



ACE4566RT

28V, 800mA, Single Li-ion Battery Linear Charger

Description

The ACE4566RT is a complete constant-current/constant voltage linear charger for single Lithium-Ion battery with high input voltage rating and large current. The largest input voltage is up to 28V and charge current is up to 1A. The input over voltage protection threshold is 6.8V and the lowest input voltage is 3.75V, which can meet the requirement of voltage- adjustment to reduce charging power consumption and improve overall efficiency. External isolation diodes are not required due to the internal PMOS architecture and anti-reverse charging circuit. Thermal feedback regulates the charge current to limit the die temperature during high power operation or high ambient temperature. The charge voltage is fixed at 3.5V/3.6V/3.7V, and the charge current can be programmed externally with a single resistor. The ACE4566RT automatically terminates the charge cycle when the charge current drops to 1/10 the programmed value after the final float voltage is reached. When the input voltage (supplied by AC adapter or USB power supply) is removed, the ACE4566RT automatically enters a low current state, decreasing the battery leakage current to less than 1 μ A. Other features of ACE4566RT include over temperature protection, under voltage lockout, automatic recharge and charging state indication (two LED pins to show charge state and charge-ending state).

Features

- Maximum Input Voltage: up to 28V
- Minimum Input Voltage: 3.75V (Typ.)
- Input Over Voltage Protection: 6.8V (Typ.)
- Maximum BAT withstand voltage up to 20V
- Battery reverse connection protection
- Programmable Charge Current up to 1A
- No anti-backcharge MOSFETs, detection resistors, or isolation diodes are required
- Thermal Regulation to Maximize Charge Rate Without Risk of Overheating.
- 1% Charge Voltage Accuracy
- Charging status and fault status indication
- C/10 Termination Charge Current, automatically recharge
- Trickle charge threshold: 1.9V to 2.1V
- Soft-start and surge current limit
- Battery Temperature Monitoring
- Available ESOP-8, DFN2*2-8, DFN3*3-8L Package

Application

- Digital camera, mobile phone, PDA, GPS
- Portable devices, Various chargers
- Standby power supply/ portable power source



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Absolute Maximum Ratings ^(Note)

Item	Symbol	Value	Unit	
Input Voltage	V_{CC}	-0.3~28	V	
BAT Voltage	V_{BAT}	-5~20	V	
CHG/FULL/CE/TEMP Voltage	$V_{PIN(1)}$	-0.3~28	V	
PROG Voltage	$V_{PIN(2)}$	-0.3~7	V	
BAT Pin Current	I_{BAT}	1200	mA	
Maximum Power Dissipation	ESOP-8	P_{DMAX}	2.0	W
	DFN2*2-8		1.0	W
	DFN3*3-8L		1.5	W
Junction to Ambient Thermal Resistance	ESOP-8	$R_{\theta JA}$	60	°C/W
	DFN2*2-8		100	°C/W
	DFN3*3-8L		67	°C/W
Junction Temperature	T_J	-40 to 150	°C	
Ambient Temperature	T_A	-40 to 85	°C	
Storage Temperature	T_{STG}	-55 to 150	°C	
Soldering Temperature	T_{SOLDER}	260	°C,10s	

Note: Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Recommended Operating Condition

Item	Symbol	Min	Max	Unit
Input Voltage Range	V_{CC}	3.75	25	V
Charge Current Range	I_{BAT}	100	1000	mA
Charge Current Programming Resistor	R_{PROG}	1	10	KΩ

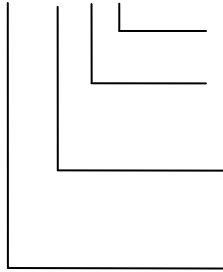


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Ordering Information

ACE4566RT XX XX + H



Halogen - free

Pb - free

I M: ESOP-8

DN: DFN2*2-8

NN: DFN3*3-8L

Float Voltage: 3.5V/3.6V/3.7V



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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/>