



EV8801DJ-00A

Low Dropout 150mA Linear Regulator

INITIAL RELEASE

GENERAL DESCRIPTION

The MP8801 is a low-noise, low-dropout linear regulator. It operates from 2.7V to 6.5V input voltage, and regulates the output voltage with 2% accuracy from 1.5V to 5V.

The MP8801 can supply up to 150mA of load current. The MP8801 features thermal overload protection. It is available in a 5-pin TSOT23-5 package.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	2.7 to 6.5	V
Output Voltage ⁽¹⁾	V_{OUT}	2.85	V
Operating Temp		-40 to +85	°C

Note:

- 1) 2.85V default output voltage adjustable from 1.5V to 5.0V using an external resistor divider.

FEATURES

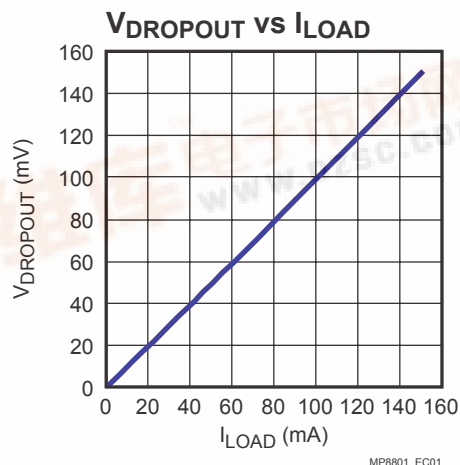
- Low 150mV Dropout at 150mA Output
- 2% Accurate Output Voltage
- Default Output Voltage Set to 2.85V, Adjustable from 1.5V to 5V using an External Resistor Divider
- Up to 6.5V Input Voltage
- High PSRR
 - 70dB at 1KHz
 - 30dB at 1MHz
- Better Than 0.001%/mA Load Regulation
- Stable With Low-ESR Output Capacitor
- Low 125µA Ground Current
- Internal Thermal Protection

APPLICATIONS

- 802.11 PC Cards
- Mobile Handset PLL Power
- Audio Codec Power

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EV8801DJ-00A EVALUATION BOARD

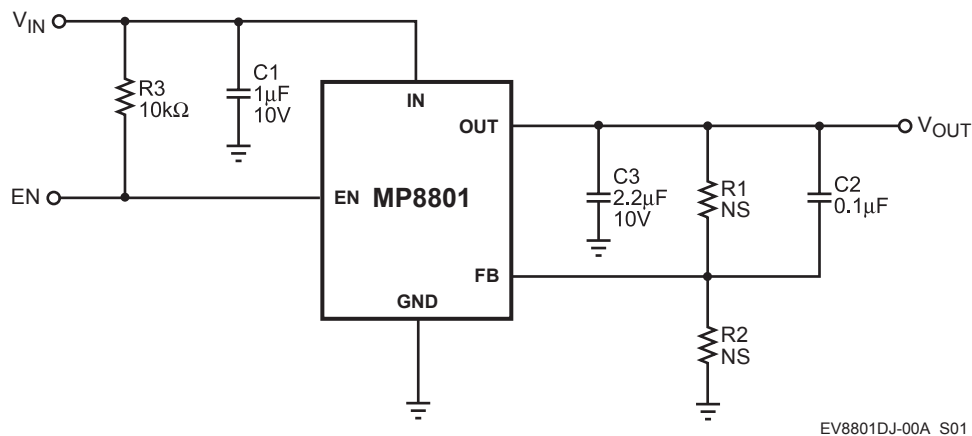


MP8801_EC01

Dimensions (2.0"X x 2.0"Y x 0.4"Z)

Board Number	MPS IC Number
EV8801DJ-00A	MP8801DJ2.85

EVALUATION BOARD SCHEMATIC



EV8801DJ-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Manufacturer	Manufacturer P/N
1	C1	1μF	Ceramic Cap, 10V, X7R	AVX	0805ZC105KAT2A
1	C2	0.1μF	Ceramic Cap, 50V, X7R	AVX	08055C104KAT2A
1	C3	2.2μF	Ceramic Cap, 10V, X5R	AVX	0805ZD225KAT2A
1	R1		Do Not Stuff		
1	R2		Do Not Stuff		
1	R3	10kΩ	Film Res, 5%	Panasonic	ERJ-6GEYJ104V
1	U1		DC-DC Converter	MPS	MP8801DJ2.85

PRINTED CIRCUIT BOARD LAYOUT

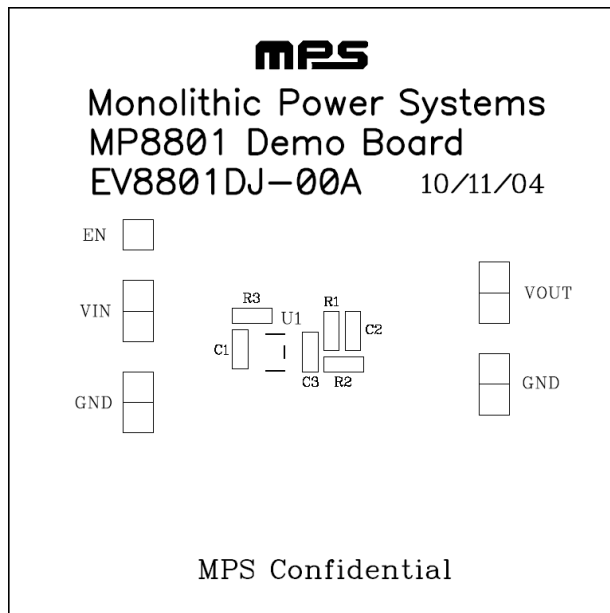


Figure 1—Top Silk Layer

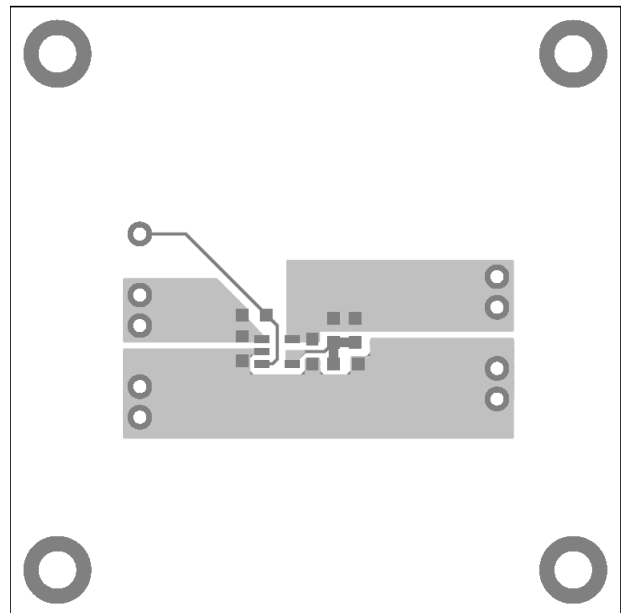


Figure 2—Top Layer

QUICK START GUIDE

The output voltage of this board is set to 2.85V. The EN pin is connected to V_{IN} with a 10k Ω resistor for automatic startup. You can connect EN to GND to disable the MP8801.

Attach the positive and the negative ends of the load to the V_{OUT} and GND pins, respectively.

Attach an input voltage ($2.7V \leq V_{IN} \leq 6.5V$) and input ground to the V_{IN} and GND pins, respectively.

The output voltage (V_{OUT}) can be changed by adding a resistor divider (R1 and R2). A 10k Ω ($\pm 1\%$) resistor should be used for the low-side resistor R2 of the voltage divider. The high side resistor R1 can be determined by the equation:

$$R1 = R2 \times \left(\frac{V_{OUT} - V_{FB}}{V_{FB}} \right)$$

Where V_{FB} is the OUT feedback threshold voltage equal to 1.222V.

The following table lists the R1 selected values for some typical output voltages:

V_{OUT} (V)	R1 (Ω)
1.25	232
1.5	2.26k
1.8	4.75k
2	6.34k
2.5	10.5k
2.8	13k
3	14.7k
3.3	16.9k
4	22.6k
5	30.9k

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