

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

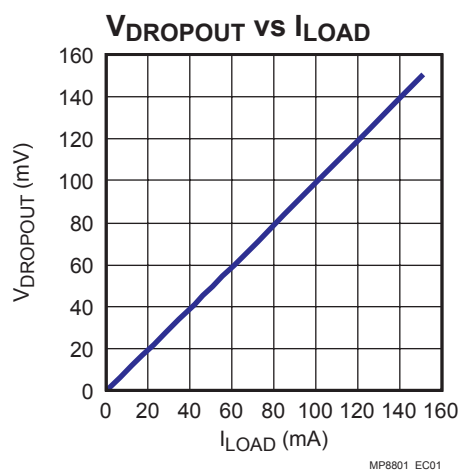
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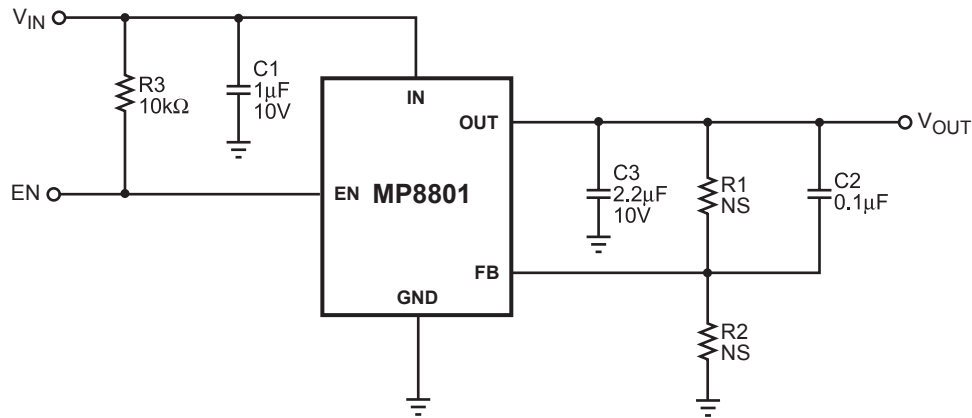
EV8801DJ-00A EVALUATION BOARD



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_S01

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

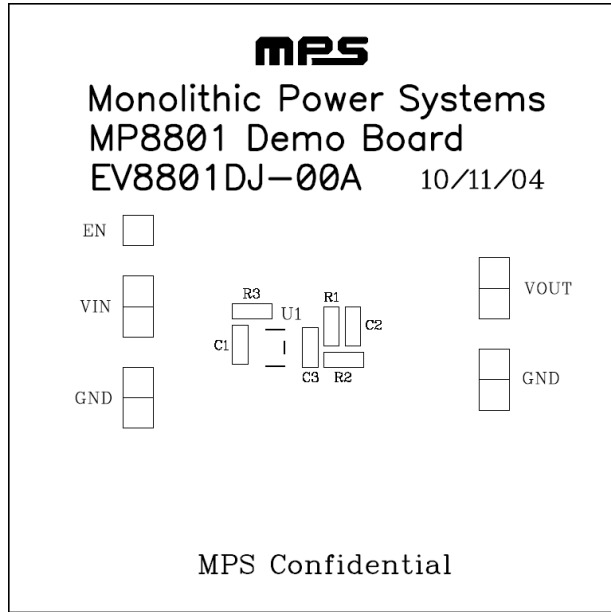


Figure 1—Top Silk Layer

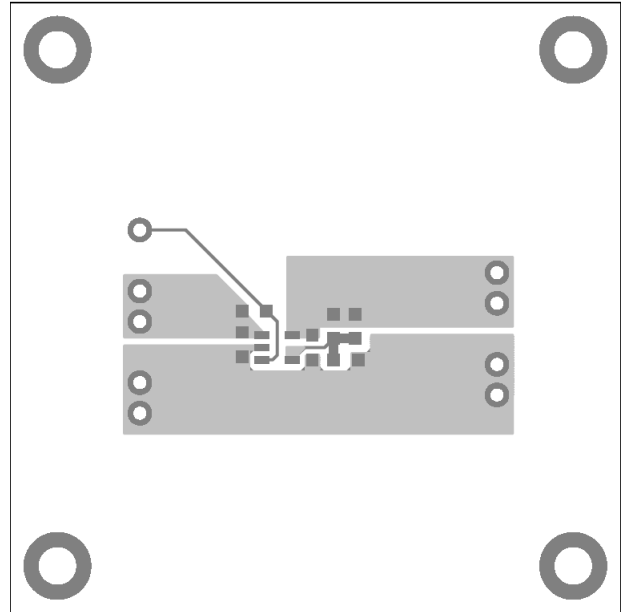


Figure 2—Top Layer

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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