



GFMJ-250 5 OPzV 250



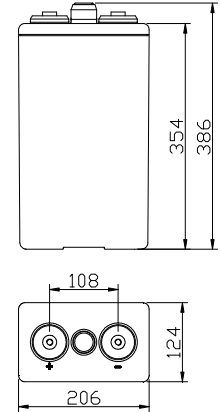
Application:

- Solar energy, wind energy
- Electric power, nuclear power
- Communication
- Ship, maritime affairs
- UPS, medical facilities and emergency lighting
- Situation with high environmental protection and energy-saving

Features of performance application

- ✚ Designed service life of 20 years
- ✚ High cycle service life
- ✚ Better temperature resistance performance
- ✚ Excellent deep cycle performance
- ✚ Superior low current discharge performance
- ✚ Stronger constant power discharge capability
- ✚ Better charge acceptability
- ✚ Better safety performance and reliability
- ✚ Modular and personified installation design
- ✚ High Performance/price ratio and low yearly operating cost
- ✚ Eco-friendly, cycle application

Rated voltage	2 V
Capacity@ 25°C (77°F)	250Ah @ 10hr to 1.80V per cell
Weight	About 23kg (50.6 lb)
Reference internal resistance (charged)	About 0.51mΩ@ 25°C (77°F)
Short-circuit current	About 4020A (0.1S reference value)
Max discharge current	750A (5sec)
Self-discharge	< 20% 180 days @ 25°C (77°F)
Temperature range	Application: -20°C ~ 50°C (-4°F ~ 122°F) Storage: 0°C ~ 20°C (32°F ~ 68°F) Recommendation: 20°C ~ 25°C (68°F ~ 77°F)
Max charge current	40A
Charge voltage @ 25°C (77°F)	Float charge: 2.23V, average charge: 2.35V Temperature compensation factor: -3 mV/°C
Terminal output	M10 copper terminal (HPb59-1)
Recharge time	See figure 2



Structure features of Shuangdeng GFMJ series VRLA gel battery:

- Electrolyte: primary material adopts Germany gas silicon dioxide, the material will be the thin collosol state when it's injected initially, and it can fill the whole plate space of battery, and each part of plate can react evenly. The flooded electrolyte design can avoid dry up of battery when it's in high temperature and over charged, the thermal capacity is big and heat-elimination is fine, accordingly, thermal runaway can be avoided. The electrolyte is in the gel state in finished battery without flowing, accordingly, leakage and lamination can be avoided.
- Plate: positive plate adopts tubular type plate which can effectively prevent active substance falling, the positive plate frame is molded with multi-component alloy, the crystal particle of alloy structure is tiny and dense, the corrosion-resisting performance is fine and service life is long. Negative plate adopts pasted plate, the grid adopts radiated structure which enhances utilization ratio of active substance and discharge capability of strong current, and the charge reception capability is strong.
- Battery case: it's made of ABS material, corrosion prevention is fine, strength is high, and appearance is beautiful, it can be sealed with lid reliably which can prevent potential leakage risk.
- Separator: adopt special micro-pore PVC-SiO₂ separator from Europe AMER-SIL Company, the porosity of separator is big and resistance is low. It has bigger electrolyte storage space.
- Terminal sealing: the built-in copper core lead-base terminal post has stronger current carrying capacity and corrosion resistance. The unique double sealing structure of terminal post can effectively avoid leakage, to guarantee reliability of terminal post sealing.
- Safety valve: adopt Germany technology, constant opening and closing valve, high reliability, the accumulator case expansion, damage and electrolyte dry up can be avoided.



Execution standard:

- IEC60896-21/22 DIN40742
- BS EN 61427-2002
- YD/T 1360-2005
- Q/321284KCC 03-2006

Authentication and certificate:

- Certificate of Qualification on Perfecting Measurement & Measuring System GB/T19022-2003
- ISO10012:2003、IDT
- Quality Management System Authentication GB/T19001-2000
- NO.03006Q10002R0M-2
- Environmental Management System Authentication ISO 14001:2004
- NO.010607E2024R1M-2
- Occupational Health Management System Authentication GB/T28001-2001
- NO.010607S10147R0M-2
- Product authentication: YD/T1360-2005
- NO.030074640567R1M
- CE authentication EN 61000-6-3:2001+A11:2004
- EN 61000-6-1:2001
- National Industrial Product Production License XK06-044-00012
- Product Quality Test Free Certificate (2006)GM(321630488)
- Export product quality license

Discharge current at different final voltages and different discharge rates unit: A (25°C, 77°F)

	5min	10min	15min	30min	45min	1hr	1.5hr	2hr	3hr	4hr	5hr	8 hr	10 hr	20hr	100 hr	120hr
1.90	228	193	184	147	130	111	86	72	54	43	38	26	22	11.71	3.07	2.59
1.85	306	248	224	173	139	125	94	74	57	47	39	27	23	12.88	3.24	2.73
1.80	315	285	266	202	164	131	119	81	65	49	42	29	26	13.52	3.36	2.83
1.75	338	317	298	216	179	138	120	90	68	50	43	32	27	14.06	3.47	2.92

Discharge power at different final voltages and different discharge rates unit: W (25°C, 77°F)

	5min	10min	15min	30min	45min	1hr	1.5hr	2hr	3hr	4hr	5hr	8 hr	10 hr	20hr	100 hr	120hr
1.90	450	378	301	267	238	208	171	134	104	84	73	51	43	23.4	6.14	5.18
1.85	464	394	337	296	265	233	190	147	113	93	79	56	47	25.5	6.42	5.41
1.80	483	472	429	349	305	261	217	172	131	107	90	63	52	26.5	6.59	5.55
1.75	533	521	487	388	335	282	232	181	135	110	91	65	53	27.1	6.70	5.64



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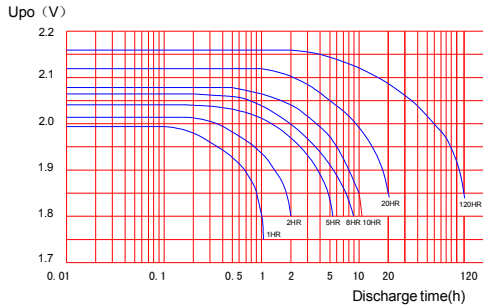


Figure 1 Discharge characteristic curve (20°C)

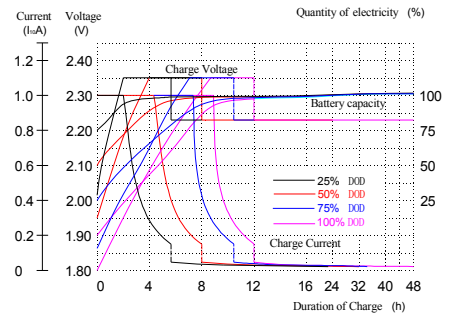


Figure 2 Constant voltage charge characteristic curve

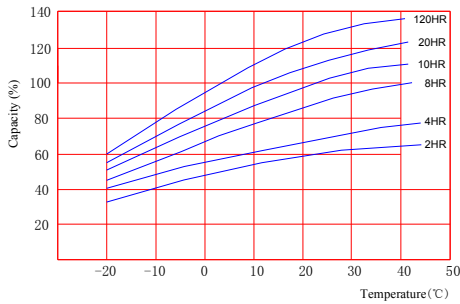


Figure 3 Relation curves between capacity and temperature

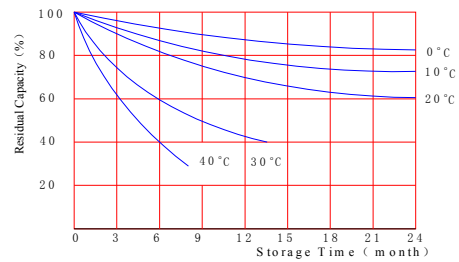


Figure 4 Self-discharge characteristic curve

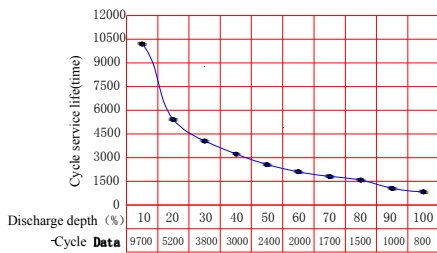


Figure 5 Relation curve between discharge depth and cycle service life

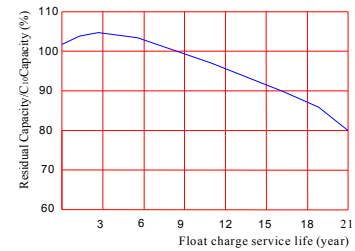


Figure 6 Relation curve between float charge service life and residual capacity

Remark: a) test circumstances: 20-30°C, relative humidity is 50~80percent;
b) charge mode: electricity of charge is equal to 105~115percent of discharge
c) residual capacity is 80 percent C₁₀

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The above data are only taken as reference instead of inspection standard. Additional notification won't be available for parameter change due to improvement and regulation of product. Inspection shall be performed in accordance with standards.

We must make a statement, when the battery service life and safe operating performance is confirmed, the test condition will be stricter; accordingly, the battery shall not be used in these conditions, because it's difficult for battery to reach expected service life.