EV26029-Q-00A

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

The Future of Analog IC Technology

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.

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

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

APPLICATIONS

- Smart Handheld Devices
- Digital Cameras, Bluetooth
- Toys

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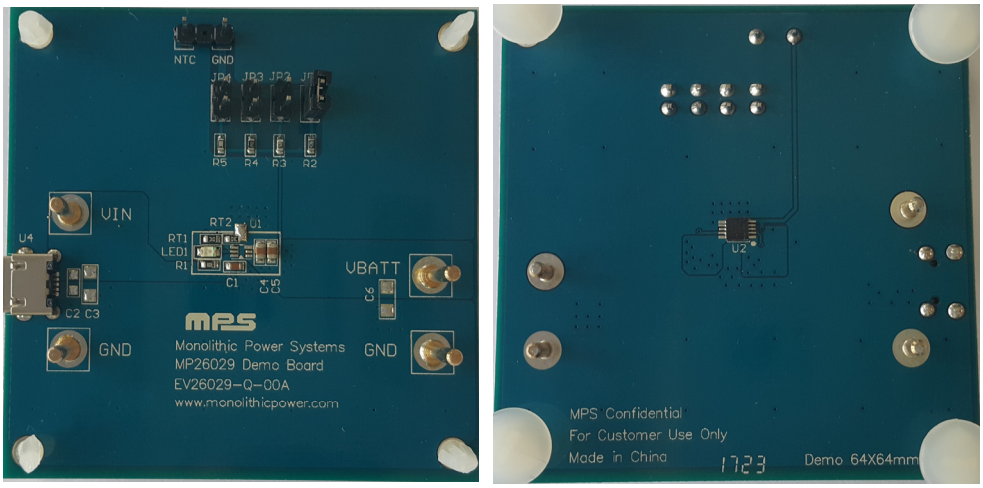
EV26029-Q-00A EVALUATION BOARD



(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.

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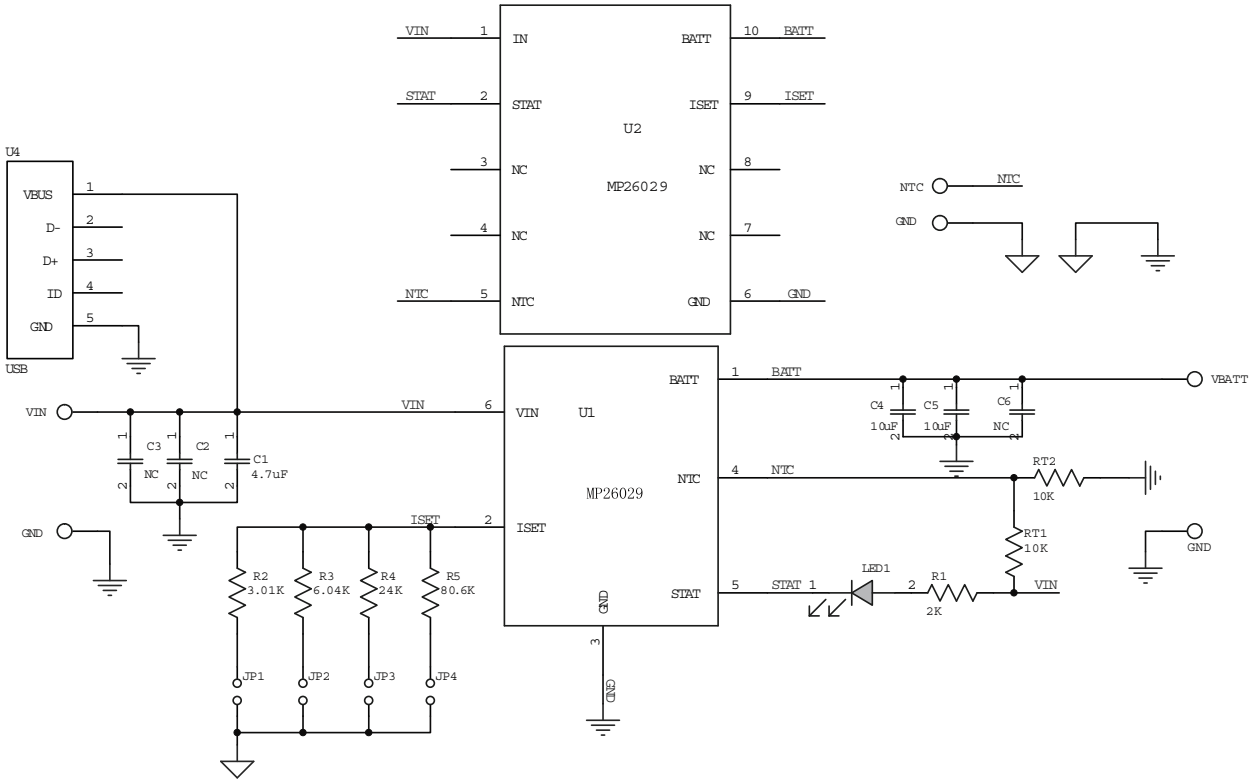
EVALUATION BOARD SCHEMATIC



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;		

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PRINTED CIRCUIT BOARD LAYOUT

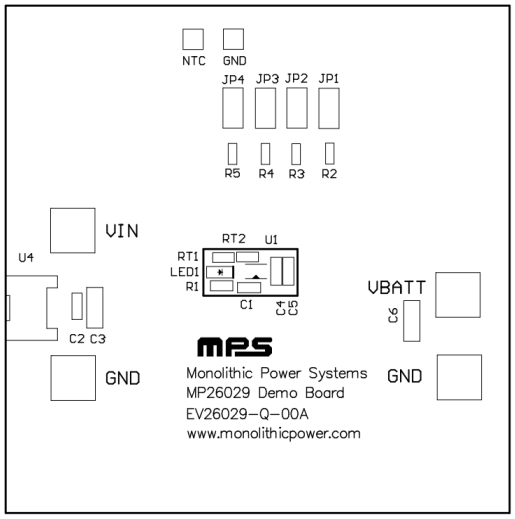

Figure 1—Top Silk Layer

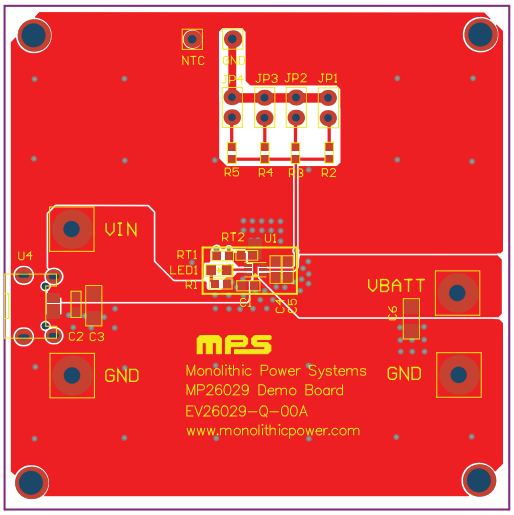

Figure 2—Top Layer

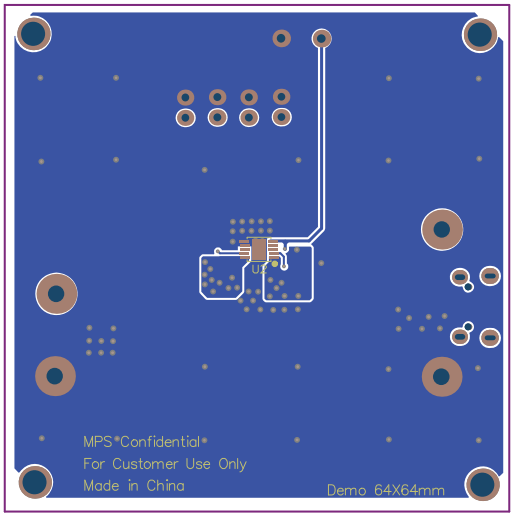

Figure 3—Bottom Layer

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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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