Eastman
ENERGY. UNLIMITED.

A GREEN INNOVATION FROM EASTMAN GROUP

SHORT TUBULAR BATTERY MAINTENANCE FREE (100Ah to 200Ah)

www.eaplworld.com | sales@eastmanglobal.com

TECHNICAL SPECIFICATION

Short Tubular Battery Maintenance Free

Product Features :

1. Special alloy with High pressure diecasted spine - rate of spine corrosion is very low as compare to AGM VRLA
2. Ceramic Vent Plugs - Special ceramic vent plugs for controlled acid fumes.
3. Special Negative grid alloy to have MF characteristics.
4. Consistent backup throughout life
5. Spill proof vent plug for zero spillage
6. Low self Discharge equivalent to AGM VRLA.
7. Good for deep cyclic application as compare to AGM VRLA.
8. Maintenance free character for 1 year @ 27°C
9. Very High Design & service life as compare to than AGM VRLA.

Technical Specifications

Model	Nominal Voltage	Rated Capacity 20 Hr @ 27°C (Ah)	Dimensions in mm			Filled Battery Weight [Kg] [±3%]	Terminal Type
			Length (± 3 mm)	Width (± 3 mm)	Height (± 3 mm)		
EM100SMF [12 V 100 AH @ C20]	12	100	411	174	279	31.5	L
EM150SMF [12 V 150 AH @ C20]	12	150	512	212	273	49.05	L
EM200SMF [12 V 200 AH @ C20]	12	200	517	274	275	62.5	L

Electrical Parameters & Charging Profile

Battery Specified Capacity Test @ 27 °C					
	C20 @10.5 V	C10 @10.5 V	C3 @10.5 V	C1 @10.5 V	Energy Kwh (10Hr)
EM150SMF [12 V 150 AH @ C20]	100	90	65	45	1.1
EM150SMF [12 V 150 AH @ C20]	150	135	97	68	1.62
EM200SMF [12 V 200 AH @ C20]	200	180	129	90	2.16
Ah & Wh Efficiency					
Ah Efficiency		>90%	Wh Efficiency		>75%

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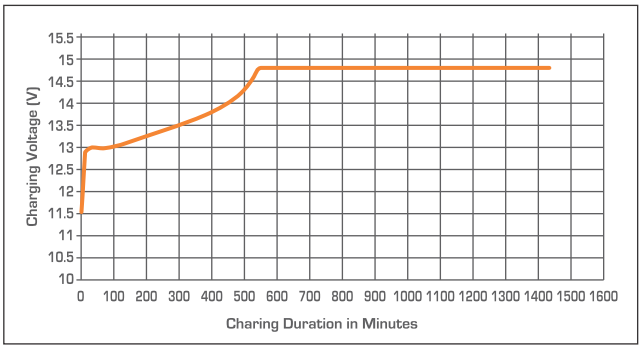
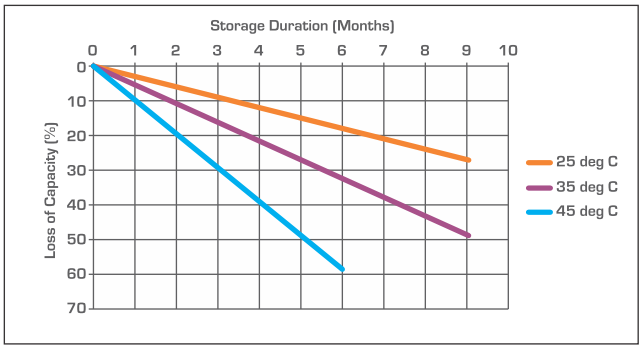
TECHNICAL SPECIFICATION - Short Tubular Battery Maintenance Free

- Poly Components Material:- Polypropylene Co polymer.
- Color :- Black
- Testing Parameters :- IS 13369:1992 & IEC 60896:11

Charging Profile



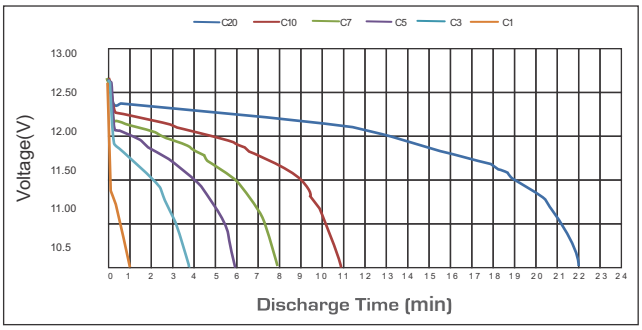
Self Discharge Characteristics @ Different Temperature



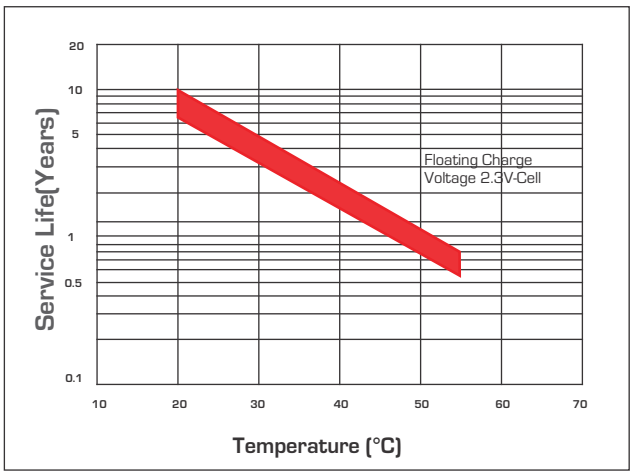
State of Charge Measure of Open-circuit Voltage @ 27°C

State of Charge	Specific Gravity	Voltage
100%	1.245-1.270	12.55V-12.75V
75%	≤ 1.225	≤ 12.4V
50%	≤ 1.190	≤ 12.1V
25%	≤ 1.155	≤ 12.0V
0%	1.120	11.8V

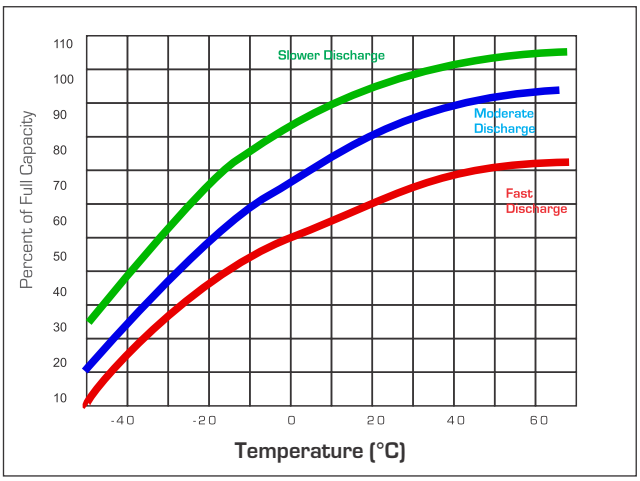
DISCHARGING CHARACTERSTICS at various rates @ 27°C



Service (Float) Life and Temperature



Expected Capacity vs Temperature



Eastman Battery Manufacturing Certified by Vincotte for

ISO9001 CERTIFIED VINÇOTTE

ISO 14001 ENVIRONMENTAL MANAGEMENT VINÇOTTE

OHSAS18001 CERTIFIED VINÇOTTE

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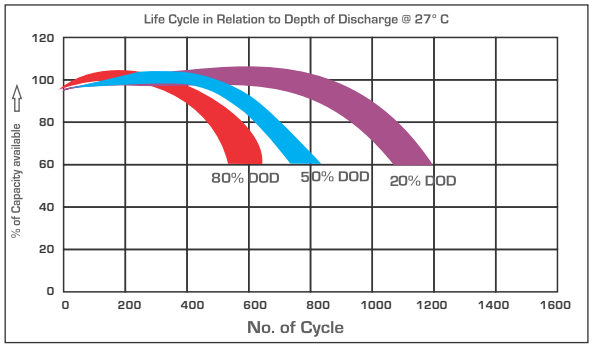
Expected Life



Specific Gravity & Self Discharge w.r.t. Temperature

CHARGING TEMPERATURE COMPENSATION	Add	Subtract
	0.005 volt per cell for every 1°C below 25°C 0.0028 volt per cell for every 1°F below 77°F	0.005 volt per cell for every 1°C above 25°C or 0.0028 volt per cell for every 1°F above 77°F
OPERATIONAL DATA	Operating Temperature	Self Discharge
	-4°F to 131°F (-20°C to +55°C). At temperatures below 32°F (0°C) maintain a state of charge greater than 60%.	As per discharge Graph

Charging Instructions

Charger Voltage Settings (at 77° F/ 25°C)			
System Voltage	12V	24V	48V
Maximum Charge Current	0.2C10		
Maximum Absorption Phase Time (hours)	4		
Absorption Voltage	14.4	28.8	57.6
Float Voltage	13.6	27.2	54.4
Equalization Voltage	16	32	64
Do not install or charge batteries in a sealer or non- ventilated compartment. Constant under or overcharging will damage the battery and shorten its life as with any battery.			
Periodic Charge	Provide a periodic freshening charge to maintain a SOC greater than the threshold of 70%		

Comparison in between Eastman Short Tubular Maintenance Free & AGM Gel VRLA

S.No	Parameter	Eastman Short Tubular Maintenance Free	AGM VRLA
1	Plate Technology	Short Tubular	Flat Pasted Plate
2	Life w.r.t Application	Excellent performance on cyclic application	Not good for deep cycle application.
3	Application	"Power Backup Solution-Solar/Inverter/UPS Suitable for Float Application above 1 Hour discharge rate"	"Power Back up - Inverter/UPS Good for float & stand by application"
4	Electrolyte	Free Flow Electrolyte	Electrolyte in- between AGM
5	Water Loss	Very Low	Negligible
6	Water Top up	No water top up throughout Warranty Life	No water top up throughout Warranty Life
7	Life Extension	Life can be extended via top-up	Not Applicable
8	Self Discharge	Low < 2.5%	Very Low < 2.0%
9	Life Cycle w.r.t DOD @27° C @ 80% DoD	(500 Cycle/100SMF) - (600 Cycle/150-200SMF)	450 Cycle
10	Spillage	Low Spill Proof	Spill-proof
11	Fumes	Low Fumes	No
12	Recovery in PSOC	Excellent	Low
13	Charger Settings	Generic set point for chargers	Required special set point for chargers
14	Operating Temperature Range	-20 Degrees to +55 Degrees	-15 Degrees to +40 Degrees
15	Terminal Type	L-Type Terminal	Stud Type Terminal

Terminal Configuration :-
Terminal Type :- L
Terminal Height :- 21 mm
Torque Value :- 8-10 N.m
Bolt Type :- M8

Vent Plug Type :-
M22 coin type

EASTMAN AUTO & POWER LTD.

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