

V-LFP48100 (48V100Ah)

Vision Technology delivers safe lithium iron phosphate Battery solutions for Telecom application.



Overview

The V-LFP 48V100Ah back-up lithium iron phosphate battery system is developed for backup of Telecom equipment. Under normal condition, grid AC power supply to rectifier module and the Telecom loads and charge battery pack; When the AC power fail, rectifier module stop power supply, the battery serves for Telecom equipment, to ensure the Telecom equipment runs normally; when the AC power is switched on again, power rectifier module for Telecom equipment recover to while charge the battery pack.

Features

- RS485 communication output for monitoring
- Built-in BMS with Charging current limitation
- Built-in automatic protection for over-charge, Over - discharge and over-temperature conditions
- State of charge and state of health indication
- Built-in battery control for efficient operation
- Internal cell balancing
- Compatible with standard Telecom rectifiers
- Maintenance free

Specifications		V-LFP48100
Voltage		48 V
Number of cell		15 cell
Nominal Capacity (40°C , 0.5C)		100 Ah
Weight (Approximate)		42.6 ± 0.3Kg
Energy	Normal energy (40°C , 0.5C)	4800 Wh
	Volumetric energy density	153Wh/L
	Gravimetric energy density	112Wh/kg
Dimensions (W*D*H)	Width*Depth* Height	440mm*440mm*177mm
Impedance	(Max, at 1000Hz.)	≤ 25mΩ
Standard Discharge 25°C	Max. constant current	100A
	Cut-off voltage	42V
Standard charge 25°C	Charge Voltage	54-55V
	Max. constant current	100A
	Recommended charging current and time	20A(0.2C) for 5.2 hours
Round trip efficiency (%)		> 96%
Calendar life	25°C	> 12 years
Cycle life (0.2C, 25°C)		80% DOD 4000 cycles
Recommend operating temperature		Charging: 0°C ~60°C
		Discharging: -20°C ~ 60°C
Recommend storage temperature		Recommended range: 0°C ~ 60°C

BMS Parameters.

NO.	Type		Function	Setting value		Remarks
				V-LFP48100	48V100Ah	
1	Voltage	Charge	Cell Voltage Protection	3.90V Protection		Recover at 3.6V
2			Total Voltage Protection	57V Protection		Recover at 54.0V
3		Discharge	Cell Voltage Protection	2.3V Protection		Recover at 3.1V
4			Total Voltage Protection	42V Protection		Recover at 46.5V
5	Current	charge	Normal	$\leq 100A$		
6		Discharge	Normal	$\leq 100A$		
7			Over Current Protection 1	$> 100A$ and $< 150A$		Delay 30s ,recovery in every 60s
			Over Current Protection 2	$> 150A$ and $< 300A$		Delay 3s ,recovery in every 60s
8			Short Circuit Protection	$\geq 300A$		Delay 300uS
9	Temp	Cell Temp 1	Low temp protection	Charging $< -10^{\circ}C$ Discharging $< -20^{\circ}C$		Delay 1~2S
10		Cell Temp 2	High temp protection	Charging $> 70^{\circ}C$ Discharging $> 75^{\circ}C$		Delay 1~2S
11		PCB	Range	$\geq 95^{\circ}C$		Recovery at $75^{\circ}C$
12	Cell Balance	Balance	Make all cells be balance during charging process. Current: 150mA	$V_{Max} \geq 3.40V$ and $V_{Max} - V_{Min} \geq 40mV$, Start balance		All cell voltages $< 3.4V$ or $V_{Max} - V_{Min} \leq 40mV$, or discharge Stop balance

Battery Status.

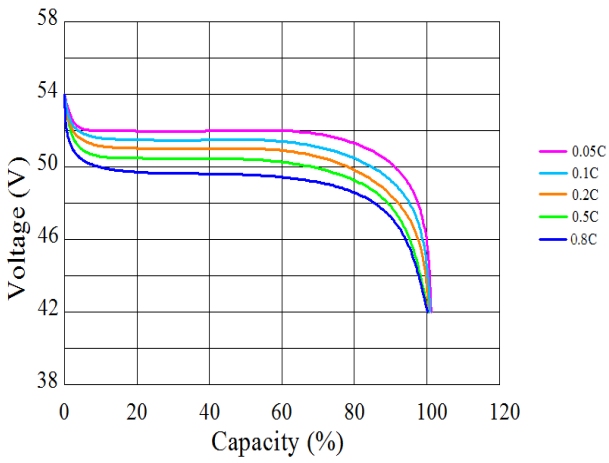
- Stop/Transport Mode.** In working mode, turn off air switch, battery will go to STOP mode with low self-discharge. In STOP mode, charging MOS and discharging MOS are turn off, battery cannot charge, discharge or communicate.
- Working Mode.** In STOP mode, connect the battery to SMPS, turn on air switch, battery will go to working mode. In working mode, BMS will monitor battery voltage, current, and temp and communication is available, charging MOS and discharging MOS are closed, Battery will operate as the settings.
- Sleep Mode.** After turn on the battery, if the battery voltage below low voltage protection, BMS will go to sleep mode in 1 minute. In sleep mode, charging MOS and discharging MOS are closed; BMS will check the current in every 1 min, if there is charging current connecting; battery will turn to working mode.
- Error Mode.** In working mode, if there is: ①. Battery cells, $\Delta U > 1V$, or ②. Any cell voltage $> 3.9V$ or $< 2.3V$, or ③. Battery temp is $< -20^{\circ}C$ or $+75^{\circ}C$. BMS will go to error mode, ALM will bright and other LED will shut down, and go to STOP mode, charging MOS and discharging MOS are turn off. Need to make troubleshoot.



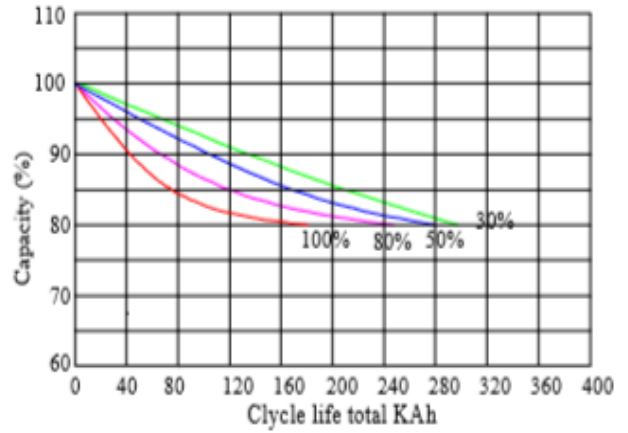
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Performance Curve.

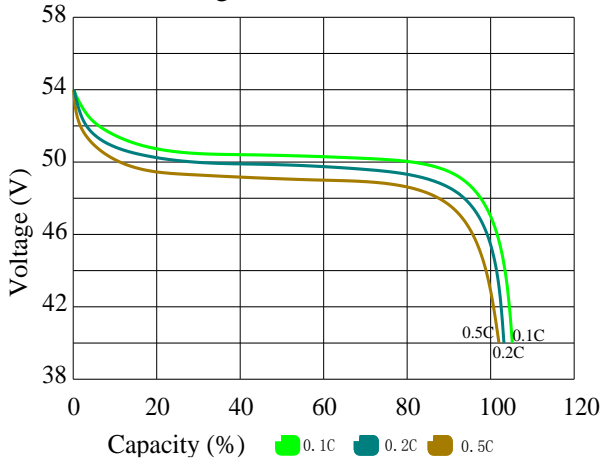
Discharge Performance at 25°C



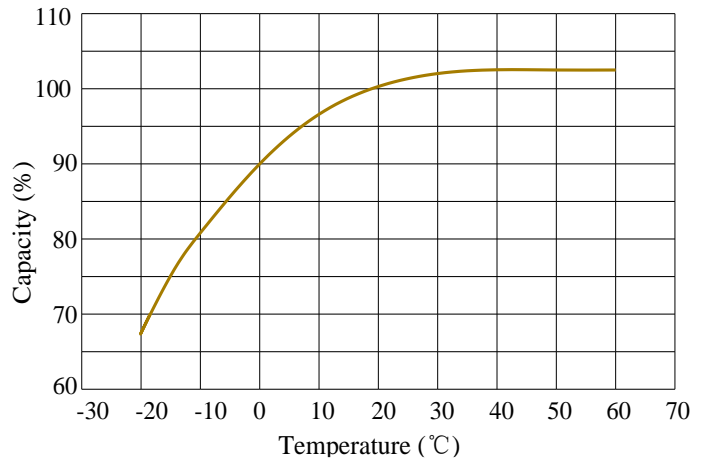
Cycles life total capacity with DOD at 25°C 0.8C



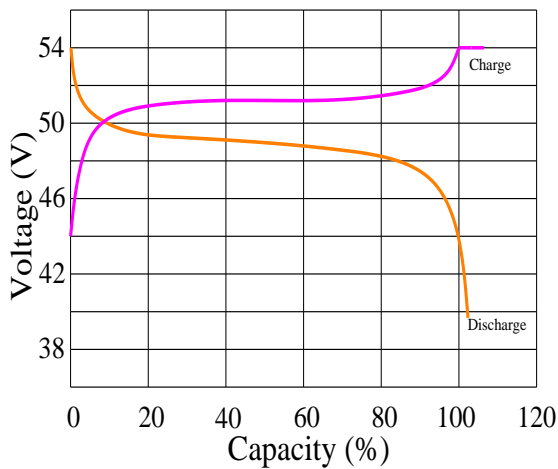
Discharge Performance at 40°C



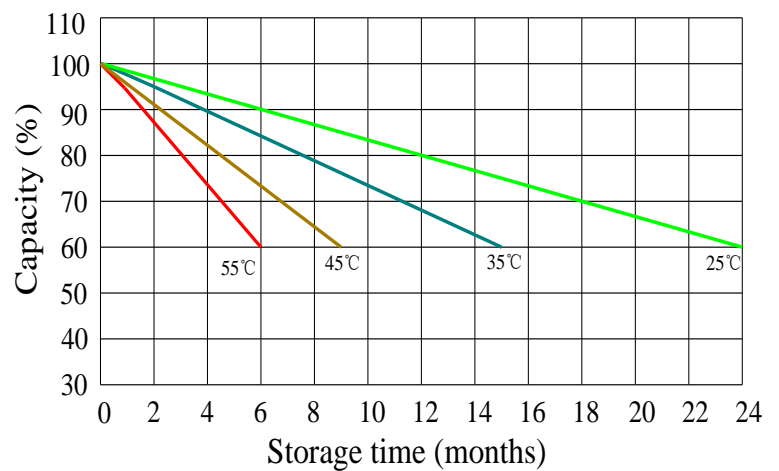
Temperature effects on capacity at 0.5C

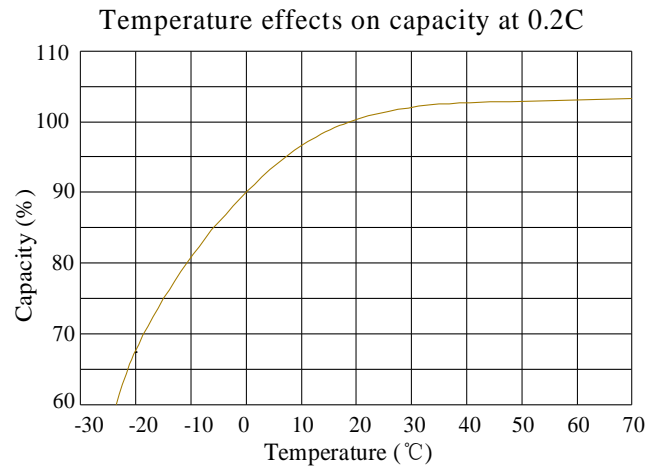
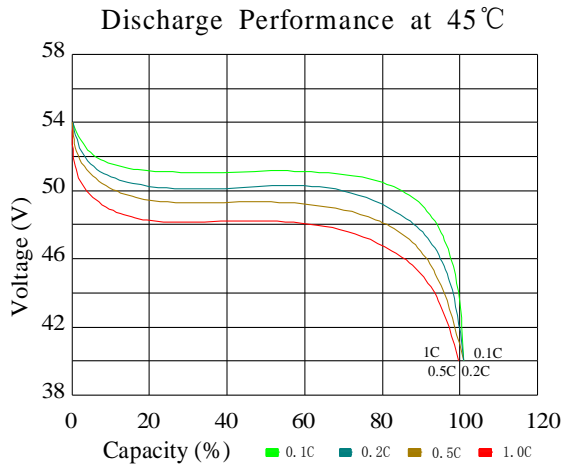


Charge and Discharge at 40°C, 0.5C

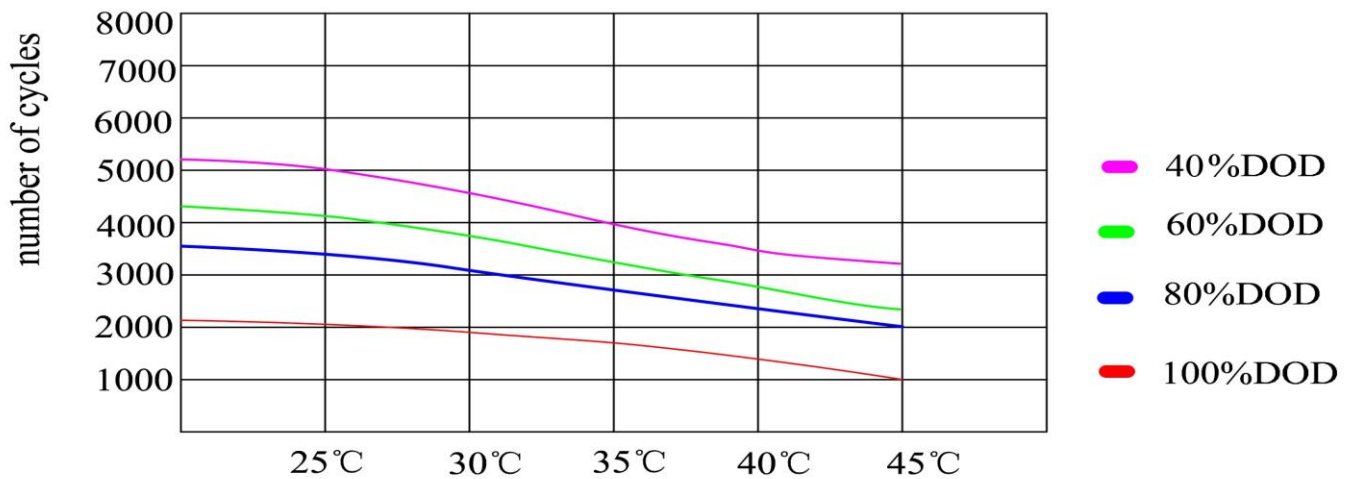


Self-discharge at different temperature





Number of cycles VS DOD at different temp



Performance may vary depending on, but not limited to cell usage and application. If cell is used outside specifications, performance will diminish. All specifications are subject to change without notice. All information provided herein is believed, but not guaranteed, to be current and accurate.