



The **WISE** Choice

EASTMAN WORLD

Welcome to Eastman World - Your Global Partner in Energy Solutions!



AGM VRLA BATTERY

2V SERIES



AGM VRLA 2V Series 200Ah ~ 3000Ah

Certifications



Characteristics

- Capacity range: 200Ah to 3000Ah.
- Available in: 2V cells.
- Cycle life:
 - 30% DOD: 1800 cycles (2V).
 - 50% DOD: 850 cycles (2V).
 - 100% DOD: 400 cycles (2V).
- EUROBAT design life:
 - 2V > 200Ah: >12 years, Very Long Life (depending on cycles).
- Self-discharge per month: ≤ 3% at 25°C.
- Operation temperature range: - 20°C to + 50°C.
- Recommended operation temperature: 25°C.

Introduction

Eastman AGM VRLA batteries are designed with state-of-the-art AGM (Absorbent Glass Mat) technology, high-performance plates and electrolyte. With excellent value and characteristics, this range is suitable for all general purpose applications.

Product Features

- Stable quality & high reliability.
- Long service life.
- Maintenance-free operation.
- Heavy-duty grids.
- Low self-discharge.
- Container available in flame retardant (UL 94-V0).

Application Scenarios

Emergency light systems, Firefighting equipment, Alarm systems, UPS, Electric toys, Medical equipment, Telecommunications, IT equipment.

Product Specifications

Battery Model	Nominal Voltage [V]	Rated Capacity [Ah], 25°C			Internal Resistance [mΩ]	Terminal Type	Terminal Location	Design Life [years]		Weight [kg]	Length [mm]	Width [mm]	Height [mm]	Total Height [mm]
		20Hr 1.80V/cell	10Hr 1.80V/cell	5Hr 1.80V/cell				JIS 25°C	EUROBAT 20°C					
EM2-200-DC	2	211	200	182.5	0.90	T20	G	15	>12	14.00	171±2	111±2	330±2	364±2
EM2-300-DC	2	322	300	278	0.75	T20	G	15	>12	19.50	171±2	151±2	330±2	364±2
EM2-400-DC	2	422	400	364.5	0.60	T20	H	15	>12	27.00	210±2	176±2	330±2	367±2
EM2-500-DC	2	533	500	460	0.50	T20	H	15	>12	31.50	241±2	271±2	330±2	367±2
EM2-600-DC	2	633	600	545	0.45	T20	H	15	>12	38.00	302±2	175±2	330±2	367±2
EM2-800-DC	2	844	800	730	0.35	T20	J	15	>12	53.00	410±2	175±2	330±2	367±2
EM2-1000-DC	2	1060	1000	910	0.28	T20	J	15	>12	63.00	475±2	175±2	330±2	367±2
EM2-1500-DC	2	1570	1500	1355	0.20	T20	K	15	>12	96.50	400±2	350±2	345±2	382±2
EM2-2000-DC	2	2110	2000	1825	0.17	T20	L	15	>12	131.00	490±2	350±2	345±2	382±2
EM2-3000-DC	2	3140	3000	2710	0.11	T20	L	15	>12	188.00	710±2	350±2	345±2	382±2

Technical Information

Charging & Discharging | Characteristics & Cycle Life

Charge Voltage & Charge Current

Ambient Temperature: 25°C

Usage	Standby Use				Cycle Use			
	2V Cell	4V Battery	6V Battery	12V Battery	2V Cell	4V Battery	6V Battery	12V Battery
Charge Voltage (V)	2.25-2.30	4.50-4.60	6.75-6.90	13.5-13.8	2.40-2.50	4.80-5.00	7.25-7.50	14.5-15.0
Max Charge Current (A)	0.3C*	0.3C	0.3C	0.3C	0.3C	0.3C	0.3C	0.3C
Max Charge Current HR (A)	0.08P*	0.08P	0.08P	0.08P	0.08P	0.08P	0.08P	0.08P

Discharge Voltage & Final Voltage

Ambient Temperature: 25°C

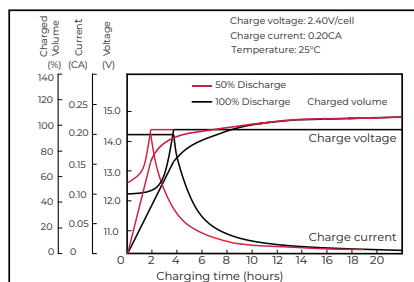
Discharge Current (A)	Final Voltage (V)			
	2V Battery	4V Battery	6V Battery	12V Battery
0.05C ₂₀	1.75	3.50	5.35	10.50
0.1C ₁₀ ~ 0.25C ₁₀	1.80	3.60	5.40	10.80
0.55C ₂₀	1.75	3.50	5.25	10.50
1C ₁₀ ~ 3C ₁₀	1.60	3.20	4.80	9.60

Notes

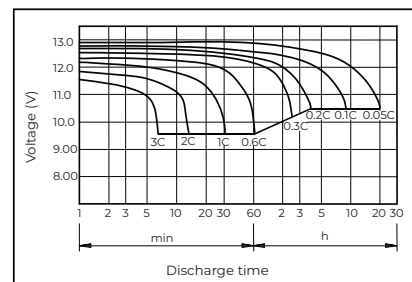
- "C" means Ah value of battery's rated capacity. "P" means watt value of battery's rated power (HR series).
- When the ambient temperature is outside of 15°C to 35°C range, use a temperature compensation factor $\pm 3 \text{ mV}/^\circ\text{C}/\text{cell}$ (standby charge) or $\pm 5 \text{ mV}/^\circ\text{C}/\text{cell}$ (cycle charge), starting from the standard centre point at 25°C.
- When charging, the ambient temperature should be in the range of -10°C to +50°C.
- End of discharge voltage should vary according to the discharge current.
- Battery voltage must be higher than its corresponding end voltage when discharge.
- Charge the batteries immediately after discharge.
- When discharging, the ambient temperature should be in the range of -15°C to +50°C.

Characteristics & Cycle Life

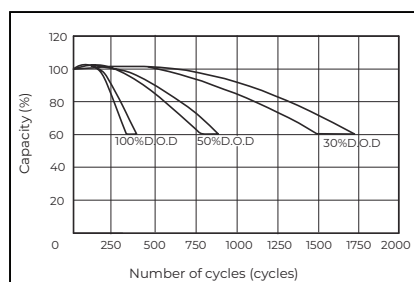
Charging Characteristics (25°C)



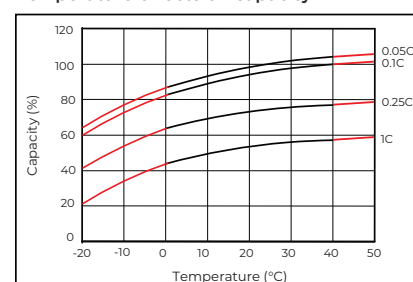
Discharge Characteristics (25°C)



Cycle Life on D.O.D (25°C)

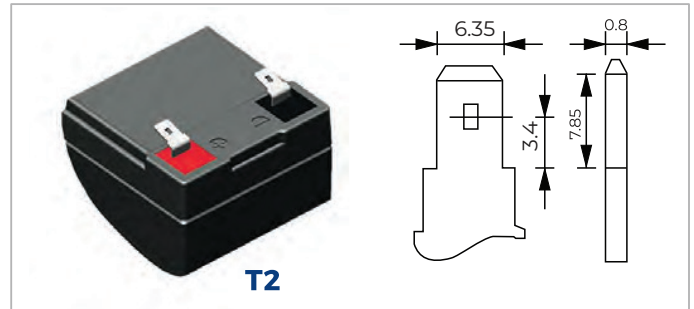
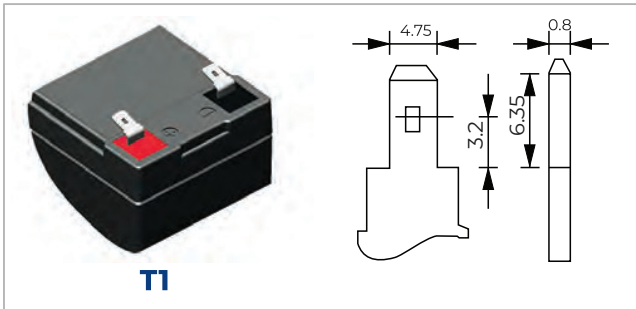


Temperature effects on capacity



Technical Information

Terminal Type & Position



Flat Terminal

Type	A (mm)	B (mm)	C (mm)	D (mm)	Material
T3	12	6	12	2	Cu
T4	14	6	14	2	Cu
T5	16	7	17	8	Pb
T6	18	8	18	7	Pb
T7	18	7	20	8	Pb
T8	24	9	24	7	Pb
T9	26	9	25	8	Pb
T10	26	9	21	7	Pb
T21	20	6	18	3	Cu
T22	22	9	23	3	Cu
T25	25	9	23	3	Cu
T64	20	6	16	3	Cu

Insert Terminal

Type	A (mm)	B (mm)	C (mm)	Material
T12	12	5	2	Cu
T14	14	6	4	Cu
T16	16	8	5	Cu
T16A	16	6	5	Cu
T18	18	8	5	Cu
T20	20	8	5	Cu

Torque specificatio	N.m
T12	3.0 ± 0.6
T14	5.1 ± 0.6
T16	12.3 ± 2.5
T16A	5.1 ± 0.6
T18	12.3 ± 2.5
T20	12.3 ± 2.5



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