



# ACE4722

## 5A, Multi-Chemistry Battery Charger IC With Photovoltaic Cell MPPT Function

### Description

The ACE4722<sup>(Note 1)</sup> is a PWM switch-mode battery charger controller that can be powered by photovoltaic cell with maximum power point tracking function. The ACE4722 is specially designed for charging 1 or multi-cell 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 current 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 charging current decreases gradually, the charge cycle will be terminated when the charging current drops to 9.5% of the full-scale current, and a new charge cycle automatically restarts if the battery voltage falls below 95.8% of the regulation voltage in constant voltage mode.

ACE4722 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

- Photovoltaic Cell Maximum Power Point Tracking
- 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
- Battery Temperature Monitoring
- 2 Status Indications
- Soft Start
- Battery Overvoltage Protection
- Operating Ambient Temperature -40°C to +85°C

### Application

- The Charger Powered by Photovoltaic cell
- Electric Tools
- Battery-Backup Systems
- Standalone Battery Chargers

Note 1: Patent Pending



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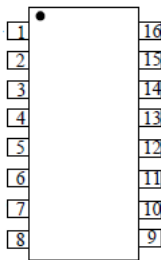
### Absolute Maximum Ratings

Parameter	Max	Unit
Voltage from VCC, VG, DRV, CHRG, DONE to GND	-0.3 ~ 30	V
Voltage from CSP, BAT to GND	-0.3 ~ 28	V
Voltage from COM3 to GND	6.5	V
Voltage from Other Pins to GND	-0.3 ~ $V_{COM3}+0.3$	$\mu A$
Storage Temperature	-65 ~ 150	$^{\circ}C$
Operating Ambient Temperature	-40 ~ 85	$^{\circ}C$
Lead Temperature (Soldering, 10 seconds)	300	$^{\circ}C$

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.

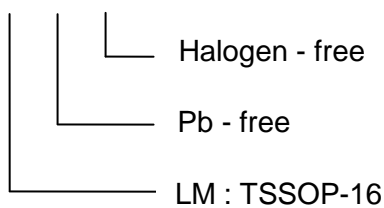
### Packaging Type

TSSOP-16



### Ordering information

ACE4722 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 Electronics 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.

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