

## General Description

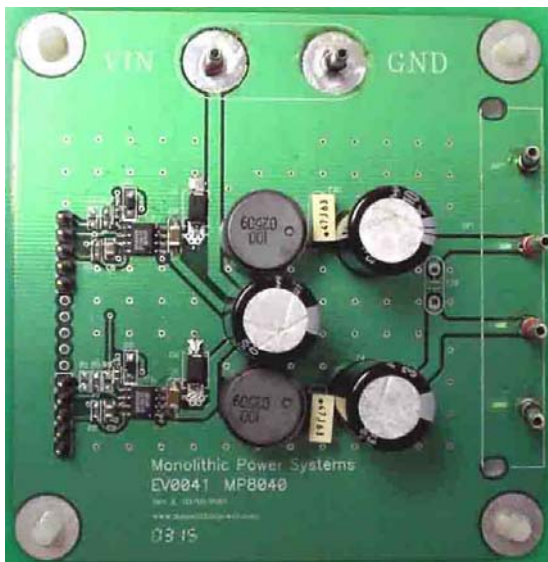
The EV0041 is an evaluation board designed to demonstrate the capabilities of MPS' MP8040. It can be configured as a stereo single ended amplifier (EV0041A) or a full bridge mono amplifier (EV0041B).

The MP8040 is a general purpose, high frequency half bridge power driver. The MP8040 integrates both top and bottom n-channel MOSFET power switches. The MP8040 is fully protected from both sourcing and sinking current by a preset cycle-by-cycle current limit. The MP8040 features a low-current shutdown-mode, input under-voltage protection, thermal shutdown, and fault flag signal output. The MP8040 interfaces with standard logic signals and is available in small 8-lead SOIC package.

## Ordering Information

Board Number	MPS IC Number
EV0041	<a href="#">MP8040DN</a>

## EV0041 Evaluation Board



(Actual Size: 3.5"X x 3.5"Y)

## Absolute Maximum Ratings

Supply Voltage $V_{IN}$	-0.3V to 26V
SW Pin Voltage $V_{SW}$	-0.3V to $V_{IN}$
SW to BS	-0.3V to 6V
Voltage at All Other Pins	-0.3V to 6V
RMS Output Current	6A Maximum

## Recommended Operating Conditions

Input Supply Voltage ( $V_{IN}$ )	7.5 V to 25V
Peak Output Current	9A Maximum
RMS Output Current	4.5A Maximum

## Features

- **+/- 9A Peak Current Output**
- **+/- 4.25A Continuous Current Output**
- Up to 1.2MHz Switching Frequency
- Protected Integrated Power 0.1  $\Omega$  Switches
  - Designed Switch Dead time of 30ns
  - All Switches Current Limited
  - Internal Under-voltage Protection
  - Internal Thermal Protection
- 1 $\mu$ A Standby Mode
- Fault Indicator Output

## Applications

- Full or Half Bridge DC-DC Switching Regulator
- Class D Audio Driver
- Motor Driver

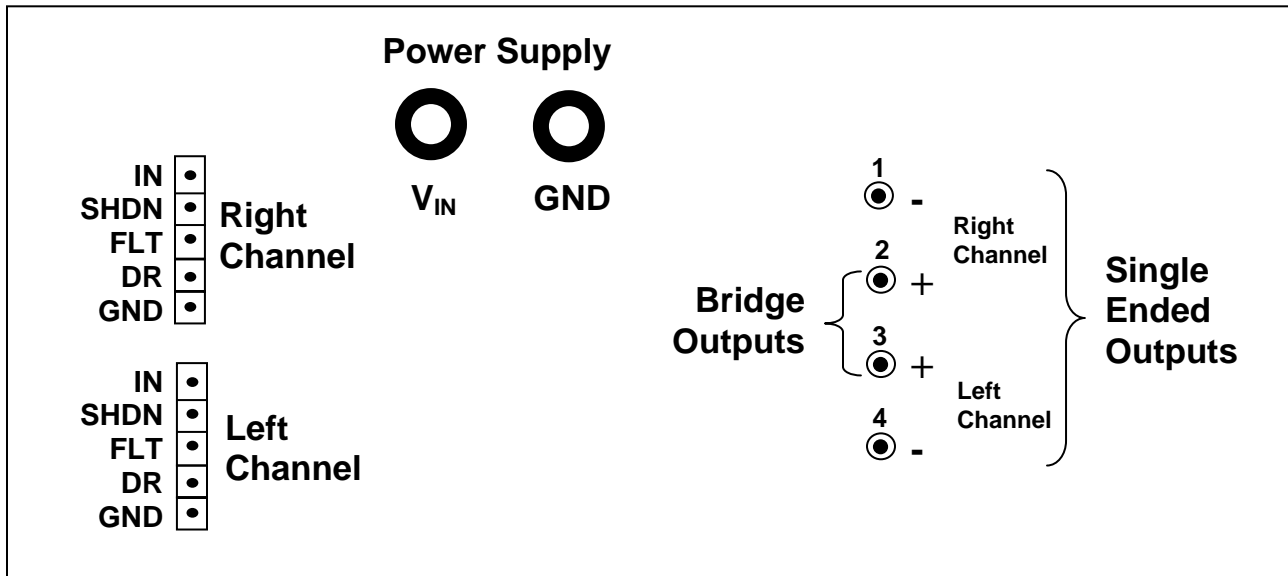




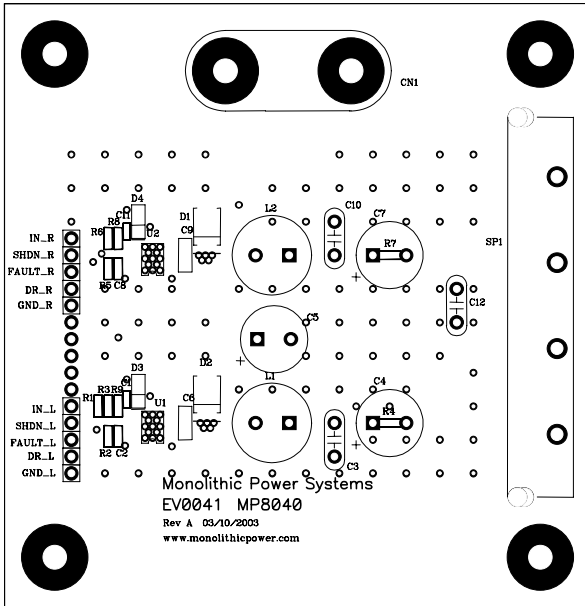
## Operation

1. The EV0041 comes configured as a stereo single ended audio amplifier (EV0041A).
2. To configure the board as a full bridge circuit (EV0041B), short R4, R7, R9, remove C4, C7 and stuff C12 with a 0.47 $\mu$ F capacitor.
3. Connect the audio inputs to the IN pins as shown in Figure 5.
4. Connect speakers to pins 1-4 as shown in Figure 5 for single ended configuration. Use pins 2 and 3 for bridged circuit.
5. Connect the power supply to the V<sub>IN</sub> terminals as shown in Figure 5.
6. SHDN enables/disables the MP8040. Drive SHDN low to turn on the MP8040, drive it high to turn it off. If not used connect SHDN to GND.
7. A low output at FLT indicates that the MP8040 has detected a fault and has shutdown.
8. The DR pin is an optional fixed 5V voltage output capable of driving a 1mA load for external circuitry.

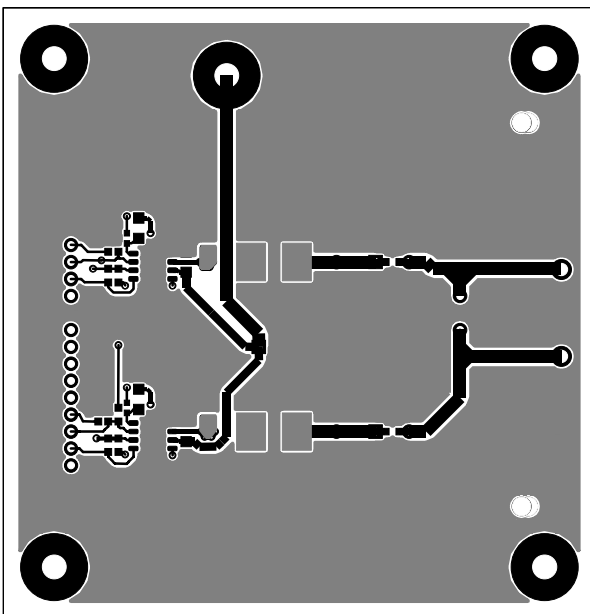
**Figure 5: Top Side Evaluation Board Diagram**



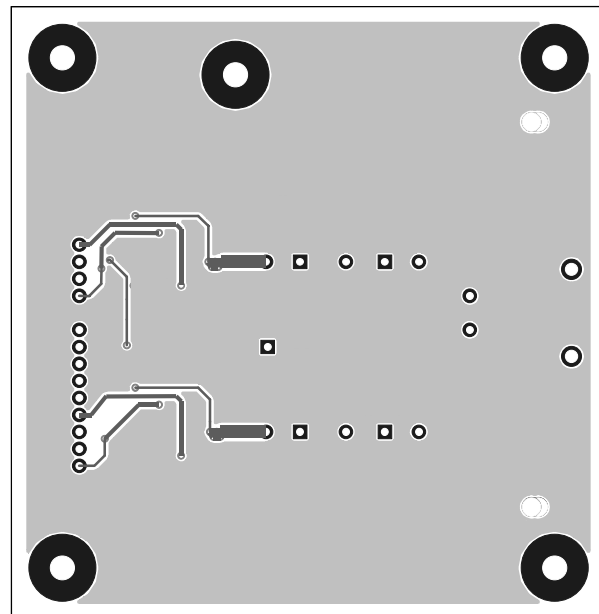
**Figure 6: Top Silk Layer**



**Figure 7: Top Layer**



**Figure 8: Bottom Layer**



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