ACE40421F

1A Lithium Battery Charger IC

Description

The ACE40421F is a complete constant-current /constant voltage linear charger for single cell Li-ion and Li Polymer rechargeable batteries. The device contains an on-chip power MOSFET and eliminates the need for the external sense resistor and blocking diode. Its low external component count makes ACE40421F ideally suited for portable applications.

Thermal feedback regulates the charge current to limit the die temperature during high power operation or high ambient temperature. The regulation voltage is fixed at 4.2V with 1% accuracy. The charge current can be set externally with a single resistor. When the input supply is removed, the ACE40421F automatically enters a low power sleep mode, dropping the battery drain current to less than 3uA. Other features include undervoltage lockout, automatic recharge, chip enable function, battery temperature monitoring and charge status indications.

Features

- Complete Charge Management for Single Cell Lithium Battery
- On-chip Power MOSFET
- No external Blocking Diode or Current Sense Resistors Required
- Preset 4.2V Regulation Voltage with 1% Accuracy
- Precharge Conditioning for Reviving Deeply Discharged Cells and Minimizing Heat Dissipation During Initial Stage of Charge
- 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 Indications for LEDs or uP Interface
- C/10 Charge Termination
- Automatic Recharge
- Battery Temperature Monitoring
- Chip Enable Input
- Available in thermally enhanced SOP8 Package
- Pb-free, rohs-compliant and Halogen-free

Application

- Cellular Telephones
- Digital Still Cameras
- Power Bank
- Portable Devices
- Standalone Chargers

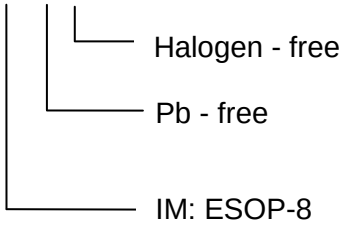
Absolute Maximum Ratings

Parameter	Value
All Terminal Voltage	-0.3V to 6.5V
BAT Short-Circuit Duration	Continuous
ESD Rating (HBM)	2KV
Storage Temperature	-65℃ to 150℃
Thermal Resistance	TBD
Maximum Junction Temperature	150℃
Operating Temperature	-40℃ to 85℃
Lead Temperature (Soldering)	300℃

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.

Ordering information

ACE40421FXX + H



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 shoes 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.