MOTOMA®
Power into the Future

VRLA BATTERY | MS12V33 | 12V33Ah

SLA BATTERY—STANDARD SERIES

Specification

Nominal Voltage	12V
Number of cell	6
Nominal Capacity	33Ah@10hr-rate (3.3A to 1.80V/cell @25℃)
Weight	Approx.10.2Kg
Terminal	M6,Ø=14
Container Material	ABS (UL94-HB), Flammability resistance of UL94-V1 can be available upon request.
Rated Capacity	34.0Ah 20hr-rate (1.70A to 1.80V/cell @25℃) 33.0Ah 10hr-rate (3.3A to 1.80V/cell @25℃) 28.6Ah 5hr-rate (5.72A to 1.75V/cell @25℃) 21.0Ah 1hr-rate (21.0A to 1.60V/cell @25℃)
Max. Discharge Current	330A(5sec)
Internal Resistance	Approx.10.0mΩ(Fully charged)
Operating Temp. Range	Discharge: -20℃~50℃ Charge : -10℃~50℃ Storage : -20℃~40℃
Cycle Use	Charging Current:≤9.9A Voltage:14.6V~14.8V Temperature compensation:-30mV/℃
Standby Use	Charging Current:No limit Voltage:13.6V~13.8V Temperature compensation:-20mV/℃
Self-Discharge	less than 3% at 25℃
Design Life	12 years (floating charge)

Introduction

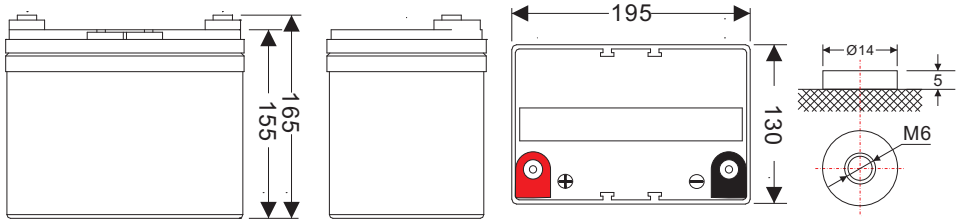
The MOTOMA standard series batteries designed with 12 years or more service life for general purpose, which designed with advanced technology, super heavy duty grid, high performance plates and electrolyte.The standard series batteries have long and reliable standby life and high consistency for better performance in series usage.

Applications

- *Auto control system &ATM machine*
- *Electronic apparatus and equipment*
- *Emergency light & Emergency backup power supply & Alarm/Security system*
- *Power generation system (solar and wind power system,etc.)*
- *Communication power & DC power*
- *Electric Power System(EPS)*
- *Uninterruptable Power System (UPS)*
- .....

Dimensions

Length	195±1mm (7.67 inches)
Width	130±1mm (5.12 inches)
Heigth	155±1mm (6.10 inches)
Total Heigth	165±1mm (6.61 inches)



Unit: mm

Constant Current Discharge Characteristics: A (25℃)

F. V/Time	5min	10min	15min	30min	1h	2h	3h	4h	5h	8h	10h	20h
1.60V/cell	104.3	76.79	58.98	38.14	21.56	12.64	8.656	7.164	5.864	4.120	3.483	1.842
1.65V/cell	101.3	73.07	57.77	37.51	21.46	12.55	8.623	7.130	5.829	4.086	3.450	1.809
1.70V/cell	98.29	70.49	56.86	37.18	21.26	12.45	8.557	7.097	5.795	4.053	3.416	1.775
1.75V/cell	88.26	65.05	54.14	36.25	21.06	12.36	8.523	7.031	5.726	4.019	3.383	1.742
1.80V/cell	79.66	59.31	49.91	34.66	20.56	12.14	8.291	6.865	5.622	3.952	3.349	1.708
1.85V/cell	69.34	53.01	44.76	32.47	19.53	11.60	7.926	6.534	5.381	3.785	3.249	1.608

Constant Power Discharge Characteristics: W (25℃)

F. V/Time	5min	10min	15min	30min	1h	2h	3h	4h	5h	8h	10h	20h
1.60V/cell	1017	759.5	634.7	408.9	246.5	145.5	99.89	82.78	67.88	47.80	39.17	20.69
1.65V/cell	990.2	725.4	621.5	403.8	245.4	144.9	99.69	82.58	67.47	47.60	38.77	20.49
1.70V/cell	960.4	701.2	613.0	399.1	243.6	143.6	99.10	82.18	67.26	47.20	38.57	20.29
1.75V/cell	864.8	647.9	584.6	390.0	241.2	142.2	98.50	81.59	66.64	46.80	38.16	20.09
1.80V/cell	777.9	588.3	537.1	372.2	235.2	140.1	96.11	79.40	65.60	45.80	37.76	19.89
1.85V/cell	671.5	522.5	479.6	348.8	222.9	133.7	91.34	75.62	62.29	44.19	36.56	19.08

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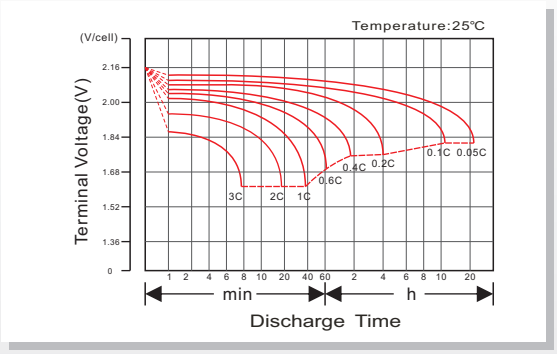
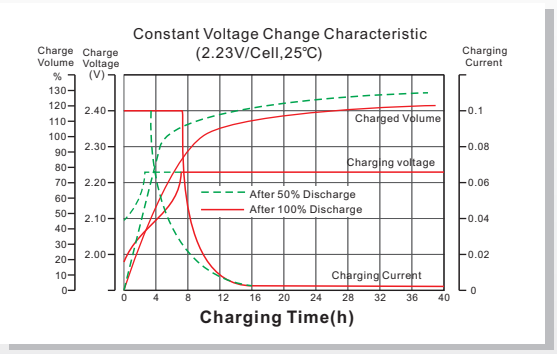
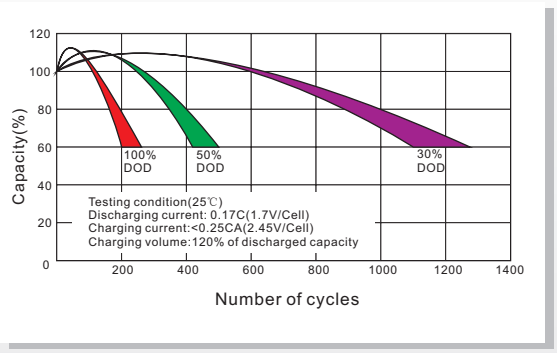
Discharge Characteristics Curve



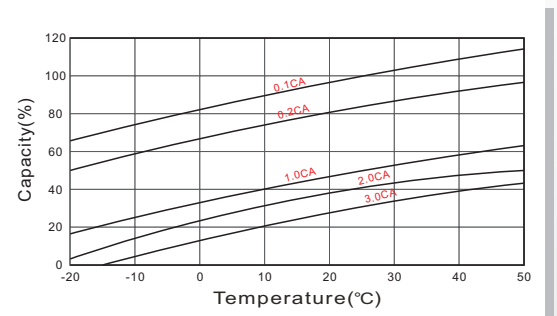
Charging Characteristics Curve



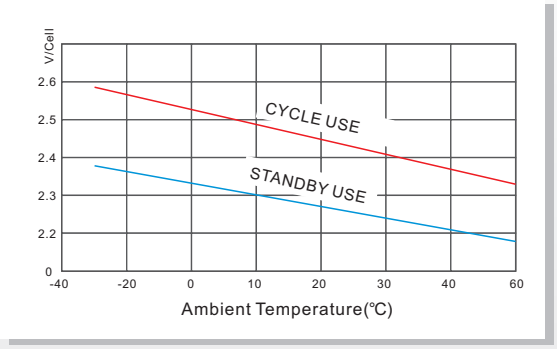
Cycle life in relation to depth of Discharge



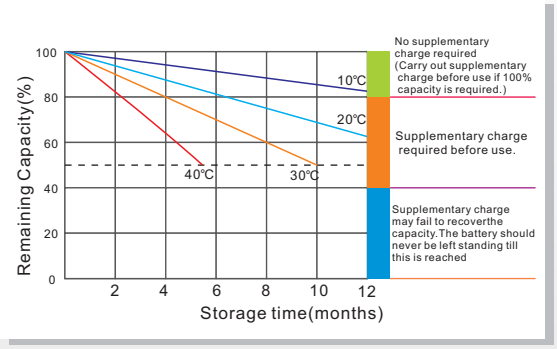
Temperature effects on Capacity



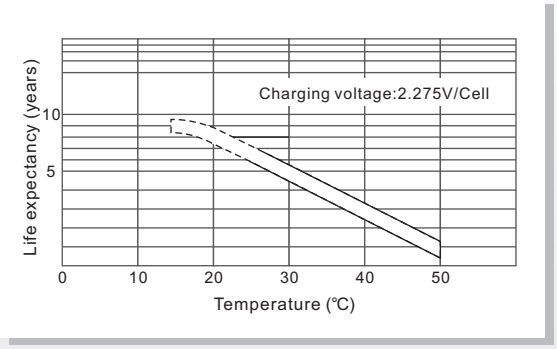
Relationship between charging voltage and temperature



Self-discharge Characteristics



Temperature effects on Float life



Life Characteristics of Standby use