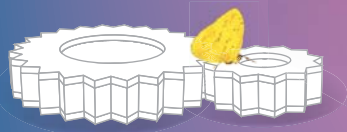


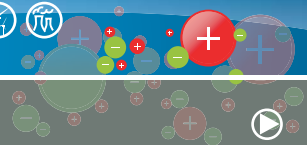


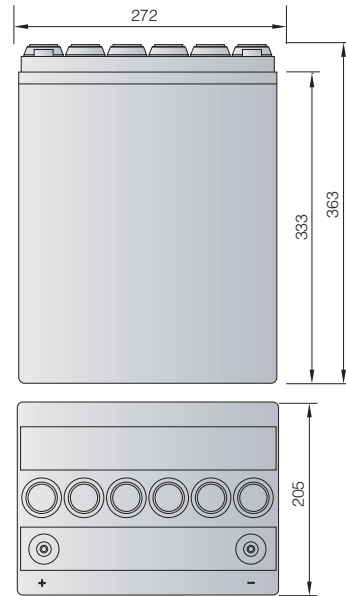
# 6-GFMJ(G)-100 (OPzV monobloc) 12V tubular gel battery



shoto

power the future





views of battery

**Application:**

- > Solar energy, wind energy
- > 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 18 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	12 V
Capacity@ 25 (77F)	100Ah@10hr to 10.8V
Weight	Weight About 53kg (116.6 lb)
Reference internal resistance (charged)	About 12m @ 25 (77F)
Short-circuit current	About 1000A (0.1s reference value)
Max discharge current	300A (5sec)
Self-discharge	<20% 180 days @ 25 (77F)
Temperature range	Application: -20~50 (-4~122F) Storage: 0~20 (32~68F) Recommendation: 20~25 (68~77F)
Max charge current	15A
Charge voltage @ 25 (77F)	Float charge: 13.5V, average charge: 14.1V Temperature compensation factor: -18 mV/
Terminal output	M8 copper terminal (HPb59-1)
Recharge time	See figure 2

**Standard:**

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

## Structure features of Shoto 12V tubular 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 complex 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-SiO<sub>2</sub> Separator 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 pressure, high reliability, the accumulator case expansion, damage and electrolyte dry up can be avoided.

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

	Discharge time (min)					Discharge time (hr)										
	5	10	15	30	45	1	1.5	2	3	4	5	8	10	20	100	120
11.4V	91	77	74	59	52	45	34	29	21	17	15	10	9	5.42	1.25	1.08
11.1V	122	100	90	69	56	51	37	29	22	18	16	11	9	5.53	1.28	1.09
10.8V	128	114	106	81	66	56	47	32	26	20	17	12	10	5.65	1.29	1.10
10.5V	136	127	120	86	72	57	48	36	27	21	18	13	11	5.71	1.30	1.11

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

	Discharge time (min)					Discharge time (hr)										
	5	10	15	30	45	1	1.5	2	3	4	5	8	10	20	100	120
11.4V	1080	906	726	642	570	498	408	324	252	204	174	120	102	65.04	15	12.96
11.1V	1116	942	810	714	636	558	456	354	270	222	192	132	114	65.7	15.18	13.08
10.8V	1158	1134	1032	840	732	624	516	414	318	258	216	150	126	66.42	15.3	13.14
10.5V	1278	1248	1170	930	804	678	558	438	330	264	222	156	132	72.12	15.66	13.20

## Performance curve of 6-GFMJ(G)-100 gel battery

Figure 1 Discharge characteristic curve (20 °C)

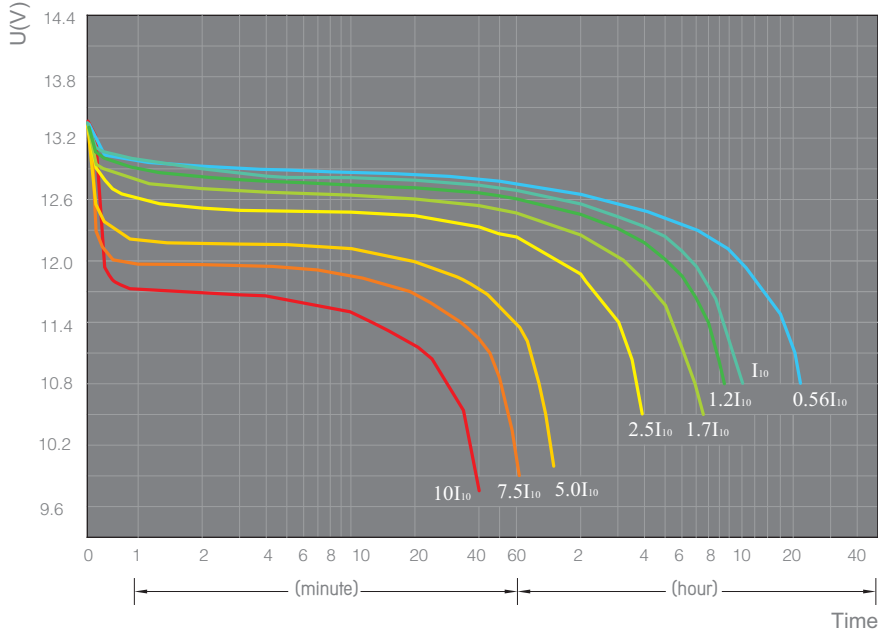


Figure 2 Constant voltage charge characteristic curve

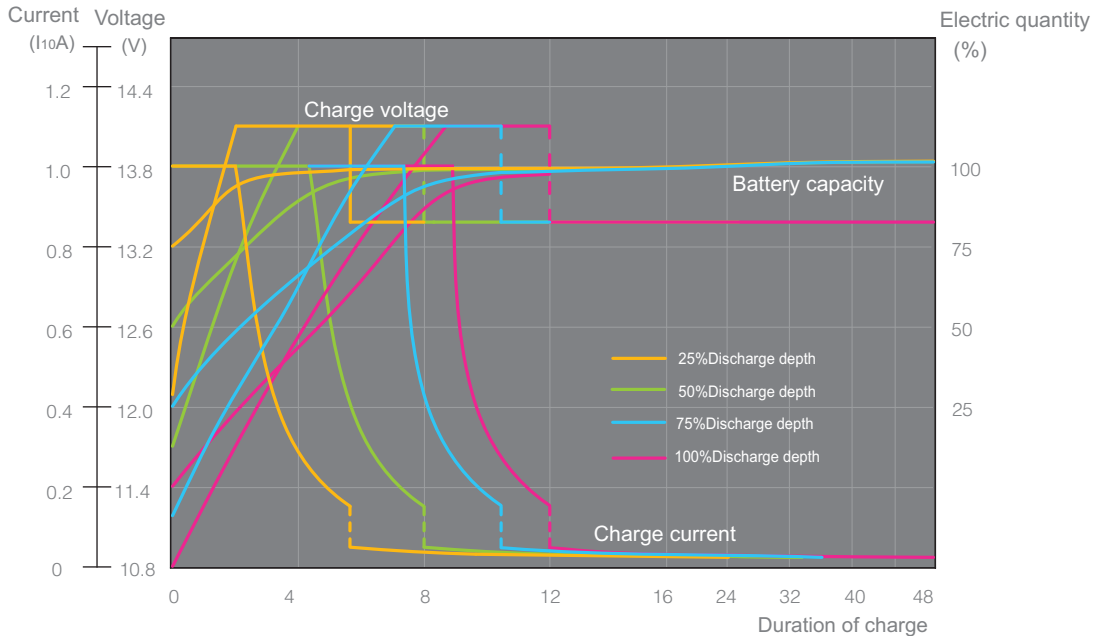


Figure 3 Relation curves of capacity and temperature

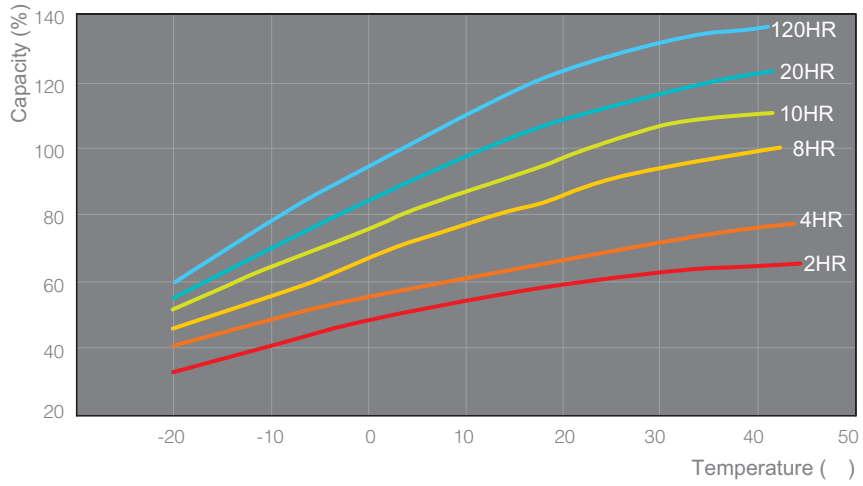
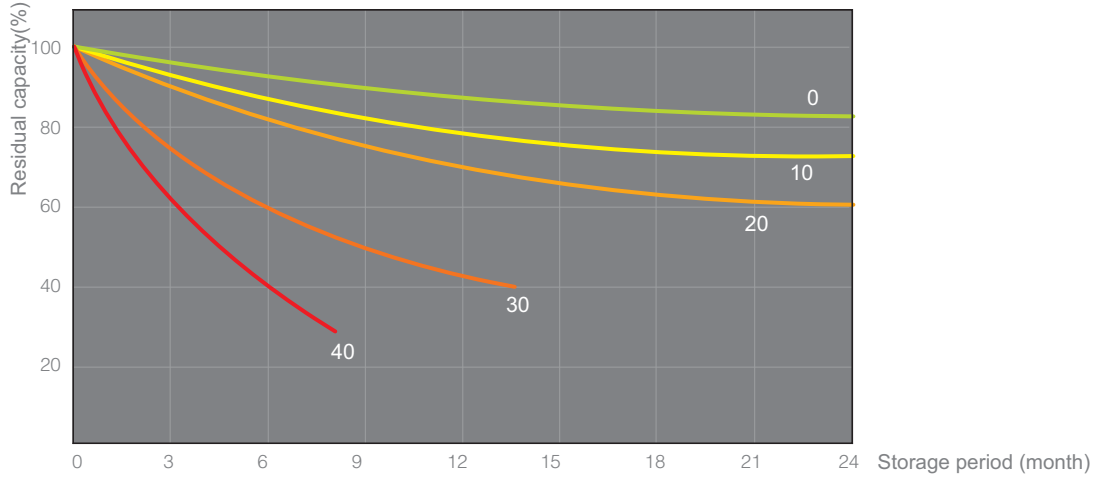
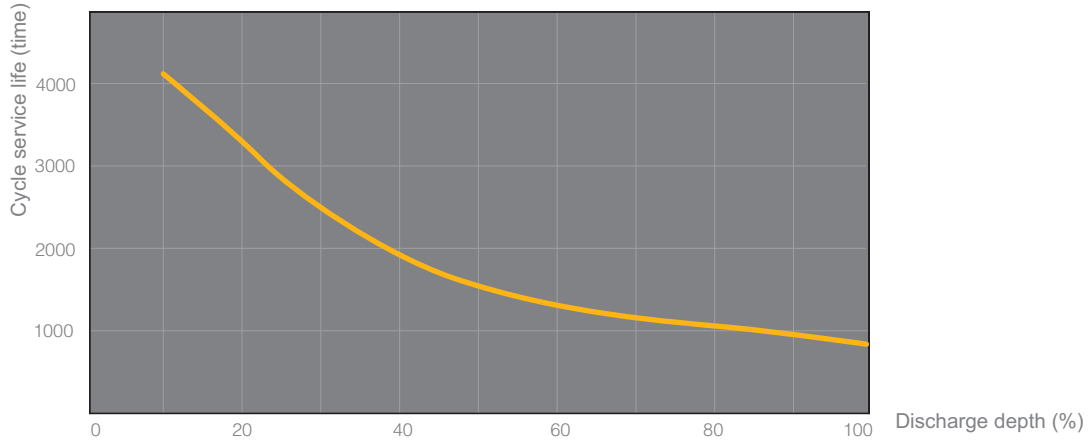


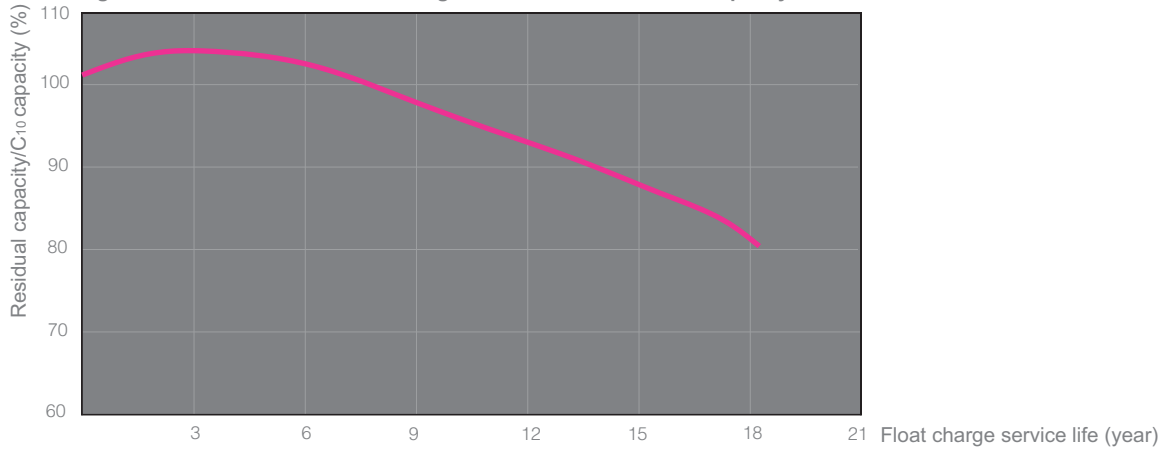
Figure 4 Self-discharge characteristic curve



**Figure 5 Relation curve of discharge depth and cycle service life**



**Figure 6 Relation curve of Float charge service life and residual capacity**





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