



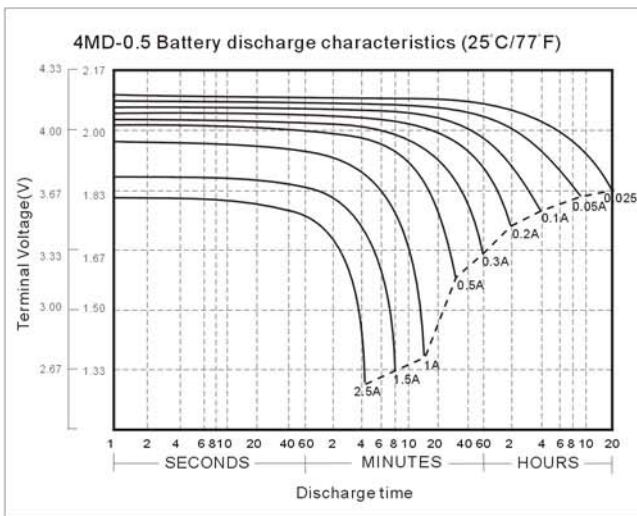
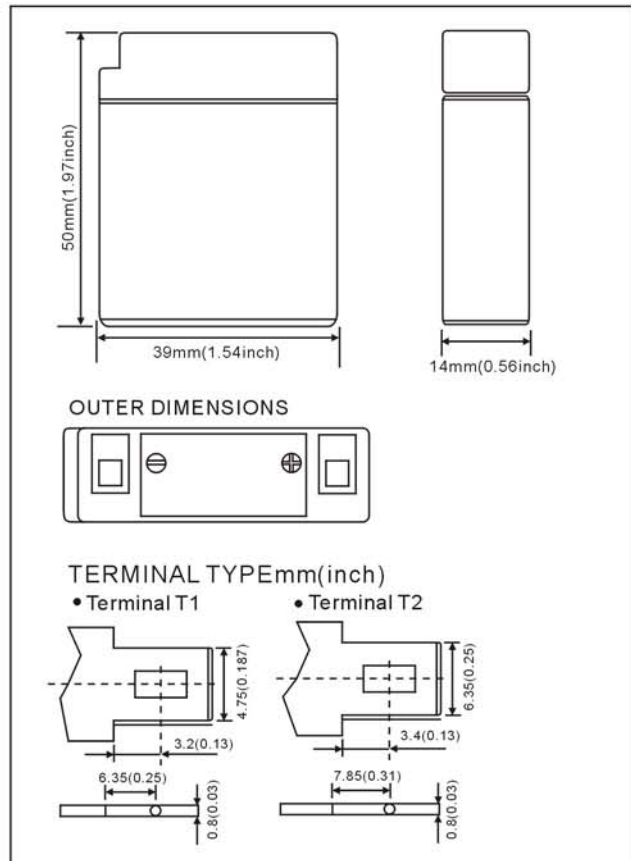
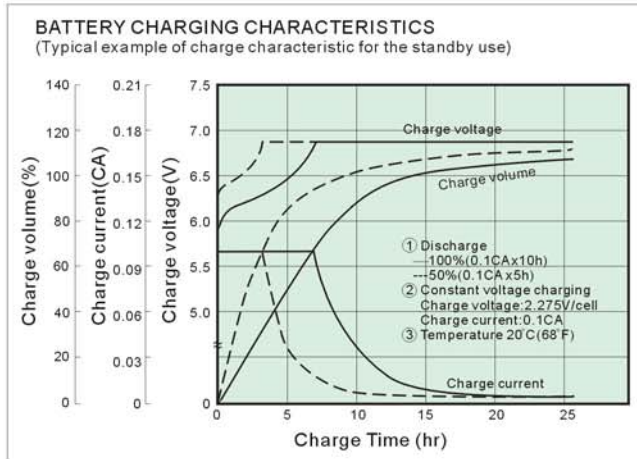
**MD SERIES**  
4MD-0.5 (4V0.5AH)

**FEATURES**

- \*Maintenance Free
- \*Leak Proof/ Spill Proof
- \*Gas Recombination
- \*Absorbed Electrolyte
- \*Float/ Cycle Use
- \*Low Self Discharge Rate
- \*Safety Valve
- \*Lead Calcium Alloy
- \*Useable In Any Position
- \*Rugged Design
- \*Available Flame Retardant Material(Optional)

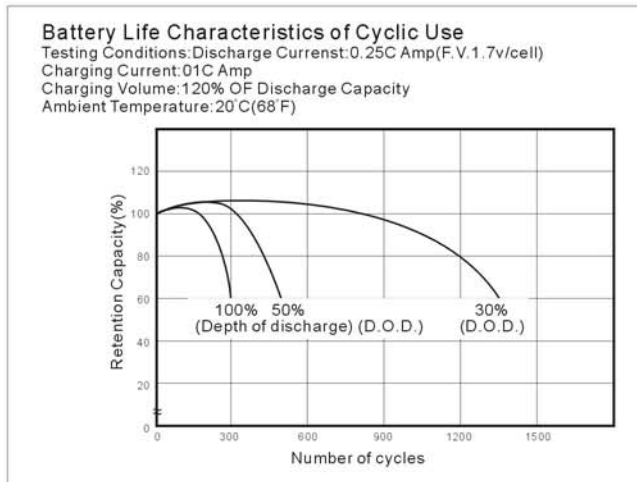
Nominal Voltage		
Rated Capacity (20 Hour Rate)		
Dimensions	Length	39mm (1.54inches)
	Width	14mm (0.56inches)
	Height	50mm (1.97inches)
	Total Height	50mm (1.97inches)
	Weight	0.07kg(0.16lbs)

VRLA 4V0.5Ah - Specifications				
Nominal Voltage	Rated Capacity @20hr rate	Maximum Charge Rate	Maximum Discharge- Amps 5sec.	Internal Resistance
4V	0.5Ah	0.15A	2.5A	79Mili Ohms
Capacity@ 77 F(25 C)	0.50Ah @ 20 hour rate (25mA) to 1.75 volts per cell			
	0.46Ah @ 10 hour rate (46mA) to 1.75 volts per cell			
	0.42Ah @ 5 hour rate (84mA) to 1.70 volts per cell			
	0.36Ah @ 3 hour rate (100mA) to 1.67 volts per cell			
	0.30Ah @ 1 hour rate (0.3A) to 1.60 volts per cell			
Operating Temperature Range	Discharge	-4 F (-20°C) to + 140° F (60° C)		
	Charge	14° F (-10° C) to + 122° F (50° C). (with temperature compensation)		
Recomended Operating Temperature Range	+68° F (20° C)to + 77° F (25° C)			
Charging (Constant Voltage)	Cycle use	Initial Current 0.1Amps (recommended).		
		Voltage 4.83-4.97Volts @77° F (25° C)		
	Float use	Voltage4.53-4.60Volts @77° F (25° C)		
Self Discharge @ 77° F (25° C)	Capacity after 3 month storage	90%		
	Capacity after 6 month storage	80%		
	Capacity after 12 month storage	60%		
CCB Battery may be stored for up to 12 months at 77° F(25° C) and then a freshing charge is required. For higher temperatures the time interval will be shorter.				
Capacity affected by Temperature (20 hour rate)	104° F (40° C)	102%		
	77° F (25° C)	100%		
	32° F (0° C)	85%		
	5° F (-15° C)	65%		
Charge Method (Constant Voltage)	Cycle use (Repeating use)	Initial current	0.1A or smaller	
		Control voltage	4.83V to 4.97V	
	Trickle use	Initial current	0.15A or smaller	
		Control voltage	4.53V to 4.6V(25° C)	



Constant power discharge characteristics at 25°C/77°F

End V/cell	Discharge time							
	5Min	10Min	15Min	30Min	1Hr	3Hr	5Hr	10Hr
1.75V	4.08	2.7	2.06	1.14	0.7	0.35	0.23	0.13
1.70V	4.2	2.78	2.2	0.12	0.78	0.37	0.23	0.13
1.60V	4.33	2.81	2.23	1.24	0.79	0.38	0.24	0.13



### Charging Procedure

Application	Charging method	Charging Voltage at 20°C (V/cell)	Temperature compensation coefficient of charging voltage (mV/C cell)	Max. charging current (CA)	Charging time 0.1CA, 20°C (h)		Temp (°C)
					100% discharge	50% discharge	
For standby power Source	Constant voltage & Constant current charging	2.25~2.30	-3	0.3	24	20	0~40 (32~104°F)
For cycle service	(with current restriction)	2.40~2.0	-4	0.3	16	10	

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