EV6600-R-01A

35V, 1.5A, Bipolar Stepper Motor Driver Evaluation Board

DESCRIPTION

The EV6600-R-01A is an evaluation board designed to demonstrate the capabilities of the MP6600, a stepper motor driver with a built-in, microstepping translator.

The MP6600 operates from a supply voltage of up to 35V, and can deliver a motor current up to 1.5A. It can operate a bipolar stepper motor in full-, half-, quarter-, and eighth-step modes by setting MS2 and MS1. The input control signals for the MP6600 are applied through the connector or generated on the board.

The MP6600 is available in a QFN-24 (4mmx4mm) package. It is recommended to read the MP6600 datasheet prior to making any changes to the EV6600-R-01A.

PERFORMANCE SUMMARY

Parameters	Conditions	Value
Input voltage (V_{IN}) range		4.5V to 35V
Maximum output current (I_{OUT_MAX})		1.5A
VCC voltage (V_{CC})		3.3V or 5V

EVALUATION BOARD



LxW (6.35cmx6.35cm)

Board Number	MPS IC Number
EV6600-R-01A	MP6600GR

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QUICK START GUIDE

1. Connect the input voltage (4.5V ≤ V_{IN} ≤ 35V) and input ground to the VIN and GND connectors, respectively.
2. Switch SW2 to the top side (see Terminal 3 in Figure 1 on page 3) to enable the external step signal input from the EXT_STEP connector.
3. Connect the step signal to the EXT_STEP connector.
4. Set the input control and logic signal through the CN1 connector via the external MCU, or manually through SW1. Manual action requires an external 3.3V or 5V V_{CC} as a pull-up power supply.

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EVALUATION BOARD SCHEMATIC

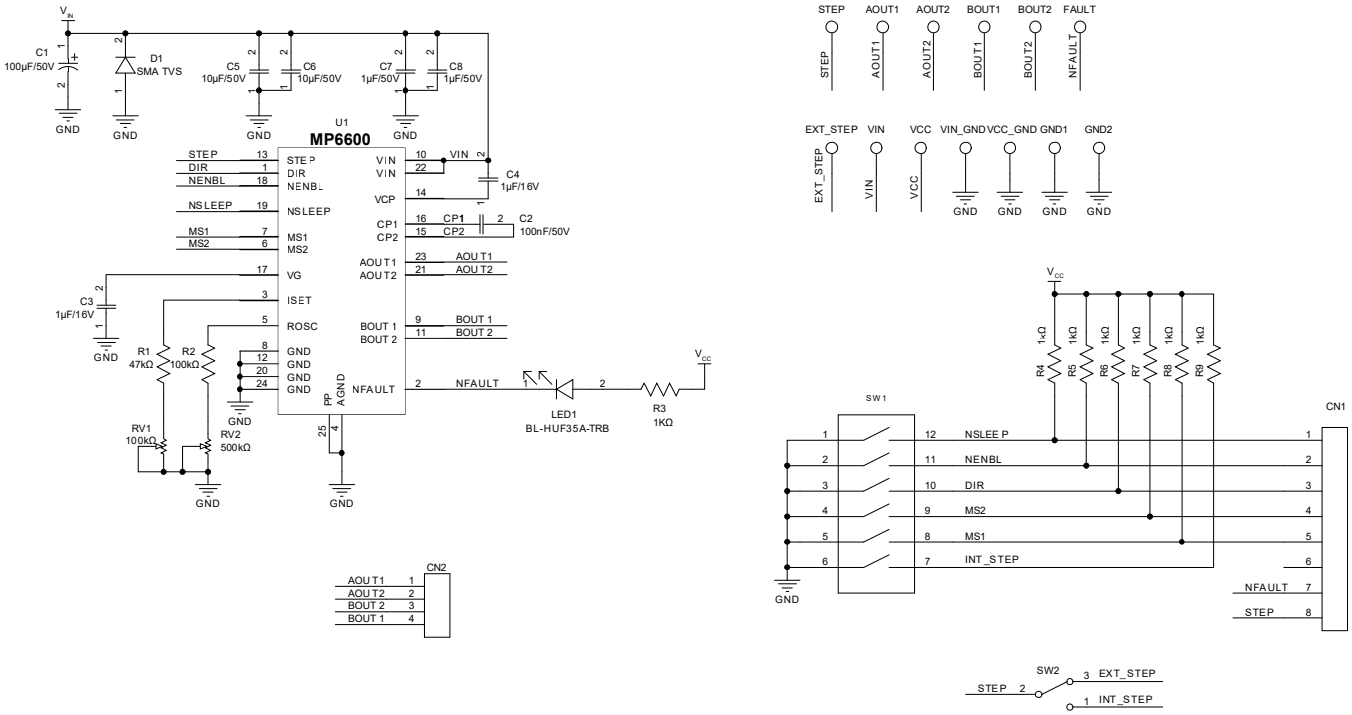


Figure 1: Evaluation Board Schematic

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EV6600-R-01A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer PN
1	C1	100µF	Electrolytic capacitor, 50V	DIP	Rubycon	50YXF100MEPA
1	C2	100nF	Ceramic capacitor, 50V, X7R	0603	Murata	GRM188R71H104KA93D
2	C3, C4	1µF	Ceramic capacitor, 16V, X7R	0603	Murata	GRM188R71C105KA12D
2	C5, C6	10µF	Ceramic capacitor, 50V, X7R	1210	Murata	GRM32ER71H106KA12L
2	C7, C8	1µF	Ceramic capacitor, 50V, X7R	0805	Wurth	885012207103
7	R3, R4, R5, R6, R7, R8, R9	1kΩ	Film resistor, 1%	0603	Yageo	RC0603FR-071KL
1	R1	47kΩ	Film resistor, 1%	0603	Yageo	RC0603FR-0747KL
1	R2	100kΩ	Film resistor, 1%	0603	Yageo	RC0603FR-07100KL
1	RV1	100kΩ	Square trimming potentiometer	DIP	Bourns	3266W-1-104F
1	RV2	500kΩ	Square trimming potentiometer	DIP	Bourns	3266W-1-504LF
1	LED1	50mW	Red LED	0805	Baihong	BL-HUE35A-AV-TRB
1	SW1	25mA	6-bit dial switch	SMD	Wurth	418121270806
1	SW2	500mA	Switch slide SPDT, 12V	DIP	Wurth	450301014042
1	CN1	2.54mm	8-bit connector	DIP	Any	
1	CN2	2.54mm	4-bit connector	DIP	Any	
1	D1	NS				
2	STEP, FLT	Yellow	Test point	DIP	Any	
2	VIN, VIN_GND	2mm	Connector, φ = 2mm	DIP	Any	
9	VCC, EXT_STEP, AOUT1, AOUT2, BOUT1, BOUT2, GND1, GND2, GND3	1mm	Connector, φ = 1mm	DIP	Any	
1	U1	MP6600	35V, 1.5A stepper motor driver	QFN-24 (4mmx 4mm)	MPS	MP6600GR

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PCB LAYOUT

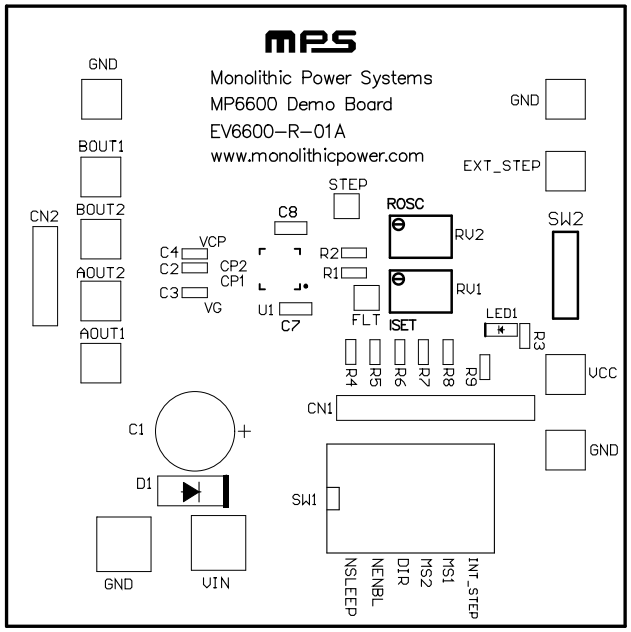


Figure 2: Top Silk

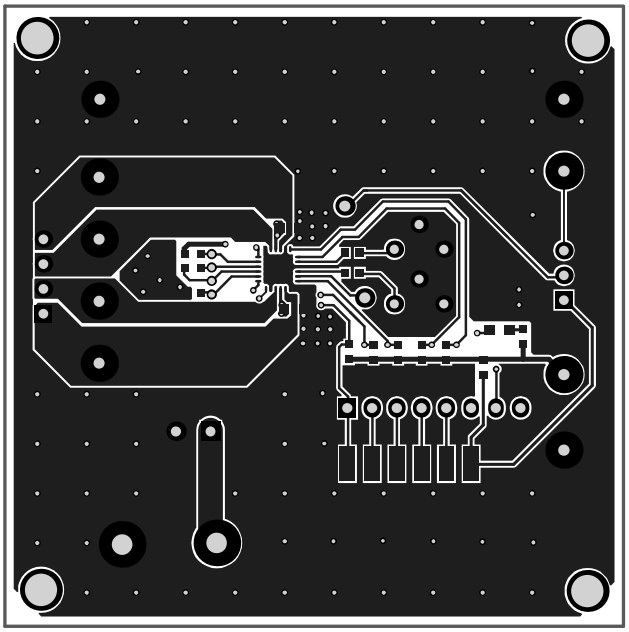


Figure 3: Top Layer

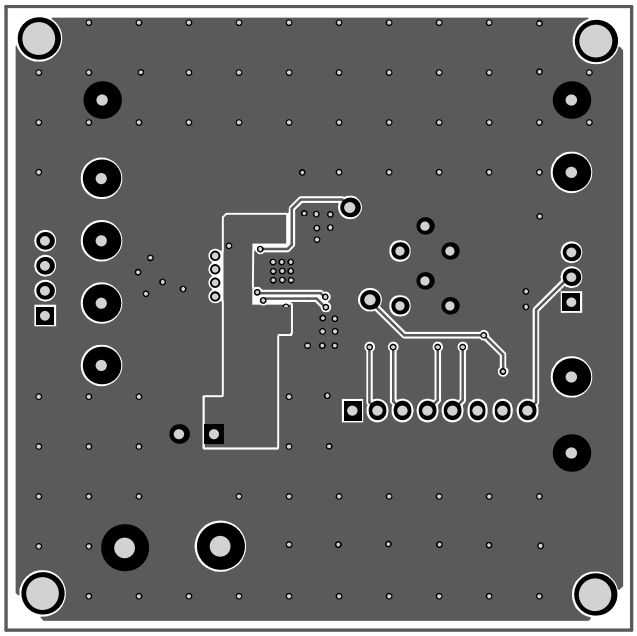


Figure 4: Bottom Layer

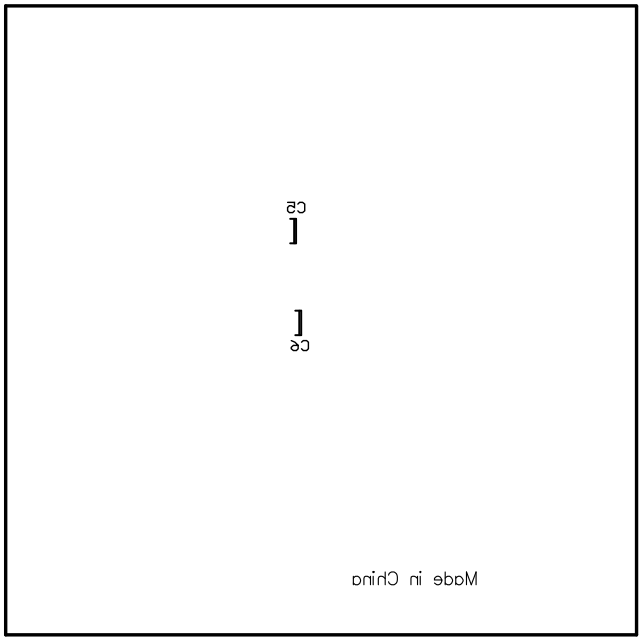


Figure 5: Bottom Silk

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REVISION HISTORY

Revision #	Revision Date	Description	Pages Updated
1.0	2/14/2022	Initial Release	-

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