

BATTERY
CSB



GP series
General Purpose
Full Product Line

ENERGY OF INFINITY ▼

Confidence & Creativity
Service & Sincerity
Belief & Bravery

GP

GP series

GP-series batteries have the widest range of applications. With VRLA technology, they are small, lightweight and can be used for more than 260 cycles at 100% discharge, or up to 5 years in standby service.

As with all CSB batteries, all GP series batteries are rechargeable, highly efficient, maintenance free, leakproof, viable in any orientation and ISO/UL certified.



Performance

- Multi-functional.
- For both cycle and standby use.
- Uniform plate formation for consistent capacity.
- Reduced internal resistance for superior performance.
- Provides hundreds to thousands of recharge cycles (cycle life is based on temperature and depth of discharge)
- No-spill design.
- Can be used in any orientation.
- Maintenance-free.
- Low self-discharge.

Service life

- Up to 5 years expected life under normal float charge conditions at 25 °C (77°F)
- Extended shelf life (up to 14 months at 20 °C)

Reliability

- CSB manufactured batteries are 100% 2-cycle tested by CCDS.
- CSB-manufactured batteries are UL-recognized components under UL 924 and UL 1989. CSB file number MH 14533.
- ISO 9001/14001 certified.

Applications

Standby use

- UPS.
- Workstation UPS.
- Emergency lighting equipment.
- Precision instrument backup power.
- Fire alarm and security systems.
- Communications and electrical equipment.
- Office computers, microcomputers and OA equipment.
- Robots, control equipment and other FA equipment.
- Telemeters.
- Emergency power supply in power plants & substations.

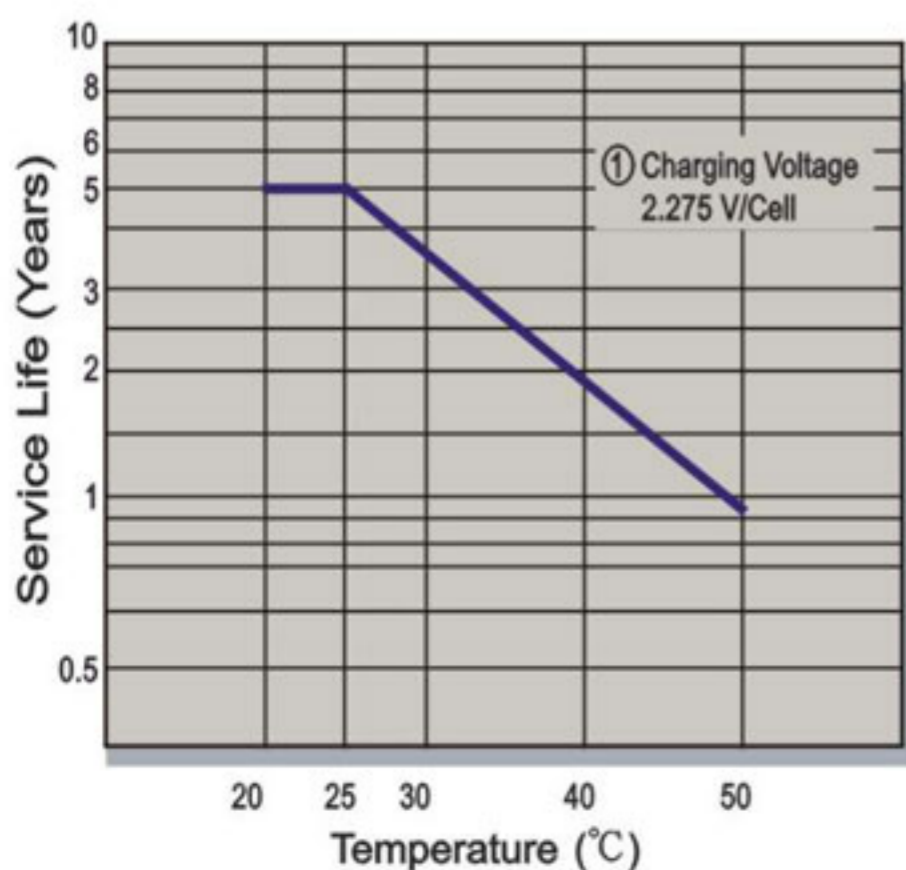
Cycle use

- Portable measuring equipment.
- Cameras and photographic equipment.
- Various toys and hobby equipment.

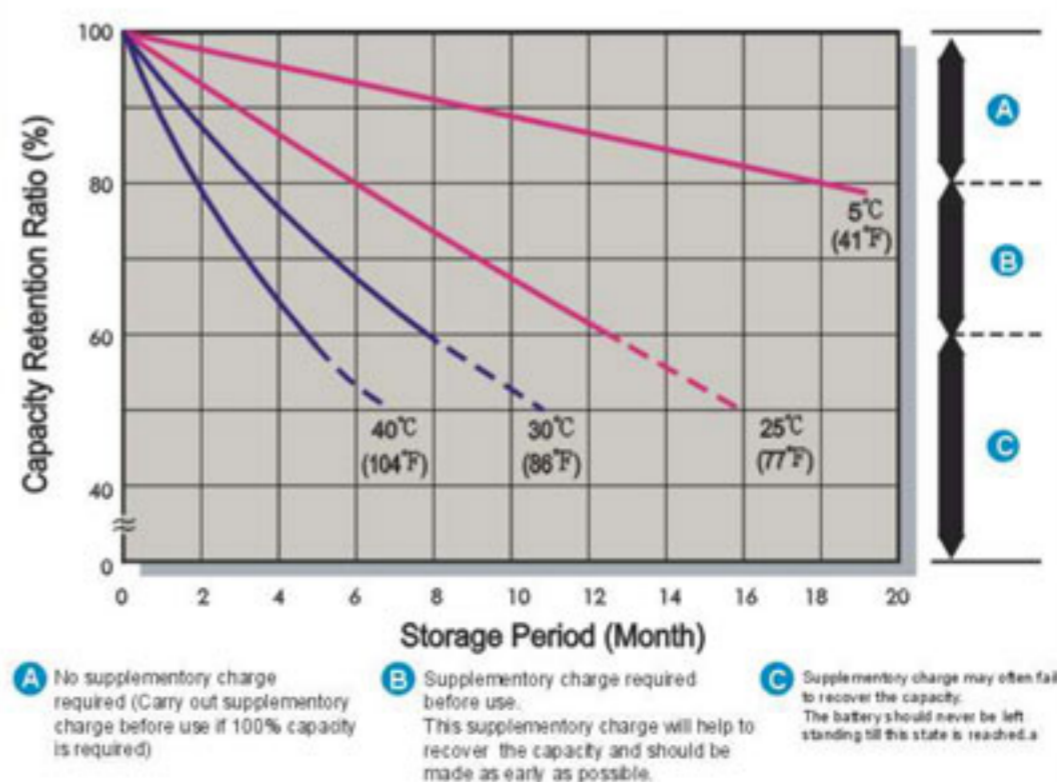
Solar Cell Power Generation

- Street lighting.
- Portable power supply.
- Water pumping.
- Rural power systems.

Trickle (or Float) Service Life



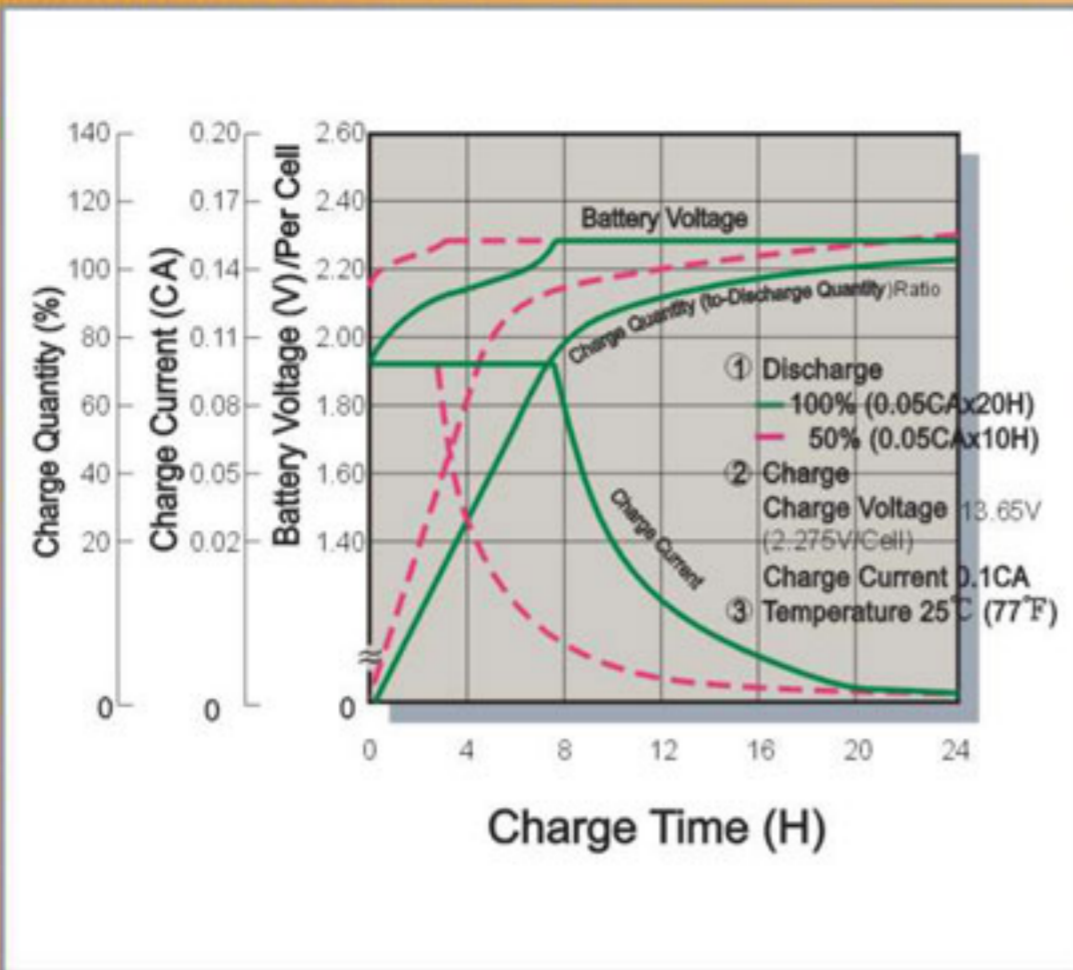
Capacity Retention Characteristic



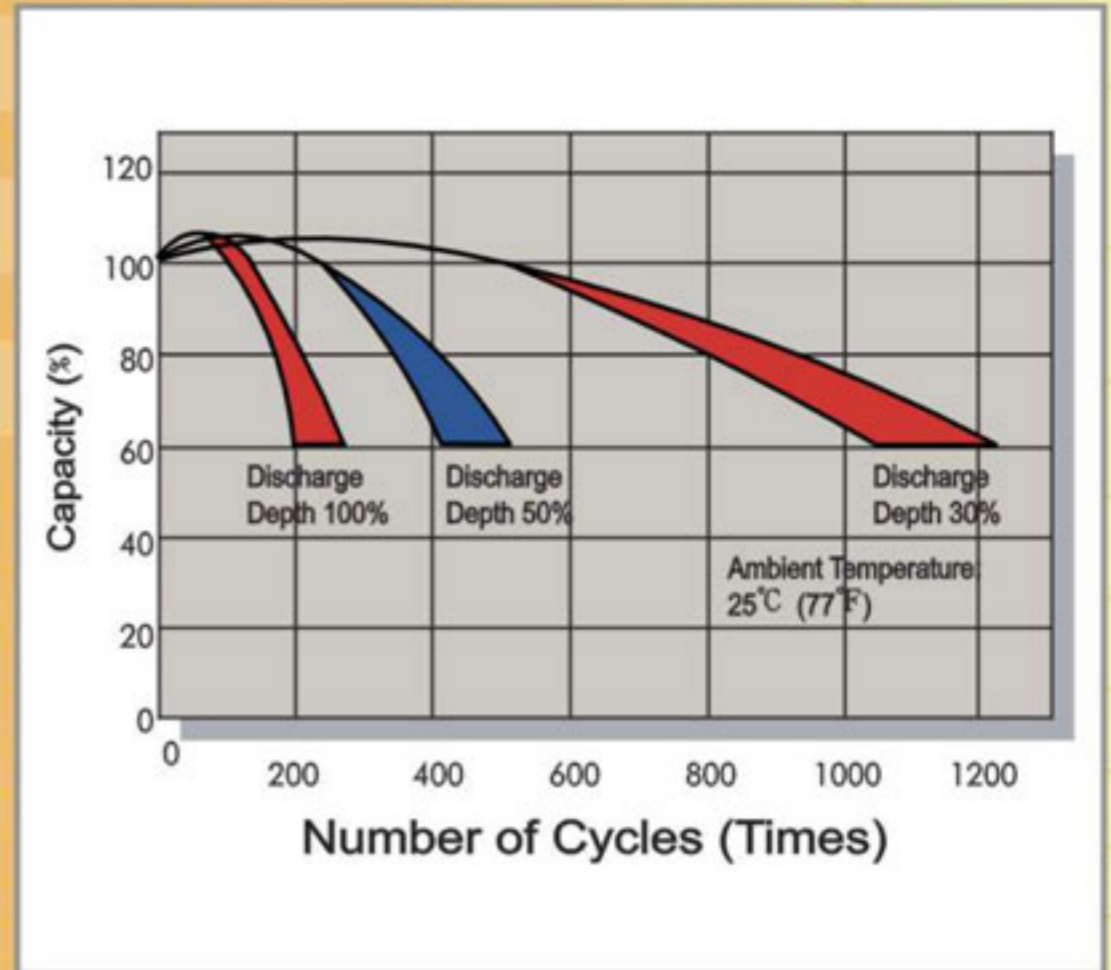
- A** No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)
- B** Supplementary charge required before use. This supplementary charge will help to recover the capacity and should be made as early as possible.
- C** Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached.

Supplementary charge and storage guidelines

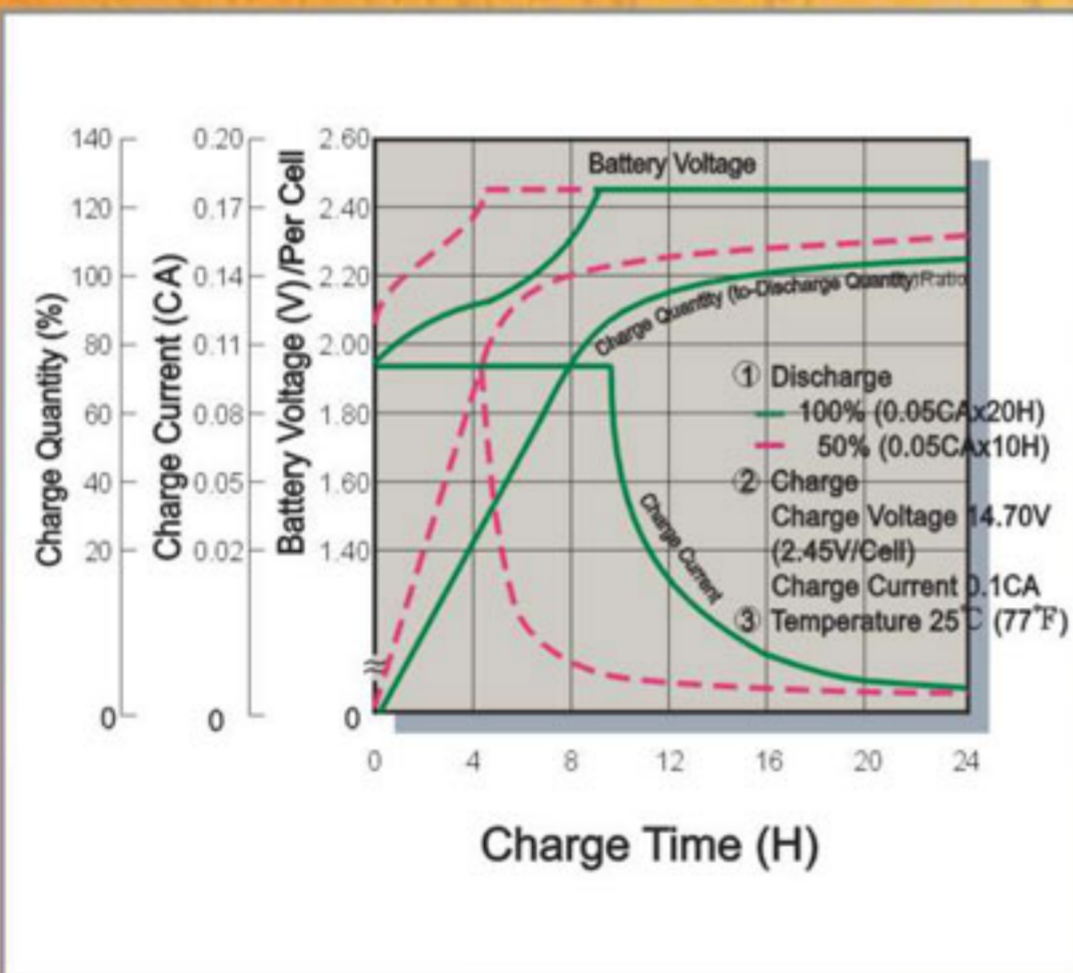
Battery Voltage and Charge Time for Standby Use



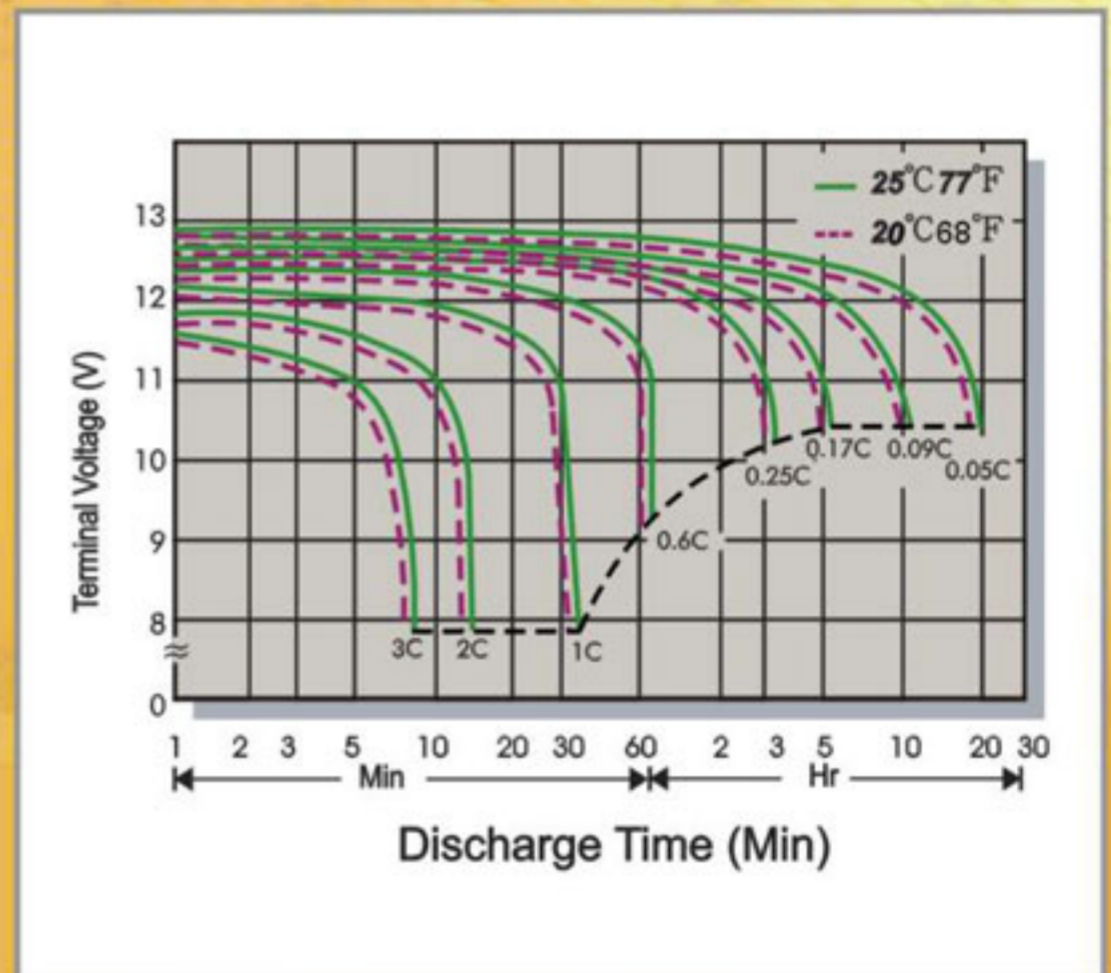
Cycle Service Life



Battery Voltage and Charge Time for Cycle Use



Terminal Voltage (V) and Discharge Time

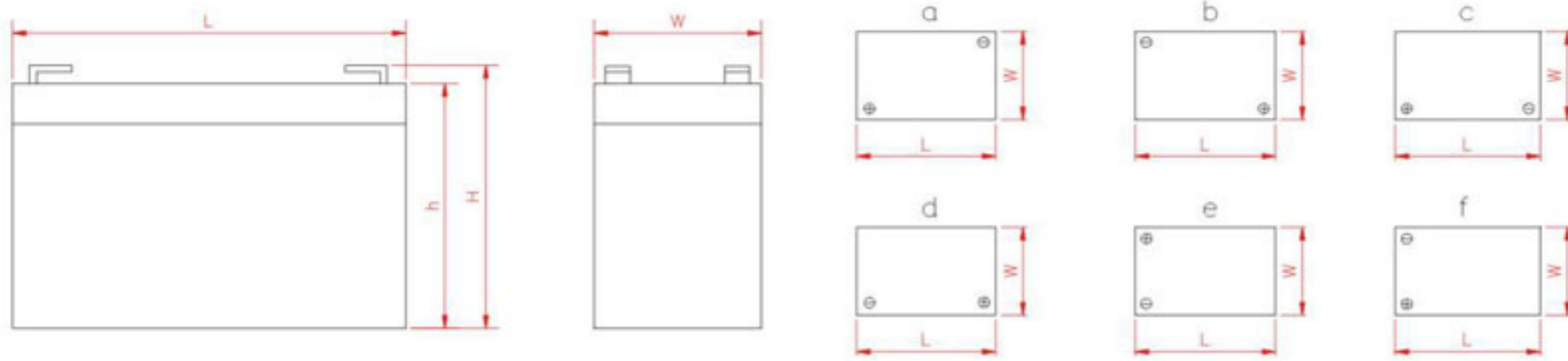


Specifications

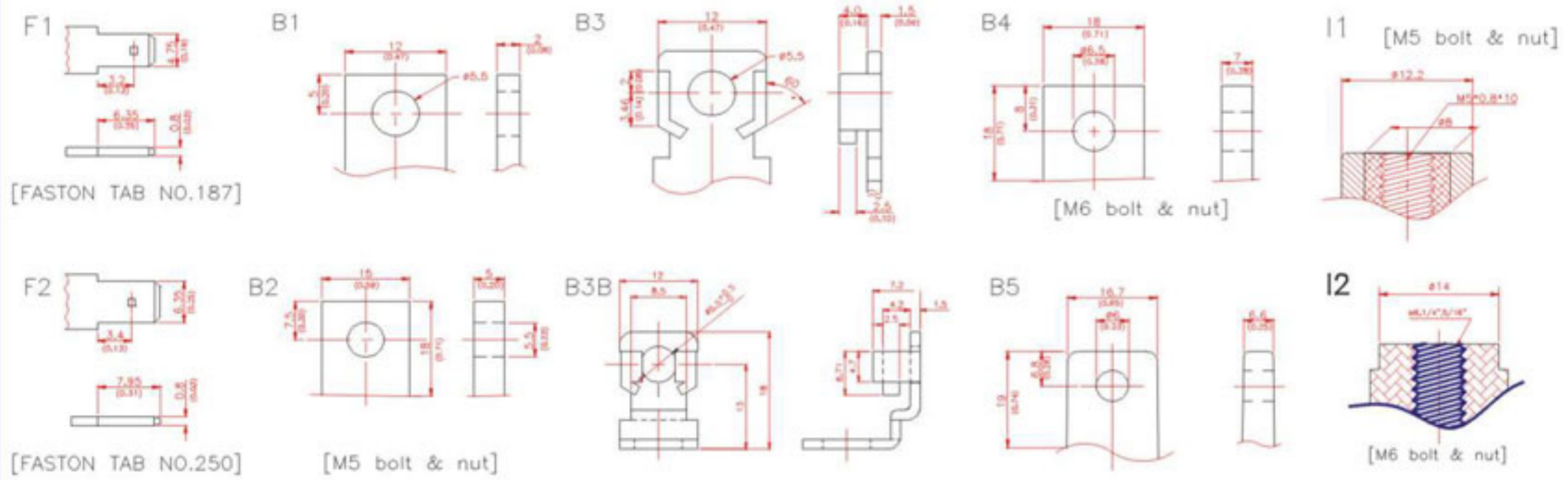
Battery Type	Nominal Voltage(V)	Nominal Capacity (20hr)(Ah)	Weight (Approx. kg)	Energy Density (Wh/L)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec. (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)				kgf-cm/lbf-in	N-m
GP645	6	4.5	0.84	78.8	32.14	19.00	60/90	108±1.5	102±1.5	70±1.0	48±1.0	a	F1/F2	1.35	--	--
GP672	6	7.2	1.22	89.5	35.50	15.50	100/130	100±1.0	94±1.0	151±2.0	34±1.0	c	F1/F2	2.16	--	--
GP6120	6	12.0	1.85	101.5	38.92	8.50	150/180	100±1.0	94±1.0	151±2.0	50±1.0	c	F1/F2	3.60	--	--
GP1222	12	2.2	0.90	72.7	29.33	63.00	40/60	66±1.0	60±1.0	178±0.5	34±0.5	c	F1/F2	0.66	--	--
GP1245	12	4.5	1.66	81.6	32.53	40.50	60/90	108±1.5	102±1.5	92.8±1.0	69.9±1.0	c	F1/F2	1.35	--	--
GP1272	12	7.2	2.40	93.6	36.00	23.00	100/130	100±1.0	94±1.0	151±2.0	65±1.0	e	F1/F2	2.16	--	--
GP12120	12	12.0	3.67	103.5	39.24	16.00	150/180	100±1.0	94±1.0	151±2.0	98±1.0	e	F1/F2	3.60	--	--
GP12170	12	17.0	5.50	89.4	37.09	16.00	230	167±2.0	165.5±2.0	181±2.0	76.2±1.0	d	B1/B3	5.10	65/56	6.37
GP12200	12	20.0	6.40	108.8	37.50	13.00	230	167±2.0	160±2.0	181±2.0	76.2±1.0	d	I1	6.00	65/56	6.37
GP12260	12	26.0	8.45	88.0	36.92	11.00	350	125±1.5	122±1.5	175±2.0	166±2.0	d	B1/B3/B3B	7.80	65/56	6.37
GP12340	12	34.0	10.48	103.7	38.93	8.00	380	178.3±2.0	154.8±2.0	195.6±2.0	130±1.5	c	B5	10.20	127/110	12.45
GP12400	12	40.0	12.63	87.6	38.00	11.00	400	170±2.0	168.5±2.0	197±2.0	165±2.0	d	B2	12.00	65/56	6.37
GP12650	12	65.0	20.00	78.0	39.00	8.00	500	174±2.0	172.5±2.0	349.4±2.5	166±2.0	d	B4	19.50	127/110	12.45
GP121000	12	100.0	31.20	95.9	38.46	4.50	800	217.6±2.5	214.6±2.5	343±2.5	170±2.0	f	I2	30.00	127/110	12.45

Charging(V) : • Standby Use : 2.275V±0.025V/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



Terminal Type



GP645

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	18.7	12.3	9.08	5.37	3.11	1.80	1.26	0.994	0.810	0.535	0.439	0.234
1.67V	17.6	11.8	8.89	5.31	3.10	1.79	1.25	0.987	0.808	0.533	0.438	0.233
1.70V	17.0	11.6	8.79	5.28	3.08	1.78	1.24	0.984	0.807	0.532	0.437	0.232
1.75V	16.1	11.2	8.62	5.22	3.06	1.77	1.23	0.979	0.804	0.531	0.435	0.229
1.80V	15.0	10.7	8.42	5.13	3.03	1.76	1.22	0.975	0.801	0.529	0.431	0.225
1.85V	13.8	10.3	8.22	5.05	3.00	1.75	1.21	0.971	0.798	0.528	0.428	0.221

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	111	72.4	54.8	32.9	19.3	11.1	8.06	6.41	5.34	3.55	2.90	1.60
1.67V	103	69.7	53.3	32.7	19.2	11.0	7.98	6.37	5.30	3.54	2.89	1.59
1.70V	99.5	68.6	52.5	32.4	19.1	10.9	7.95	6.32	5.25	3.52	2.88	1.58
1.75V	93.9	66.4	51.2	32.3	19.0	10.8	7.88	6.27	5.21	3.51	2.87	1.57
1.80V	88.5	64.1	50.0	31.8	18.8	10.7	7.86	6.21	5.17	3.48	2.86	1.56
1.85V	82.7	61.1	48.3	30.5	18.3	10.6	7.75	6.17	5.11	3.45	2.82	1.55

GP672

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	35.6	22.0	16.5	9.61	5.51	3.08	2.14	1.65	1.35	0.925	0.778	0.456
1.67V	33.1	21.0	15.9	9.36	5.42	3.03	2.09	1.60	1.32	0.906	0.762	0.447
1.70V	31.9	20.5	15.6	9.24	5.37	3.00	2.06	1.58	1.30	0.897	0.756	0.438
1.75V	29.6	19.6	15.1	9.03	5.30	2.96	2.02	1.54	1.28	0.883	0.742	0.428
1.80V	27.2	18.6	14.4	8.77	5.23	2.92	1.99	1.50	1.25	0.871	0.732	0.421
1.85V	24.5	17.4	13.7	8.45	5.14	2.87	1.96	1.48	1.23	0.861	0.720	0.409

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	180	123	91.4	53.9	32.2	18.8	13.3	10.4	8.63	5.88	4.90	2.69
1.67V	170	118	88.7	52.9	31.8	18.5	13.2	10.3	8.51	5.80	4.84	2.64
1.70V	165	115	87.2	52.4	31.6	18.4	13.1	10.2	8.46	5.76	4.77	2.62
1.75V	157	111	85.0	51.6	31.2	18.2	13.0	10.1	8.36	5.71	4.74	2.58
1.80V	147	106	82.3	50.6	30.9	18.0	12.8	10.0	8.27	5.65	4.70	2.54
1.85V	138	101	79.2	49.5	30.4	17.7	12.6	9.80	8.17	5.61	4.65	2.50

GP6120**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	51.2	33.2	23.9	13.9	8.14	4.70	3.37	2.70	2.24	1.45	1.19	0.622
1.67V	48.2	32.0	23.6	13.7	8.12	4.62	3.36	2.67	2.21	1.44	1.18	0.618
1.70V	46.3	31.6	23.3	13.6	8.09	4.61	3.32	2.63	2.18	1.43	1.17	0.613
1.75V	43.3	30.0	22.6	13.4	8.03	4.58	3.26	2.58	2.13	1.41	1.16	0.611
1.80V	38.8	28.0	21.5	13.0	7.81	4.48	3.17	2.50	2.06	1.38	1.14	0.594
1.85V	34.2	25.3	19.8	12.3	7.51	4.29	3.03	2.36	1.97	1.32	1.09	0.572

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	269	173	134	79.8	48.9	28.0	19.8	15.3	12.7	8.37	6.91	3.85
1.67V	257	171	132	79.6	48.8	27.8	19.7	15.2	12.6	8.30	6.85	3.82
1.70V	250	168	131	78.8	48.5	27.7	19.5	15.1	12.5	8.25	6.80	3.81
1.75V	231	163	128	78.1	48.1	27.5	19.3	14.9	12.2	8.12	6.69	3.77
1.80V	209	153	121	76.3	47.4	26.8	18.9	14.5	12.0	7.92	6.53	3.71
1.85V	185	140	111	72.2	45.8	26.3	18.1	14.1	11.7	7.74	6.36	3.62

GP1222**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	8.67	5.90	4.45	2.63	1.42	0.820	0.590	0.470	0.390	0.260	0.219	0.125
1.67V	7.94	5.50	4.17	2.49	1.36	0.787	0.569	0.449	0.371	0.249	0.209	0.118
1.70V	7.57	5.27	4.02	2.42	1.33	0.774	0.560	0.440	0.363	0.244	0.205	0.115
1.75V	6.75	4.76	3.68	2.25	1.30	0.751	0.540	0.425	0.351	0.238	0.199	0.110
1.80V	5.84	4.16	3.31	2.08	1.25	0.730	0.520	0.410	0.340	0.231	0.192	0.105
1.85V	4.79	3.48	2.82	1.90	1.21	0.710	0.504	0.395	0.330	0.225	0.185	0.100

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	104	70.8	54.5	32.3	17.0	9.79	7.11	5.62	4.64	3.06	2.59	1.41
1.67V	94.0	66.5	51.7	30.2	16.3	9.45	6.82	5.39	4.45	2.93	2.49	1.35
1.70V	89.7	63.6	49.9	29.2	16.0	9.28	6.69	5.29	4.37	2.88	2.44	1.32
1.75V	81.0	57.5	45.7	27.0	15.5	8.99	6.49	5.13	4.24	2.80	2.37	1.28
1.80V	70.1	49.9	39.7	24.9	15.0	8.70	6.28	4.96	4.10	2.71	2.29	1.24
1.85V	57.5	41.8	33.8	22.7	14.5	8.41	6.08	4.80	3.97	2.63	2.22	1.20

GP1245**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	18.7	12.3	9.08	5.37	3.11	1.80	1.26	0.994	0.810	0.535	0.439	0.234
1.67V	17.6	11.8	8.89	5.31	3.10	1.79	1.25	0.987	0.808	0.533	0.438	0.233
1.70V	17.0	11.6	8.79	5.28	3.08	1.78	1.24	0.984	0.807	0.532	0.437	0.232
1.75V	16.1	11.2	8.62	5.22	3.06	1.77	1.23	0.979	0.804	0.531	0.435	0.229
1.80V	15.0	10.7	8.42	5.13	3.03	1.76	1.22	0.975	0.801	0.529	0.431	0.225
1.85V	13.8	10.3	8.22	5.05	3.00	1.75	1.21	0.971	0.798	0.528	0.428	0.221

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	221	145	110	65.9	38.6	22.2	16.1	12.8	10.7	7.10	5.80	3.19
1.67V	206	139	107	65.4	38.4	22.0	16.0	12.7	10.6	7.08	5.78	3.18
1.70V	199	137	105	64.9	38.1	21.9	15.9	12.6	10.5	7.04	5.77	3.17
1.75V	188	133	102	64.7	38.0	21.8	15.8	12.5	10.4	7.03	5.74	3.16
1.80V	177	128	100	63.6	37.7	21.5	15.7	12.4	10.3	6.97	5.72	3.13
1.85V	165	122	96.6	60.9	36.7	21.3	15.5	12.3	10.2	6.89	5.64	3.09

GP1272**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	35.6	22.0	16.5	9.61	5.51	3.08	2.14	1.65	1.35	0.925	0.778	0.456
1.67V	33.1	21.0	15.9	9.36	5.42	3.03	2.09	1.60	1.32	0.906	0.762	0.447
1.70V	31.9	20.5	15.6	9.24	5.37	3.00	2.06	1.58	1.30	0.897	0.756	0.438
1.75V	29.6	19.6	15.1	9.03	5.30	2.96	2.02	1.54	1.28	0.883	0.742	0.428
1.80V	27.2	18.6	14.4	8.77	5.23	2.92	1.99	1.50	1.25	0.871	0.732	0.421
1.85V	24.5	17.4	13.7	8.45	5.14	2.87	1.96	1.48	1.23	0.861	0.720	0.409

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	360	245	183	108	64.4	37.7	26.6	20.8	17.3	11.8	9.80	5.37
1.67V	340	235	177	106	63.6	37.1	26.3	20.5	17.0	11.6	9.69	5.27
1.70V	331	231	174	105	63.1	36.9	26.2	20.4	16.9	11.5	9.54	5.23
1.75V	313	222	170	103	62.4	36.4	25.9	20.2	16.7	11.4	9.48	5.15
1.80V	295	213	165	101	61.7	35.9	25.6	19.9	16.5	11.3	9.40	5.07
1.85V	276	202	158	99.0	60.8	35.4	25.2	19.6	16.3	11.2	9.29	4.99

GP12120**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	51.2	33.2	23.9	13.9	8.14	4.70	3.37	2.70	2.24	1.45	1.19	0.622
1.67V	48.2	32.0	23.6	13.7	8.12	4.62	3.36	2.67	2.21	1.44	1.18	0.618
1.70V	46.3	31.6	23.3	13.6	8.09	4.61	3.32	2.63	2.18	1.43	1.17	0.613
1.75V	43.3	30.0	22.6	13.4	8.03	4.58	3.26	2.58	2.13	1.41	1.16	0.611
1.80V	38.8	28.0	21.5	13.0	7.81	4.48	3.17	2.50	2.06	1.38	1.14	0.594
1.85V	34.2	25.3	19.8	12.3	7.51	4.29	3.03	2.36	1.97	1.32	1.09	0.572

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	539	347	268	160	97.9	55.9	39.6	30.5	25.3	16.7	13.8	7.70
1.67V	515	342	265	159	97.7	55.6	39.3	30.4	25.2	16.6	13.7	7.63
1.70V	499	336	262	158	97.0	55.4	39.0	30.1	25.0	16.5	13.6	7.62
1.75V	462	326	256	156	96.1	54.9	38.5	29.8	24.4	16.2	13.4	7.55
1.80V	418	307	243	153	94.8	53.7	37.7	29.1	24.1	15.8	13.1	7.43
1.85V	369	280	221	144	91.6	52.6	36.3	28.2	23.3	15.5	12.7	7.24

GP12170**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	80.2	50.9	38.5	23.4	13.8	8.03	5.72	4.44	3.63	2.37	1.93	1.00
1.67V	71.2	47.5	36.5	22.9	13.7	8.00	5.69	4.43	3.62	2.36	1.90	0.958
1.70V	67.4	45.8	35.6	22.7	13.6	7.98	5.68	4.42	3.61	2.35	1.89	0.940
1.75V	61.0	43.1	34.1	22.3	13.4	7.93	5.65	4.41	3.60	2.33	1.86	0.910
1.80V	54.5	40.2	32.7	21.8	13.3	7.87	5.61	4.38	3.58	2.30	1.83	0.880
1.85V	48.0	37.3	31.0	21.2	13.1	7.81	5.57	4.36	3.57	2.28	1.80	0.850

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	890	583	449	281	166	96.4	68.6	53.3	43.6	28.4	23.1	12.0
1.67V	790	544	423	275	164	96.0	68.5	53.1	43.4	28.3	22.8	11.5
1.70V	748	527	413	272	163	95.8	68.4	53.0	43.3	28.2	22.7	11.3
1.75V	677	493	395	267	161	95.3	67.9	52.8	43.2	27.9	22.4	10.9
1.80V	605	460	377	261	160	94.6	67.3	52.6	43.0	27.6	22.0	10.5
1.85V	533	427	361	254	158	93.8	66.8	52.3	42.9	27.3	21.7	10.1

GP12200**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	87.5	55.5	42.3	25.5	15.1	8.75	6.23	4.92	3.97	2.62	2.10	1.09
1.67V	77.7	51.8	39.7	24.9	15.0	8.69	6.22	4.90	3.94	2.61	2.07	1.05
1.70V	73.5	50.2	38.7	24.7	14.9	8.67	6.20	4.89	3.93	2.60	2.06	1.03
1.75V	66.4	47.0	37.1	24.2	14.8	8.55	6.17	4.86	3.92	2.59	2.04	1.00
1.80V	59.3	43.8	35.2	23.8	14.5	8.42	6.12	4.83	3.91	2.58	2.00	0.960
1.85V	52.2	40.5	33.7	23.2	14.3	8.30	6.07	4.79	3.90	2.57	1.97	0.925

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	1,050	666	507	306	181	105	74.7	59.0	47.6	31.4	25.2	13.1
1.67V	932	621	481	301	179	104	74.6	58.9	47.3	31.3	24.9	12.5
1.70V	882	602	466	299	178	103	74.3	58.7	47.2	31.2	24.8	12.3
1.75V	797	564	446	292	176	102	74.0	58.5	47.1	31.1	24.4	11.9
1.80V	712	525	421	285	174	101	73.4	58.0	46.9	31.0	24.0	11.5
1.85V	627	487	404	278	171	99.5	72.8	57.6	46.8	30.9	23.6	11.1

GP12260**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	106	69.0	52.8	32.7	19.6	11.5	8.14	6.37	5.24	3.46	2.82	1.47
1.67V	99.0	65.9	51.1	32.3	19.5	11.4	8.13	6.36	5.23	3.43	2.79	1.43
1.70V	95.7	64.6	50.4	32.2	19.4	11.3	8.12	6.35	5.22	3.42	2.78	1.41
1.75V	89.7	62.0	49.0	31.6	19.3	11.2	8.11	6.34	5.21	3.39	2.74	1.37
1.80V	83.3	59.4	47.5	31.1	19.2	11.1	8.10	6.33	5.19	3.35	2.70	1.33
1.85V	76.7	56.5	45.8	30.5	19.1	11.0	8.09	6.32	5.17	3.32	2.66	1.29

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	1,270	828	634	392	235	138	97.7	76.4	62.9	41.5	33.8	17.6
1.67V	1,181	790	610	385	234	137	97.6	76.3	62.8	41.2	33.5	17.1
1.70V	1,139	772	602	382	233	136	97.5	76.2	62.7	41.0	33.3	16.9
1.75V	1,071	744	586	378	232	135	97.4	76.1	62.6	40.6	32.9	16.5
1.80V	999	713	570	373	231	134	97.3	76.0	62.3	40.2	32.4	16.0
1.85V	920	678	550	367	230	133	97.2	75.9	62.1	39.8	32.0	15.6

GP12340**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	144	91.7	69.3	42.1	25.0	14.5	10.3	8.00	6.55	4.26	3.48	1.86
1.67V	128	85.5	65.5	41.3	24.7	14.4	10.2	7.97	6.51	4.24	3.43	1.78
1.70V	121	82.8	63.8	40.8	24.5	14.3	10.1	7.95	6.49	4.23	3.41	1.75
1.75V	110	77.5	61.2	40.0	24.4	14.2	10.0	7.94	6.47	4.19	3.36	1.70
1.80V	98.0	72.3	58.8	39.2	24.0	14.1	9.91	7.89	6.45	4.14	3.30	1.64
1.85V	86.3	67.0	55.7	38.2	23.6	14.0	9.81	7.85	6.43	4.10	3.25	1.59

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	1,732	1,100	832	505	300	174	124	96.0	78.6	51.1	41.7	21.6
1.67V	1,539	1,026	788	495	297	173	123	95.8	78.1	50.8	41.1	20.7
1.70V	1,456	994	771	490	295	172	122	95.7	77.9	50.7	40.9	20.3
1.75V	1,316	931	739	481	292	171	121	95.2	77.7	50.2	40.3	19.6
1.80V	1,176	867	705	470	288	170	120	94.7	77.4	49.6	39.6	18.9
1.85V	1,036	804	669	458	283	169	119	94.2	77.2	49.1	39.0	18.2

GP12400**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	176	113	85.0	51.8	30.6	17.7	12.6	9.83	8.01	5.25	4.28	2.21
1.67V	157	105	81.0	50.8	30.3	17.6	12.5	9.77	7.98	5.19	4.20	2.12
1.70V	149	101	78.7	50.1	30.2	17.5	12.4	9.75	7.96	5.17	4.16	2.08
1.75V	135	95.0	75.5	49.0	30.0	17.4	12.3	9.71	7.93	5.10	4.09	2.01
1.80V	121	88.3	71.7	47.6	29.8	17.3	12.2	9.67	7.89	5.03	4.03	1.93
1.85V	107	81.7	67.8	46.2	29.4	17.2	12.1	9.63	7.85	4.96	3.96	1.86

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	2,110	1,350	1,020	622	367	212	151	118	96.1	63.0	51.3	26.5
1.67V	1,886	1,259	972	606	364	211	150	117	95.7	62.3	50.4	25.4
1.70V	1,790	1,214	945	600	363	210	149	116	95.5	62.0	50.0	24.9
1.75V	1,620	1,140	902	585	360	209	148	115	95.2	61.2	49.2	24.1
1.80V	1,450	1,060	860	571	357	208	147	114	94.8	60.4	48.3	23.2
1.85V	1,280	980	814	555	353	207	146	113	94.2	59.6	47.5	22.4

GP12650**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	271	173	132	79.9	47.2	27.3	19.4	15.1	12.4	8.08	6.58	3.57
1.67V	242	162	124	78.3	46.9	27.2	19.3	15.0	12.3	7.98	6.48	3.42
1.70V	229	157	121	77.3	46.7	27.1	19.2	14.9	12.2	7.93	6.43	3.36
1.75V	208	147	117	75.4	46.4	27.0	19.1	14.8	12.1	7.86	6.32	3.25
1.80V	186	137	111	73.4	45.9	26.9	19.0	14.7	12.0	7.76	6.21	3.14
1.85V	164	127	105	71.3	45.4	26.8	18.9	14.6	11.9	7.66	6.10	3.03

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	3,250	2,080	1,580	959	566	327	232	181	148	97.0	79.0	40.9
1.67V	2,900	1,940	1,503	935	562	326	231	180	147	96.0	77.7	39.2
1.70V	2,750	1,871	1,460	924	560	325	230	179	146	95.5	77.1	38.4
1.75V	2,490	1,760	1,400	903	555	324	229	178	145	94.3	75.8	37.1
1.80V	2,230	1,640	1,330	881	550	323	228	177	144	93.1	74.5	35.7
1.85V	1,970	1,520	1,260	856	545	322	227	176	143	91.9	73.2	34.4

GP121000**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	374	257	197	121	70.1	39.9	29.0	22.7	18.6	12.3	10.1	5.40
1.67V	346	242	187	117	68.8	39.2	28.6	22.3	18.3	12.1	9.94	5.30
1.70V	332	236	183	116	68.1	38.9	28.4	22.0	18.2	12.0	9.86	5.20
1.75V	305	222	175	113	66.8	38.4	27.9	21.7	17.9	11.8	9.72	5.10
1.80V	276	206	164	109	65.4	37.6	27.3	21.2	17.5	11.5	9.59	5.00
1.85V	242	185	152	103	63.5	36.6	26.5	20.7	17.1	11.3	9.40	4.80

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

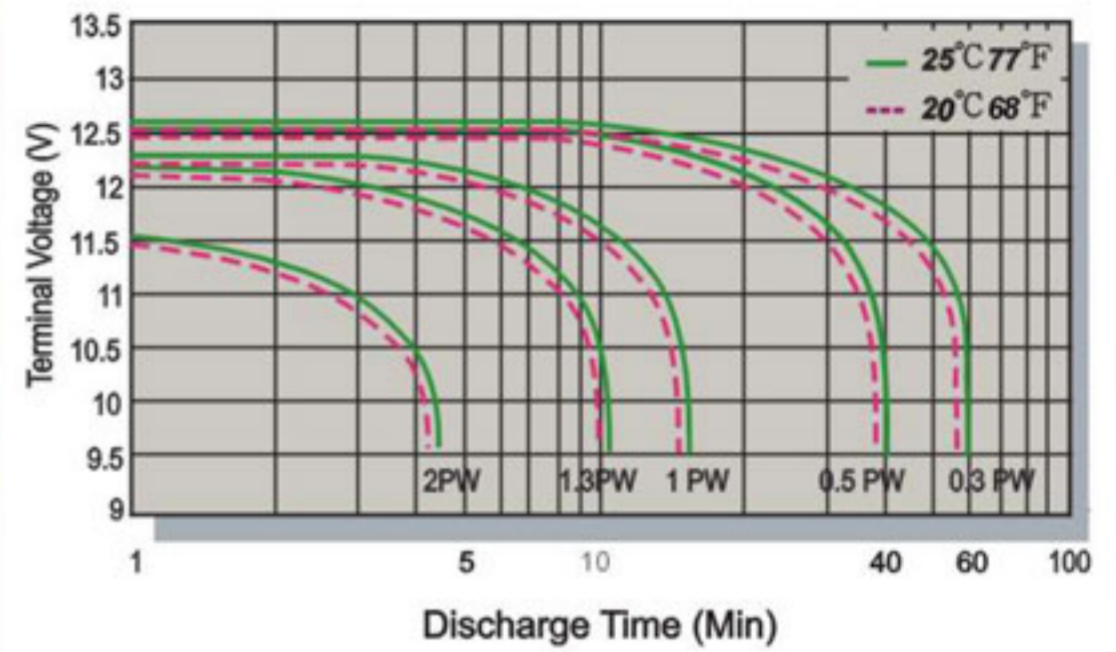
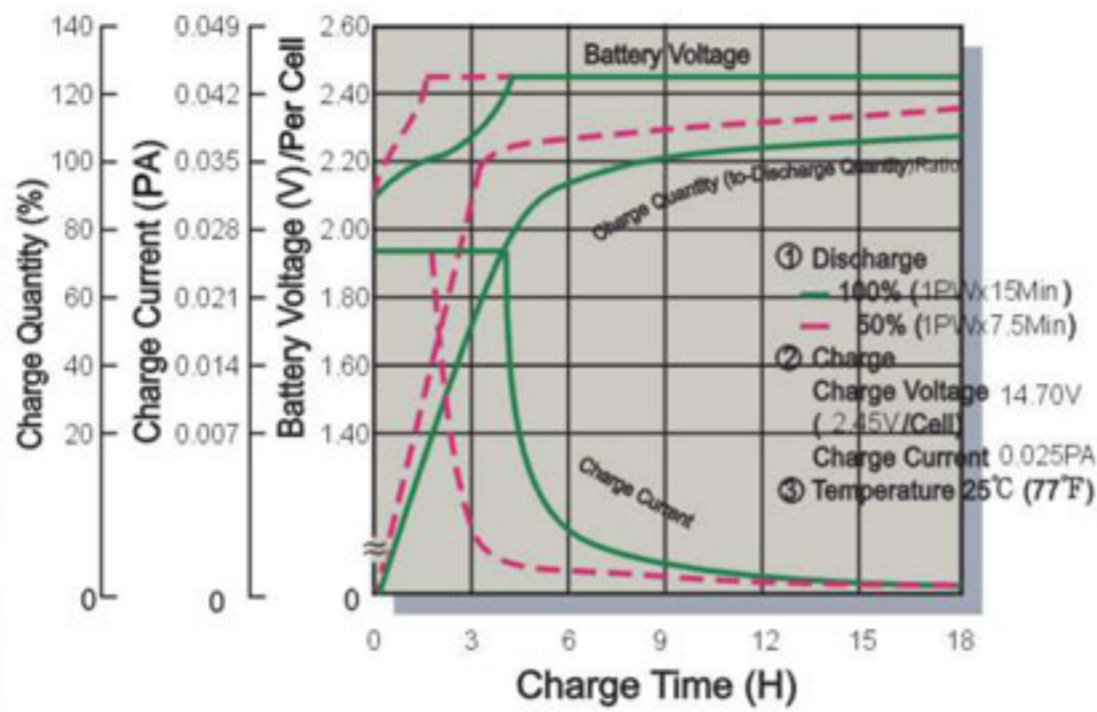
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	4023	2838	2223	1366	802	459	335	263	216	143	117	61.1
1.67V	3690	2659	2094	1325	785	453	328	260	213	141	115	60.5
1.70V	3516	2578	2036	1306	778	449	325	258	211	140	114	60.0
1.75V	3242	2420	1931	1267	763	441	320	254	208	138	113	59.5
1.80V	2927	2228	1815	1218	746	432	313	248	203	135	111	58.9
1.85V	2601	2024	1698	1165	725	422	306	240	198	132	109	56.6

GP1245(12V 16W)

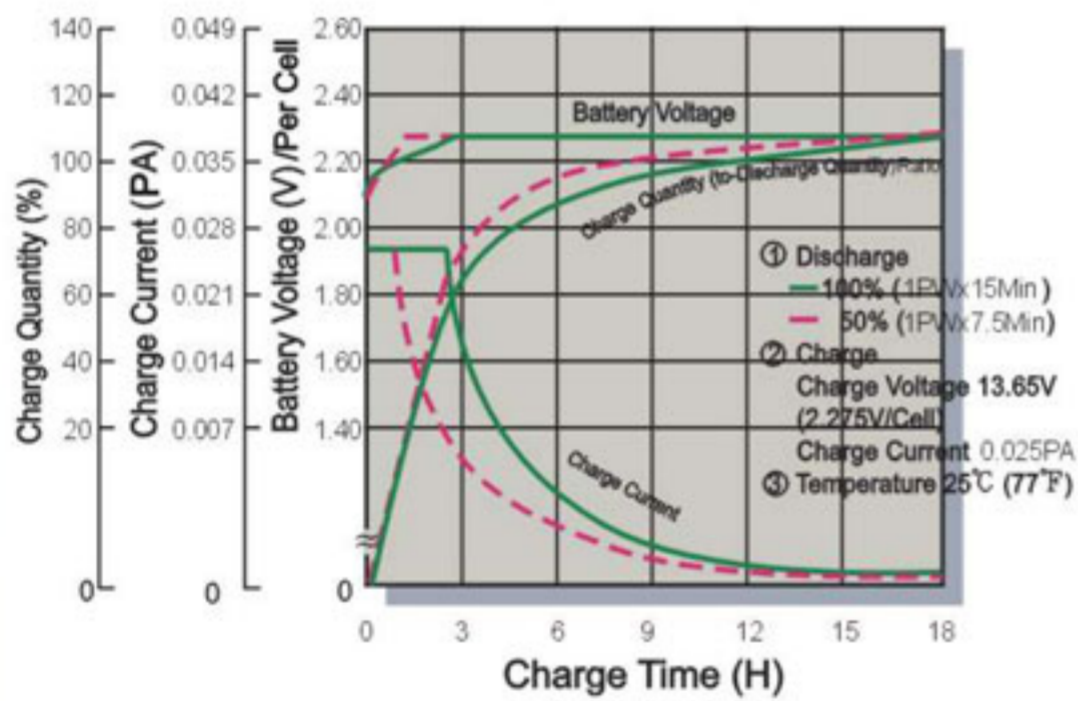
GP1272(12V28W)

Battery Voltage and Charge Time for Cycle Use

Terminal Voltage (V) and Discharge Time



Battery Voltage and Charge Time for Standby Use



Specifications

Type	Nominal Voltage(V)	Nominal Capacity (15min) (Wh/cell)	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	Terminal Type	Max. Charging Current (A)	Charging(V)	
								Height Over Terminal (h)	Container Height (h)	Length (L)	Width (W)				Standby Use	Cycle Use
GP1245 (12V16W)	12	16.0	1.40	37.4	17.14	33.00	60/90	107.7±1.5	101.8±1.5	90.0±1.0	70.0±1.0	c	F1/F2	1.35	2.275V±0.025V/CELL AT 25°C (77°F)	2.45V±0.05V/CELL AT 25°C (77°F)
GP1272 (12V28W)	12	28.7	2.10	45.5	20.00	21.00	100/130	100.0±1.0	94.0±1.0	151.0±2.0	65.0±1.0	e	F1/F2	2.16	Temp Coefficient -3.3mV/CELL°C	Temp Coefficient -5mV/CELL°C

GP1245(12V 16W)

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

F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	30.3	19.6	15.0	12.5	10.8	8.24	6.32	4.26	2.29	1.60
1.67V	28.1	18.5	14.3	12.0	10.4	8.02	6.11	4.14	2.22	1.55
1.70V	26.9	18.0	13.9	11.8	10.2	7.80	6.02	4.06	2.19	1.53
1.75V	24.9	17.0	13.3	11.4	9.86	7.60	5.85	3.97	2.14	1.49
1.80V	22.6	15.7	12.6	10.9	9.52	7.36	5.66	3.87	2.08	1.44
1.85V	20.2	14.5	11.8	10.4	9.16	7.12	5.46	3.77	2.01	1.38

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

F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	329	223	170	142	123	96.7	74.2	50.1	27.3	19.0
1.67V	306	210	163	138	120	96.0	72.4	49.0	26.7	18.6
1.70V	295	204	159	135	119	95.0	71.5	48.5	26.5	18.4
1.75V	275	194	153	131	116	94.1	69.8	47.7	26.0	18.0
1.80V	255	182	147	127	113	90.5	68.0	46.8	25.4	17.7
1.85V	233	169	139	121	109	86.9	65.4	45.6	24.8	17.3

GP1272(12V28W)

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

F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	58.3	39.7	29.9	24.1	20.8	15.0	12.0	8.73	4.98	3.52
1.67V	52.8	36.8	28.3	23.5	20.4	14.9	11.9	8.65	4.95	3.50
1.70V	50.2	35.4	27.5	23.0	20.1	14.7	11.8	8.61	4.92	3.48
1.75V	45.7	32.6	26.0	22.1	19.5	14.4	11.6	8.53	4.89	3.46
1.80V	41.1	29.8	24.4	20.7	18.5	13.9	11.2	8.26	4.81	3.41
1.85V	36.5	27.3	22.7	19.3	17.1	13.0	10.6	7.92	4.63	3.31

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

F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	595	410	318	268	232	174	139	101	58.5	41.8
1.67V	552	387	305	262	229	172	138	100	58.1	41.6
1.70V	532	373	298	260	226	171	137	99.3	57.8	41.4
1.75V	499	350	286	249	220	168	135	98.8	57.4	41.1
1.80V	464	327	272	237	212	162	132	96.8	56.4	40.6
1.85V	425	305	256	220	197	152	125	93.1	54.9	39.6



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