.6	54.1	45.6	22.8	19.0
1.75V	539	455	287	173	125	96.1	78.6	66.6	53.4	45.0	22.5	18.7
1.80V	461	403	265	165	120	92.8	76.1	64.9	52.1	43.9	22.0	18.3
1.85V	407	370	248	158	115	89.5	73.6	63.2	50.9	42.9	21.5	17.9
Constant Power Discharge Characteristics Unit: W (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	1183	938	574	344	246	194	161	138	108	85.8	42.9	35.8
1.67V	1100	902	563	341	244	193	160	137	107	85.3	42.6	35.5
1.70V	1056	879	555	339	243	192	159	137	107	85.0	42.5	35.4
1.75V	965	821	532	332	239	189	157	135	105	83.8	41.9	34.9
1.80V	866	742	496	319	231	184	154	132	102	81.6	40.8	34.0
1.85V	780	692	468	306	224	179	149	129	99.5	79.5	39.7	33.1

MSJ500												
Constant Current Discharge Characteristics Unit: A (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	927	621	380	218	156	121	98.4	83.3	65.1	53.9	26.9	22.4
1.67V	830	590	370	215	154	119	97.4	82.5	64.6	53.4	26.7	22.3
1.70V	780	570	363	213	153	118	96.8	82.0	64.2	53.2	26.6	22.2
1.75V	702	519	345	208	151	116	95.2	80.7	63.3	52.5	26.2	21.9
1.80V	600	459	319	199	145	112	92.1	78.5	61.7	51.1	25.6	21.3
1.85V	530	421	298	191	140	108	89.1	76.2	59.9	49.7	24.9	20.7
Constant Power Discharge Characteristics Unit: W (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	1623	1125	691	415	298	235	195	167	128	101	50.5	42.1
1.67V	1508	1082	677	411	295	233	194	166	127	100	49.8	41.5
1.70V	1448	1054	667	408	294	232	193	165	127	99.1	49.5	41.3
1.75V	1323	966	640	400	289	229	191	164	125	97.7	48.9	40.7
1.80V	1187	890	597	384	280	223	186	160	121	94.9	47.5	39.6
1.85V	1070	830	563	369	270	217	181	155	117	92.0	46.0	38.3

MSJ650												
Constant Current Discharge Characteristics Unit: A (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	1205	807	494	283	203	157	128	108	84.6	70.0	35.0	29.2
1.67V	1079	767	481	279	201	155	127	107	83.9	69.5	34.7	28.9
1.70V	1014	741	472	277	199	154	126	106	83.5	69.1	34.6	28.8
1.75V	912	675	449	271	196	151	124	105	82.3	68.2	34.1	28.4
1.80V	780	597	414	259	189	146	120	102	80.1	66.5	33.2	27.7
1.85V	690	548	388	248	181	141	116	99.0	77.9	64.6	32.3	26.9
Constant Power Discharge Characteristics Unit: W (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	2109	1463	898	540	387	305	254	217	167	130	65.2	54.3
1.67V	1960	1407	881	535	384	303	252	216	165	129	64.7	53.9
1.70V	1883	1371	867	531	382	302	251	215	164	128	64.0	53.3
1.75V	1721	1281	832	520	375	298	248	213	162	127	63.5	52.9
1.80V	1543	1157	776	500	363	290	242	207	157	123	61.7	51.4
1.85V	1391	1079	732	480	351	282	235	202	152	120	59.8	49.8

MSJ800												
Constant Current Discharge Characteristics Unit: A (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	1422	1078	625	357	256	197	161	136	108	91.3	45.6	38.0
1.67V	1274	1024	609	353	253	195	159	135	108	90.6	45.3	37.8
1.70V	1198	990	597	350	251	194	158	134	107	90.3	45.2	37.6
1.75V	1077	901	568	342	247	190	156	132	106	89.1	44.5	37.1
1.80V	922	798	524	327	238	184	151	129	103	87.0	43.5	36.3
1.85V	814	732	491	313	229	177	146	125	101	85.0	42.5	35.4
Constant Power Discharge Characteristics Unit: W (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	2366	1857	1137	682	488	384	319	273	213	170	85.0	70.8
1.67V	2199	1786	1115	675	484	382	317	271	212	169	84.4	70.4
1.70V	2112	1740	1098	671	481	380	316	270	211	168	84.1	70.1
1.75V	1930	1626	1054	657	473	375	312	267	208	166	83.0	69.1
1.80V	1731	1468	983	631	458	365	304	261	202	162	80.8	67.3
1.85V	1560	1369	927	606	443	355	296	255	197	157	78.7	65.6

MSJ1000												
Constant Current Discharge Characteristics Unit: A (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	1853	1241	760	435	312	241	197	167	130	108	53.9	44.9
1.67V	1660	1179	740	430	309	239	195	165	129	107	53.4	44.5
1.70V	1561	1139	726	426	307	237	194	164	128	106	53.2	44.3
1.75V	1403	1038	691	417	301	233	190	161	127	105	52.5	43.7
1.80V	1201	919	637	398	290	225	184	157	123	102	51.1	42.6
1.85V	1061	843	596	381	279	217	178	152	120	99.4	49.7	41.4
Constant Power Discharge Characteristics Unit: W (25°C, 77°F)												
F.V/Time	15MIN	300MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	3245	2251	1381	831	595	470	390	334	256	201	100	83.6
1.67V	3016	2165	1355	823	590	467	388	332	254	199	100	82.9
1.70V	2897	2109	1335	817	587	464	386	331	253	198	99.1	82.6
1.75V	2647	1971	1260	800	578	458	381	327	249	195	97.7	81.4
1.80V	2374	1780	1194	769	559	446	372	319	242	190	94.9	79.1
1.85V	2139	1660	1126	738	541	434	362	311	234	184	92.0	76.7

Please refer to the official site for the latest rating confirmation. URL: www.csb-battery.com

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Hitachi Chemical
HITACHI



Large Capacity Long Life
ENERGY OF INFINITY ▶

MSJ series

BATTERY
CSB



Hitachi Chemical Energy Technology Co., Ltd.

MSJ series

Applications :

- UPS
- Telecom systems
- Emergency lighting
- Solar battery systems
- Power equipment operation
- Fire alarms and security systems
- Switching mode rectifier power supply
- Back-up Power for testing and measuring equipment
- Replacement for open-type stationary lead acid battery



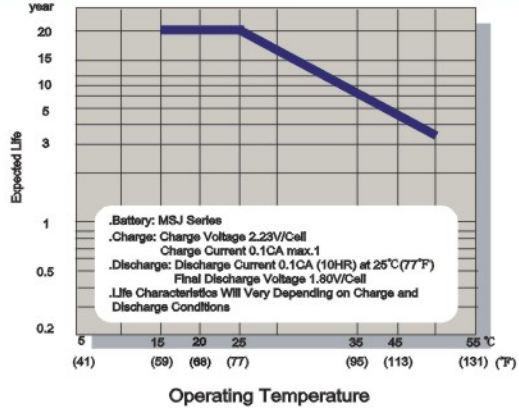
Features and Benefits :

- Single-cell batteries
- High-quake resistance mounted storage batteries with cover and container made of flame retardant plastic (UL 94-V O)-28% L.O.I.
- Up to 20 years design life in float service at 25°C (77°F) through newly formulated Pb-Ca-Sn alloy grid with high corrosion resistance.
- Our MSJ series battery is manufactured in accordance with JIS C 8704 and is qualified by the Battery Equipment Approval Committee of Japan for use in fire alarms, security systems and emergency lighting systems.
- Proven service and supply records for telecommunications.
- Reliability :
 - Our batteries are 100% 2-cycle tested by computer charge and discharge System (CCDS).
 - Our batteries are UL-recognized components under UL 1989. (File Number with MH 14533)
 - ISO 9001/14001/18001 certified.
- MSJ series is battery is in line with EUROBAT guide for >12 YEARS VERY LONG LIFE.
- With new VRLA technology, there are no requirements on water adding, specific gravity measurements and equalization charge, which reduce the expenses of TCO (Total Cost of Ownership).

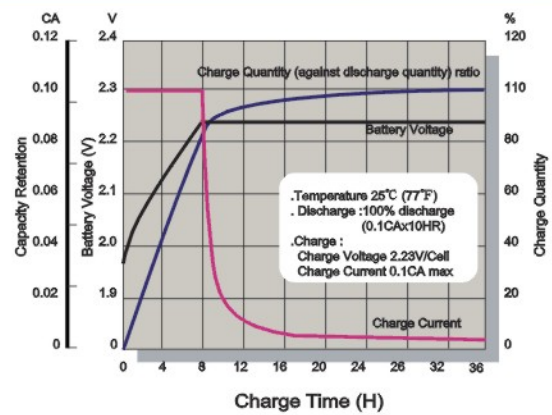
Specifications													
Battery Type	Nominal Voltage (V)	Nominal Capacity (Ah)	Weight (Approx. Kg)	Internal Resistance (Approx. mΩ)	Short Circuit Current (A)	Max. Discharge Current (5 sec)(A)	Dimensions (mm)				Terminal Type	Bolt	Max. Charge Current(A)
							Overall Height (H)	Container Height (h)	Depth (D)	Width (W)			Kgf·cm/ lbf·in
													N·m
MSJ150	2	155	12.80	0.54	2848	900	330.0±2.5	331.0±2.5	170.0±2.0	106.0±1.5	I4	M8	45
MSJ200	2	205	15.00	0.42	3630	1200	330.0±2.5	331.0±2.5	170.0±2.0	106.0±1.5	I4	M8	60
MSJ260	2	260	18.70	0.36	4872	1560	330.0±2.5	331.0±2.5	170.0±2.0	131.0±1.5	I4	M8	78
MSJ300	2	305	21.80	0.33	5075	1800	330.0±2.5	331.0±2.5	170.0±2.0	150.0±1.5	I4	M8	90
MSJ400	2	439	28.60	0.30	6065	2400	330.0±2.5	331.0±2.5	197.0±2.0	170.0±2.0	I4	M8	120
MSJ500	2	510	36.50	0.28	9653	3000	330.0±2.5	331.0±2.5	241.0±2.5	171.0±2.0	I4	M8	150
MSJ650	2	660	46.60	0.26	13235	3900	330.0±2.5	331.0±2.5	307.0±2.5	171.0±2.0	I4	M8	195
MSJ800	2	870	56.70	0.25	—	4800	330.0±2.5	331.0±2.5	373.0±2.5	174.0±2.0	I4	M8	240
MSJ1000	2	1020	72.80	0.28	—	6000	330.0±2.5	331.0±2.5	471.0±2.5	171.0±2.0	I4	M8	300

- Nominal Capacity 10hr-rate to 1.80V per cell @25°C (77°F)
- Float Charge: 2.23±0.02 V/Cell at 25°C (77°F); Temp. Coefficient: -3.3mV/°C

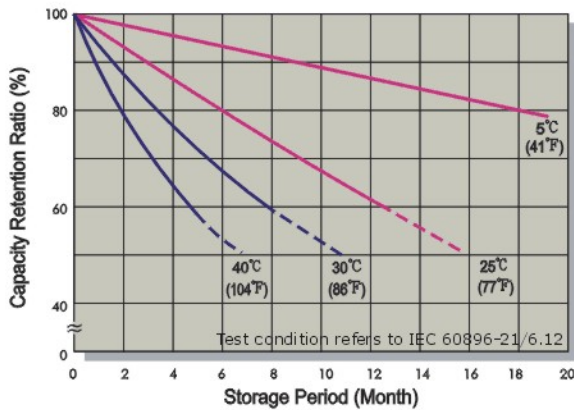
Expected Life vs. Operating Temperature



Typical Constant Voltage Charge Characteristics

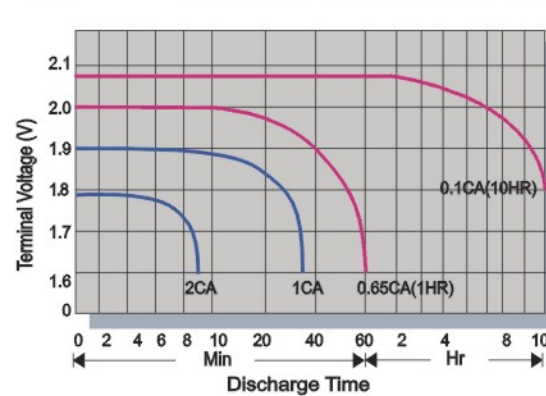


Capacity Retention Characteristics

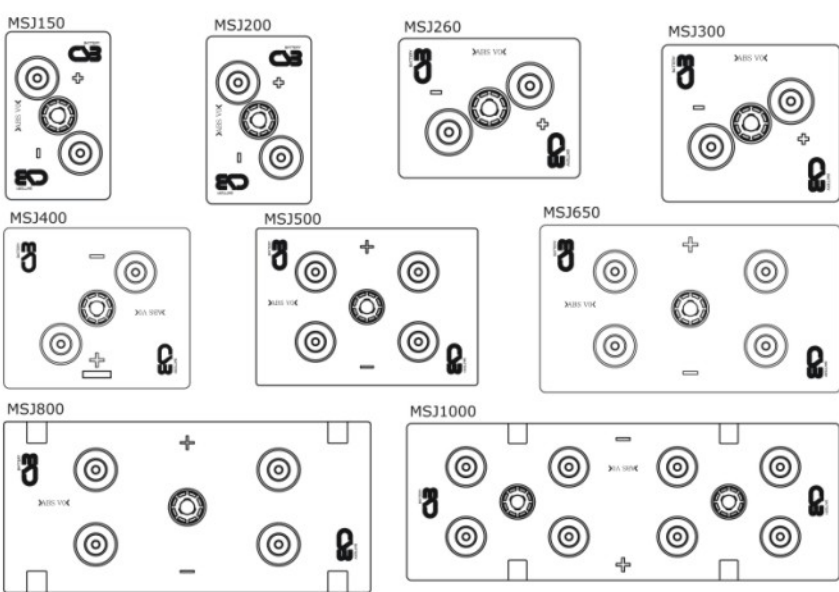


- The above diagrams are typical. For more detailed information, please see the specific product sheets.
- C is the capacity of 10 hour-rate while the final voltage is 1.80V per cell. For example, 1C discharge current of MSJ150 is: 1 x 150 = 150 (A)

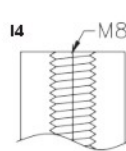
Discharge Characteristics



Terminal Position



Terminal Type



MSJ150

Constant Current Discharge Characteristics Unit: A (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	286	192	117	67.2	48.2	37.3	30.4	25.7	20.1	16.6	8.32	6.93
1.67V	256	182	114	66.4	47.7	36.9	30.1	25.5	19.9	16.5	8.26	6.88
1.70V	241	176	112	65.9	47.4	36.6	29.9	25.3	19.8	16.4	8.22	6.85
1.75V	217	160	107	64.4	46.5	36.0	29.4	24.9	19.6	16.2	8.11	6.76
1.80V	185	142	98.4	61.6	44.9	34.7	28.5	24.3	19.1	15.8	7.90	6.58
1.85V	164	130	92.1	58.9	43.1	33.5	27.5	23.5	18.5	15.4	7.68	6.40
Constant Power Discharge Characteristics Unit: W (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	501	348	213	128	92.0	72.6	60.3	51.7	39.6	31.0	15.5	12.9
1.67V	466	334	209	127	91.2	72.1	59.9	51.4	39.3	30.8	15.4	12.8
1.70V	448	326	206	126	90.7	71.7	59.7	51.2	39.1	30.6	15.3	12.7
1.75V	409	305	198	124	89.2	70.8	58.9	50.5	38.5	30.2	15.1	12.6
1.80V	367	275	185	119	86.4	68.9	57.4	49.3	37.4	29.3	14.7	12.2
1.85V	331	256	174	114	83.5	67.0	55.9	48.0	36.2	28.4	14.2	11.8

MSJ200

Constant Current Discharge Characteristics Unit: A (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	371	248	152	87.0	62.4	48.2	39.3	33.3	26.0	21.5	10.8	8.98
1.67V	332	236	148	86.0	61.7	47.7	38.9	33.0	25.8	21.4	10.7	8.91
1.70V	312	228	145	85.3	61.3	47.4	38.7	32.8	25.7	21.3	10.6	8.86
1.75V	281	208	138	83.3	60.2	46.5	38.1	32.3	25.3	21.0	10.5	8.75
1.80V	240	184	127	79.7	58.1	45.0	36.9	31.4	24.7	20.5	10.2	8.52
1.85V	212	169	119	76.3	55.8	43.4	35.6	30.5	24.0	19.9	9.94	8.29
Constant Power Discharge Characteristics Unit: W (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	649	450	276	166	119	93.9	78.0	66.9	51.2	40.1	20.1	16.7
1.67V	603	433	271	165	118	93.3	77.6	66.5	50.9	39.8	19.9	16.6
1.70V	579	422	267	163	117	92.9	77.2	66.2	50.6	39.6	19.8	16.5
1.75V	529	394	256	160	116	91.6	76.3	65.4	49.9	39.1	19.5	16.3
1.80V	475	356	239	154	112	89.2	74.4	63.8	48.4	38.0	19.0	15.8
1.85V	428	332	225	148	108	86.7	72.3	62.2	46.9	36.8	18.4	15.3

MSJ260

Constant Current Discharge Characteristics Unit: A (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	463	310	190	109	78.0	60.3	49.2	41.6	32.5	26.9	13.5	11.2
1.67V	415	295	185	107	77.2	59.7	48.7	41.2	32.3	26.7	13.4	11.1
1.70V	390	285	182	107	76.6	59.2	48.4	41.0	32.1	26.6	13.3	11.0
1.75V	351	259	173	104	75.3	58.2	47.6	40.4	31.7	26.2	13.1	10.9
1.80V	300	230	159	99.6	72.6	56.2	46.1	39.2	30.8	26.0	13.0	10.8
1.85V	265	211	149	95.3	69.8	54.2	44.6	38.1	30.0	24.9	12.4	10.4
Constant Power Discharge Characteristics Unit: W (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	811	563	345	208	149	117	97.6	83.6	64.0	50.1	25.1	20.9
1.67V	754	541	339	206	148	117	97.0	83.1	63.6	49.8	24.9	20.7
1.70V	724	527	334	204	147	116	96.5	82.8	63.3	49.5	24.8	20.6
1.75V	662	493	320	200	144	115	95.3	81.8	62.3	48.9	24.4	20.4
1.80V	594	445	299	192	140	112	92.9	79.8	60.5	47.5	23.7	19.8
1.85V	535	415	282	184	135	108	90.4	77.7	58.6	46.0	23.0	19.2

MSJ300

Constant Current Discharge Characteristics Unit: A (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	556	372	228	131	93.6	72.4	59.0	50.0	39.1	32.3	16.2	13.5
1.67V	496	354	222	129	92.6	71.6	58.4	49.5	38.7	32.1	16.0	13.4
1.70V	468	342	218	128	92.0	71.1	58.1	49.2	38.5	31.9	16.0	13.3
1.75V	421	311	207	125	90.3	69.8	57.1	48.4	38.0	31.5	15.7	13.1
1.80V	360	276	191	120	87.1	67.4	55.3	47.1	37.0	30.7	15.3	12.8
1.85V	318	253	179	114	83.7	65.0	53.5	45.7	35.9	29.8	14.9	12.4
Constant Power Discharge Characteristics Unit: W (25°C, 77°F)												
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR	24HR
1.60V	974	675	414	249	179	141	117	100	76.9	60.2	30.1	25.1
1.67V	905	649	406	247	177	140	116	99.7	76.3	59.7	29.9	24.9
1.70V	869	633	400	245	176	139	116	99.3	75.9	59.5	29.7	24.8
1.75V	794	591	384	240	173	137	114	98.1	74.8	58.6	29.3	24.4
1.80V	712	534	358	231	168	134	112	95.7	72.5	57.0	28.5	23.7
1.85V	642	498	338	221	162	130	108	93.3	70.3	55.2	27.6	23.0