



GFMJ-600 6 OPzV 600



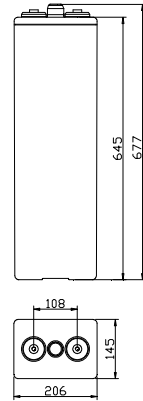
Application:

- 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)	600Ah @ 10hr to 1.80V per cell
Weight	About 48kg (105.6 lb)
Reference internal resistance (charged)	About 0.33mΩ@ 25°C(77°F)
Short-circuit current	About 6212A (0.1S reference value)
Max discharge current	1800A (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	120A
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	8hr	10hr	20hr	100hr	120hr
1.90V	513	449	303	294	282	234	186	165	129	108	93	65	54	28.08	7.41	6.21
1.85V	541	472	353	330	299	258	204	177	137	114	98	67	56	30.88	7.80	6.54
1.80V	580	572	487	420	336	312	258	199	150	123	104	72	61	32.42	8.07	6.76
1.75V	603	583	558	468	373	338	284	208	156	126	106	73	62	33.71	8.27	6.93

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	8hr	10hr	20hr	100hr	120hr
1.90V	972	842	480	421	378	335	318	300	247	208	180	130	113	56.16	14.82	12.42
1.85V	1005	877	538	488	460	432	386	339	277	230	199	142	122	61.14	15.44	12.95
1.80V	1066	1052	771	683	624	564	488	411	328	269	227	161	136	63.54	15.82	13.25
1.75V	1102	1067	888	772	706	639	543	447	347	284	237	163	137	65.06	15.96	13.37



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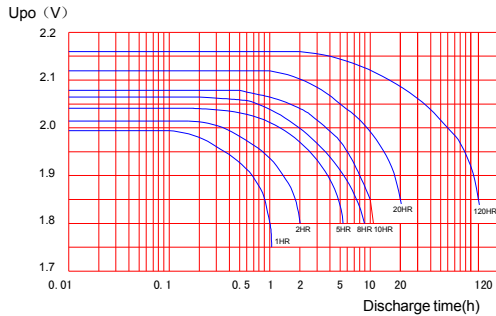


Figure 1 Discharge characteristic curve (20°C)

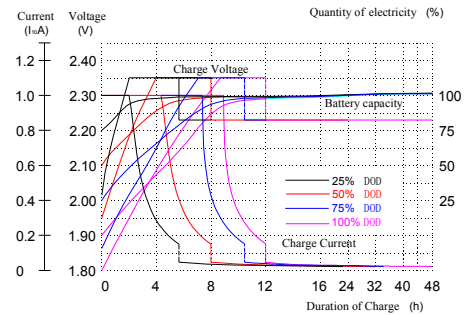


Figure 2 Constant voltage charge characteristic curve

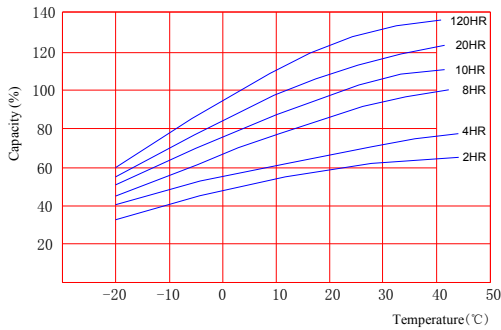


Figure 3 Relation curves between capacity and temperature

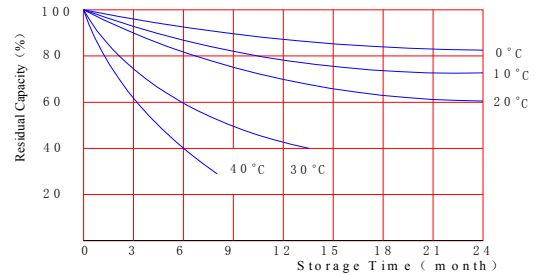


Figure 4 Self-discharge characteristic curve

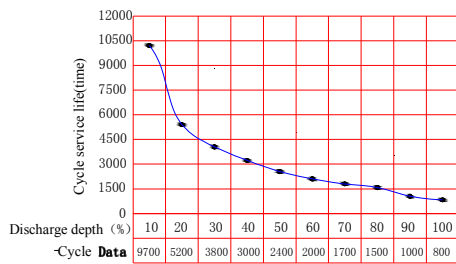


Figure 5 Relation curve between discharge depth and cycle service life

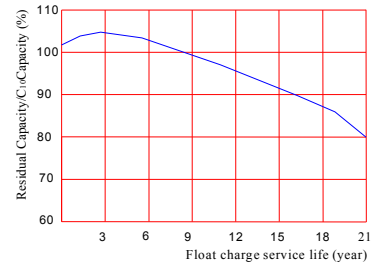


Figure 6 Relation curve between float charge service life and residual capacity

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

Free service line: +86-4008-899-886
FAX: +86-25-83176850
Tel: +86-25-83176860
E-mail: gjpt@chinashoto.com
E-mail: joyce.zhong@chinashoto.com
Web: <http://www.chinashoto.cn/>

Shuangdeng Group promises to provide excellent engineering service for customers, including product solution, installation design and on-site maintenance.

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.