

BATTERY
CSB



HC series
High Rate
Special Cassette Design

PRODUCT APPLICATION ▼



- Confidence & Creativity
- Service & Sincerity
- Belief & Bravery

HC



HC series

HC-series batteries have a special cassette design. With VRLA technology, they can be easily and directly applied to electrical systems and equipment through their foolproof inner terminals.

The HC series battery is small, lightweight, and offers up to 5 years of standby service, or more than 260 cycles at 100% discharge. Its unique cassette design and high-rate discharge make the HC series a most innovative product. As with all CSB batteries, all HC series batteries are rechargeable, highly efficient, maintenance free, leakproof, viable in any orientation and ISO/UL certified.



Performance

- Innovative plate structure greatly increases energy/density ratios.
- Increased current delivery for high-rate discharge.
- Up to 50% greater resistance to grid growth under optimal temperatures.
- Reduced internal resistance for superior performance.
- Uniform plate formation for consistent capacity.
- No-spill design
- Viable in any orientation.
- Maintenance free.

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.

Long service life

- Lead-Calcium cast grid design makes for longer shelf/service life.

Special cassette design

- Easy replacement.
- Recessed terminals.
- Direct insertion into a PC board or UPS.
- New patent design 84304739, National Bureau of Standards.

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.
- Emergency power supply in power plants and Substations.

Cycle use

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

Solar Cell Power Generation

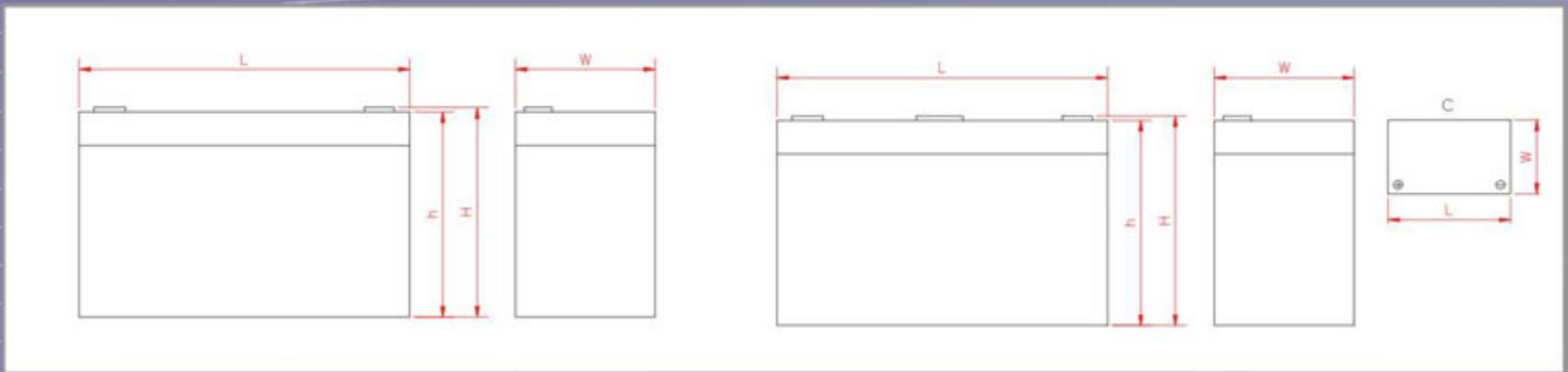
- Street lighting
- Portable power supply
- Water pumping systems
- Small town power systems



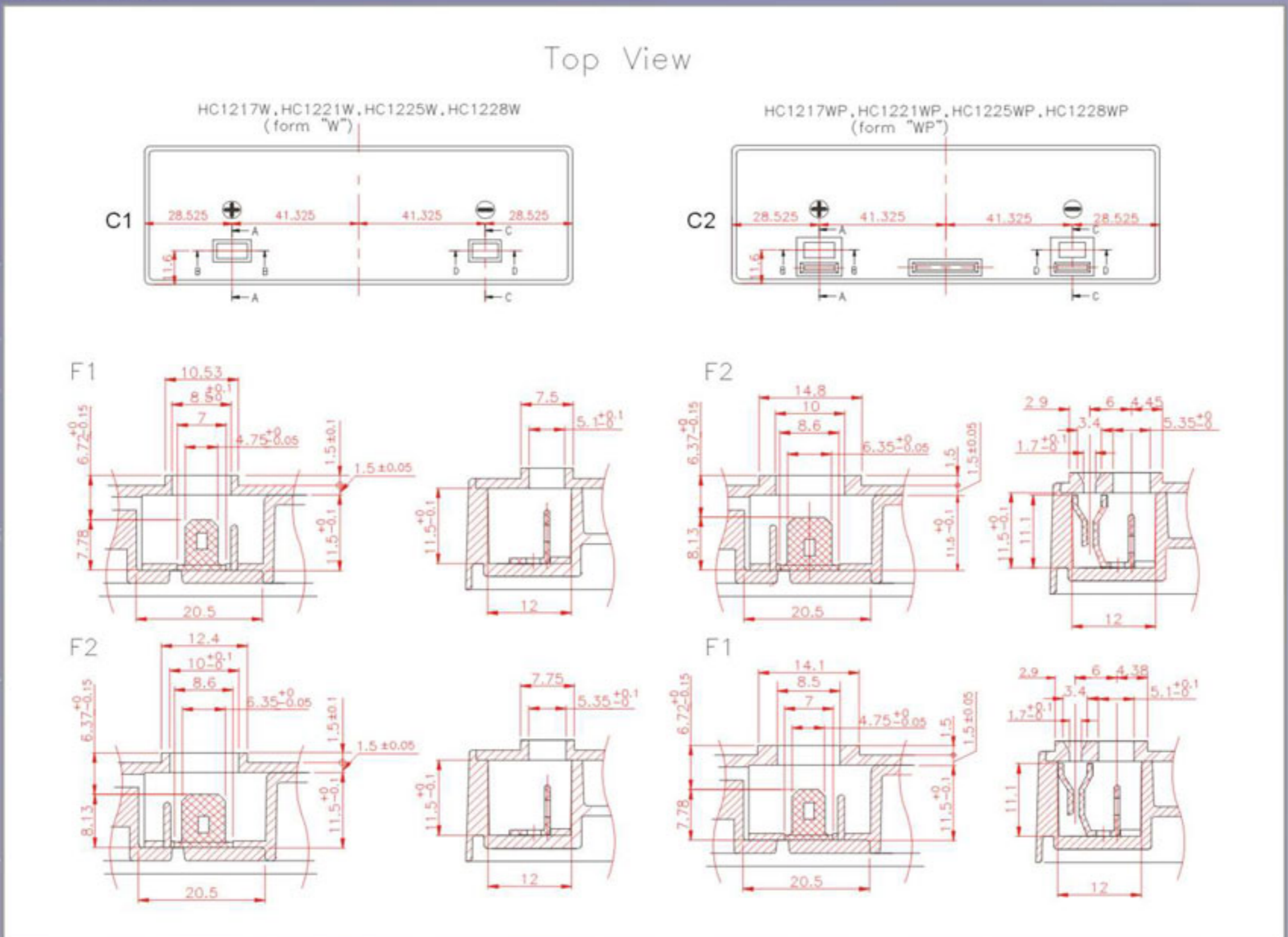
Specifications

Battery 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)	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)				Standby Use	Cycle Use
HC1217W	12	17	1.64	37.3	15.55	42.00	60	103.5±1.5	102±1.5	139.7±1.5	48±1.0	c	C1	1.70	2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL/°C	2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL/°C
HC1217WP	12	17	1.64	37.3	15.55	60	103.5±1.5	102±1.5	139.7±1.5	48±1.0	c	C2	1.70			
HC1221W	12	21	1.79	46.1	17.60	25.00	60	103.5±1.5	102±1.5	139.7±1.5	48±1.0	c	C1	2.10		
HC1221WP	12	21	1.79	46.1	17.60	25.00	60	103.5±1.5	102±1.5	139.7±1.5	48±1.0	c	C2	2.10		
HC1225W	12	25	2.25	44.4	16.67	30.00	60	127.5±1.5	126±1.5	139.7±1.5	48±1.0	c	C1	2.50		
HC1225WP	12	25	2.25	44.4	16.67	30.00	60	127.5±1.5	126±1.5	139.7±1.5	48±1.0	c	C2	2.50		
HC1228W	12	28	2.51	49.7	16.73	21.00	60	127.5±1.5	126±1.5	139.7±1.5	48±1.0	c	C1	2.80		
HC1228WP	12	28	2.51	49.7	16.73	21.00	60	127.5±1.5	126±1.5	139.7±1.5	48±1.0	c	C2	2.80		

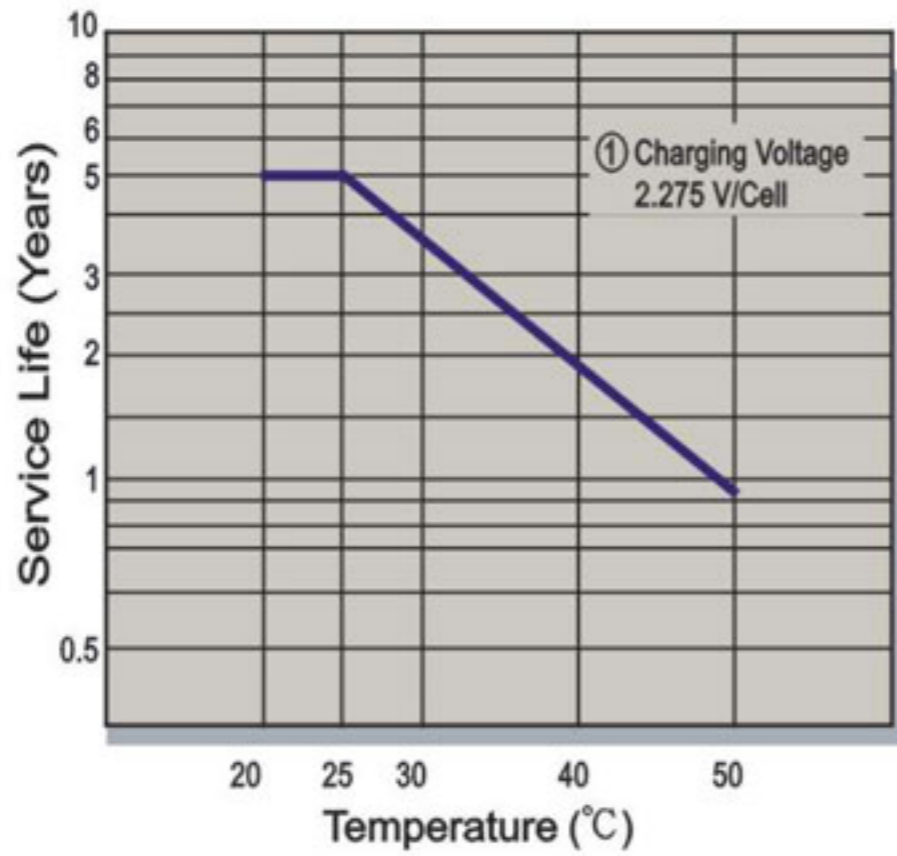
Terminal Position



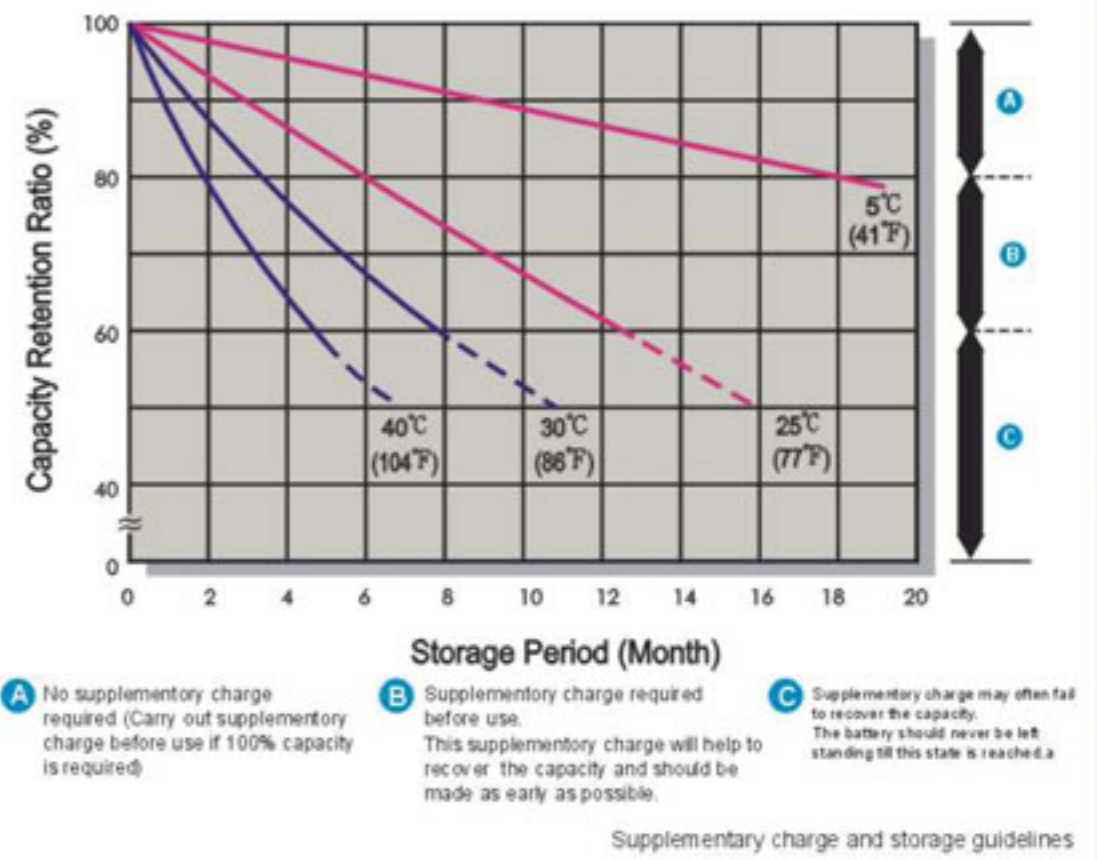
Terminal Type



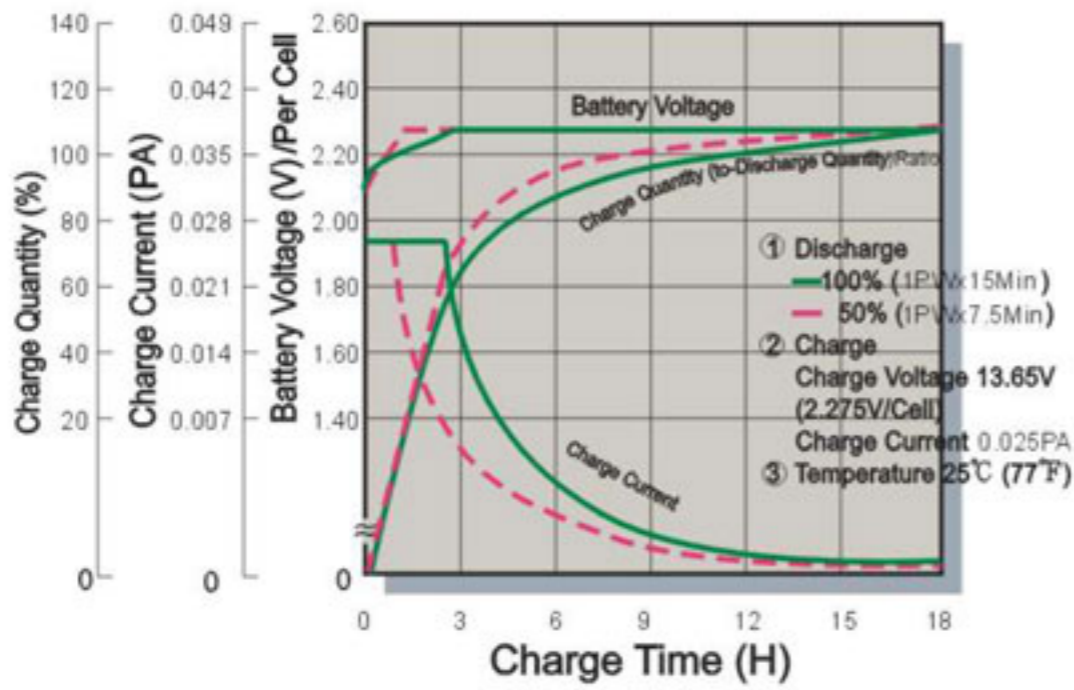
Trickle (or Float) Service Life



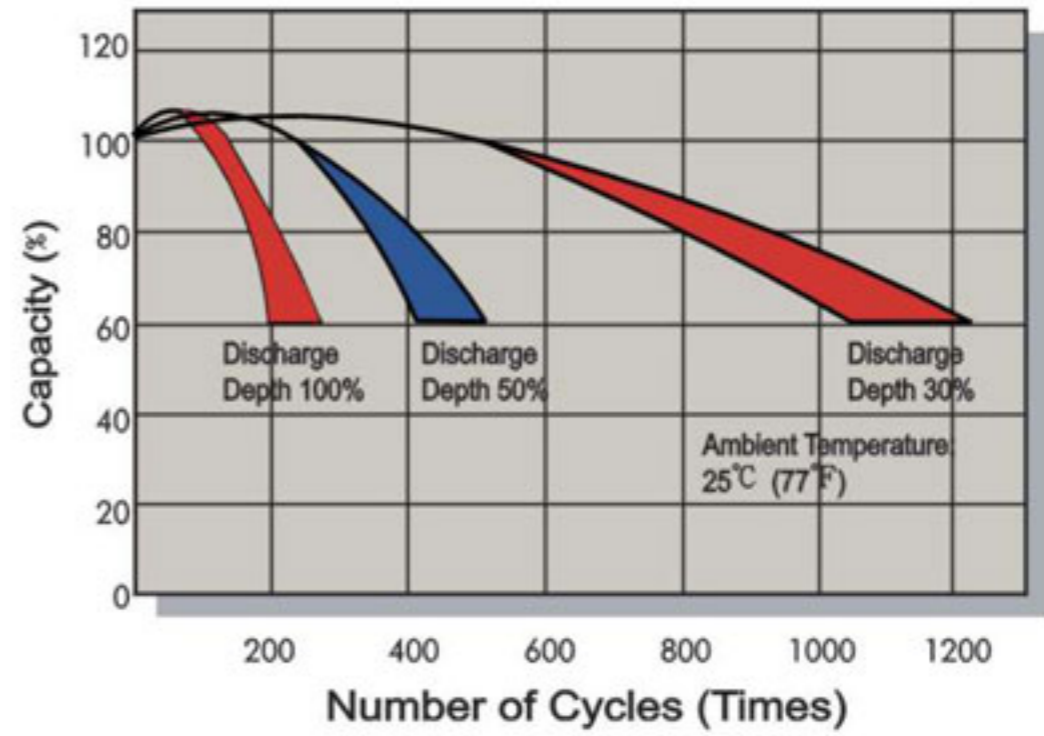
Capacity Retention Characteristic



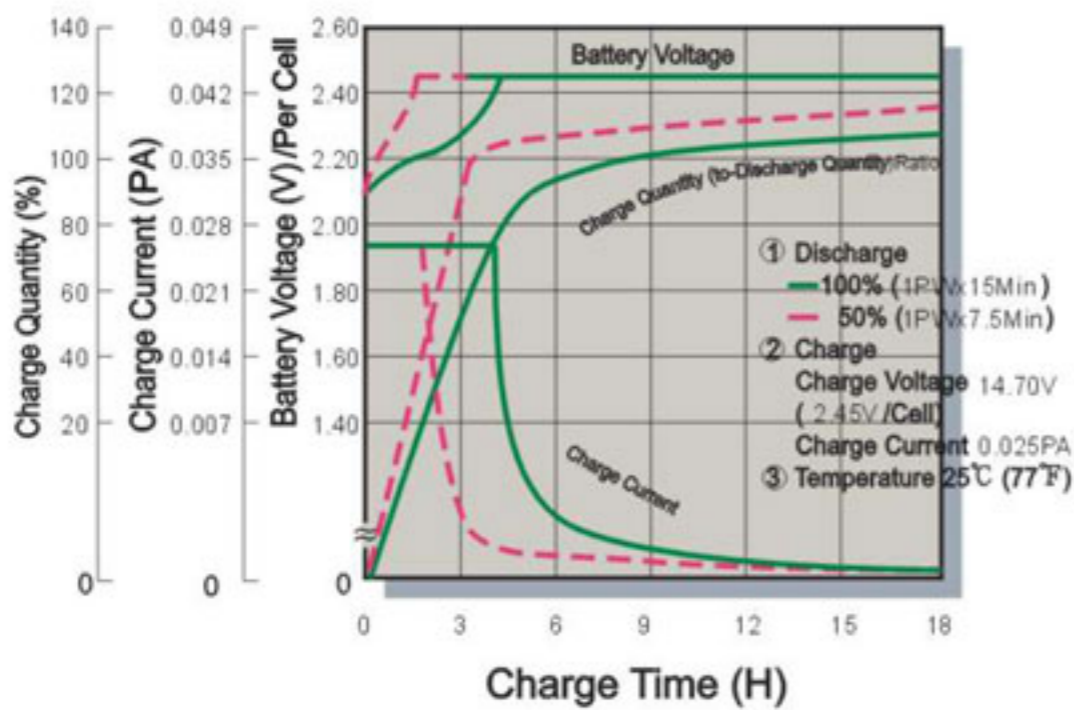
Battery Voltage and Charge Time for Standby Use



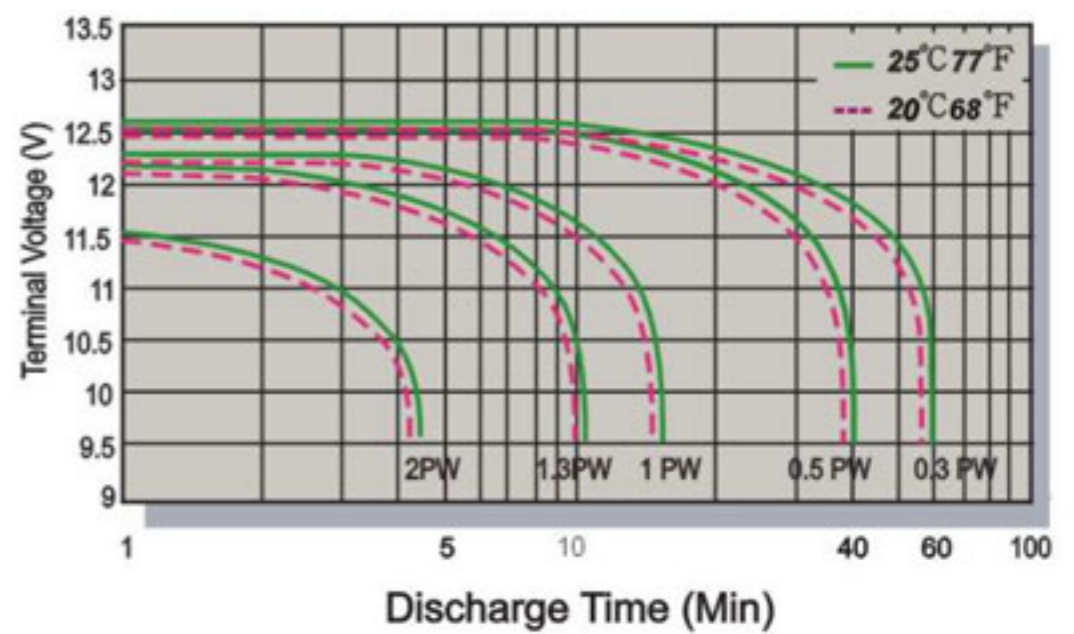
Cycle Service Life



Battery Voltage and Charge Time for Cycle Use



Terminal Voltage (V) and Discharge Time



HC1217W / HC1217WP

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	29.8	21.6	17.9	15.1	12.9	9.84	8.26	6.13	3.44	2.11
1.67V	27.8	20.5	17.1	14.5	12.6	9.59	8.08	6.03	3.38	2.07
1.70V	25.8	19.5	16.3	13.9	12.2	9.38	7.90	5.93	3.32	2.01
1.75V	23.9	18.3	15.3	13.3	11.7	9.12	7.69	5.82	3.26	1.95
1.80V	22.0	17.0	14.3	12.6	11.3	8.89	7.50	5.73	3.20	1.87
1.85V	20.1	15.6	13.2	11.9	10.7	8.57	7.25	5.61	3.14	1.80

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	358	257	215	179	152	117	99.1	73.5	41.3	25.3
1.67V	335	246	208	174	148	114	96.7	72.3	40.6	24.7
1.70V	310	233	197	166	142	111	94.0	71.2	39.8	24.0
1.75V	287	218	187	158	137	107	91.0	69.9	39.1	23.3
1.80V	265	203	173	150	131	104	88.2	68.7	38.4	22.4
1.85V	242	187	160	141	126	100	85.7	67.2	37.7	21.5

HC1221W / HC1221WP

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	46.4	31.2	24.4	20.3	17.1	12.3	10.1	7.18	4.02	2.83
1.67V	43.4	29.8	23.8	20.0	16.9	12.2	10.0	7.16	4.01	2.71
1.70V	40.2	28.5	23.0	19.5	16.5	12.1	9.93	7.15	4.00	2.66
1.75V	36.6	27.0	22.0	18.9	16.1	11.9	9.82	7.14	3.99	2.56
1.80V	32.8	25.1	20.8	18.2	15.7	11.7	9.71	7.13	3.98	2.46
1.85V	28.6	22.9	19.5	17.3	15.2	11.5	9.59	7.12	3.97	2.36

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	557	374	293	238	202	148	121	86.1	48.2	33.9
1.67V	521	358	285	233	199	147	120	85.9	48.1	32.8
1.70V	483	340	274	227	196	145	119	85.8	48.0	31.6
1.75V	440	320	263	220	191	144	117	85.6	47.9	30.5
1.80V	393	299	250	212	186	141	116	85.4	47.8	29.4
1.85V	343	275	234	203	180	138	114	85.3	47.7	28.3

HC1225W / HC1225WP

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	47.8	35.3	28.3	23.0	19.3	14.3	11.9	9.08	5.28	3.21
1.67V	45.1	33.7	26.9	22.0	18.6	13.9	11.7	8.95	5.21	3.10
1.70V	42.5	32.1	25.7	20.9	17.8	13.5	11.5	8.81	5.15	2.96
1.75V	40.0	30.6	24.5	19.9	17.0	13.1	11.2	8.67	5.09	2.84
1.80V	37.6	28.8	23.0	18.9	16.2	12.7	11.0	8.50	5.03	2.68
1.85V	35.1	26.9	21.5	17.8	15.5	12.3	10.7	8.34	4.98	2.53

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	574	423	339	276	232	172	143	109	63.4	38.5
1.67V	542	405	323	265	223	166	141	107	62.7	37.1
1.70V	510	386	308	253	214	161	138	106	62.0	35.5
1.75V	481	365	292	240	205	157	135	104	61.2	34.0
1.80V	451	345	276	227	195	151	132	102	60.4	32.1
1.85V	422	323	259	214	186	146	129	100	59.7	30.2

HC1228W / HC1228WP

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	48.6	38.2	31.3	27.2	23.3	18.0	14.9	11.6	7.33	4.75
1.67V	46.9	36.8	30.2	26.3	22.7	17.5	14.7	11.5	7.26	4.59
1.70V	45.2	35.4	29.3	25.5	22.1	17.0	14.4	11.4	7.19	4.43
1.75V	43.4	34.0	28.2	24.5	21.4	16.6	14.2	11.3	7.12	4.29
1.80V	41.4	32.6	27.1	23.6	20.8	16.3	14.0	11.2	7.03	4.14
1.85V	39.4	30.9	26.0	22.7	20.1	16.0	13.8	11.1	6.92	4.00

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	583	458	375	326	280	212	175	139	89.5	57.0
1.67V	563	442	361	315	273	207	173	138	88.6	55.1
1.70V	544	425	349	304	265	202	170	137	87.7	53.2
1.75V	522	408	337	293	258	197	167	135	86.8	51.5
1.80V	498	391	325	280	248	193	164	134	86.0	49.7
1.85V	473	371	312	268	239	187	161	133	85.1	48.0

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