DATA SHEET

FP12-12FR

FULBAT™
GENERAL PURPOSE BATTERY

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NON-SPILLABLE

AGM

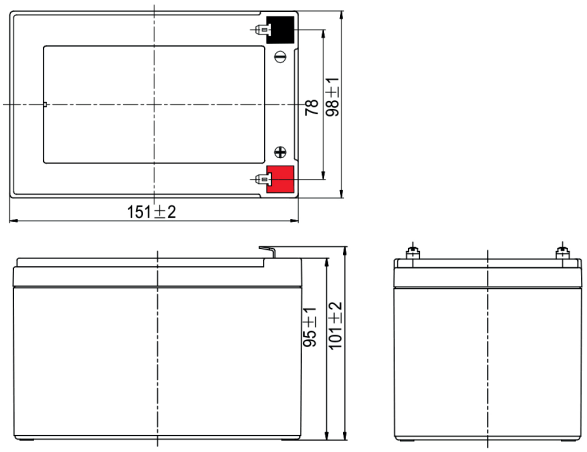
FP Series are general purpose batteries with 5 years design life in float service. With advanced AGM valve regulated technology and high purity raw material, the FP series batteries ensure high performance and reliable standby service life. They have been designed specifically for applications such as security & alarm systems, UPS, Telecom, power grid, medical equipment and emergency lighting. It can also be used for light cycling use. For intensive cycling, the FPC or FPG cyclic ranges are recommended.

SPECIFICATION

Nominal voltage	12V (6 cells)
Nominal capacity	12Ah (20hr)
Design life	5 years at 20°C
Internal resistance	Approx 14mΩ
Terminal	T2
Max. discharge current	180A (5 sec)
Reference capacity	12.0Ah (20hr, 1.80V/cell, 25°C/77°F) 11.2Ah (10hr, 1.80V/cell, 25°C/77°F) 10.2Ah (5hr, 1.75V/cell, 25°C/77°F) 9.2Ah (3hr, 1.75V/cell, 25°C/77°F) 7.74Ah (1hr, 1.60V/cell, 25°C/77°F)
Charge voltage	
Standby use voltage	13.5V ~ 13.8V 25°C/77°F Temperature compensation: -10mV/°C/Cell
Cycle use voltage	14.4V ~ 15.0V 25°C/77°F Temperature compensation: -15mV/°C/Cell
Operating temp. range	Discharge: -15°C ~ 50°C Charge: 0°C ~ 40°C Storage: -15°C ~ 40°C
Nominal operating temp. range	25°C ± 3°C / 77°F ± 5°F
Self discharge	Can be stored for up to 6 months at 25°C/77°F and then recharging is recommended. Monthly self-discharge ratio is less than 3% at 25°C/77°F
Capacity affected by temp.	40°C/104°F 103% 25°C/77°F 100% 0°C/32°F 86%
Container material	Flame Retardant UL94-V0

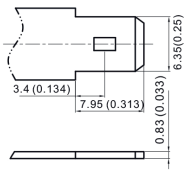
DIMENSIONS & WEIGHT

LENGHT	151±2mm
WIDTH	98±1mm
TOTAL HEIGHT	101±2mm
WEIGHT	3.24kg (tolerance ± 3%)



APPLICATIONS

TERMINAL (MM)



APPROVALS

ISO9001 - Quality management system
ISO14001 - Environnmental management System
Approved for transport by Air (IATA)
Designed in accordance with IEC 60896-21/22

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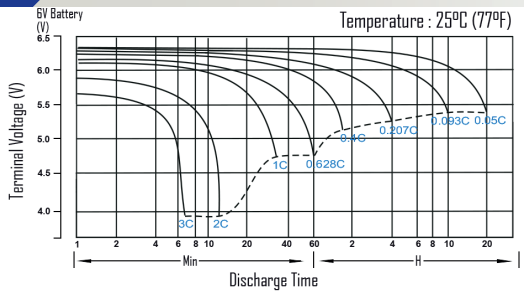
CONSTANT CURRENT DISCHARGE (AMPERES) AT 25°C/77°F

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	22.0	15.2	12.5	11.0	9.0	7.04	5.83	3.58	2.70	2.22	1.88	1.63	1.30	1.08	0.594
1.80V/cell	27.4	18.2	14.7	12.6	10.1	7.73	6.31	3.84	2.88	2.36	1.98	1.70	1.34	1.12	0.600
1.75V/cell	32.8	20.9	16.4	13.9	10.8	8.27	6.67	4.00	2.98	2.42	2.03	1.75	1.38	1.14	0.606
1.70V/cell	38.1	23.3	18.0	15.1	11.5	8.67	6.96	4.14	3.05	2.47	2.08	1.79	1.40	1.16	0.617
1.65V/cell	42.0	25.3	19.3	16.2	12.1	9.1	7.20	4.27	3.14	2.54	2.12	1.82	1.42	1.18	0.625
1.60V/cell	46.3	27.4	20.8	17.1	12.8	9.4	7.49	4.38	3.21	2.60	2.17	1.86	1.45	1.20	0.629

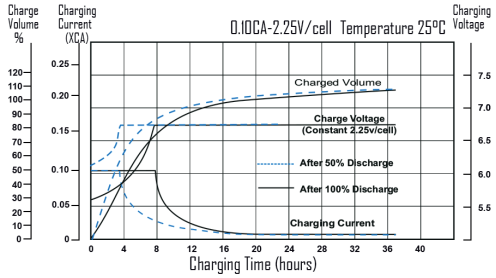
CONSTANT POWER DISCHARGE (WATTS/CELL) AT 25°C/77°F

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	42.6	28.4	23.6	20.8	17.1	13.5	11.3	6.96	5.26	4.33	3.69	3.20	2.56	2.14	1.18
1.80V/cell	49.5	33.4	27.2	23.6	19.0	14.7	12.1	7.41	5.58	4.59	3.86	3.33	2.65	2.21	1.19
1.75V/cell	58.8	37.9	30.0	25.8	20.2	15.7	12.7	7.69	5.75	4.68	3.95	3.42	2.71	2.26	1.20
1.70V/cell	67.3	41.7	32.7	27.8	21.4	16.3	13.2	7.94	5.88	4.78	4.04	3.48	2.75	2.29	1.22
1.65V/cell	73.1	44.6	34.7	29.5	22.4	16.9	13.6	8.17	6.02	4.88	4.11	3.54	2.79	2.32	1.23
1.60V/cell	79.2	47.5	36.6	30.6	23.3	17.5	14.1	8.33	6.13	4.99	4.18	3.61	2.84	2.35	1.24

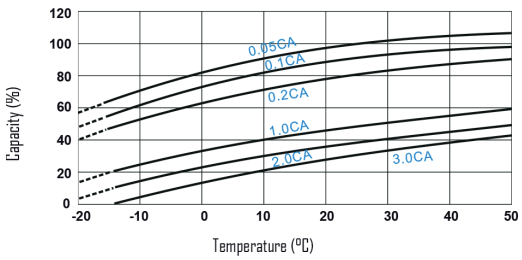
DISCHARGE CHARACTERISTICS



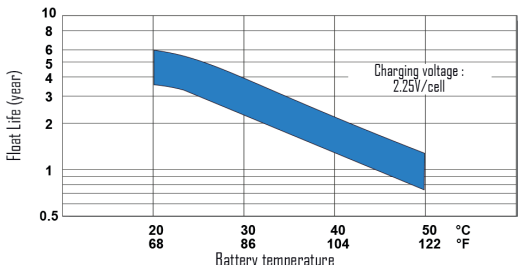
FLOAT CHARGING CHARACTERISTICS



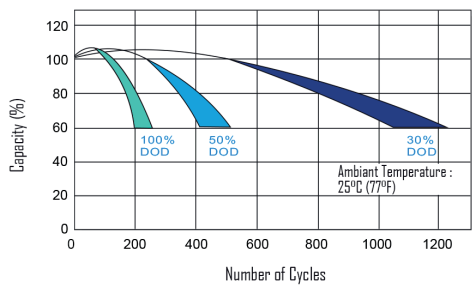
TEMPERATURE EFFECTS IN RELATION TO BATTERY CAPACITY



EFFECT OF TEMPERATURE ON LONG TERM FLOAT LIFE

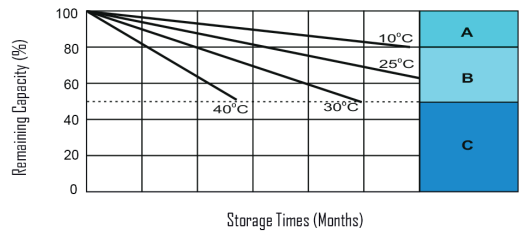


CYCLE LIFE IN RELATION TO DEPTH OF DISCHARGE



Testing condition
Discharging:current 0.17C A(FV 1.7V/cell);
Charging:current 0.25C max, voltage 2.45V/cell;
Charging volume:125% of discharged capacity.

SELF DISCHARGE CHARACTERISTICS



A No supplementary charge required (carry out supplementary charge before use if 100% capacity is required)

B Supplementary charge required before use. Optional charging way as below:
1. Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell
2. Charged for above 20 hours at limted current 0.25CA and constant voltage 2.45V/cell
3. Charged for 8-10 hours at limited current 0.05CA

C Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this is reached