

MSV500												
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	732	512	329	194	143	116	96.7	82.8	64.9	52.7	26.4	22.0
1.67V	664	494	326	191	140	114	96.5	82.6	64.6	52.2	26.1	21.8
1.70V	639	478	321	189	139	113	95.8	82.1	64.3	51.8	25.9	21.6
1.75V	577	460	310	186	136	111	94.5	81.2	63.9	51.2	25.6	21.3
1.80V	512	427	295	177	132	109	91.7	79.1	62.6	50.0	25.0	20.8
1.83V	442	382	268	163	125	102	88.4	75.9	59.6	47.2	23.6	19.7
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	1223	894	588	367	274	213	180	156	125	102	51.0	42.5
1.67V	1149	870	581	364	272	210	178	154	124	101	50.5	42.1
1.70V	1118	850	575	361	270	209	177	154	123	100	50.0	41.7
1.75V	1038	810	561	352	267	202	176	153	122	99.2	49.6	41.3
1.80V	943	774	531	348	263	198	173	150	120	98.2	49.1	40.9
1.83V	834	699	496	327	248	191	170	147	117	95.9	48.0	40.0

MSV650												
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	925	636	421	249	187	148	125	109	86.1	73.1	35.2	29.4
1.67V	844	606	401	241	177	143	120	104	84.5	71.5	35.1	29.2
1.70V	784	591	395	236	176	141	119	102	82.9	69.9	35.0	29.1
1.75V	684	545	364	223	164	134	112	97.5	79.6	66.6	34.6	28.9
1.80V	594	477	343	215	158	128	109	95.9	78.0	65.0	34.0	28.4
1.83V	517	422	317	202	151	122	104	91.0	74.1	63.4	33.4	27.8
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	1516	1119	749	450	338	271	229	202	163	137	67.9	56.6
1.67V	1387	1071	748	447	333	268	228	200	161	135	67.6	56.3
1.70V	1322	1037	723	437	327	267	226	197	158	133	67.4	56.2
1.75V	1197	968	676	418	314	255	216	189	154	130	67.0	55.9
1.80V	1091	866	637	401	301	245	210	184	150	128	66.3	55.2
1.83V	929	751	587	377	288	234	200	176	143	124	65.1	54.3

MSV800												
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	1138	783	518	306	230	182	154	134	106	90.0	45.0	37.5
1.67V	1038	746	494	296	218	176	148	128	104	88.0	44.0	36.7
1.70V	964	728	486	290	216	174	146	126	102	86.0	43.0	35.8
1.75V	842	671	448	274	202	164	138	120	98.0	82.0	41.0	34.2
1.80V	732	587	422	264	194	158	134	118	96.0	80.0	40.0	33.3
1.83V	636	519	390	248	186	150	128	112	91.2	78.0	39.0	32.5
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	1865	1378	922	554	416	334	282	248	200	168	84.0	70.0
1.67V	1707	1318	920	550	410	330	280	246	198	166	83.0	69.2
1.70V	1627	1276	890	538	402	328	278	242	194	164	82.0	68.3
1.75V	1473	1191	832	514	386	314	266	232	190	160	80.0	66.7
1.80V	1343	1066	784	494	370	302	258	226	184	158	79.0	65.8
1.83V	1144	925	722	464	354	288	246	216	176	152	76.0	63.3

MSV1000												
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	1423	979	648	383	288	228	193	168	133	113	56.5	47.1
1.67V	1298	933	618	370	273	220	185	160	130	110	55.0	45.8
1.70V	1206	910	608	363	270	218	183	158	128	108	54.0	45.0
1.75V	1052	839	560	343	253	206	173	150	123	103	51.5	42.9
1.80V	915	734	528	330	243	198	168	148	120	100	50.0	41.7
1.83V	795	649	488	310	233	188	160	140	114	97.5	48.8	40.6
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	2332	1722	1153	693	520	418	353	310	250	210	105	87.5
1.67V	2134	1648	1150	688	513	413	350	308	248	208	104	86.7
1.70V	2033	1595	1113	673	503	410	348	303	243	205	103	85.4
1.75V	1842	1489	1040	643	483	393	333	290	238	200	100	83.3
1.80V	1679	1333	980	618	463	378	323	283	230	198	99.0	82.5
1.83V	1430	1156	903	580	443	360	308	270	220	190	95.0	79.2

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



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MSV series

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Hitachi Chemical Energy Technology Co., Ltd.

MSVseries

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



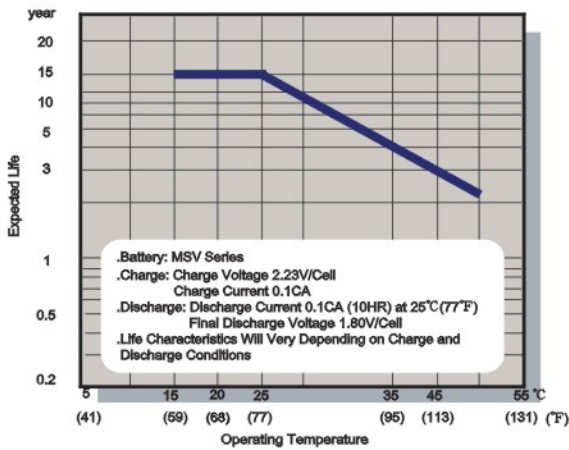
Features and Benefits :

- Single-cell batteries.
- High-quake resistance mounted storage batteries with cover made of flame retardant plastic (UL 94-V0).
- Up to 15 years design life in float service at 25°C (77°F) through newly formulated Pb-Ca-Sn alloy grid with high corrosion resistance.
- Our MSV 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 system.
- 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.
- MSV series 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).

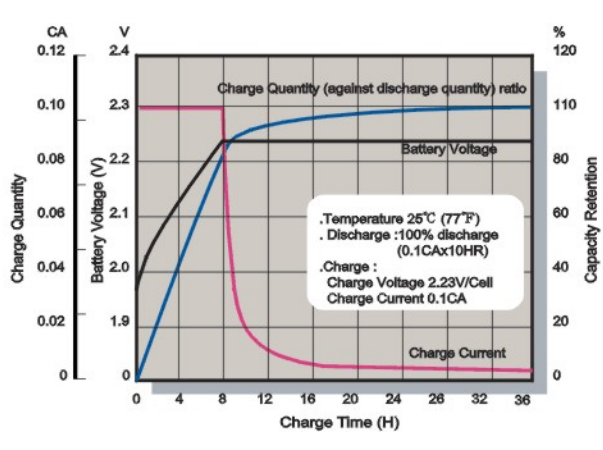
Specifications															
Battery Type	Nominal Voltage (V)	Nominal Capacity (Ah)*	Weight (Approx. Kg)	Internal Resistance (Approx. mΩ)	Short Circuit Current (A)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Type	Bolt	Max. Charge Current (A)	Max. Screw Torque Value	
							Overall Height (H)	Container Height (h)	Depth (D)	Width (W)				Kgf. cm/ lbf-in	N-m
MSV200	2	200	13.60	0.59	2968	1200	330.0±2.5	331.0±2.5	170.0±2.0	106.0±1.5	I4	M8	60	41-43/95	40.57
MSV300	2	300	18.20	0.54	3900	1800	330.0±2.5	331.0±2.5	170.0±2.0	150.0±1.5	I4	M8	90	41-43/95	40.57
MSV400	2	415	24.90	0.48	--	2400	330.0±2.5	331.0±2.5	167.0±2.0	170.0±2.0	I4	M8	120	41-43/95	40.57
MSV500	2	500	31.20	0.39	--	3000	330.0±2.5	331.0±2.5	241.0±2.5	171.0±2.0	I4	M8	150	41-43/95	40.57
MSV650	2	650	41.40	0.38	--	3900	330.0±2.5	331.0±2.5	307.0±2.5	171.0±2.0	I4	M8	165	41-43/95	40.57
MSV800	2	800	50.60	0.38	--	4800	330.0±2.5	331.0±2.5	373.0±2.5	174.0±2.0	I4	M8	240	41-43/95	40.57
MSV1000	2	1000	64.40	0.38	--	6000	330.0±2.5	331.0±2.5	471.0±2.5	171.0±2.0	I4	M8	300	41-43/95	40.57

- 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

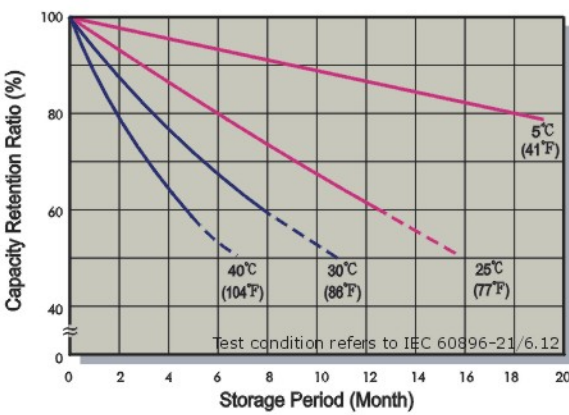
Expected Life vs. Operating Temperature



Typical Constant Voltage Charge Characteristics

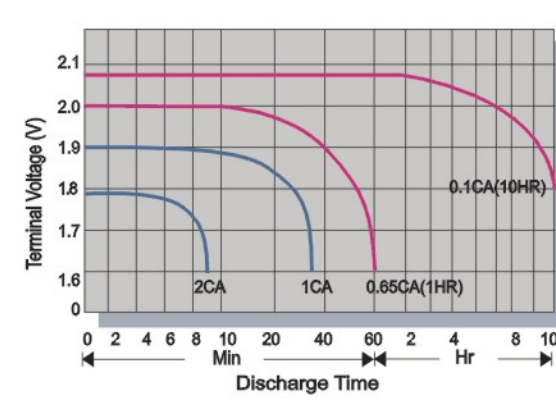


Capacity Retention Characteristics

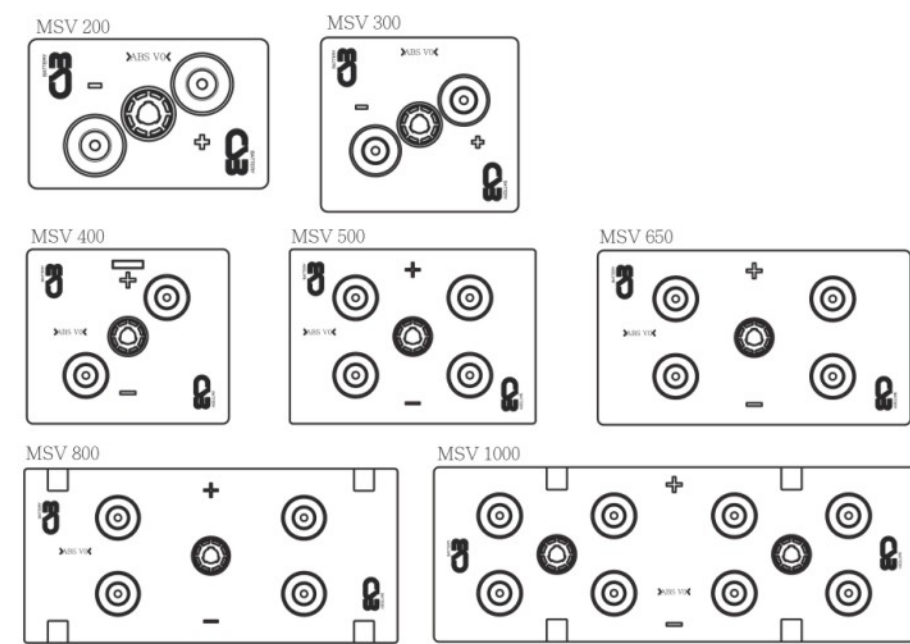


- The above diagrams are typical. For more detailed information, please see the specific product sheets.
- C is the capacity of 10-hour-rate while the final voltage is 1.80V per cell. For example, 1C discharge current of MSV200 is: 1 x 200 = 200 (A)

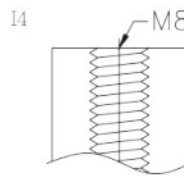
Discharge Characteristics



Terminal Position



Terminal Type



MSV200												
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	285	196	130	76.5	57.5	45.5	38.5	33.5	26.5	22.5	11.3	9.38
1.67V	260	187	124	74.0	54.5	44.0	37.0	32.0	26.0	22.0	11.0	9.17
1.70V	241	182	122	72.5	54.0	43.5	36.5	31.5	25.5	21.5	10.8	8.96
1.75V	210	168	112	68.5	50.5	41.1	34.5	30.0	24.5	20.5	10.3	8.54
1.80V	183	147	106	66.0	48.5	39.5	33.5	29.5	24.0	20.0	10.0	8.33
1.83V	159	130	97.5	62.0	46.5	37.5	32.0	28.0	22.8	19.5	9.75	8.13
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	466	344	231	139	104	83.5	70.5	62.0	50.0	42.0	21.0	17.5
1.67V	427	330	230	138	103	82.5	70.0	61.5	49.5	41.5	20.8	17.3
1.70V	407	319	223	135	101	82.0	69.5	60.5	48.5	41.0	20.5	17.1
1.75V	368	298	208	129	96.5	78.5	66.5	58.0	47.5	40.0	20.0	16.7
1.80V	336	267	196	124	92.5	75.5	64.5	56.5	46.0	39.5	19.8	16.5
1.83V	286	231	181	116	88.5	71.9	61.5	54.0	44.0	38.0	19.0	15.8

MSV300												
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	427	294	194	115	86.3	68.3	57.8	50.3	39.8	33.8	16.9	14.1
1.67V	389	280	185	111	81.8	66.0	55.5	48.0	39.0	33.0	16.5	13.8
1.70V	362	273	182	109	81.0	65.3	54.8	47.3	38.3	32.3	16.2	13.5
1.75V	316	252	168	103	75.8	61.7	51.8	45.0	36.8	30.8	15.4	12.8
1.80V	274	220	158	99.0	72.8	59.3	50.3	44.3	36.0	30.0	15.0	12.5
1.83V	238	195	146	93.0	69.8	56.3	48.0	42.0	34.2	29.3	14.7	12.2
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	700	517	346	208	156	125	106	93.0	75.0	63.0	31.5	26.3
1.67V	640	494	345	206	154	124	105	92.3	74.3	62.3	31.2	26.0
1.70V	610	479	334	202	151	123	104	90.8	72.8	61.5	30.8	25.6
1.75V	552	447	312	193	145	118	100	87.0	71.3	60.0	30.0	25.0
1.80V	504	400	294	185	139	113	96.8	84.8	69.0	59.3	29.7	24.7
1.83V	429	347	271	174	133	108	92.3	81.0	66.0	57.0	28.5	23.8

MSV400												
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	586	425	259	158	116	93.3	77.3	66.2	52.0	43.0	21.5	18.0
1.67V	543	399	253	156	115	92.5	76.7	65.8	51.7	42.9	21.4	17.9
1.70V	517	385	248	155	114	92.1	76.4	65.5	51.5	42.7	21.3	17.8
1.75V	476	354	237	152	113	90.7	75.4	64.8	51.0	42.3	21.2	17.6
1.80V	428	313	222	146	109	88.2	73.5	63.3	50.0	41.6	20.8	17.3
1.83V	381	284	211	140	106	85.7	71.5	61.7	48.9	40.8	20.4	17.0
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	884	733	474	292	212	169	142	124	99.2	83.5	41.8	34.8
1.67V	871	701	465	289	210	168	141	123	98.5	83.1	41.6	34.6
1.70V	862	679	458	287	209	167	141	122	98.3	83.0	41.5	34.6
1.75V	842	631	442	282	207	166	140	121	97.8	82.5	41.3	34.4
1.80V	755	566	420	273	203	164	139	120	96.8	81.5	40.8	34.0
1.83V	674	520	402	262	197	161	136	119	95.1	80.2	40.1	33.4

