

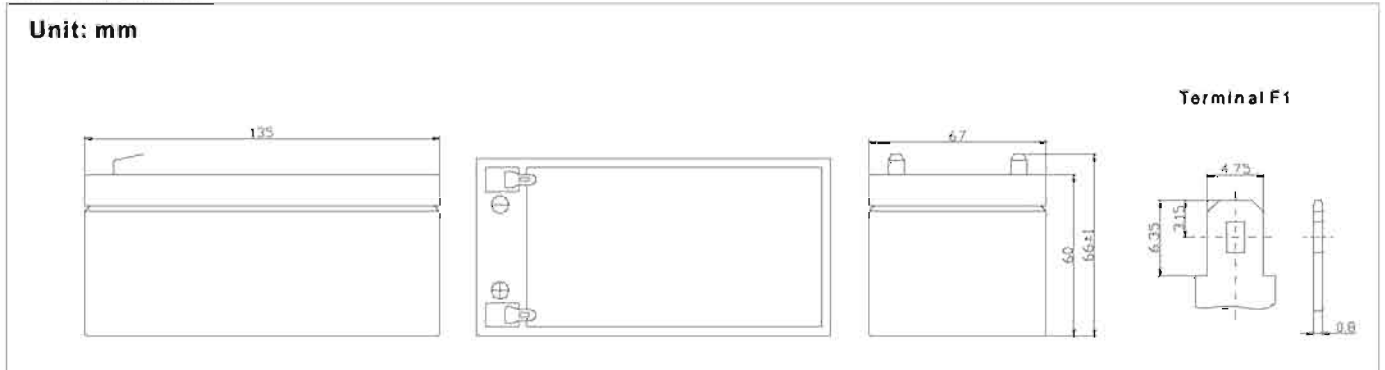


Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	3.3Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 1.3 Kg
Size (LxWxHxTotalH)	135 x 67 x 60 x 66 mm.
Max. Discharge Current	33 A (5 sec)
Internal Resistance	Approx. 45 mΩ
Operating Temperature Range	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C ± 5°C
Float charging Voltage	13.6 to 13.8 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	0.99A
Equalization and Cycle Service	14.5 to 14.9 VDC/unit Average at 25°C
Self Discharge	SPA batteries can be stored for more than 6 months at 25°C. Please charge batteries before using. For higher temperature, the time interval will be shorter.
Terminal	Faston Tab 187(F1)
Container Material	A. B. S. (UL94-HB) Flammability resistance of UL94-V2 can be available upon request.



Dimensions



Constant Current Discharge Characteristics Unit: A(25°C)

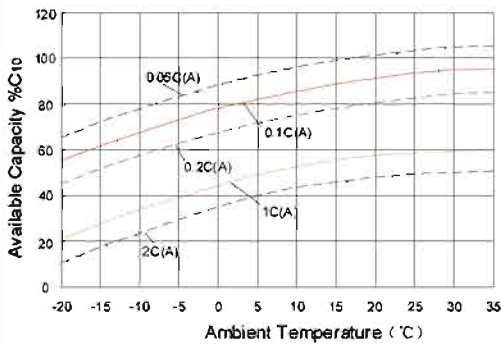
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	13.72	9.16	7.04	3.87	2.29	1.37	0.85	0.69	0.56	0.41	0.32	0.19
1.67V	12.79	8.54	6.62	3.82	2.28	1.36	0.85	0.69	0.56	0.41	0.32	0.18
1.70V	12.17	8.28	6.47	3.78	2.26	1.36	0.84	0.69	0.55	0.41	0.32	0.18
1.75V	10.93	7.74	6.13	3.69	2.23	1.34	0.84	0.68	0.55	0.41	0.31	0.17
1.80V	9.79	7.22	5.79	3.61	2.20	1.32	0.83	0.68	0.55	0.40	0.31	0.15
1.85V	8.62	6.69	5.46	3.52	2.17	1.30	0.83	0.68	0.54	0.40	0.30	0.15

Constant Power Discharge Characteristics Unit: W(25°C)

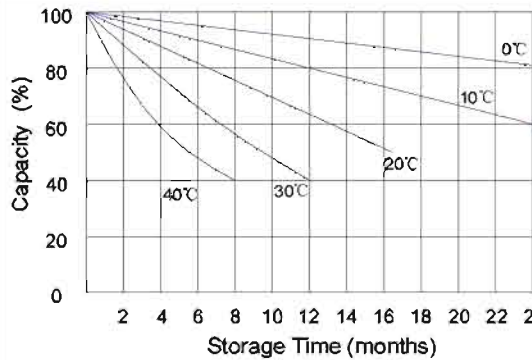
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	26.40	17.12	13.92	7.74	4.58	2.74	1.69	1.38	1.31	0.83	0.64	0.36
1.67V	24.75	16.50	13.20	7.62	4.57	2.72	1.68	1.37	1.30	0.83	0.64	0.35
1.70V	24.23	15.98	12.89	7.57	4.56	2.72	1.68	1.37	1.30	0.81	0.63	0.34
1.75V	21.97	15.37	12.27	7.38	4.48	2.68	1.67	1.36	1.29	0.81	0.62	0.33
1.80V	19.59	14.33	11.55	7.21	4.40	2.64	1.66	1.36	1.29	0.80	0.62	0.32
1.85V	17.22	13.41	10.93	7.03	4.33	2.60	1.64	1.35	1.29	0.80	0.61	0.31

All mentioned values are average values.

Temperature effects curve



Storage characteristic



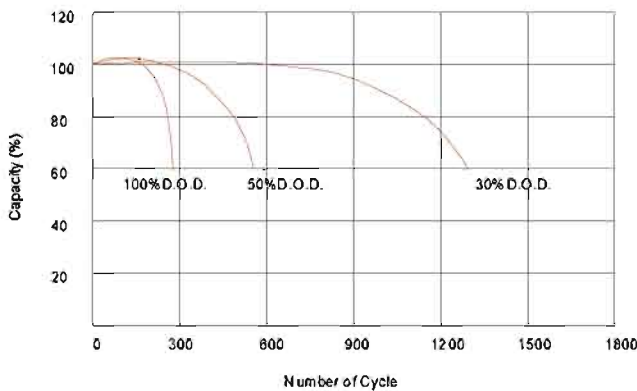
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

Supplementary charge required before use. This supplementary charge will help to recover the capacity and should be made as early as possible.

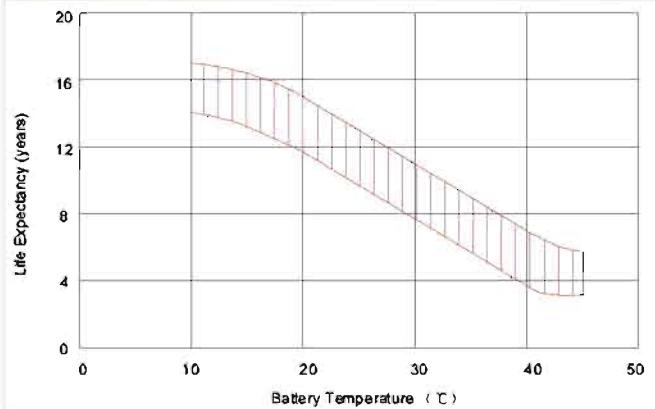
Supplementary charge may often fail to recover the capacity. The battery should never be left standing in this state.

Supplementary charge and storage guidelines

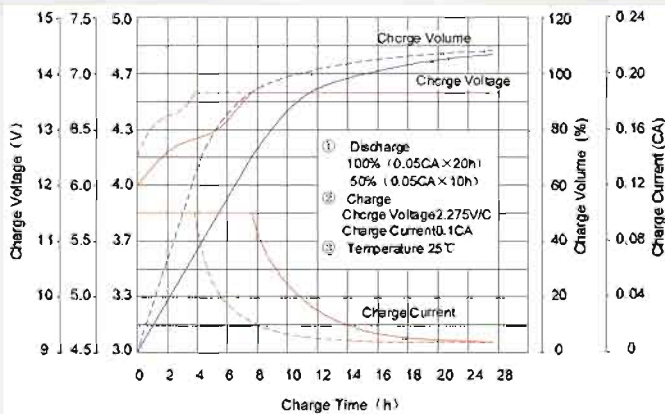
Life characteristics of cyclic use



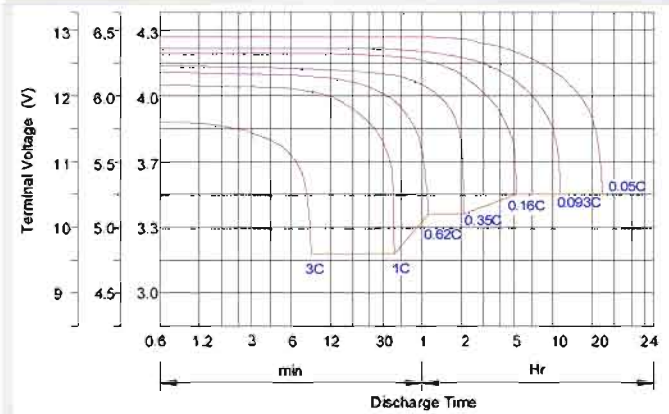
Effect of temperature on long term float life



Charge characteristic Curve for standby use



Discharge characteristic Curve



Charging Procedures

Application	Charge Voltage (V)			Max. Charge Current
	Temperature	Set point	Allowable range	
Cycle Use	25°C	14.7	14.5~14.9	0.3C
Standby	25°C	13.7	13.6~13.8	0.3C

Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/cell	1.75V	1.70V	1.60V
Discharge Current (A)	(A) ≤ 0.2C	0.2C < (A) < 1.0C	(A) ≥ 1.0C

Charge the batteries at least once every six months, if they are stored at 25°C.

Charging Method:

Constant Voltage	14.5~14.9V, 5~11h, Max. Current 0.3CA
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