



The Future of Analog IC Technology®

EV26029-Q-00A

Evaluation Board of 1A Linear Charger for SingleCell Li-Ion Battery

DESCRIPTION

The EV26029-Q-00A is an evaluation board for the MP26029GQ, a highly-integrated single-cell Li-Ion/Li-Polymer battery charger with thermal regulation. It takes input from either AC adapter or USB port to charge the battery. The charger section features pre charge, high-accuracy constant current (CC, up to 1A) and constant voltage (CV) regulation, charge termination and auto-recharge.

ELECTRICAL SPECIFICATION

| Parameter | Symbol | Value | Units |
|-----------------|-------------------|-------------|-------|
| Input Voltage | V _{IN} | 4.35 – 5.50 | V |
| Charge Current | I _{CC} | 30 - 1000 | mA |
| Battery Voltage | V _{BATT} | 4.2 | V |

FEATURES

- Fully Autonomous Charger for Single-Cell Li-ion/Polymer Batteries
- Programmable Charge Current: **30mA** to 1A
- 0.5% Charging Voltage Accuracy
- 13V Maximum Voltage for the Input Source
- Fully Integrated Power Switches and No External Blocking Diode Required
- Built-in Robust Charging Protection Including Battery Temperature Monitor and Safety Timer
- Thermal Limiting Regulation on Chip

APPLICATIONS

- Smart Handheld Devices
- Digital Cameras, Bluetooth
- Toys

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EV26029-Q-00A EVALUATION BOARD

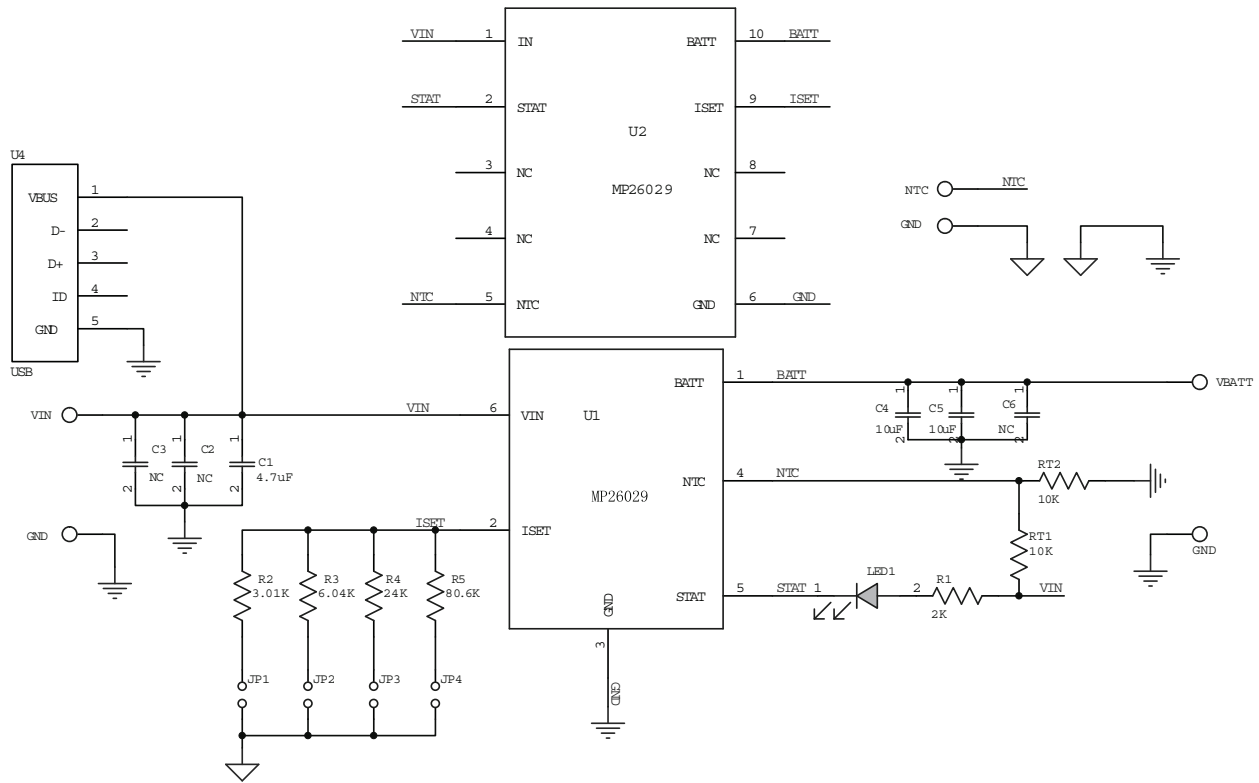


(L x W x H) 2.5" x2.5"x 0.063"
(6.35cm x 6.35cm x 0.16cm)

| Board Number | MPS IC Number |
|---------------|-----------------|
| EV26029-Q-00A | MP26029GQ-xxxx* |

*: "xxxx" is the register setting option. The factory default is "0000". For customer options, please contact an MPS FAE to obtain a "XXXX" value.

EVALUATION BOARD SCHEMATIC



EV26029-Q-00A BILL OF MATERIALS

| Qty | Ref | Value | Description | Package | Manufacturer P/N |
|-----|----------|---------------|---------------------------------|-----------|--------------------|
| 1 | C1 | 4.7µF | Ceramic Capacitor;25V;X6S;0603; | 0603 | GRM188C81E475KE11D |
| 1 | C2 | NC | Ceramic Capacitor;25V;X7R;0805; | 0805 | GRM21BR71E225KA73L |
| 2 | C3, C6 | NC | Ceramic Capacitor;25V;X7R;1206 | 1206 | GRM31CR71E475KA88L |
| 2 | C4, C5 | 10µF | Ceramic Capacitor;10V;X7R;0805; | 0805 | GRM21BR71A106ME51L |
| 1 | LED1 | BL-HUF35A-TRB | LED;RED; | 0805 | BL-HUF35A-TRB |
| 1 | R1 | 2k | Film Resistor;1%; | 0603 | RC0603FR-072KL |
| 1 | R2 | 3.01k | Film Resistor;1%; | 0603 | RC0603FR-073K01L |
| 1 | R3 | 6.04k | Film Resistor;1% | 0603 | RC0603FR-076K04L |
| 1 | R4 | 24k | Film Resistor;1%; | 0603 | RC0603FR-0724KL |
| 1 | R5 | 80.6k | Film Resistor;1%; | 0603 | RC0603FR-0780K6L |
| 2 | RT1, RT2 | 10k | Film Resistor;1%; | 0603 | RC0603FR-0710KL |
| 1 | U1 | NC | MP26029GTF-xxxx | SOT563 | MP26029GTF-xxxx |
| 1 | U2 | | MP26029GQ-xxxx | QFN10/3X3 | MP26029GQ-xxxx |
| 1 | U4 | | Micro-B USB connector; | | |

PRINTED CIRCUIT BOARD LAYOUT

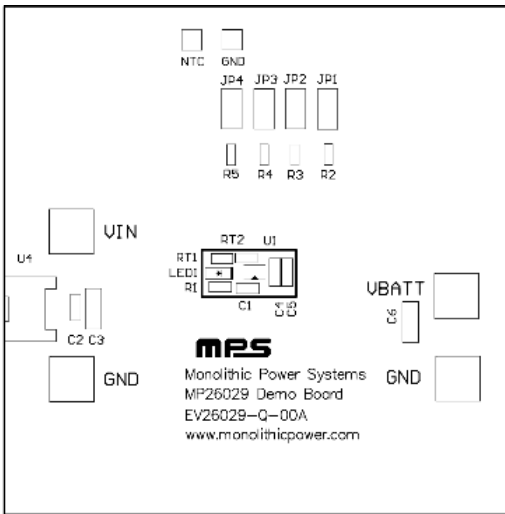


Figure 1—Top Silk Layer

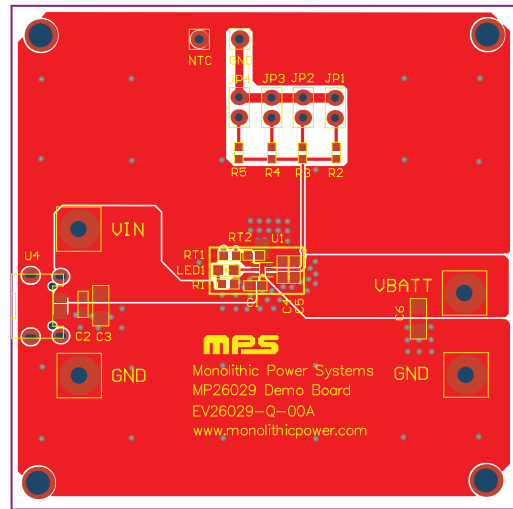


Figure 2—Top Layer

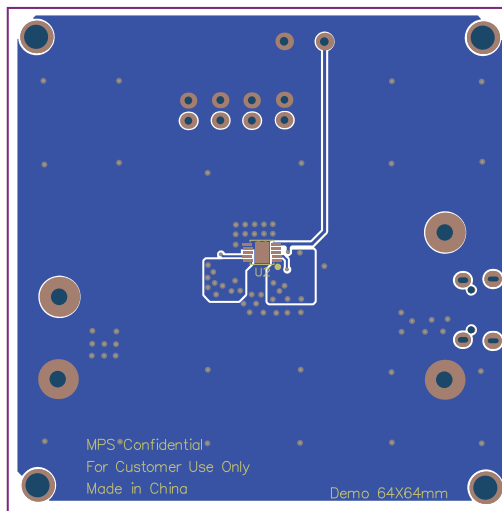


Figure 3—Bottom Layer

QUICK START GUIDE

This board is designed for MP26029 which is a standalone 1A linear Li-Ion battery charger with thermal regulation. The BATT output voltage on this board is preset to 4.2V for 1 cell Li-Ion battery. The board layout accommodates most commonly used capacitors.

The LED is a fault and charge indicator. The status of STAT pin in different cases is shown in below table:

| Charging State | STAT |
|-------------------------|-----------------|
| In Charging | LOW |
| Charging complete | HIGH |
| Charging Suspend ,fault | Blinking at 1Hz |

Set the charge current I_{CC} using the jumpers JP1, JP2, JP3 and JP4 per the following table:

| JP | JP1 | JP2 | JP3 | JP4 |
|----------|--------|-------|-------|------|
| I_{CC} | 1006mA | 484mA | 114mA | 32mA |

1. Attach the positive and negative ends of the battery to the BATT and GND pins, respectively.
2. Attach the input voltage ($V_{IN}=5V$) and the input ground to the VIN and GND pins, respectively.

❖Notes❖

1. For the other detailed description on the operation of this part, please contact local FAE to apply the latest datasheet

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