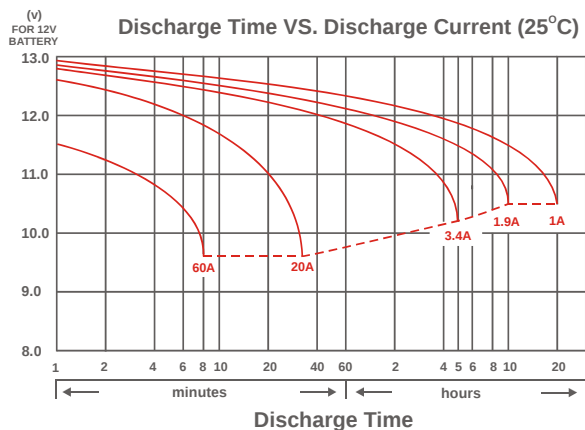
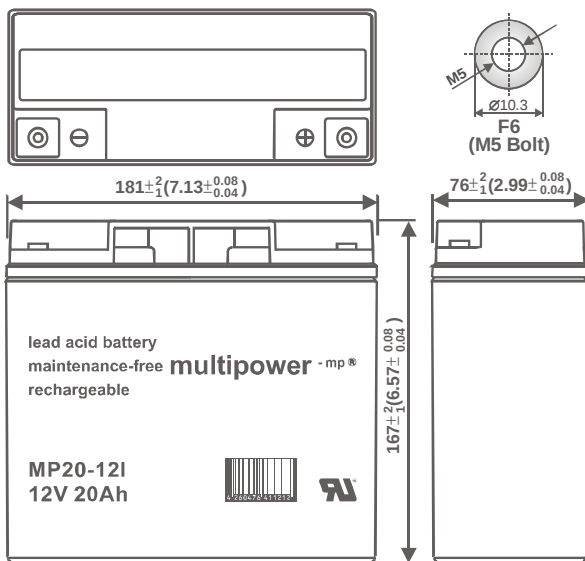




MP20-12I

Nominal Voltage(V) 12V

Nominal Capacity

20 hour rate	(1A	to	10.50V)	20.00Ah
10 hour rate	(1.9A	to	10.50V)	19.00Ah
5 hour rate	(3.4A	to	10.20V)	17.00Ah
1 C	(20A	to	9.60V)	11.33Ah
3 C	(60A	to	9.60V)	8.00Ah

Weight Approx. 5.95kg (13.09Lbs.)

Internal Resistance (at 1KHz) Approx. 10 mΩ

Maximum Discharge Current for

5 seconds: 300A

Charging Methods at 25°C (77°F)

Cycle use:	
Charging Voltage	14.7 to 14.8V
Coefficient -5.0mV/°C/cell	
Maximum Charging Current:	6A
Standby use:	
Float Charging Voltage	13.5 to 13.8V
Coefficient -3.0mV/°C/cell	

Operating Temperature Range

Charge	-15°C (5°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

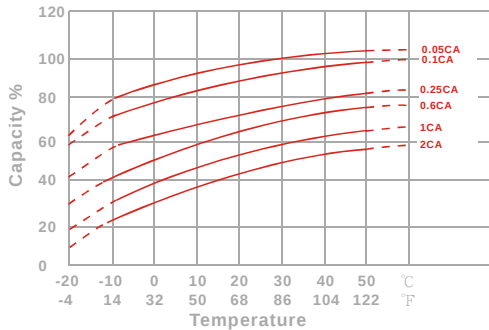
Terminal F6

Description of torque value of hard ware for the terminals:

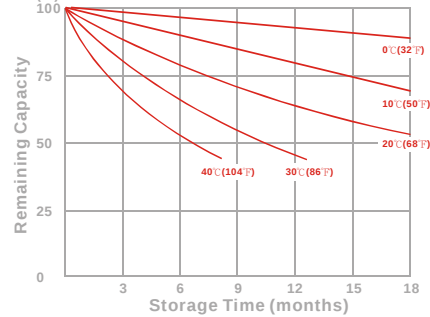
Recommended torque value	M5: 4 N·m (41 kgf·cm)
Maximum allowable torque value	M5: 6 N·m (61 kgf·cm)

CHARACTERISTIC & PERFORMANCE DATA

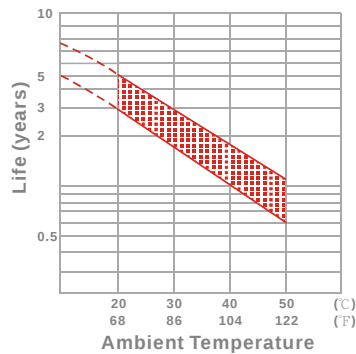
Effect of Temperature on Capacity 25°C(77°F)



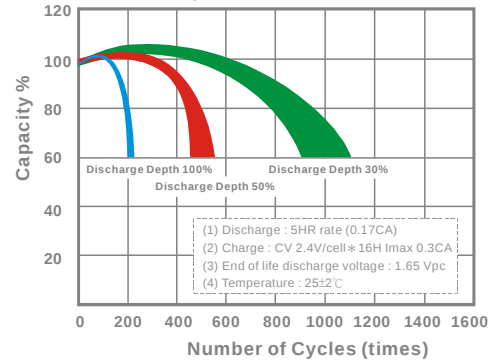
Capacity Retention Characteristic



Trickle (or float) Service Life



Cycle Service Life



- PERFORMANCE DATA

Discharge Rates in Watts per Cell 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	110	128	139	146	148	150	152
10	min	78.7	88.8	96.2	101	102	103	105
15	min	68.2	75.5	80.4	83.5	84.3	85.2	85.9
30	min	35.5	37.9	40.6	42.2	42.7	43.1	43.6
60	min	22.2	23.2	24.0	24.7	24.8	25.2	25.5
120	min	12.2	12.7	13.0	13.5	13.6	13.7	13.8
180	min	9.53	9.88	10.1	10.3	10.4	10.5	10.6
240	min	7.63	7.93	8.12	8.27	8.32	8.38	8.46
300	min	6.65	6.88	7.00	7.10	7.13	7.18	7.24
600	min	3.87	3.98	4.07	4.13	4.15	4.19	4.22
1200	min	2.05	2.12	2.17	2.20	2.22	2.23	2.25

- Discharge Rates in Amperes per Battery 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	69.6	75.4	79.1	82.3	83.7	85.1	87.6
10	min	46.7	49.9	52.4	54.6	55.5	56.5	58.2
15	min	35.4	38.1	39.8	41.3	41.9	42.6	43.5
30	min	18.9	20.4	21.5	22.4	22.7	23.1	23.6
60	min	11.1	11.7	12.2	12.6	12.7	12.9	13.1
120	min	6.25	6.47	6.61	6.73	6.77	6.82	6.89
180	min	4.73	4.90	5.00	5.08	5.11	5.15	5.21
240	min	3.88	3.97	4.04	4.09	4.11	4.14	4.17
300	min	3.41	3.48	3.53	3.57	3.58	3.60	3.62
600	min	1.97	2.00	2.02	2.04	2.05	2.06	2.07
1200	min	1.00	1.03	1.05	1.07	1.08	1.09	1.10

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%)