



# ACE40512Z

## 1.2A/16V Fully Integrated Linear Charger for 1 Cell Li-ion Battery

### Description

ACE40512Z is a single cell, fully integrated constant current (CC)/constant voltage (CV) Li-ion battery charger. Its compact package with minimum external components requirement makes the ACE40512Z ideal for portable applications. No external sense resistor or blocking diode is necessary for the ACE40512Z. Build-in thermal feedback mechanism regulates the charge current to control the die temperature during high power operation or at elevated ambient temperature. The ACE40512Z has a pre-charge function for trickle charging deeply discharged batteries. The fast charge current can be programmed by an external resistor. CV regulation mode is automatically enabled once the battery's charging curve reaches the constant voltage portion. The output current then decays and is finally terminated once the charge current drops to 1/10th of the programmed value. The ACE40512Z keeps monitoring the battery voltage and enables a new charge cycle once the voltage drops by 120mV below the CV value.

### Features

- 16V input standoff voltage
- 4.2V charge termination voltage
- 2.9V trickle charge threshold
- Charge current programmable, up to 1.2A
- 250nA BAT current when no charging
- Soft-start limits in-rush current
- ESOP8 / DFN2x2-8 / DFN2x3-8 / SOT23-6

### Application

- E-cigarette
- Toys
- Bluetooth applications
- Li-ion battery powered devices



# ACE40512Z

## 1.2A/16V Fully Integrated Linear Charger for 1 Cell Li-ion Battery

### Absolute Maximum Rating

| Parameter                          |               | Value          |          |
|------------------------------------|---------------|----------------|----------|
| VIN Voltage                        |               | -0.3V to 20V   |          |
| ISET Voltage                       |               | -0.3V to 6V    |          |
| ALL other pin Voltage              |               | -0.3V to 16V   |          |
| Operating Temperature Range        |               | -40°C to 85°C  |          |
| Storage Temperature Range          |               | -55°C to 150°C |          |
| Thermal Resistance                 | $\theta_{JA}$ | ESOP-8         | 50°C/W   |
|                                    |               | DFN2*2-8       | 100°C /W |
|                                    |               | DFN2*3-8       | 80°C /W  |
|                                    |               | SOT-23-6       | 110°C /W |
|                                    | $\theta_{JC}$ | ESOP-8         | 10°C/W   |
|                                    |               | DFN2*2-8       | 20°C /W  |
|                                    |               | DFN2*3-8       | 15°C /W  |
|                                    |               | SOT-23-6       | 22°C/W   |
| Lead Temperature (Soldering 10sec) |               | 260°C          |          |
| ESD HBM (Human Body Mode)          |               | 2KV            |          |

(Note: Exceeding these limits may damage the device. Exposure to absolute maximum rating conditions for long periods may affect device reliability.)

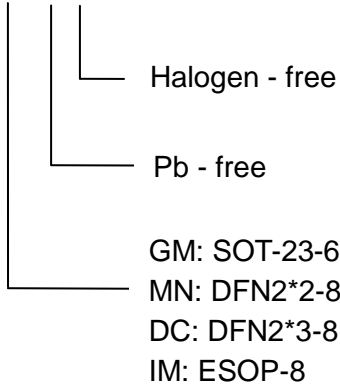


# ACE40512Z

## 1.2A/16V Fully Integrated Linear Charger for 1 Cell Li-ion Battery

### Ordering information

ACE40512Z XX + H





# ACE40512Z

## 1.2A/16V Fully Integrated Linear Charger for 1 Cell Li-ion Battery

### 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 sued 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/>