

DESCRIPTION

The EV2606DQ-00A is an evaluation board for the MP2606, a linear, high-performance single cell Li-Ion battery charger. By integrating high voltage input protection into the charger IC, the MP2606 can tolerate an input surge up to 28V.

The MP2606 features constant current (CC) and constant voltage (CV) charging modes with programmable charge currents (85mA to 1A), programmable battery full threshold, thermal protection and reverse current blocking. The MP2606 also provides AC adapter power good and charge status indications to the system.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	5	V
Charging Current	I_{CHG}	0.8	A
Charging Voltage	V_{BAT}	4.2	V

FEATURES

- Input Surge up to 28V
- Adapter or USB Input
- Programmable Charge Current: 85mA to 1A
- AC Adapter Power Good Indicator
- Charge Status Indicator
- Programmable Charge Termination Current Threshold
- Fully Assembled and Tested

APPLICATIONS

- Cell Phones
- MP3/Multimedia Players
- Smart Phones
- PDAs
- Digital Cameras

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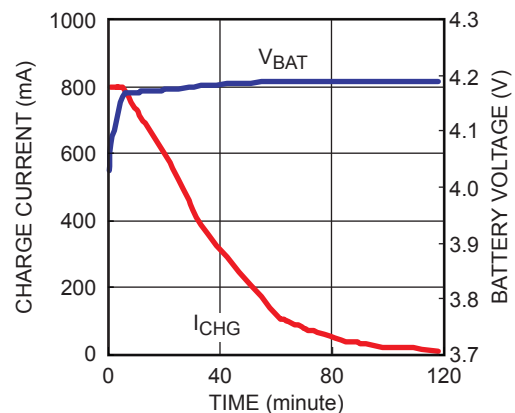
EV2606DQ-00A EVALUATION BOARD



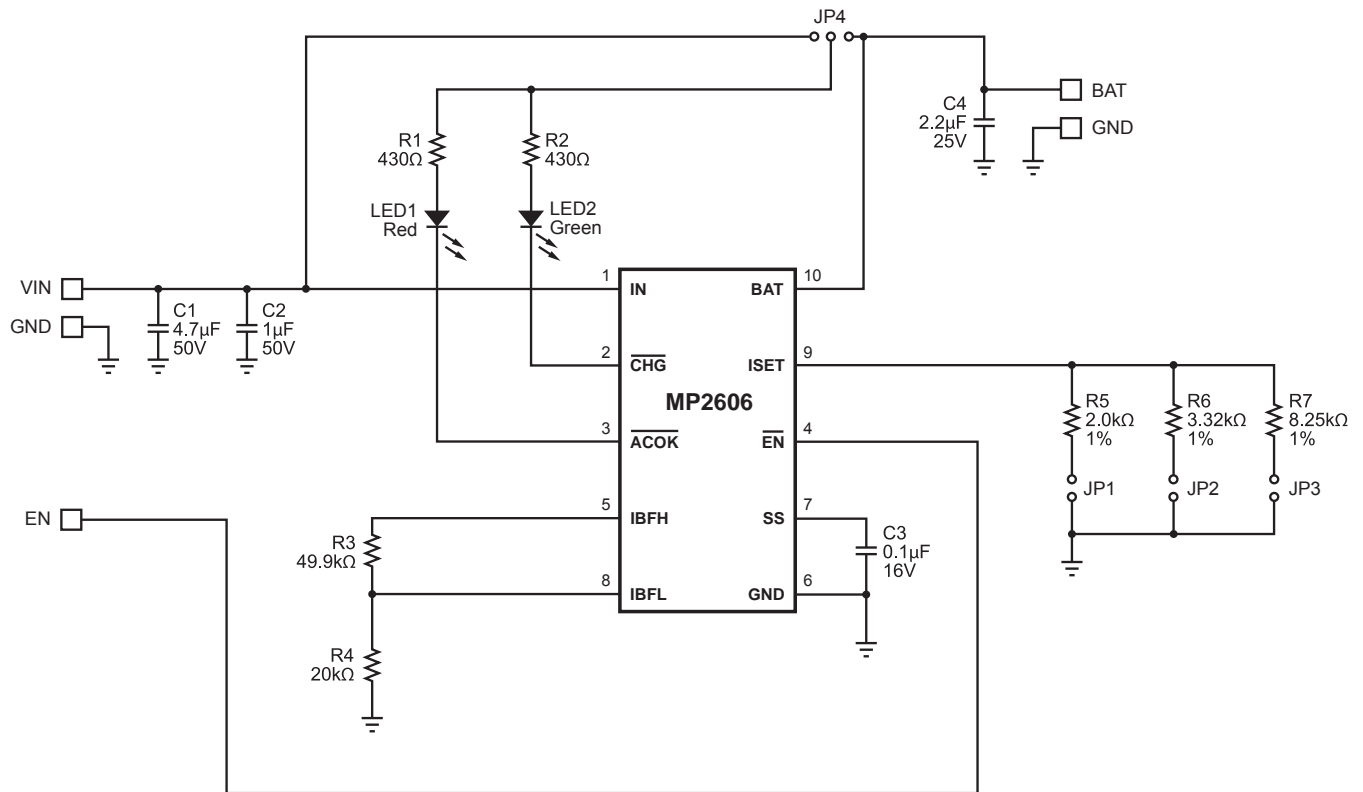
(L x W x H) 2.0" x 1.9" x 0.6"
5.1cm x 4.8cm x 1.5cm

Board Number	MPS IC Number
EV2606DQ-00A	MP2606DQ

800mA Charge Curve



EVALUATION BOARD SCHEMATIC



EV2606DQ-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Part Number
1	C1	4.7µF	Ceramic Capacitor, 50V, X7R	1210	Murata	GRM32ER71H475KA88L
1	C2	1µF	Ceramic Capacitor, 50V, X7R	1206	TDK	C3216X7R1H105K
1	C3	0.1µF	Ceramic Capacitor, 16V, X7R	0603	TDK	C1608X7R1C104K
1	C4	2.2µF	Ceramic Capacitor, 25V, X7R	1206	Murata	GRM31MR71E225KA93
1	LED1		Red LED, Surface Mount	0805		
1	LED2		Green LED, Surface Mount	0805		
2	R1, R2	430Ω	Film Resistor, 5%	0603	Any	
1	R3	49.9kΩ	Film Resistor, 1%	0603	Yageo	RC0603FR-0749K9L
1	R4	20kΩ	Film Resistor, 1%	0603	Yageo	RC0603FR-0720KL
1	R5	2.0kΩ	Film Resistor, 1%	0603	Yageo	RC0603FR-072KL
1	R6	3.32kΩ	Film Resistor, 1%	0603	Yageo	RC0603FR-073K32L
1	R7	8.25kΩ	Film Resistor, 1%	0603	Yageo	RC0603FR-078K25L
1	U1		Linear Charger	QFN10		

PRINTED CIRCUIT BOARD LAYOUT

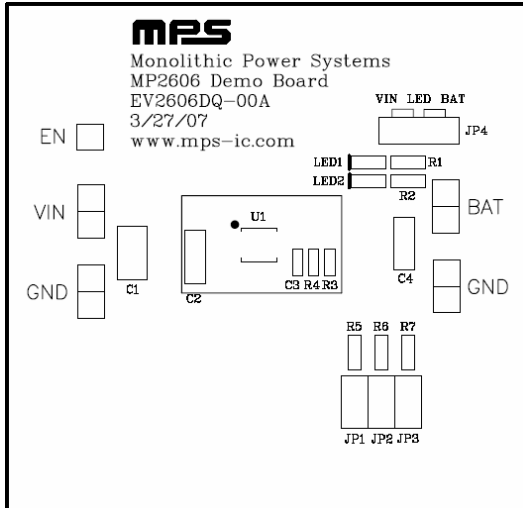


Figure 1—Top Silk Layer

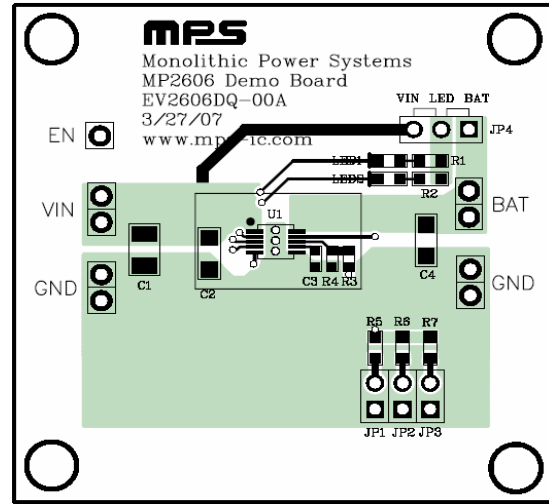


Figure 2—Top Layer

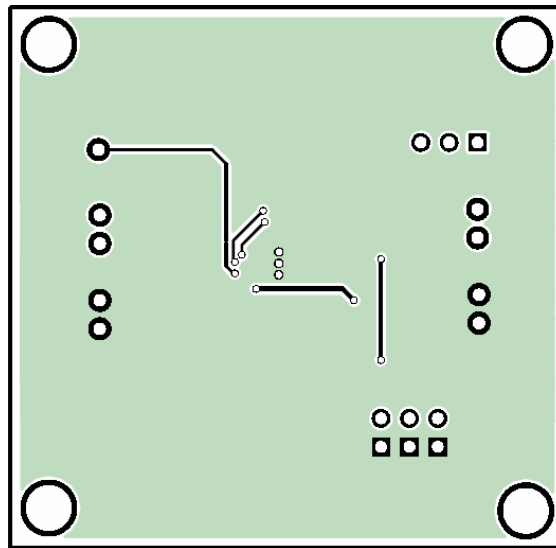


Figure 3—Bottom Layer

QUICK START GUIDE

The output voltage on this board is preset to 4.2V (for a single cell battery). The board layout accommodates most commonly used capacitors.

The LEDs are power indicators. When LED1 is on, the 5V input is present (LED1 is off when the input is disconnected). When LED2 is on, the battery is charging, and when the battery is full or there is no battery connected, LED 2 will turn off.

1. Set the charge current I_{CHG} using the jumpers JP1, JP2 and JP3 per the following table:

JP1	JP2	JP3	I_{CHG} (mA)
X		X	1032
X			800
	X	X	695
	X		500
		X	200

Where “X” indicates a connection.

2. Attach the positive and negative ends of the load to the VOUT and GND pins, respectively.
3. Attach the input voltage ($V_{IN}=5V$) and the input ground to the VIN and GND pins, respectively.
4. Set the battery full threshold I_{BF} using R_3 and R_4 :

$$I_{BFL} = \frac{1A \times 1.7k\Omega}{R_3} \quad I_{BFH} = 1A \times 1.7k\Omega \left(\frac{R_3 + R_4}{R_3 \times R_4} \right)$$

Generally, set I_{BFL} to 10% of the programmed CC current and I_{BFH} as twice as I_{BFL} but lower than 80% of the programmed CC current.

5. Set the LED1 and LED2 input power from the VIN side or BAT side using JP4.

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