



ACE4561P

Maximum Input Voltage 300mA Single Cell Li-ion Battery Charger 16V OVP, Enable Control

Description

The ACE4561P series of devices are highly integrated Li-Ion and Li-Pol linear chargers targeted at small capacity battery for portable applications. It is a complete constant current/ constant voltage linear charger. No external sense resistor is needed, and no blocking diode is required due to the internal MOSFET architecture. It can deliver up to 300mA of charge current (using a good thermal PCB layout) with a final float voltage accuracy of $\pm 1\%$. The charge voltage is fixed at 4.2V to 4.45V with 50mV per step, and the charge current can be programmed externally with a single resistor. The charger function has high accuracy current and voltage regulation loops and charge termination.

The ACE4561P 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 supply (wall adapter or USB supply) is removed, the ACE4561P will shut off, the leakage current coming from battery at sleep mode decrease to less than 1ua , so it can save energy and improve standby time. The ACE4561P is available in a small package with TDFN1*1-6. Standard product is Pb-Free and Halogen- free.

Features

Charging

- Input Voltage Range: 3.25V ~ 16V, OVP is 5.7V
- Preset 4.20V to 4.45 Charge Voltage, 50mV/step
- Constant Current/Constant Voltage/Thermal Limiting Regulation
- Precharge Function for Deeply Discharged Battery
- Support Application for Very Low Charge Currents – 10mA to 300mA
- Support Minimum 1mA Charge Termination Current
- Automatic Recharge and Low Power Sleep Mode when Input Supply Voltage is Removed
- Soft-Start Limits Inrush Current
- Charge Status Output Pin
- Chip Enable Input Pin

Applications

- Fitness Accessories
- Smart Watches
- Bluetooth Handsets
- Wireless Low Power Handheld Devices



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Absolute Maximum Ratings

Symbol	Items		Value	Unit
V_{CC}	Input Voltage		-0.3~17	V
V_{PROG}	PROG Voltage		-0.3~7	V
V_{BAT}	BAT Voltage		-0.3~7	V
V_{CHGb}	CHGb Voltage		-0.3~7	V
V_{ENb}	ENb Voltage		-0.3~7	V
I_{BAT}	Battery Charge Current		300	mA
P_{DMAX}	Power Dissipation	TDFN1*1-6	0.5	W
T_J	Junction Temperature		-40 to 125	°C
T_{STG}	Storage Temperature		-55 to 150	°C
T_{SOLDER}	Package Lead Soldering Temperature		260°C, 10s	
ESD HBM	Human Body Mode		±2	KV

Note: Exceed these limits maybe damage the device. Exposure to absolute maximum rating conditions may affect device reliability.

Recommended Operating Range

Symbol	Items	Min	Nom	Max	Unit
V_{CC}	Input operating voltage range	3.25	5	16	V
I_{BAT}	Battery charge current range	10	100	300	mA
T_J	Junction temperature	0		125	°C
R_{PROG}	CC mode charge current programming resistor	0.33	1	10	KΩ

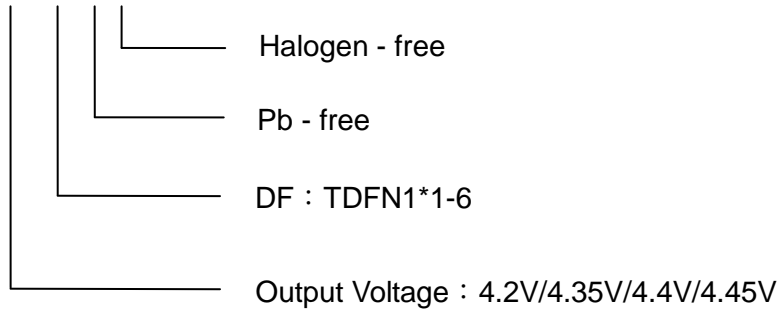


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Ordering information

ACE4561P XX 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.
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