EV6550A-G-00A

1.8V to 22V, 2A, H-Bridge Motor Driver Evaluation Board

DESCRIPTION

The EV6550A-G-00A evaluation board is designed to demonstrate the capabilities of the MP6550A, an H-bridge motor driver. The device is typically used to drive a brushed DC motor. It operates from a 1.8V to 22V input supply voltage (V_{IN}), and can achieve up to 2A of motor output current (I_{OUT}).

The MP6550A features a pulse-width modulation (PWM) interface that is compatible with industry-standard devices.

A very low standby circuit current can be achieved when the device is disabled.

The MP6550 is available in a QFN-12 (2mmx2mm) package.

PERFORMANCE SUMMARY

Specifications are at T_A = 25°C, unless otherwise noted.

Parameters	Conditions	Value
Input voltage (V_{IN}) range		1.8V to 22V
Continuous output current (I_{OUT})		2A

EVALUATION BOARD

LxWxH (6.35cmx6.35cmx1cm)

Board Number	MPS IC Number
EV6550A-G-00A	MP6550AGG

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QUICK START GUIDE

The EV6550A-G-00A evaluation board is easy to set up and use to evaluate the performance of the MP6550A. For proper measurement equipment set-up, follow the steps below:

1. Connect the input signal, either PWM or DC, to the INPUT connector.
2. Preset the VDD supply voltage to be 3.3V and the VIN supply voltage to be between 1.8V and 22V.
3. Connect the VDD supply terminals to:
   a. Positive (+): VDD
   b. Negative (-): GND
4. Connect the VIN supply terminals to:
   a. Positive (+): VIN
   b. Negative (-): GND
5. Switch SW1 to enable or disable the MP6550A and the low-dropout (LDO) output.
6. Rotate RV1 to adjust the output current (I_{OUT}) limit.

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EVALUATION BOARD SCHEMATIC

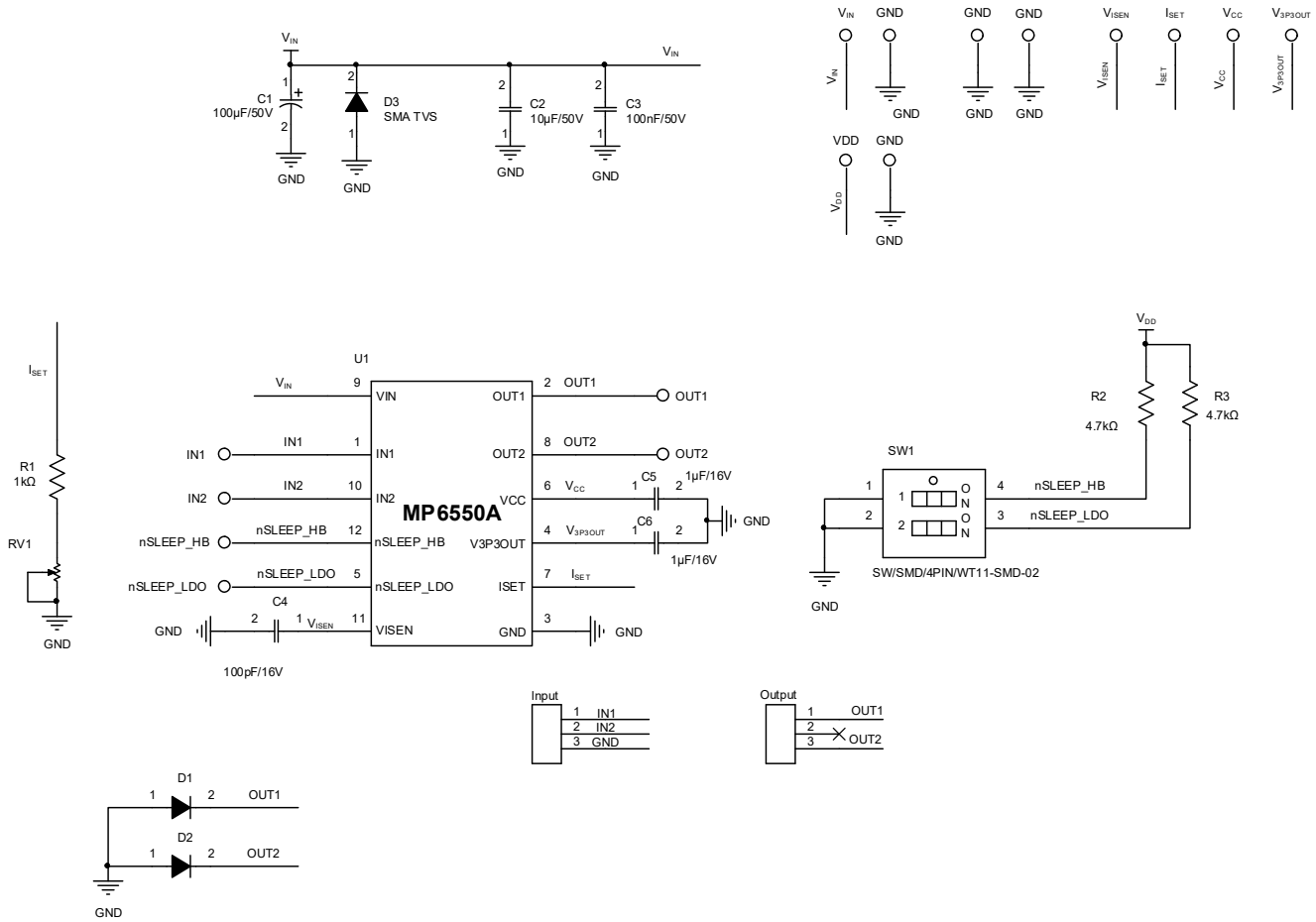

Figure 1: Evaluation Board Schematic

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EV6550A-G-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer PN
	C1	100µF	Electrolytic capacitor, 50V	DIP	Rubycon	50YXF100MEFC
2	C2	10µF	Ceramic capacitor, 50V, X7R	1210	Murata	GRM32ER71H106KA12L
1	C3	100nF	Ceramic capacitor, 50V, X7R	0603	Murata	GRM188R71H104KA93D
1	C4	100pF	Ceramic capacitor, 50V, X7R	0603	Murata	GRM1885C1H101JA01D
2	C5, C6	1µF	Ceramic capacitor, 16V, X7R	0603	Murata	GRM188R71C105KA12D
1	R1	1kΩ	Film resistor, 1%	0603	Yageo	RC0603FR-071KL
2	R2, R3	4.7kΩ	Film resistor, 1%	0603	Yageo	RC0603FR-074K7L
1	RV1	10kΩ	Potentiometer	DIP	Any	3266W-1-103F
3	D1, D2, D3	NS				
1	SW1	5mm	Dual-switch	DIP	Lanxi	WT11-SMD-02
8	VCC, NSLEEP_LDO, NSLEEP_HB, VISEN, V3P3OUT, IN1, IN2, ISET	1mm	Test point	DIP	Any	
2	OUTPUT, INPUT	2.54mm	Connector	DIP	Any	
6	OUT1, OUT2, VDD, GND1, GND2, GND3	1mm	Needle	DIP	Any	
2	VIN, GND	2mm	Needle	DIP	Any	
1	U1	MP6550A	H-bridge motor driver	QFN-12 (2mmx 2mm)	MPS	MP6550AGG

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PCB LAYOUT

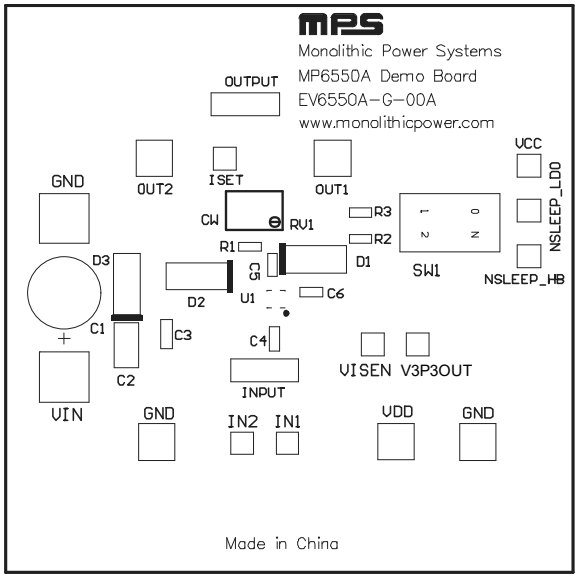

Figure 2: Top Silk

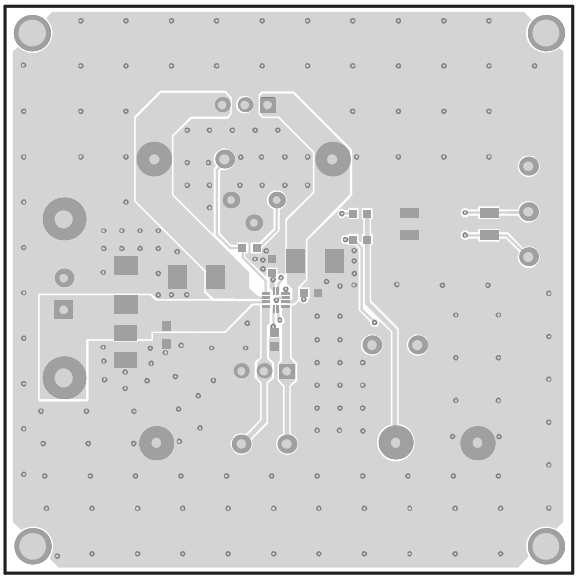

Figure 3: Top Layer

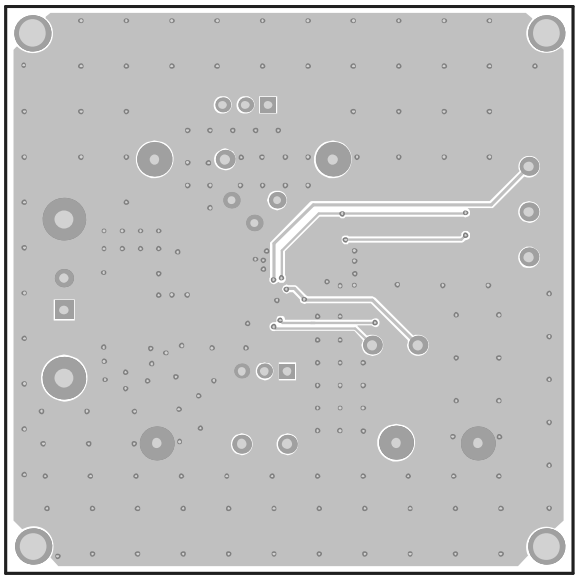

Figure 4: Bottom Layer

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REVISION HISTORY

Revision #	Revision Date	Description	Pages Updated
1.0	11/12/2024	Initial Release	-

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