



ACE4738F

3.8A, Standalone Li-ion Battery Charger

Description

The ACE4738F is a PWM switch-mode lithium-ion battery charger controller for 1 cell li-ion battery in a small package using few external components.

The ACE4738F is specially designed for charging lithium-ion batteries with constant current and constant voltage mode. In constant voltage mode, the regulation voltage can be fixed at 4.2V with $\pm 1\%$ accuracy, also can be adjusted upward with an external resistor. The constant charging current is programmable with a single current sense resistor. Deeply discharged batteries are automatically trickle charged at 17.5% of the programmed constant charging current until the cell voltage exceeds 66.5% of constant voltage. The charge cycle is terminated once the charging current drops to 16% of full-scale current, and a new charge cycle automatically restarts if the battery voltage falls below 95.5% of regulation voltage. ACE4738F will automatically enter sleep mode when input voltage is lower than battery voltage.

Other features include under voltage lockout, battery over voltage protection, status indication, etc.

ACE4738F is available in a space-saving 10-pin SSOP package.

Features

- Wide Input Voltage: 4.5V to 28V
- Complete Charge Controller for single cell Lithium-ion Battery
- Charge Current Up to 3.8A
- High PWM Switching Frequency: 300KHz
- Regulation Voltage can be adjusted upward
- Constant Voltage Accuracy: $\pm 1\%$
- Charging Current is programmed with a current sense resistor
- Automatic Conditioning of Deeply Discharged Batteries
- Automatic Recharge
- Charging Status Indication
- Soft Start
- Battery Overvoltage Protection
- Operating Ambient Temperature -40°C to 85°C
- Available in 10 Pin SSOP Package

Application

- Power Bank
- Hand-held Equipment
- Battery-Backup Systems
- Portable Industrial and Medical Equipment
- Standalone Battery Chargers



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Absolute Maximum Ratings

Parameter	Value
Voltage from VCC, VG, DRV, CHRG, DONE to GND	-0.3V to 30V
Voltage from VG to VCC	-8V to VCC+0.3V
Voltage from CSP, BAT, COM, FB to GND	-0.3V to 6.5V
Storage Temperature	-65°C to 150°C
Operating Ambient Temperature	-40°C to 85°C
Lead Temperature (Soldering, 10 seconds)	260°C

Stresses beyond those listed under 'Absolute Maximum Ratings' may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to Absolute Maximum Rating Conditions for extended periods may affect device reliability.

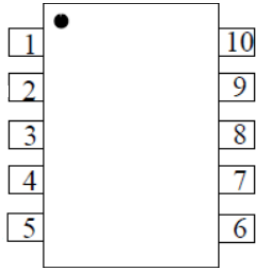


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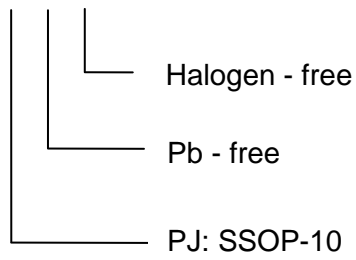
Packaging Type

SSOP-10



Ordering information

ACE4738F XX + H





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Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Technology Co., LTD. As sued herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

ACE Technology Co., LTD.
<http://www.ace-ele.com/>