



ACE4705

5A, Multi-Chemistry Battery Charger

Description

The ACE4705 is a PWM switch-mode battery charger controller for 1 or multi-cell lithium-ion batteries or LiFePO4 batteries in a small package using few external components.

The ACE4705 is specially designed for charging lithium-ion batteries or LiFePO4 batteries with constant current and constant voltage mode. In constant voltage mode, the regulation voltage is set by the external resistor divider. The constant charging current is programmable with a single sense resistor. Deeply discharged batteries are automatically trickle charged at 15% of the programmed constant charging current until the cell voltage exceeds 66.7% of the regulation voltage in constant voltage mode. The charge cycle is terminated once the charging current drops to a level set by an on-chip resistor and an external resistor, and a new charge cycle automatically restarts if the battery voltage falls below 91.1% of the regulation voltage in constant voltage mode. ACE4705 will automatically enter sleep mode when input voltage is lower than battery voltage.

Other features include undervoltage lockout, battery temperature monitoring and status indication, etc.

Features

- Wide Input Voltage: 7.5V to 28V
- Complete Charger Controller for 1 or multi-cell Lithium-ion Battery or LiFePO4 Battery
- Charge Current Up to 5A
- High PWM Switching Frequency: 300KHz
- Constant Charging Voltage Set By the External Resistor Divider
- Charging Current is programmed with a sense resistor
- Automatic Conditioning of Deeply Discharged Batteries
- End-of-Charge Current can be set by an external resistor
- Battery Temperature Monitoring
- Automatic Recharge
- Charger Status Indication
- Soft Start
- Battery Overvoltage Protection
- Operating Ambient Temperature -40°C to 85°C

Application

- LiFePO4 Battery Charger
- Electric Tools
- Battery-Backup Systems
- Portable Industrial and Medical Equipment
- Standalone Battery Chargers



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Absolute Maximum Ratings

Parameter	Max	Unit
Voltage from VCC, VG, DRV, CHRG, DONE to GND	-0.3 ~ 30	V
Voltage from VG, DRV to GND	8	V
Voltage from CSP, BAT to GND	-0.3 ~ 28	V
Voltage from COM3 to GND	6.5	V
Voltage from Other Pins to GND	-0.3 ~ $V_{COM3}+0.3$	μ A
Storage Temperature	-65 ~ 150	$^{\circ}$ C
Operating Ambient Temperature	-40 ~ 85	$^{\circ}$ C
Lead Temperature (Soldering, 10 seconds)	260	$^{\circ}$ 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.

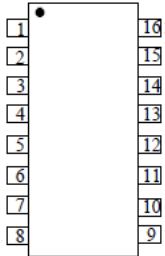


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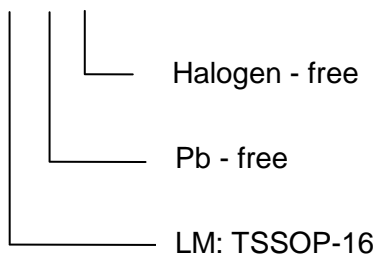
Packaging Type

TSSOP-16



Ordering information

ACE4705 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 used 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/>