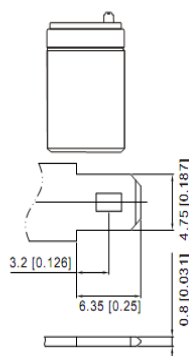
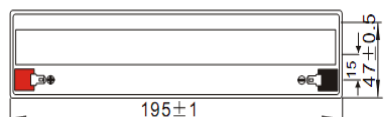
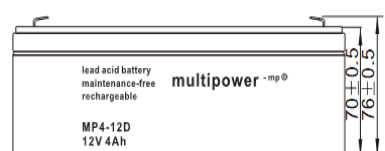


RECHARGEABLE SEALED LEAD ACID BATTERY

SPECIFICATION



F1
(Faston Tab 187)

MP4-12D (Artikel-Nr. 2003013)

Nominal Voltage(V) 12V

Nominal Capacity

20 hour rate	(0.200A	to	5.4V)	4.00Ah
10 hour rate	(0.372A	to	5.4V)	3.72Ah
5 hour rate	(0.672A	to	5.25V)	3.36Ah
1 C	(4.0A	to	4.8V)	2.08Ah
3 C	(12.0A	to	4.8V)	1.40Ah

Weight Approx. 1600g(3.53Lbs.)

Internal Resistance (at 1KHz) Approx. 45 mΩ

Maximum Discharge Current for

5 seconds: 60A

Charging Methods at 25°C(77°F)

Cycle use:	
Charging Voltage	14.4to 15.0V
Coefficient	-30.0mv/°C/cell
Maximum Charging Current:	1.2 A
Standby use:	
Float Charging Voltage	13.5 to 13.8V
Coefficient	-20mv/°C/cell

Operating Temperature Range

Charge	0°C(32°F) to 40°C(104°F)
Discharge	-15°C(5°F) to 50°C(122°F)
Storage	-15°C(5°F) to 40°C(104°F)

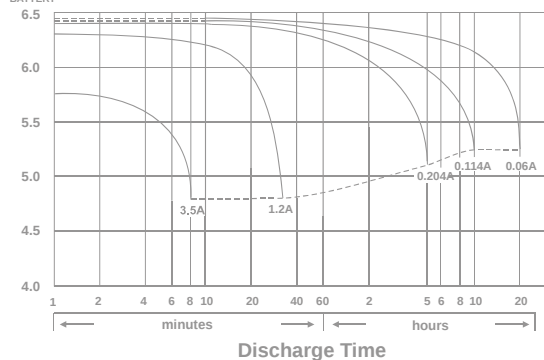
Charge Retention (shelf life) at 20°C(68°F)

1 month	92%
3 month	90%
6 month	80%

Case Material ABS
(UL94 HB flame retardant case / cover)

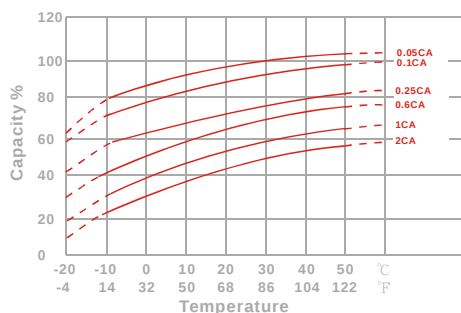
Terminal F1(Faston Tab 187)

(V)
FOR 6V
BATTERY
Discharge Time VS. Discharge Current (25°C)

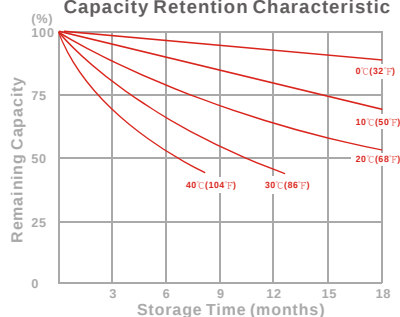


CHARACTERISTIC & PERFORMANCE DATA

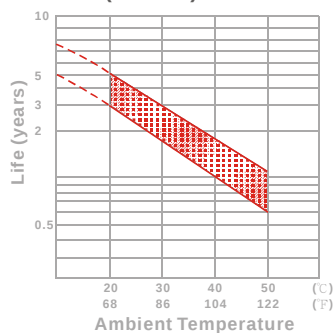
Effect of Temperature on Capacity 25°C (77°F)



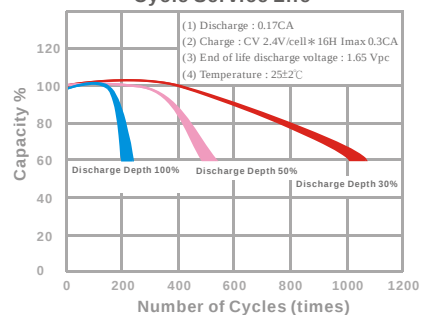
Capacity Retention Characteristic



Trickle (or float) Service Life



Cycle Service Life



- PERFORMANCE DATA

Discharge Rates in Watts to Various End Voltages at 25°C (77°F)

End Voltage		1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
Time								
5	min	14.5	17.6	20.6	23.1	23.9	25.1	26.0
10	min	10.2	12.0	13.5	14.7	15.2	15.6	16.1
15	min	8.49	9.76	10.7	11.4	11.7	12.0	12.3
30	min	5.99	6.59	6.99	7.29	7.43	7.53	7.67
60	min	3.81	4.07	4.26	4.42	4.49	4.57	4.64
120	min	2.34	2.47	2.56	2.65	2.72	2.71	2.78
180	min	1.79	1.87	1.92	1.97	2.01	2.01	2.05
240	min	1.47	1.54	1.58	1.61	1.64	1.63	1.66
300	min	1.26	1.30	1.33	1.35	1.37	1.38	1.40
600	min	0.724	0.745	0.755	0.763	0.772	0.77	0.779
1200	min	0.400	0.402	0.403	0.408	0.408	0.412	0.412

- Discharge Rates in Amperes to Various End Voltages at 25°C (77°F)

End Voltage		1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
Time								
5	min	7.68	9.44	11.2	12.7	13.3	14.0	14.7
10	min	5.35	6.39	7.22	7.97	8.30	8.57	8.93
15	min	4.42	5.12	5.65	6.11	6.37	6.46	6.74
30	min	3.07	3.40	3.63	3.82	3.93	3.98	4.09
60	min	1.93	2.08	2.19	2.28	2.33	2.38	2.43
120	min	1.18	1.25	1.31	1.36	1.41	1.40	1.45
180	min	0.899	0.945	0.979	1.01	1.03	1.04	1.06
240	min	0.739	0.777	0.801	0.821	0.842	0.838	0.859
300	min	0.627	0.654	0.672	0.689	0.703	0.704	0.718
600	min	0.359	0.372	0.379	0.386	0.393	0.391	0.398
1200	min	0.198	0.200	0.202	0.206	0.208	0.208	0.21

All data on the spec. sheet is an average value:

The tolerance range : $X < 6\text{min}$ (+15%~-15%), $6\text{min} \leq X < 10\text{min}$ (+12%~-12%), $10\text{min} \leq X < 60\text{min}$ (+8%~-8%), $X \geq 60\text{min}$ (+5%~-5%)