



ACE40541P

500mA, Single Li-ion Battery

Description

The ACE40541P is a complete constant-current/ constant voltage linear charger for single cell Lithium-Ion batteries. No external sense resistor is needed, and no blocking diode is required due to the internal MOSFET architecture. The charge voltage is fixed at 4.2V, 4.35V, 4.4V and 4.45V, and the charge current can be programmed externally with a single resistor.

The ACE40541P 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 ACE40541P automatically enters a low current state, dropping the battery drain current to less than 0.1uA.

Features

- Programmable Charge Current Up to 500mA
- 10% Charge Current Accuracy
- 1% Charge Voltage Accuracy
- Under Voltage Lockout Protection
- Input Over Voltage Protection: 6.4V (Typ.)
- 100mV (Typ.) Automatic Recharge Threshold
- Charge Status Output Pin
- 2.9V(Typ.) Trickle Charge Threshold
- Thermal Regulation Temperature: 140°C
- Protection for Battery Reverse Connection

Application

- Feature Phone
- MP3/MP4 Players
- Electric Toy
- Bluetooth, wireless handsets
- Others portable electronic device



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Absolute Maximum Ratings (Note)

Symbol	Items	Value	Unit
V _{CC}	Input Voltage	-0.3 ~ 9	V
V _{BAT}	BAT Voltage	-5 ~ 7	V
V _{PROG}	PROG Voltage	-0.3 ~ V _{CC} +0.3	V
V _{CHGb}	CHGb Voltage	-0.3 ~ V _{CC} +0.3	V
P _{D_MAX}	Power Dissipation	0.5	W
R _{θJA}	Thermal Resistance	270	°C/W
T _J	Junction Temperature	-40 ~ 125	°C
T _{STG}	Storage Temperature	-55 ~ 150	°C
T _{SOLDER}	Package Lead Soldering Temperature	260°C, 10s	
ESD	HBM	±5	KV

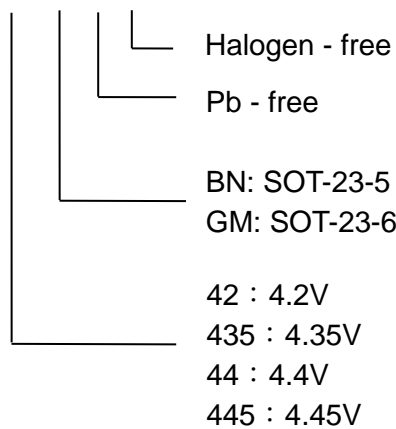
Note: Exceed these limits may damage the device. Exposure to absolute maximum rating conditions may affect device reliability.

Recommended Operating Conditions

Symbol	Items	MIN	NOM	MAX	UNIT
V _{CC}	Input operating voltage range	4	5	6	V
I _{BAT}	Battery charge current range	100	250	500	mA
R _{PROG}	CC mode charge current programming resistor	2	4	10	KΩ

Ordering information

ACE40541P 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.

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