ACE4166D

Standalone Linear Li-Ion battery charger with Thermal Regulation

Description

The ACE4166D is a complete constant-current constant-voltage linear charger for single cell Li-Ion batteries. It's SOT package and low external component count make the ACE4166D especially well-suit for portable applications. Furthermore, the ACE4166D is specifically designed to work within USB Power specifications. No external sense resistor is needed and no blocking diode is required due to internal MOSFET architecture. Thermal feedback regulates the charge current to limit the die temperature. The charge voltage is fixed at 4.2V and the charge current can be programmed externally with a single resistor. The ACE4166D automatically terminates the charge cycle when the charge current drops to 1/10th the programmed value after the final float voltage is reached. The ACE4166D automatically re-starts the charge if the battery voltage falls below an internal threshold.

Features

- Programmable Charge Current Up to 800mA
- No External MOSFET, Sense Resistor or Blocking Diode Required
- Charges Single Cell Li-Ion Batteries Directly from USB Port
- Preset 4.2V Charge Voltage with -1.2% Accuracy
- Constant-Current/Constant-Voltage Operation with Thermal Regulation to Maximize Charge Rate Without Risk of Overheating
- Charge Status Output Pin
- 30μA Shutdown Current
- 70μA Standby Current
- CompleteLinear Charger in SOT23-5 Package for Single Cell Lithium-Ion Batteries
- C/10 Charge Termination
- Soft-Start Limits Inrush Current
- Automatic Recharge

Applications

- Cellular Telephones, PDAs
- Charging Docks and Cradles
- Portable MP3 Players
- Bluetooth Applications

Absolute Maximum Ratings (Unless otherwise specified, T_A=25℃)

Parameter		Symbol	Ratings	Units
Input Voltage		V_{CC}	V_{SS} -0.3~V_{SS} 8	V
Prog Pin Voltage		V_{PROG}	V_{SS} -0.3~V_{IN} 0.3	V
CHG,BAT Pin Voltage		V_{BAT}	V_{SS} -0.3~V_{ss} 8	V
BAT Pin Current		I_{BAT}	800	mA
Power Dissipation	SOT-23-5	P_d	400	mW
Operating Temperature		T_{opr}	-40~ 85	°C
Junction Temperature		T_j	125	°C
Storage Temperature		T_{stg}	-40~ 125	°C
Soldering Temperature & Time		T_{solder}	260℃, 10s	

Ordering information

ACE4166D XX XX + H

- Halogen - free
- Pb - free
- BN: SOT-23-5
- Charge Voltage: 4.2V

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.