EV8802DJ-00A

Low Dropout 250mA Linear Regulator

EVALUATION BOARD

DESCRIPTION

The EV8802DJ-00A is the evaluation board for the MP8802. The board is configured with the MP8802DJ2.5, which provides an output voltage of 2.5V.

The MP8802 is a low-noise, low-dropout linear regulator. It operates from 2.7V to 6.5V input voltage, and regulates the output voltage to fixed values of 2.5V, 2.85V, 3.3V or from 1.5V to 5V with the use of external resistors.

The MP8802 can supply up to 250mA of load current. The MP8802 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}	2.5	V
Operating Temp		–40 to +85	°C

Note:

1) 2.5V default output voltage adjustable from 1.5V to 5.0V using an external resistor divider.

FEATURES

- Low 250mV Dropout at 250mA Output
- 2% Accurate Output Voltage
- Fixed Output Voltage Options of 2.5V, 2.85V or 3.3V
- Adjustable Output Voltage Option from 1.25V to 5V using an External Resistor Divider
- Up to 6.5V Input Voltage
- High PSRR
  - o 70dB at 1KHz
  - o 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

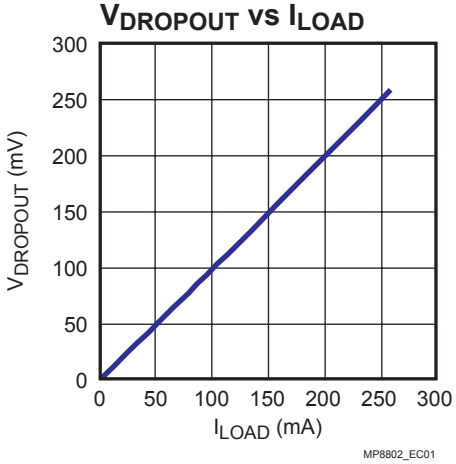
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EV8802DJ-00A EVALUATION BOARD



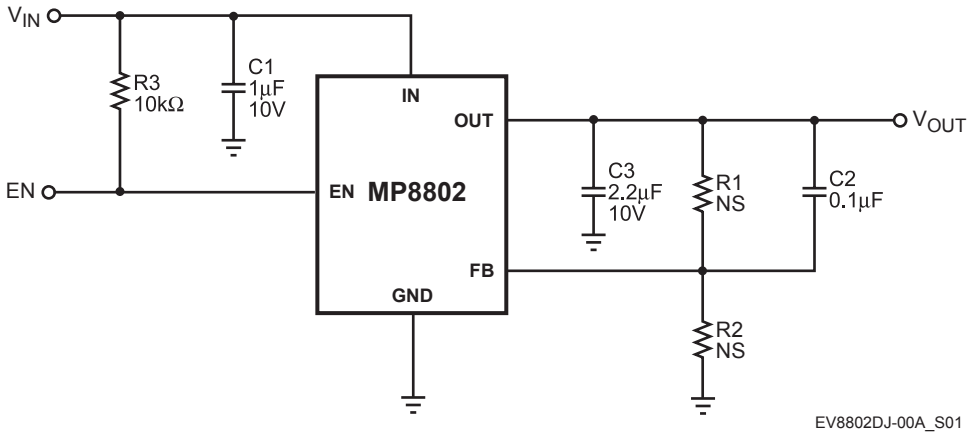
(L x W x H) 2.0" x 2.0" x 0.4"
5.0cm x 5.0cm x 1.0cm

Board Number	MPS IC Number
EV8802DJ-00A	MP8802DJ2.5



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EVALUATION BOARD SCHEMATIC



EV8802DJ-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
1	C1	1µF	Ceramic Capacitor, 10V, X7R	0805	AVX	0805ZC105KAT2A
1	C2	0.1µF	Ceramic Capacitor, 50V, X7R	0805	AVX	08055C104KAT2A
1	C3	2.2µF	Ceramic Capacitor, 10V, X5R	0805	AVX	0805ZD225KAT2A
1	R1		Not Stuffed			
1	R2		Not Stuffed			
1	R3	10kΩ	Resistor, 5%	0805	Panasonic	ERJ-6GEYJ104V
1	U1		DC-DC Converter	SOT23-5	MPS	MP8802DJ2.5

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PRINTED CIRCUIT BOARD LAYOUT

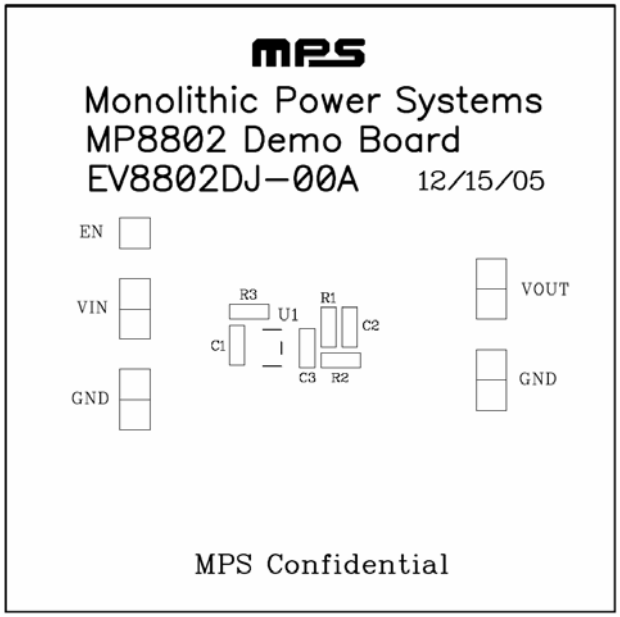


Figure 1—Top Silk Layer

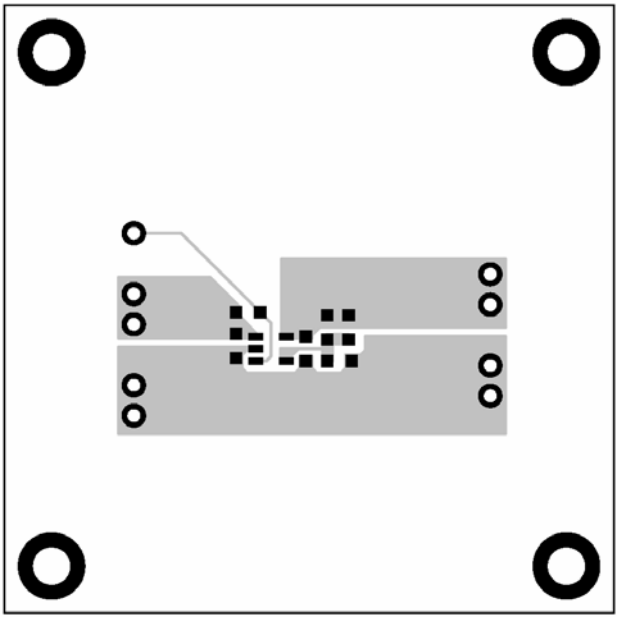


Figure 2—Top Layer

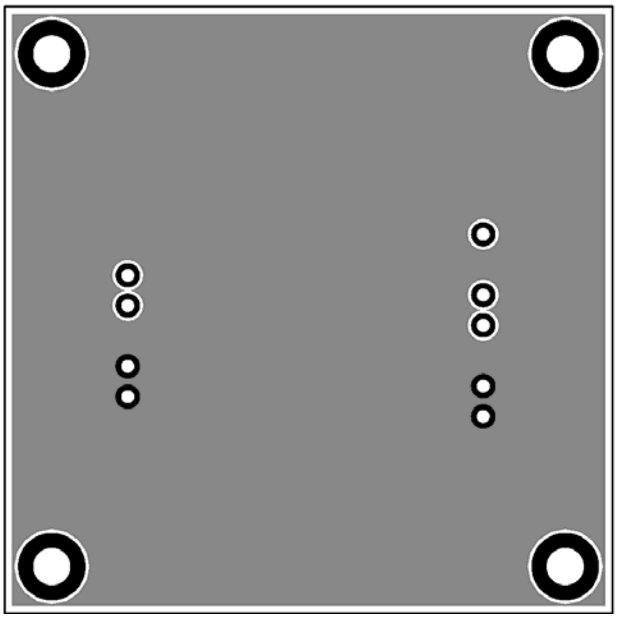


Figure 3—Bottom Layer

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QUICK START GUIDE

The output voltage of this board is set to 2.5V. The EN pin is connected to VIN with a 10kΩ resistor for automatic startup. You can connect EN to GND to disable the MP8802.

1. Attach the positive and the negative ends of the load to the VOUT and GND pins, respectively.
2. Attach an input voltage ($2.7V \leq V_{IN} \leq 6.5V$) and input ground to the VIN and GND pins, respectively.
3. The output voltage (V_{OUT}) can be changed by adding a resistor divider (R1 and R2). A 10kΩ (±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 values for R1 corresponding to the selected 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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