



SPB
Series Pure Lead
Spiral VRLA Battery

SUPER POWER





SPB Series
Technical Specifications



➤ **Good PSOC performance**

When a battery is applied in solar system, it can not be charged 100% after being discharged each time, then the battery begins to work under partial state of charge (abbr. PSOC); after a long period, part of the active materials will not be utilized, and lose their active capability, which leads to the failure of the batteries in a short time. However, with grid of 0.6mm ~ 0.9mm in thickness and imported special separator, its internal resistance is only one third of that of normal battery, and its capacity can be recovered to the common level after long period shelf life without particular charge method.

➤ **Excellent low current charge acceptance**

Shuangdeng SPB uses high pure lead, it has much less side effect than the normal battery, therefore, Shuangdeng SPB can be charged with low current, and reach 90% charge efficiency even on cloudy or rainy days.

➤ **No free electrolyte, workable with any orientation**

Shuangdeng SPB utilizes much 30% less electrolyte than normal battery; at the same time, its electrolyte is completely absorbed in the plate and AGM separator, which results in no free electrolyte in the battery; therefore, Shuangdeng SPB can be placed at any orientaton without leakage.

➤ **Steady high voltage output, high energy density**

Due to the extremely low internal resistance, high output voltage remains steady voltage under middle and high rate discharge.

➤ **Long service life**

The cycle life is 350 under 100% DOD at C/5 discharge rate.
The design service life under floating application is 15 years.
The design service life in solar application is 10 years.





➤ **Fast chargeable, 95% state of charge can be reached in 4C**

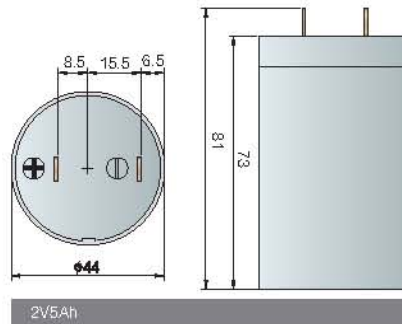
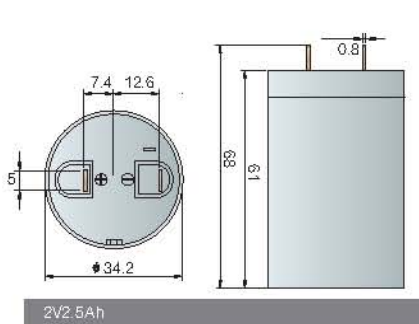


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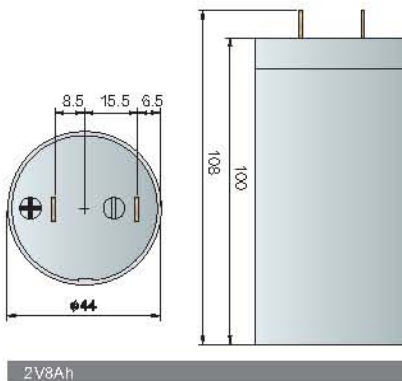
3. Specifications

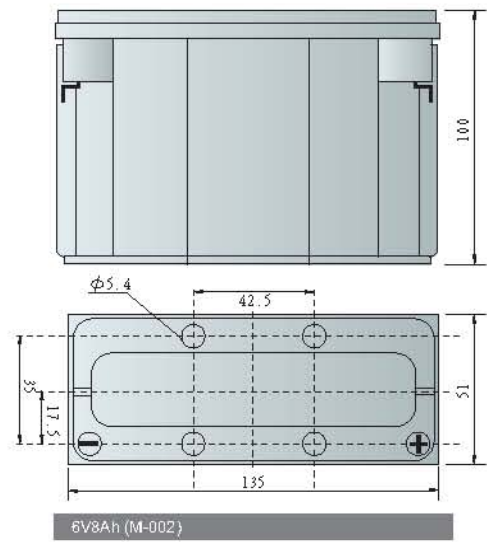
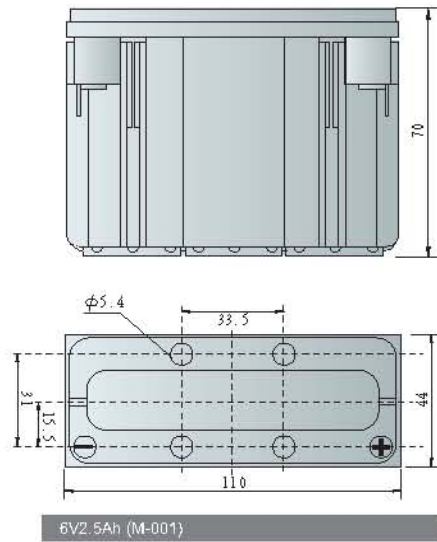
Specifications of SPB series pure lead spiral wound batteries

Type	Serial Number	Rated Voltage(V)	Capacity (C10Ah)	Dimension(mm)				Weight (Kg)	Picture
				Length	Width	Height	Total height		
SPB-2.5	S-001	2	2.5	Diameter	34.5	61.2	68.1	0.15	
SPB-5	S-002	2	5	Diameter	44.5	73	81.5	0.32	
SPB-8	S-003	2	8	Diameter	44.5	100	108	0.48	
3-SPB-2.5	M-001	6	2.5	110	44	70	70	0.46	
3-SPB-8	M-002	6	8	135	51	100	100	1.4	
6-SPB-13	M-003	12	13	145	98	141	141	4.7	
6-SPB-25	M-004	12	25	201	138	162	172	9	
6-SPB-50	M-005	12	50	255	169	204	224	18.8	
6-SPB-75	M-006	12	75	265	180	240	260	26.2	



2 views size of battery





Specifications of SPB series pure lead spiral wound batteries

Type	Serial Number	Rated Voltage(V)	Capacity (C10Ah)	Dimension(mm)				Weight (Kg)	Picture
				Length	Width	Height	Total height		
2-SPB-2.5	S-004	4	2.5	69	34.5	61.2	66	0.30	
2-SPB-5	S-005	4	5	89	44.5	73	80	0.63	
2-SPB-8	S-006	4	8	89	44.5	100	105	0.95	
3-SPB-2.5	S-007	6	2.5	104	34.5	61.2	66	0.44	
3-SPB-5	S-008	6	5	134	44.5	73	80	0.91	
3-SPB-8	S-009	6	8	134	44.5	100	105	1.43	
4-SPB-2.5	S-010	8	2.5	69	69	61.2	66	0.59	
4-SPB-5	S-011	8	5	89	89	73	80	1.2	
4-SPB-8	S-012	8	8	89	89	100	105	1.9	
6-SPB-2.5	S-013	12	2.5	104	69	61.2	66	0.9	
6-SPB-5	S-014	12	5	134	89	73	80	1.8	
6-SPB-8	S-015	12	8	134	89	100	105	2.8	
6-SPB-2.5	M-007	12	2.5	110	88	70	70	0.9	
6-SPB-8	M-008	12	8	135	102	100	100	2.7	

Specifications of SPB series pure lead spiral wound batteries

Type	Serial Number	Rated Voltage (V)	Capacity (C ₁₀ Ah)	Dimension(mm)				Weight (Kg)	Internal resistance (mΩ)	CCA@32 Degrees	CCA
				Length	Width	Height	Total height				
6-SPB-25	Q-001	12	25	201	138	162	172	9	7.2	480	390
6-SPB-50	Q-002	12	50	255	169	204	224	18.8	3.6	880	690
6-SPB-75	Q-003	12	75	265	180	240	260	26.2	2.6	1050	850

4. Electrical Performances

Discharge data under constant current and constant power at 25°C

Time	Final voltage 1.85/cell		Final voltage 1.75/cell		Final voltage 1.65/cell	
	CC discharge (k _c)	CP discharge (k _w)	CC discharge (k _c)	CP discharge (k _w)	CC discharge (k _c)	CP discharge (k _w)
2min	6.08	5.59	7.82	6.12	9.23	6.53
5min	4.05	3.79	4.85	4.20	5.65	4.58
10min	3.05	2.79	3.36	3.14	3.61	3.49
15min	2.34	2.21	2.52	2.35	2.76	2.62
20min	1.89	1.84	2.15	2.03	2.27	2.12
30min	1.35	1.31	1.44	1.40	1.55	1.46
45min	1.01	0.96	1.07	1.02	1.09	1.04
1h	0.77	0.76	0.83	0.79	0.85	0.81
2h	0.41	0.41	0.43	0.43	0.45	0.44
3h	0.32	0.32	0.32	0.32	0.35	0.33
4h	0.26	0.25	0.25	0.25	0.25	0.26
5h	0.19	0.20	0.21	0.20	0.21	0.20
8h	0.13	0.13	0.13	0.13	0.13	0.13
10h	0.11	0.11	0.11	0.11	0.11	0.11
20h	0.056	0.05	0.057	0.05	0.057	0.05

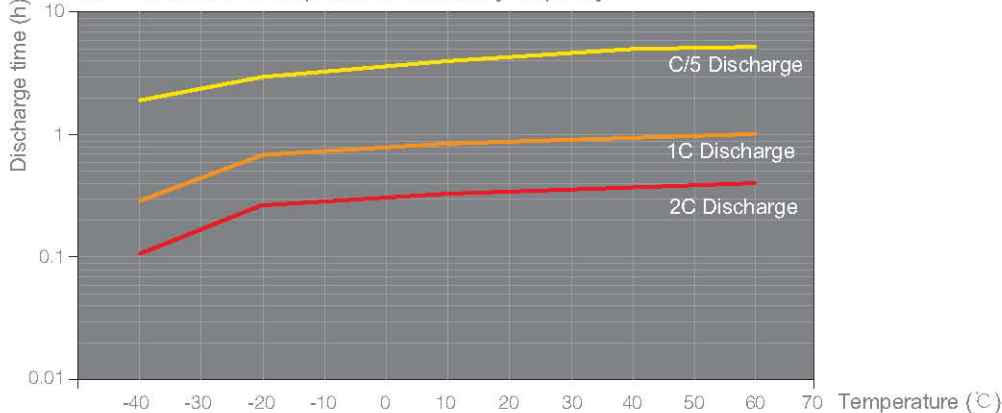
Note: The calculation method of discharge current and power for concrete type of battery:

Discharge current = rated capacity * Kc

Discharge power = rated voltage * rated capacity * Kw

E.g. calculating 5 minutes discharge current and power of 6V8Ah at final voltage 1.65V/cell, discharge current = 8Ah × 5.65=45.2A; discharge power = 6V × 8Ah × 4.58=219.8w.

The influences of temperature on battery Capacity



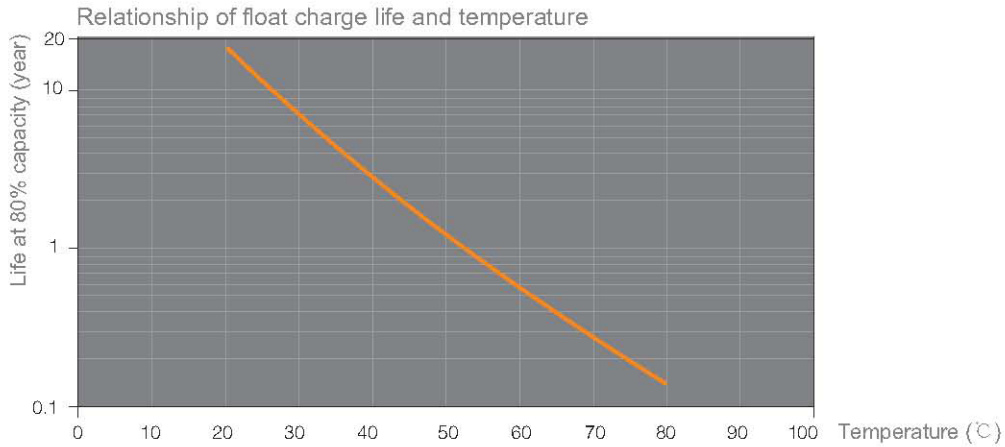
The discharge characteristic curves of 2V Series SPB at 25°C

3



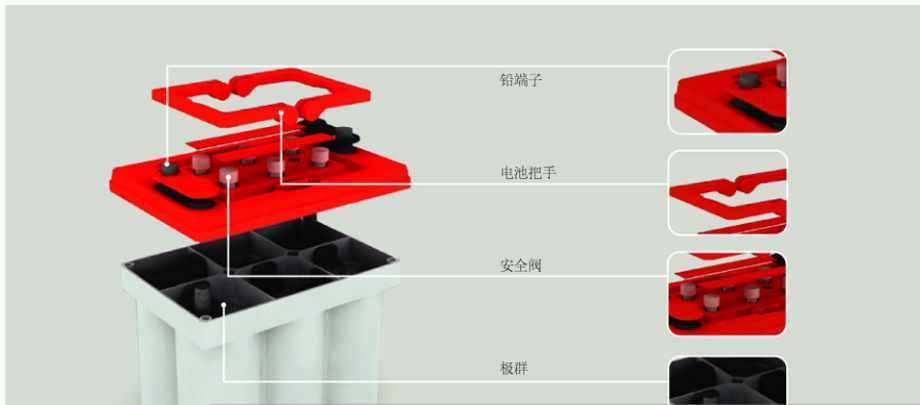
Specifications of SPB series pure lead spiral wound batteries

Depth of discharge(DOD)	Cycle life(times)
30%	1800
50%	700
80%	450
100%	350



Charge under constant voltage

- Standard float charge Application: Float charge voltage of 2.27~2.35V/cell at 25°C
- Cycle application: Restricting charge current under 0.6C10, constant charge voltage of 2.45~2.5V /cell at 25°C





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