EV6610-J-00A

45V, 3A Half-Bridge Power Driver Evaluation Board

DESCRIPTION

The EV6610-J-00A is an evaluation board for the MP6610GJ, a half-bridge power driver.

The EV6610-J-00A operates from a supply voltage of up to 45V, and can deliver load currents up to 3A. The input control signals for the MP6610 are either generated on the board, or from an external controller through the board's connector (P1).

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input voltage	V_{IN}	4 to 45	V
Maximum output current	I_{OUT-L}	3	A

FEATURES

- Wide 4V to 45V Input Voltage Range
- Up to 3A Output Current
- Internal Current Sense
- 2.5V, 3.3V, or 5V Compatible Logic Supply
- Over-Current Protection (OCP), Over-Voltage Protection (OVP), Over-Temperature Protection (OTP)
- Fault Indication Output

APPLICATIONS

- Solenoid Drivers
- Brushed DC Motors
- Relay Drivers

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EV6610-J-00A EVALUATION BOARD

(LxW) 6.35cmx6.35cm

Board Number	MPS IC Number
EV6610-J-00A	MP6610GJ

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QUICK START GUIDE

1. Attach the input voltage (4V ≤ V_{IN} ≤ 45V) to the VIN connector, and attach the input ground to the GND connector.
2. Attach the VCC voltage (2.5V, 3.3V, or 5V) to the VCC connector, and attach the input ground to the GND connector.
3. Input control signals can be generated on the board through the placement of short jumpers (JP1 and JP2), or by an external controller connected through the P1 connector. If using an external controller, remove the short jumpers (JP1 and JP2). Table 1 shows the input logic truth table.

Table 1: Logic Truth Table

EN	IN	OUT
0	0	Z
0	1	Z
1	0	L
1	1	H

4. The output current limit threshold is reached when the ISET pin reaches 1.5V. The ISET pin voltage scaling is set by the trimming potentiometer (RV1). For example, with a 10kΩ resistor connected from ISET to ground, the ISET pin voltage is 1V for every 1A of output current. This means that when the current reaches 1.5A, the ISET pin voltage reaches 1.5V, and a current trip occurs.

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EVALUATION BOARD SCHEMATIC

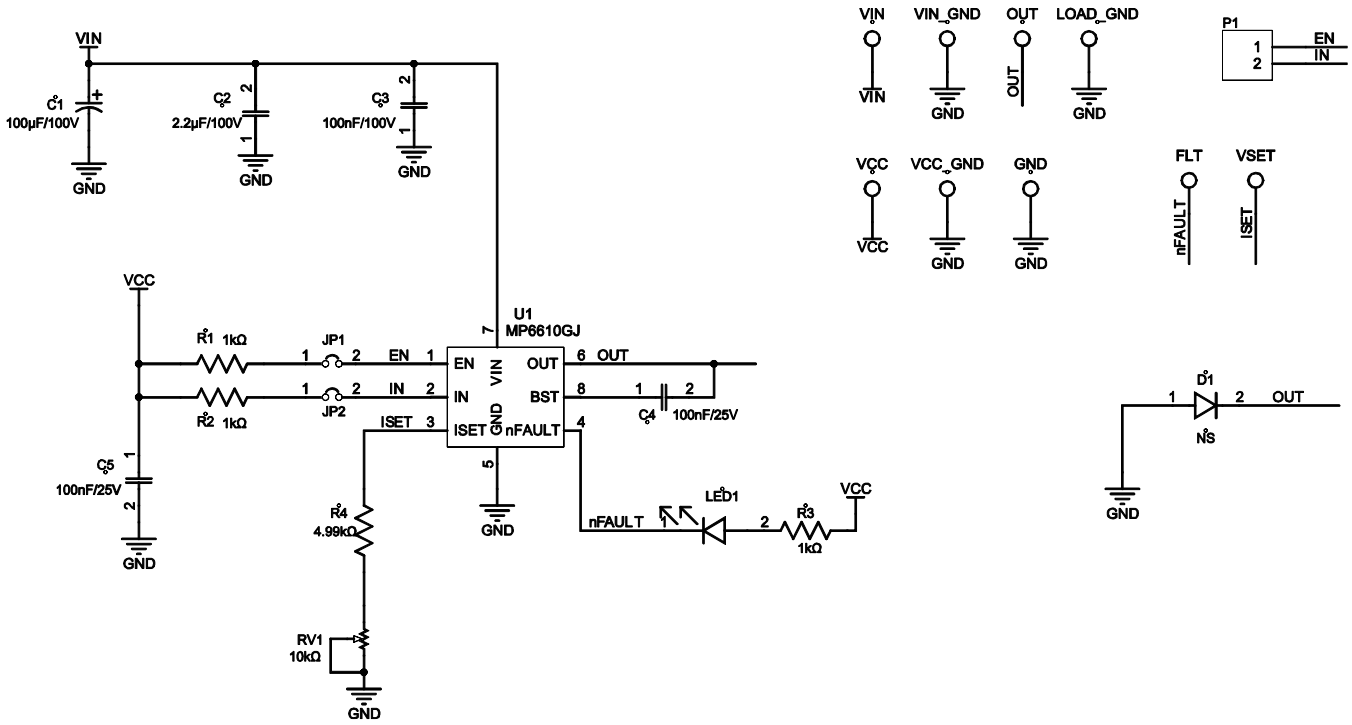

Figure 1: Evaluation Board Schematic

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EV6610-J-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
1	C1	100μF	100V electrolytic capacitor	DIP	Jianghai	CD263-100V100
1	C2	2.2μF	100V ceramic capacitor, X7R	1210	Murata	GRM32ER72A225KA35L
1	C3	100nF	100V ceramic capacitor, X7R	0603	Murata	GRM188R72A104KA35D
2	C4, C5	100nF	25V ceramic capacitor, X7R	0603	Murata	GRM188R71E104KA01D
3	R1, R2, R3	1kΩ	Film resistor, 1%	0603	Yageo	RC0603FR-071KL
1	R4	4.99kΩ	Film resistor, 1%	0603	Yageo	RC0603FR-074K99L
1	RV1	10kΩ	Square trimming potentiometer	DIP	Bourns	3266W-1-103F
1	LED1	Red	LED	0805	Baihong	BL-HUE35A-AV-TRB
1	D1	NS				
3	JP1, JP2, P1	2 bits/ 2.54mm	Connector	DIP	Wurth Electronics	61304011121
2	JP1, JP2	2.54mm	Short jumper	DIP	Wurth Electronics	60900213421
2	FLT, VSET	Yellow	Test point	DIP	Any	
4	VIN, VIN_GND, OUT, LOAD_GND	Φ = 2mm	Connector, 2mm needle	DIP	Any	
3	VCC, VCC_GND, GND	Φ = 1mm	Connector, 1mm needle	DIP	Any	
1	U1	45V, 3A	Half-bridge power driver	TSOT23-8	MPS	MPQ6610GJ

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PCB LAYOUT

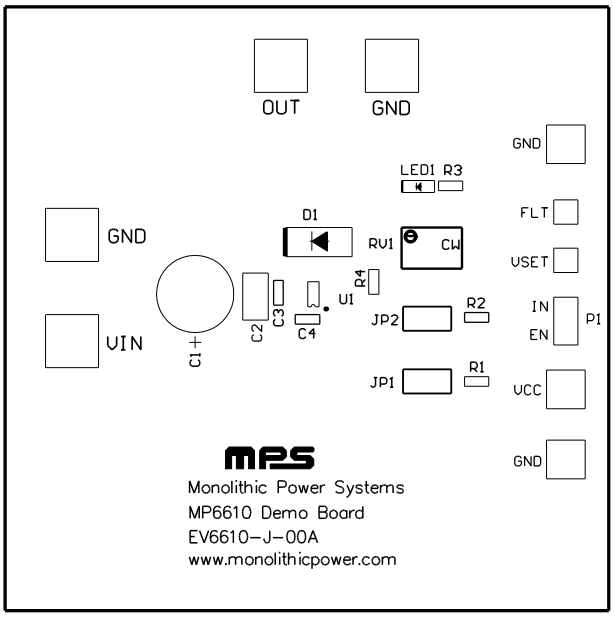

Figure 2: Top Silk Layer

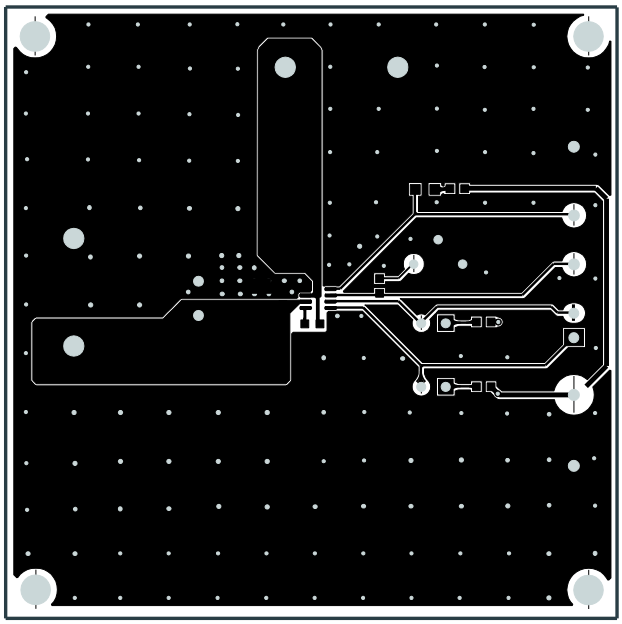

Figure 3: Top Layer

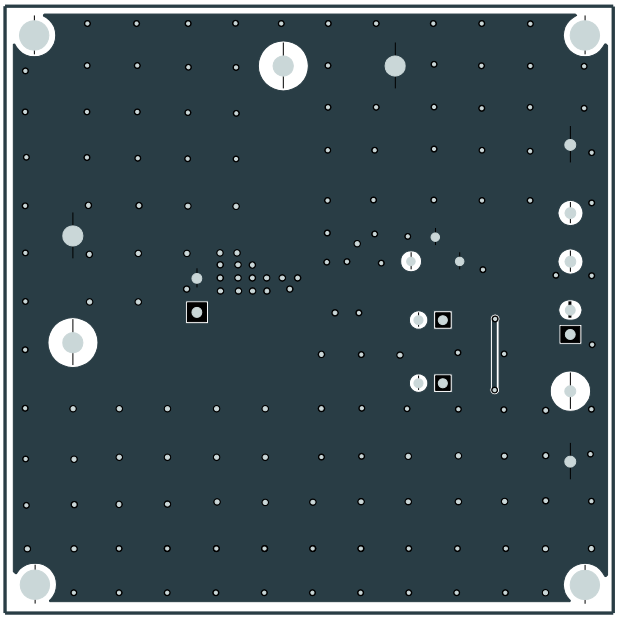

Figure 4: Bottom Layer

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Revision History

Revision #	Revision Date	Description	Pages Updated
1.0	10/13/2020	Initial Release	-

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