



XTB1056

1A/28V Fully Integrated Linear Charger for Single Cell Li-ion Battery

芯天下技术股份有限公司

XTX Technology Inc.

Tel: (+86 755) 28229862

Fax: (+86 755) 28229847

Web Site: <http://www.xtxtech.com/>

Technical Contact: fae@xtxtech.com

* Information furnished is believed to be accurate and reliable. However, XTX Technology Inc. assumes no responsibility for the consequences of use of such information or for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent rights of XTX Technology Inc. Specifications mentioned in this publication are subjected to change without notice. This publication supersedes and replaces all information previously supplied. XTX Technology Inc. products are not authorized for use as critical components in life support devices or systems without express written approval of XTX Technology Inc. The XTX logo is a registered trademark of XTX Technology Inc. All other names are the property of their respective own.

1A/28V Single Cell Li-ion Battery Linear Charger

DESCRIPTION

The XTB1056 is a cost-effective, high-integration linear charger for single cell Li-ion or Li-ion polymer batteries. The device support CC/CV charge from either USB port or AC adapter. Low BOM component requirement makes the whole system small in size. The charger accepts an input voltage up to 28V but is disabled when the input voltage exceeds the OVP threshold. The 28V rating eliminates the over-voltage protection circuit required in a low input voltage charger.

The charge current and the end-of-charge current are programmable with external resistors. When the battery voltage is lower than typically 2.6V, the charger preconditions the battery with typically 20% of the programmed charge current.

The XTB1056 implements two indication pins, $\overline{\text{PPR}}$ and $\overline{\text{CHG}}$, allowing connection to micro-controller or LED to show device status. With open-drain structure, $\overline{\text{PPR}}$ pin stays low while input voltage is within operation range, and $\overline{\text{CHG}}$ stays low during charging state, else pins are in the high impedance state.

The XTB1056 features thermal fold-back function to limit the charge current and protect the device from over junction temperature fault. The XTB1056 also integrates current monitor, UVLO, OVP function to prevent device from damage.

FEATURES

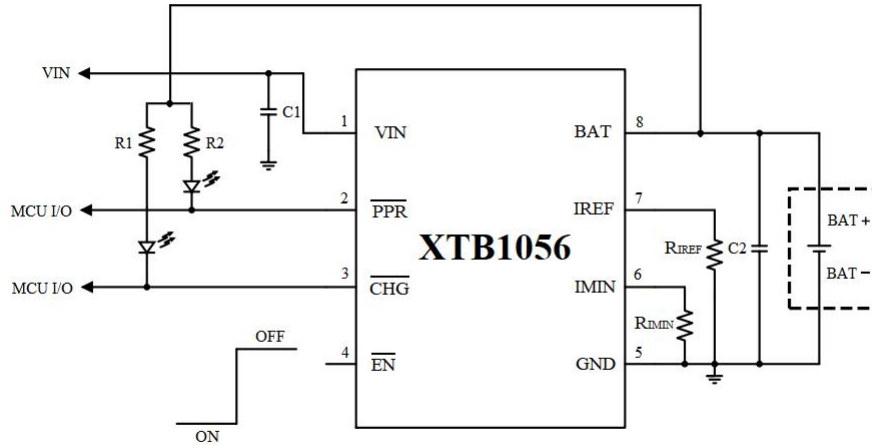
- Single-Chip for 1-cell Li-ion or Polymer Battery
- Constant-Current/Constant-Voltage Battery Charge
- No External MOSFET, Current Sensor or Diode Required
- Low Component Count and Cost
- Programmable Charge Current
- Programmable End-of-Charge Current
- Charging Current Monitor and Thermal Fold-back
- 2.6V Trickle Charge Threshold
- With 6.8V or 10.5V Input Over-Voltage Protection
- 28V Maximum Voltage for the Power Input
- Input-based dynamic power management (VIN-DPM)
- Short-circuit Protection
- Protection of Reverse Connection of Battery
- Power Presence and Charge Indications
- Soft start for Inrush Current Limitation
- Automatic Battery Recharge
- Operation Temperature: -40°C~+85°C
- Package options: DFN-2×2-8L and ESOP-8

APPLICATIONS

- ◇ Mobile Phones
- ◇ Portable Devices
- ◇ Wireless Devices, Bluetooth Headset
- ◇ Personal Electronics, Personal Healthcare
- ◇ Wearable Device

1A/28V Single Cell Li-ion Battery Linear Charger

TYPICAL APPLICATION CIRCUIT



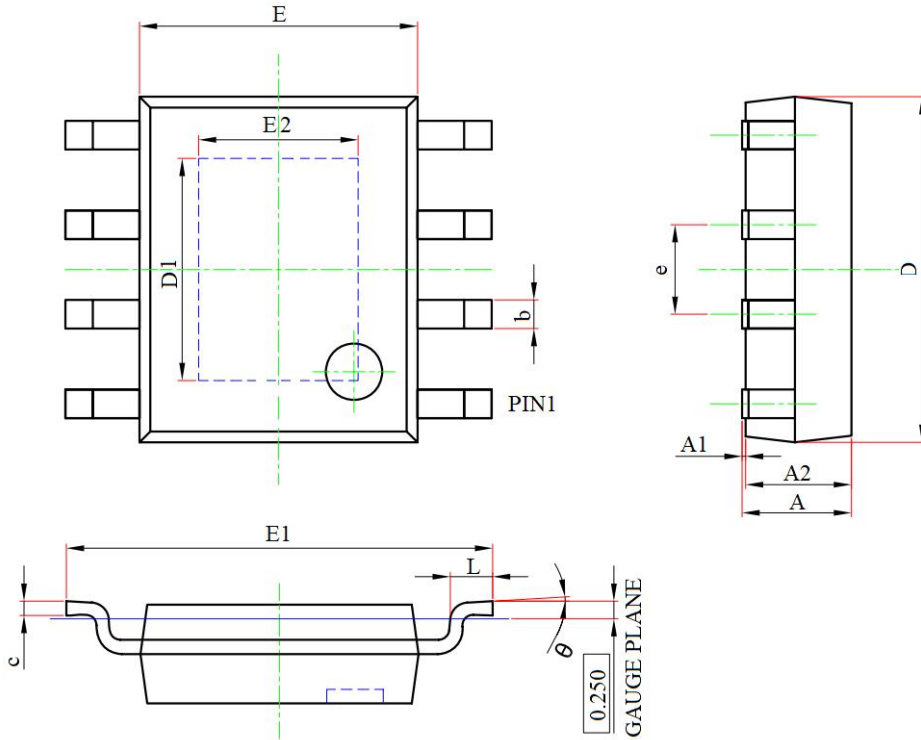
PRODUCT FAMILY TABLE

| OPN | Float Voltage(V) | OVP(V) | Trickle Voltage(V) | Package | Quantity |
|------------------|------------------|--------|--------------------|-----------|----------|
| XTB1056L420AT3CT | 4.2 | 6.8 | 2.6 | ESOP-8 | 4000 |
| XTB1056H420AT3CT | 4.2 | 10.5 | 2.6 | ESOP-8 | 4000 |
| XTB1056L420AD3CT | 4.2 | 6.8 | 2.6 | DFN2X2-8L | 3000 |
| XTB1056H420AD3CT | 4.2 | 10.5 | 2.6 | DFN2X2-8L | 3000 |
| XTB1056L435AT3CT | 4.35 | 6.8 | 2.6 | ESOP-8 | 4000 |
| XTB1056H435AT3CT | 4.35 | 10.5 | 2.6 | ESOP-8 | 4000 |
| XTB1056L435AD3CT | 4.35 | 6.8 | 2.6 | DFN2X2-8L | 3000 |
| XTB1056H435AD3CT | 4.35 | 10.5 | 2.6 | DFN2X2-8L | 3000 |

1A/28V Single Cell Li-ion Battery Linear Charger

PACKAGE OUTLINE DIMENSIONS

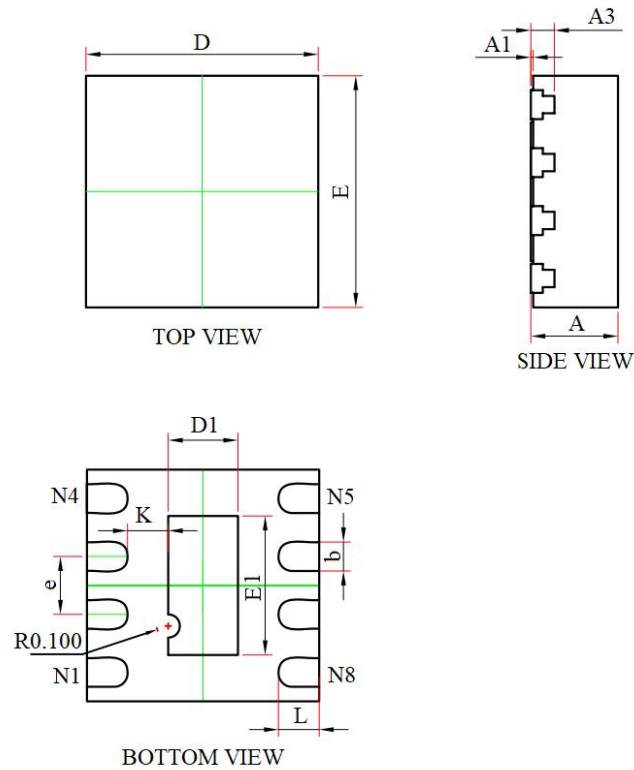
ESOP-8



| SYMBOL | DIMENSIONS IN MILLIMETERS | | DIMENSIONS IN INCHES | |
|--------|---------------------------|-------|----------------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.300 | 1.700 | 0.051 | 0.067 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.350 | 1.550 | 0.053 | 0.061 |
| b | 0.330 | 0.510 | 0.013 | 0.020 |
| c | 0.170 | 0.250 | 0.007 | 0.010 |
| D | 4.700 | 5.100 | 0.185 | 0.201 |
| E | 3.800 | 4.000 | 0.150 | 0.157 |
| D1 | 3.050 | 3.350 | 0.120 | 0.132 |
| E1 | 5.800 | 6.200 | 0.228 | 0.244 |
| E2 | 2.160 | 2.360 | 0.085 | 0.093 |
| e | 1.27BSC | | 0.050BSC | |
| L | 0.400 | 1.270 | 0.016 | 0.050 |
| theta | 0 | 8° | 0 | 8° |

1A/28V Single Cell Li-ion Battery Linear Charger

DFN2X2-8L



| SYMBOL | DIMENSIONS IN MILLIMETERS | | DIMENSIONS IN INCHES | |
|--------|---------------------------|-------|----------------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.700 | 0.800 | 0.028 | 0.031 |
| A1 | 0.000 | 0.050 | 0.000 | 0.002 |
| A3 | 0.203REF | | 0.008REF | |
| D | 1.900 | 2.100 | 0.075 | 0.083 |
| E | 1.900 | 2.100 | 0.075 | 0.083 |
| D1 | 0.500 | 0.700 | 0.020 | 0.028 |
| E1 | 1.100 | 1.300 | 0.043 | 0.051 |
| k | 0.350REF | | 0.014REF | |
| b | 0.200 | 0.300 | 0.008 | 0.012 |
| e | 0.500BSC | | 0.020BSC | |
| L | 0.274 | 0.426 | 0.011 | 0.017 |

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Battery Management](#) category:

Click to view products by [XTX](#) manufacturer:

Other Similar products are found below :

[NCP1851BFCCT1G](#) [NCP1855FCCT1G](#) [FAN54063UCX](#) [MP2615GQ-P](#) [LC05132C01NMTTTG](#) [ISL95522HRZ](#) [BD8665GW-E2](#)
[ISL95522AIRZ](#) [S-82D1AAE-A8T2U7](#) [S-82D1AAA-A8T2U7](#) [S-8224ABA-I8T1U](#) [MP2615CGQ-P](#) [ISL6251HRZ](#) [ISL6253HRZ](#) [ISL6292-2CR3](#) [ISL6292BCRZ-T](#) [ISL6299AIRZ](#) [ISL9211AIRU58XZ-T](#) [ISL9214IRZ](#) [ISL9220IRTZ-T](#) [FAN54161UCX](#) [DW01-A/J](#) [DW01A](#) [4056H](#)
[4056D](#) [TP4056](#) [TP4054](#) [TP4057](#) [IP2326_NPD](#) [IP2709_BF20WP](#) [TP4057](#) [TP4054](#) [TP4056-MS](#) [TP4057-MS](#) [TP4054-MS](#) [SY6982CQDC](#)
[SLM6335](#) [SLM6500S](#) [TP4057](#) [DW01](#) [AP5056HSPER](#) [EG4321](#) [GN4054B](#) [HG4054M5/TR](#) [4060](#) [4061](#) [4061H](#) [4056A](#) [4056V](#) [4060H](#)