



# EV6545-V-00A

## 45V, 2.5A, Simple, Three-Phase Power Stage Evaluation Board

### DESCRIPTION

The EV6545-V-00A is an evaluation board designed to demonstrate the capabilities of the MP6545, a three-phase power stage. The MP6545 can be used to drive brushless DC motors or other loads.

The device can operate from supply voltages of up to 45V, and can deliver load currents up to 2.5A per phase.

The MP6545 has separate high-side (HS) and low-side (LS) input pins for each output pin. The input control signals are generated on the board or come from an external controller via the connector on the board.

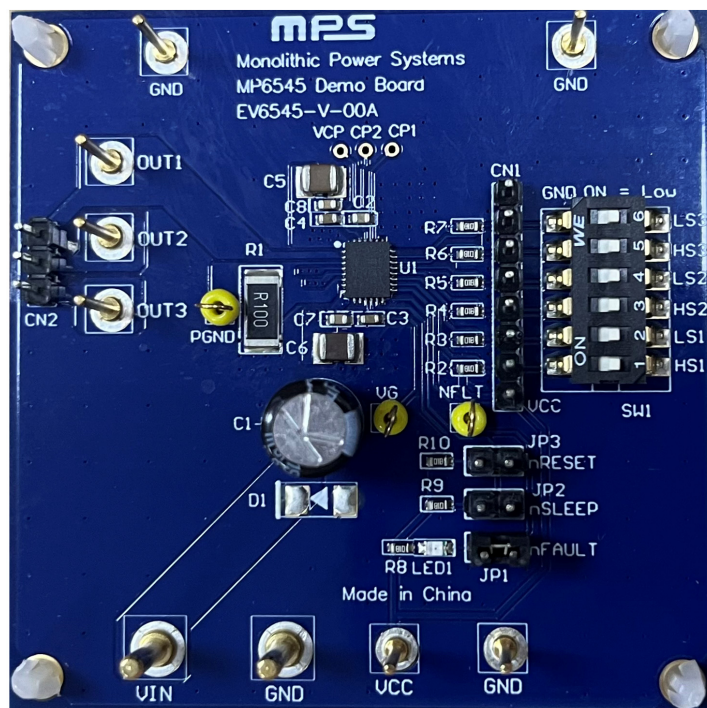
It is recommended to read the MP6545 datasheet before making any changes to the EV6545-V-00A.

### PERFORMANCE SUMMARY <sup>(1)</sup>

Specifications are at  $T_A = 25^\circ\text{C}$ , unless otherwise noted.

Parameters	Conditions	Value
Input voltage ( $V_{IN}$ ) range		4.5V to 45V
Maximum output current ( $I_{OUT}$ )		2.5A

### EVALUATION BOARD



LxW (6.35cmx6.35cm)

Board Number	MPS IC Number
EV6545-V-00A	MP6545GV

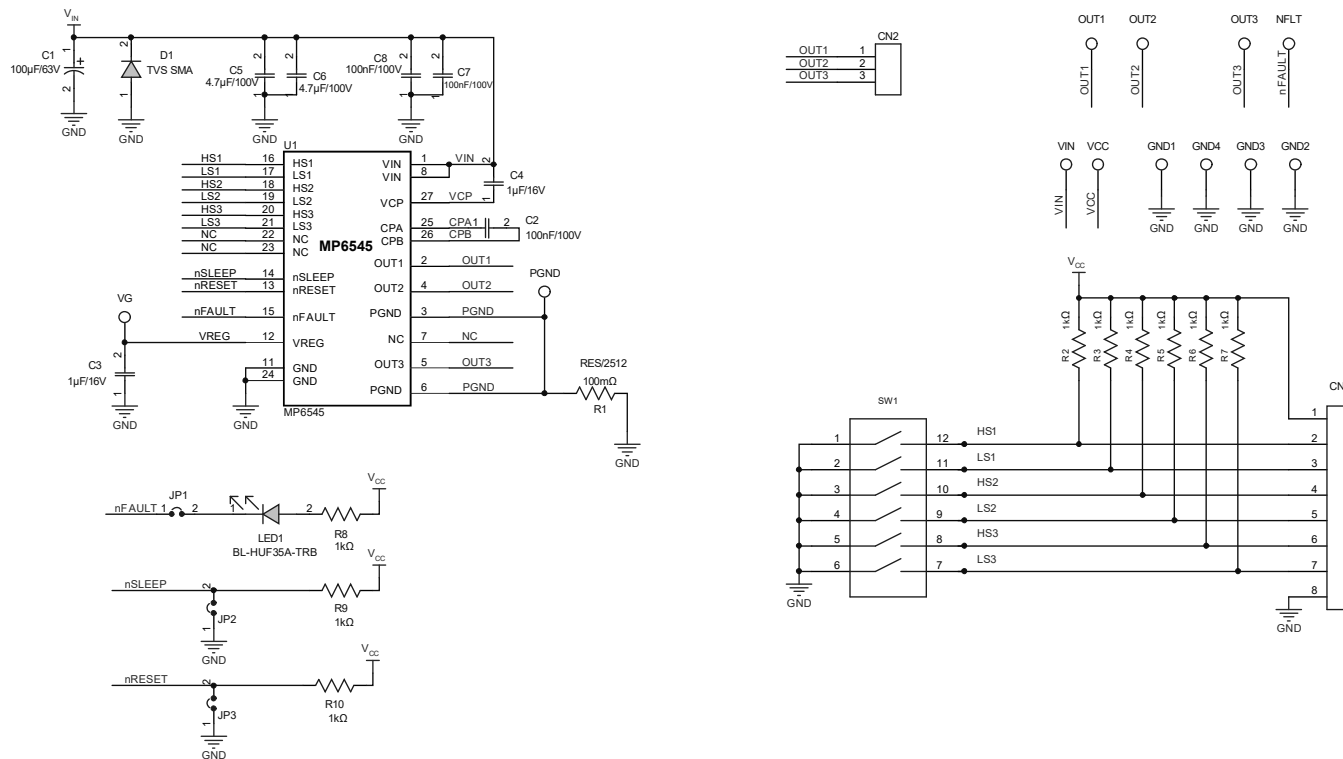
## QUICK START GUIDE

1. Preset the input power supply between 4.5V and 45V.
2. Connect the input power supply terminals to:
  - a. Positive (+): VIN
  - b. Negative (-): GND
3. Preset the VCC supply to 3.3V or 5V.
4. Connect the VCC supply terminals to:
  - a. Positive (+): VCC
  - b. Negative (-): GND
5. The input control and logic signal can be set by the CN1 connector via the external MCU or can be set manually via SW1. Table 1 shows the input logic truth table for the MP6545.

**Table 1: Input Logic Truth**

HSx	LSx	OUTx
0	0	Z
0	1	L
1	0	H
1	1	Z

# EVALUATION BOARD SCHEMATIC



**Figure 1: Evaluation Board Schematic**

**EV6545-V-00A BILL OF MATERIALS**

Qty	Ref	Value	Description	Package	Manufacturer	Manufacture PN
1	C1	100μF	Electrolytic capacitor, 63V	DIP	Rubycon	63PX100MEFC8X11.5
3	C2, C7, C8	100nF	Ceramic capacitor, 100V, X7R	0603	Wurth	885012206120
2	C3, C4	1μF	Ceramic capacitor, 16V, X7R	0603	Murata	GRM188R71C105KA12D
2	C5, C6	4.7μF	Ceramic capacitor, 100V, X7S	1210	TDK	C3225X7S2A475K
9	R2, R3, R4, R5, R6, R7, R8, R9, R10	1kΩ	Film resistor, 1%	0603	Yageo	RC0603FR-071KL
1	R1	100mΩ	Film resistor, 1%	2512	Yageo	RL2512FK-070R1L
1	LED1	20mA	LED	0805	Baihong	BL-HUE35A-AV-TRB
1	D1	NS				
1	SW1	25mA	Button	SMD	Wurth	418121270808
1	CN1	2.54mm	Connector	DIP	Any	
1	CN2	2.54mm	Connector	DIP	Any	
3	JP1, JP2, JP3	2.54mm	Connector	DIP	Any	
1	JP1	2.54mm	Short jumper	DIP	Any	
3	VG, NFLT, PGND	1mm	Test point	DIP	Any	
2	VIN, GND	2mm	Connector	DIP	Any	
7	VCC, GND, OUT1, OUT2, OUT3, GND, GND	1mm	Connector	DIP	Any	
1	U1	MP6545	45V, 2.5A, three-phase power stage	QFN-28 (4mmx5mm)	MPS	MP6545GV

## PCB LAYOUT

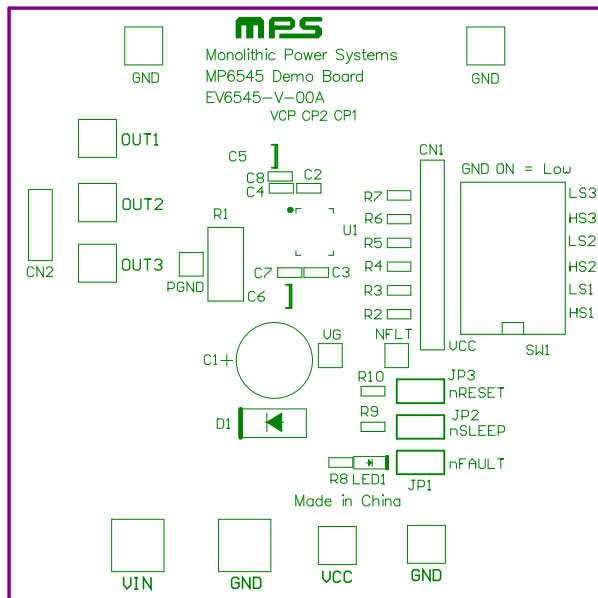


Figure 2: Top Silk

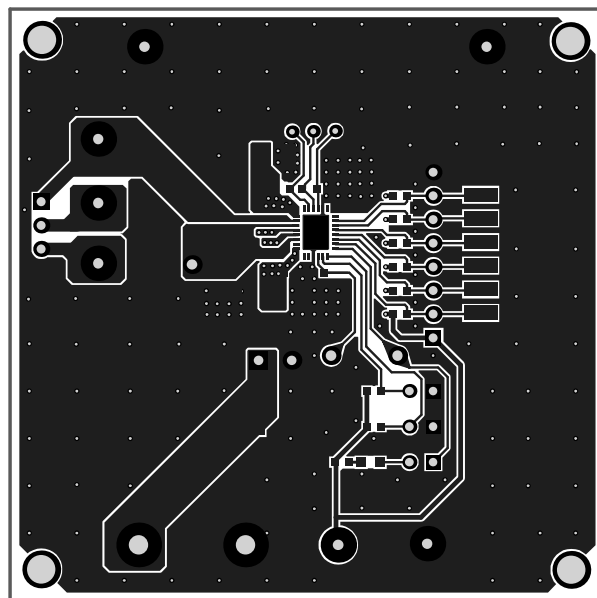


Figure 3: Top Layer

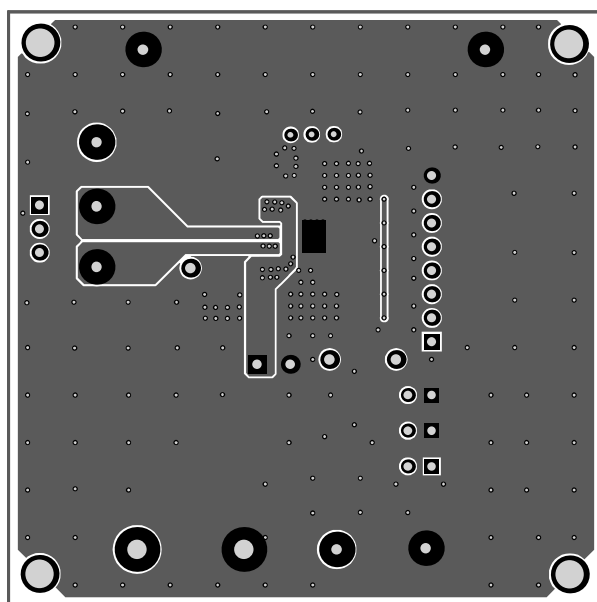


Figure 4: Bottom Layer



## REVISION HISTORY

Revision #	Revision Date	Description	Pages Updated
1.0	5/12/2022	Initial Release	-

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