



# ACE4170F

## 1A JEITA-Compliant 1-Cell Lithium Battery Charger IC

### Description

The ACE4170F is a complete constant-current /constant voltage linear charger for single cell Li-ion and Li Polymer batteries. The device contains an on-chip power MOSFET and eliminates the need for the external sense resistor and blocking diode. An on-chip adaptive cell can adjust charging current automatically based on the output capability of input power supply, so ACE4170F is ideally suited for solar powered system. Thermal feedback regulates the charge current to limit the die temperature during high power operation or high ambient temperature. The regulation voltage is internally fixed at 4.2V with 1% accuracy, it can also be adjusted upwards with an external resistor. The charge current can be set externally with a single resistor. When the input supply is removed, the ACE4170F automatically enters a low power sleep mode, dropping the battery drain current to less than 3uA.

Other features include undervoltage lockout, automatic recharge, JEITA-compliant battery temperature monitoring, over charge current protection and charging/termination indicator.

### Features

- Automatic charge current adjustment based on the output capability of input power supply
- Suitable for Solar-Powered System
- No external Blocking Diode or Current Sense Resistors Required
- Preset 4.2V regulation voltage with 1% accuracy, upwards adjustable with a resistor
- Regulation Voltage can be adjusted to 4.35V and 4.4V for ternary lithium battery
- Over Charge Current Protection in case Short Circuit at ISET Pin
- Precharge Conditioning for Reviving Deeply Discharged Cells and Minimizing Heat Dissipation During Initial Stage of Charge
- Continuous Charge Current Up to 1A
- Constant-Current/Constant-Voltage Operation with Thermal Regulation to Maximize Charge Rate Without Risk of Overheating
- Automatic Low-Power Sleep Mode When Input Supply Voltage is Removed
- Status Indication for LEDs or uP Interface
- C/10 Charge Termination
- Automatic Recharge
- JEITA-Compliant Battery Temperature Monitoring

### Application

- Emergency Lighting
- Beauty and Grooming
- Fleet Management, Asset Tracking
- Solar Powered System
- Portable Devices



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### Absolute Maximum Ratings

Parameter	Value
All Terminal Voltage	-0.3V to 6.5V
BAT Short-Circuit Duration	Continuous
Storage Temperature	-65°C to 150°C
Lead Temperature (Soldering, 10s)	260°C
Maximum Junction Temperature	150°C
Operating Temperature	-40°C to 85°C
Thermal Resistance	TBD

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.

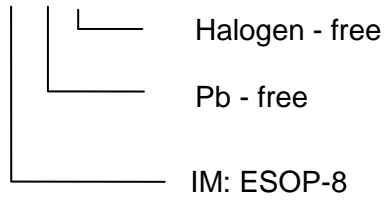


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## Ordering information

ACE4170F 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.

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