

BATTERY
CSB



Confidence & Creativity
Service & Sincerity
Belief & Bravery

ENERGY OF INFINITY ▼



Superior Cycle Life
Improved Performance
Dependable

EVH

EVH series

EVH-series batteries are specially designed for equipment such as electric cars, bicycles, wheelchairs, golf and shopping carts, etc. With new VRLA technology, A product of intensive R&D, the EVH series is small, lightweight, and suitable for numerous charges. It can be used for more than 400 cycles at 100% discharge, or up to 5 years in standby service. As with all CSB batteries, they are rechargeable, efficient, maintenance-free, leakproof, suitable in any environment and ISO/UL certified.



In accordance with IEC60896-21/22:2004
In accordance with BS6290-4

Performance

- 100% capacity on first discharge.
- Innovative PAM manufacturing technique increases cycle by 150% over standard sealed Pb-acid.
- Uniformed plate formation for consistent capacity.
- Hundreds to thousands of recharge cycles (cycle life is based on temperature and depth of discharge).
- No-spill design.
- Maintenance-free.
- Reduced internal resistance for superior performance.

Long service life

- More than 400 cycles at 100% discharge cycle use.
- 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 and 14001 certified.

Applications

Cycle use

- Electric vehicles.
- Golf carts.
- Portable telephone sets.
- Portable lighting equipment.
- Power tools, lawn mowers, vacuum cleaners.
- Portable measuring equipment.
- Camera and photographic equipment.
- Portable VTR/TV, tape recorders and radios.
- Portable personal computers and processors.

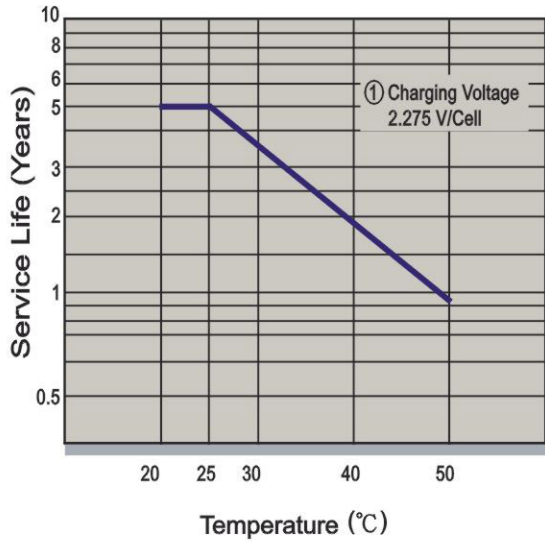
Standby use

- UPS.
- Communications and electrical equipment.
- Office computers, microcomputers and other OA equipment.
- Robots, control equipment and other FA equipment.
- Emergency power supply in power generation plants and substations.

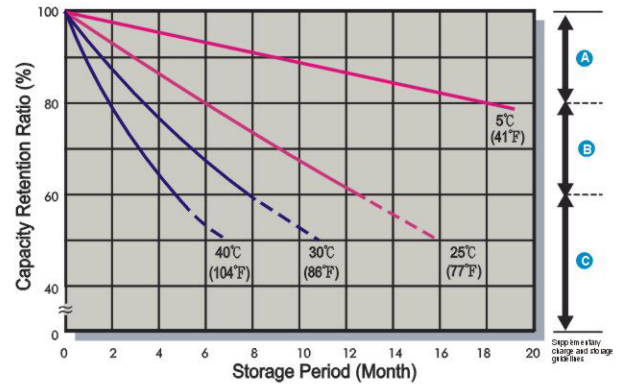
Solar Cell Power Generation

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

Trickle (or Float) Service Life



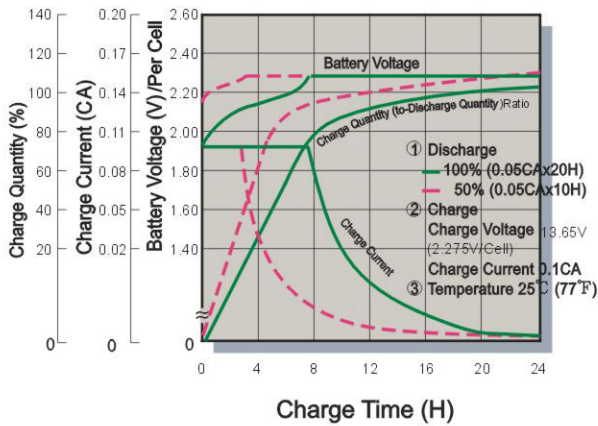
Capacity Retention Characteristic



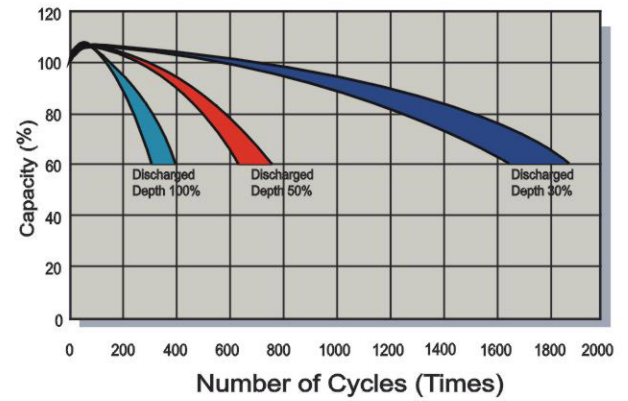
- A** No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)
- B** Supplementary charge required before use. This supplementary charge will help to recover the capacity and should be made as early as possible.
- C** Supplementary charge may often fail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

Supplementary charge and storage guidelines

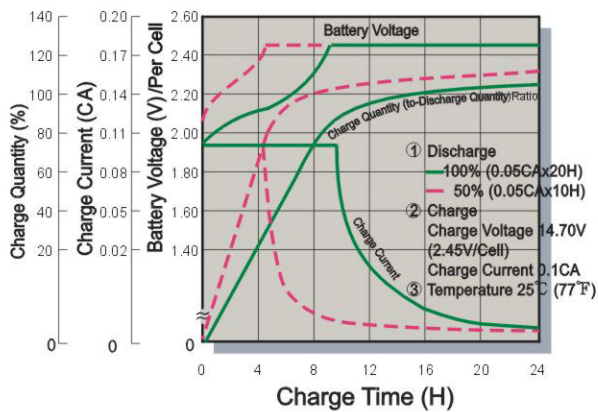
Battery Voltage and Charge Time for Standby Use



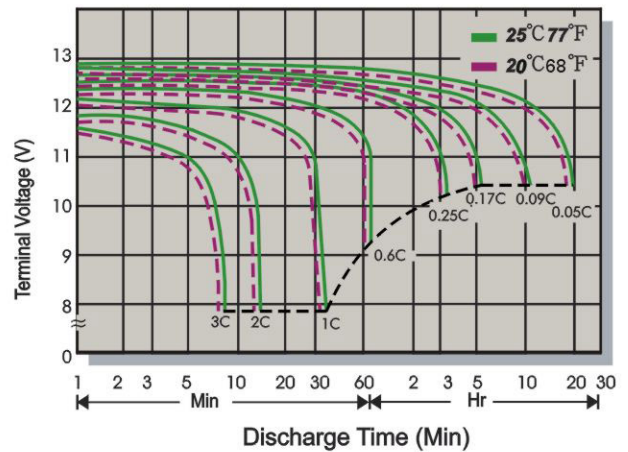
Cycle Service Life



Battery Voltage and Charge Time for Cycle Use



Terminal Voltage (V) and Discharge Time



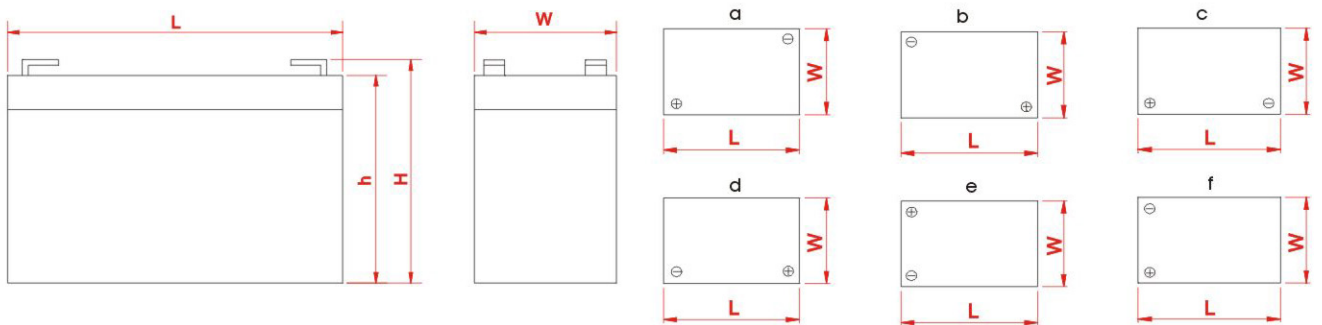
Specifications

Battery Type	Nominal Voltage(V)	Nominal Capacity (20Hr)(Ah)	Weight (Approx. Kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Discharge Current (A)	Max. Screw Torque value	
							Overall Height (H)	Container Height (h)	Length (L)	Width (W)				Kgf-cm / lbf-in	N-m
EVH12150	12	15.0	4.60	129.4	39.13	11.00	101.8±1.5	97.5±1.0	151±2.0	98±1.0	e	F2	180	---	---
EVH12240	12	24.0	7.55	118.6	38.15	9.00	178.8±2.0	176±2.0	181±2.0	76.2±1.0	d	I1	320	59/51	5.73
EVH12390	12	39.0	11.50	118.9	40.70	8.50	178.3±2.0	154.8±2.0	195.6±2.0	130±1.5	c	B5	400	138.6/120.3	13.58

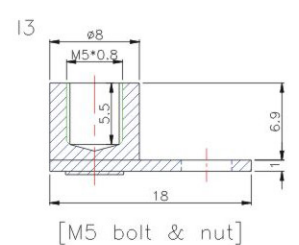
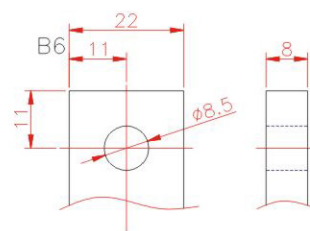
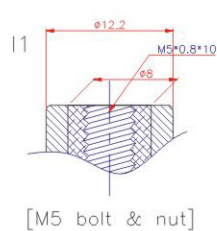
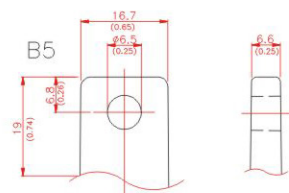
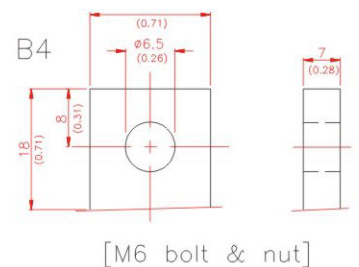
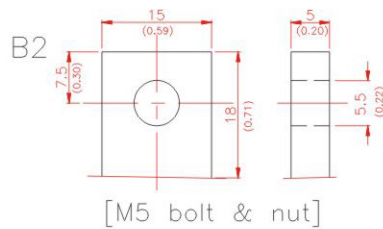
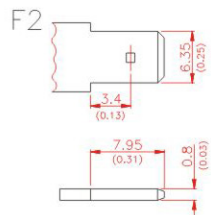
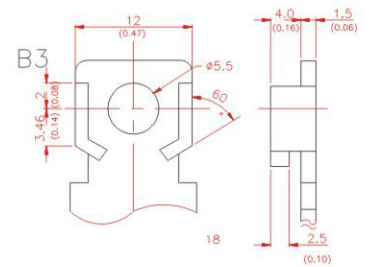
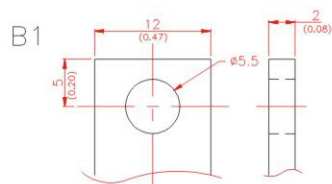
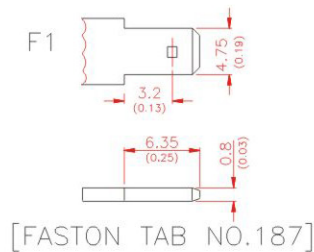
Charging(V) : • Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C

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

Terminal Position



Terminal Type



EVH12140**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	5HR	8HR	10HR	20HR
1.60V	31.7	18.2	10.4	7.33	5.77	4.04	2.54	1.63	1.33	0.728
1.67V	31.1	18.1	10.3	7.27	5.70	3.97	2.50	1.61	1.32	0.719
1.70V	30.4	17.8	10.2	7.19	5.62	3.90	2.46	1.59	1.30	0.709
1.75V	29.6	17.5	10.0	7.09	5.54	3.83	2.42	1.56	1.28	0.700
1.80V	28.7	17.2	9.88	7.00	5.44	3.75	2.37	1.53	1.25	0.691
1.85V	27.7	16.8	9.73	6.89	5.34	3.68	2.32	1.50	1.23	0.663

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

F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	5HR	8HR	10HR	20HR
1.60V	343	199	115	82.1	63.5	44.9	28.5	18.5	15.1	7.66
1.67V	336	196	112	80.3	62.6	44.2	28.0	18.2	14.9	7.61
1.70V	328	193	110	78.4	61.5	43.4	27.6	17.9	14.7	7.55
1.75V	320	189	108	76.5	60.4	42.6	27.2	17.6	14.4	7.48
1.80V	311	185	105	74.7	59.0	41.8	26.7	17.3	14.2	7.39
1.85V	301	179	104	72.8	57.7	41.0	26.1	17.0	13.9	7.30

EVH12150**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	5HR	8HR	10HR	20HR
1.60V	34.0	19.5	11.2	7.85	6.18	4.33	2.72	1.75	1.43	0.780
1.67V	33.3	19.3	11.0	7.79	6.11	4.25	2.68	1.73	1.41	0.770
1.70V	32.6	19.0	10.9	7.70	6.02	4.18	2.64	1.70	1.39	0.760
1.75V	31.7	18.7	10.7	7.60	5.93	4.10	2.59	1.67	1.37	0.750
1.80V	30.8	18.5	10.6	7.50	5.83	4.02	2.54	1.64	1.34	0.740
1.85V	29.7	18.1	10.4	7.38	5.72	3.94	2.49	1.61	1.32	0.710

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

F.V/Time	15MIN	30MIN	60MIN	90MIN	2HR	3HR	5HR	8HR	10HR	20HR
1.60V	367	213	123	88.0	68.0	48.1	30.5	19.8	16.2	8.21
1.67V	360	210	120	86.0	67.1	47.3	30.0	19.5	16.0	8.15
1.70V	351	207	118	84.0	65.9	46.5	29.6	19.2	15.7	8.09
1.75V	343	203	115	82.0	64.7	45.6	29.1	18.9	15.5	8.01
1.80V	333	199	113	80.0	63.2	44.8	28.6	18.6	15.2	7.92
1.85V	323	192	111	78.0	61.8	43.9	28.0	18.2	14.9	7.82

EVH12240**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	29.9	17.7	13.0	10.3	7.50	5.84	4.84	3.16	2.57	1.31
1.67V	29.6	17.5	12.9	10.2	7.44	5.83	4.78	3.15	2.56	1.30
1.70V	29.4	17.4	12.8	10.1	7.41	5.82	4.77	3.14	2.55	1.29
1.75V	29.0	17.2	12.7	10.0	7.32	5.74	4.73	3.09	2.52	1.28
1.80V	28.4	17.0	12.5	9.98	7.16	5.65	4.64	3.06	2.49	1.27
1.85V	27.0	16.2	11.9	9.56	6.85	5.44	4.47	2.91	2.34	1.17

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

F.V/Time	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	346	208	154	123	88.9	69.9	58.6	38.3	31.4	16.2
1.67V	343	207	153	122	88.7	69.8	57.6	38.1	31.2	16.1
1.70V	340	206	152	121	87.9	69.1	57.4	38.0	31.0	16.0
1.75V	338	205	151	120	87.3	68.4	56.9	37.8	30.7	15.9
1.80V	331	199	147	118	85.1	67.1	55.9	37.2	30.3	15.7
1.85V	313	193	142	115	82.9	65.3	54.4	36.1	29.6	15.4

EVH12390**Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)**

F.V/Time	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	39.6	23.3	17.8	14.4	10.4	8.25	6.93	4.68	3.89	2.13
1.67V	38.5	22.9	17.5	14.2	10.3	8.19	6.87	4.60	3.81	2.06
1.70V	37.4	22.4	17.2	14.0	10.2	8.13	6.79	4.53	3.73	2.01
1.75V	36.4	22.0	16.8	13.7	10.1	8.04	6.71	4.46	3.67	1.96
1.80V	35.4	21.6	16.6	13.5	9.93	7.94	6.62	4.40	3.60	1.91
1.85V	34.3	21.1	16.2	13.3	9.78	7.80	6.52	4.33	3.54	1.87

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

F.V/Time	30MIN	60MIN	90MIN	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	475	280	213	172	124	99.0	83.2	56.2	46.6	25.5
1.67V	463	276	210	170	123	98.1	82.4	55.3	45.6	24.8
1.70V	451	271	207	168	122	97.2	81.5	54.4	44.8	24.1
1.75V	438	265	204	166	120	96.2	80.5	53.6	44.0	23.5
1.80V	425	260	201	163	119	95.0	79.4	52.8	43.3	22.9
1.85V	412	253	197	160	117	93.7	78.2	52.0	42.6	22.4

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