



EV6528-R-00A

5V to 60V, H-Bridge Gate Driver Evaluation Board

DESCRIPTION

The EV6528-R-00A is an evaluation board for the MP6528GR, an H-bridge gate driver.

The EV6528-R-00A operates from a supply voltage of up to 60V. It is configured to drive two half-bridges consisting of four N-channel power MOSFETs. The driving control signals are generated by the external controller, such as MCU, FPGA, etc.

ELECTRICAL SPECIFICATION

| Parameter | Symbol | Value | Units |
|----------------|---------------|-------------|-------|
| Input Voltage | V_{IN} | 5 – 60 | V |
| OC_REF Voltage | V_{OC_REF} | 0.125 – 2.4 | V |
| VCC Voltage | V_{CC} | 3.3 or 5 | V |

FEATURES

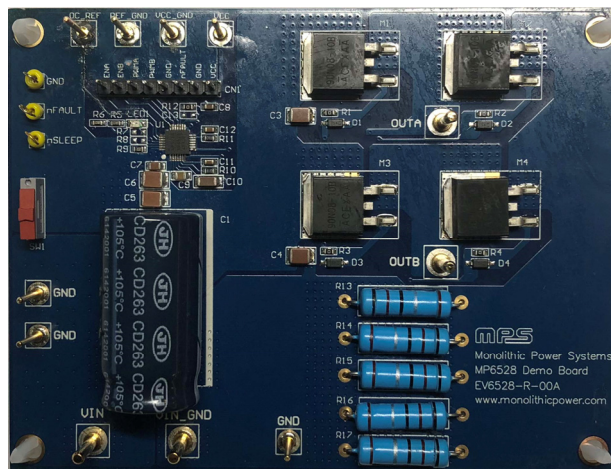
- Wide 5V to 60V Input Voltage Range
- Programmable OCP Threshold
- Support 100% Duty Cycle Operation
- OCP, OTP
- Fault Indication Output

APPLICATIONS

- DC Brush Motors
- Automotive Actuators
- Power Converters
- Gate Openers

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EV6528-R-00A EVALUATION BOARD



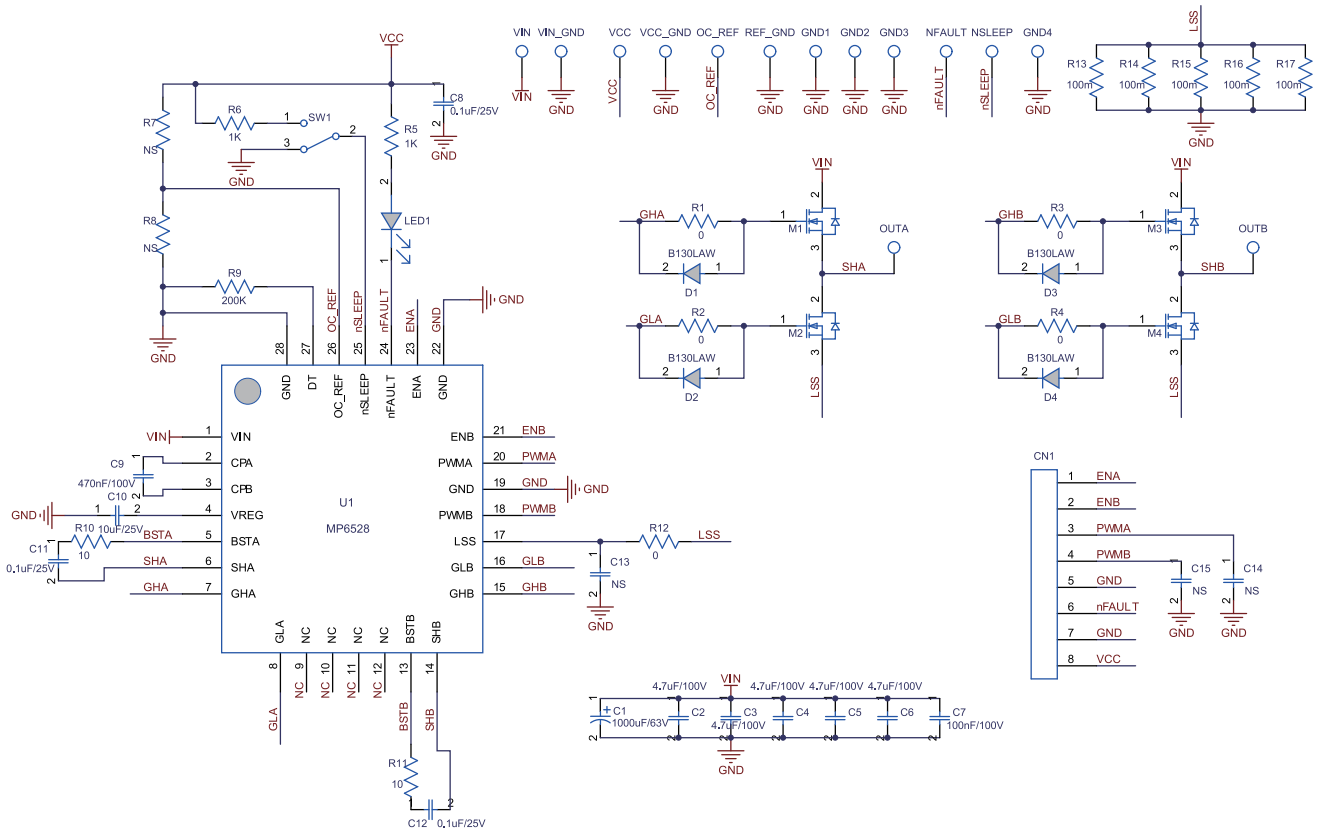
(L x W) 4.1" x 3.1" (10.3cm x 7.8cm)

| Board Number | MPS IC Number |
|--------------|---------------|
| EV6528-R-00A | MP6528GR |

QUICK START GUIDE

1. Attach the input voltage ($5V \leq V_{IN} \leq 60V$) and input ground to the VIN and GND connectors respectively.
2. Attach the VCC voltage (3.3V or 5V) to the VCC connector and switch the SW1 to the position 1 (Bottom side) to enable the chip.
3. Attach the OC_REF voltage ($0.125V \leq V_{OC_REF} \leq 2.4V$) to the OC_REF connector to set the OCP threshold.
4. Attach the driving control signals generated by the external controller to the CN1 connector.

EVALUATION BOARD SCHEMATIC



EV6528-R-00A BILL OF MATERIALS

| Qty | Ref | Value | Description | Package | Manufacturer | Part Number |
|-----|--|--------|--|---------------|--------------|--------------------|
| 1 | C1 | 1000uF | Electrolytic Cap. 63V | DIP | Jianghai | CD263-63V1000 |
| 5 | C2, C3, C4, C5, C6 | 4.7μF | Ceramic Cap. 100V, X7S | 1210 | TDK | C3225X7S2A475K |
| 1 | C7 | 100nF | Ceramic Cap. 100V, X7R | 0805 | TDK | CGA4J2X7R2A104K |
| 3 | C8, C11, C12 | 100nF | Ceramic Cap. 25V, X8R | 0603 | Murata | GCM188R91E104KA37D |
| 1 | C9 | 470nF | Ceramic Cap. 100V, X7R | 0805 | Murata | GRM21BR72A474KA73L |
| 1 | C10 | 10μF | Ceramic Cap. 25V, X5R | 1206 | TDK | C3216X5R1E106K |
| 3 | C13, C14, C15 | NS | | | | |
| 5 | R1, R2, R3, R4, R12 | 0Ω | Film Resistor, 1% | 0603 | Yageo | RC0603FR-070RL |
| 2 | R5, R6 | 1kΩ | Film Resistor, 1% | 0603 | Yageo | RC0603FR-071KL |
| 2 | R7, R8 | NS | | | | |
| 1 | R9 | 200kΩ | Film Resistor, 1% | 0603 | Yageo | RC0603FR-07200KL |
| 2 | R10, R11 | 10Ω | Film Resistor, 1% | 0603 | Yageo | RC0603FR-0710RL |
| 5 | R13, R14, R15, R16, R17 | 100mΩ | Resistor, 1%, 2W | DIP | 钰凌 | |
| 4 | D1, D2, D3, D4 | | Schottky Diode, 30V, 1A | SOD-123 | Diodes | B130LAW-7-F |
| 4 | M1, M2, M3, M4 | | N-channel MOSFET, 80V,90A, Qg=60nC, 11mOhm@Vgs=10V | TO-263 | Analog Power | AM90N08-10B-T1-PE |
| 1 | LED1 | | LED. 红光 | 0805 | 佰鸿 | 2012SURC-11 |
| 1 | SW1 | | Button | DIP | Würth | 450301014042 |
| 1 | CN1 | | 8PIN. 2.54MM | | | 61304011121 |
| 4 | VIN, VIN_GND, OUTA, OUTB | | 2.0 公针 | | | |
| 7 | VCC, VCC_GND, OC_REF, REF_GND, GND, GND, GND | | 1.0 公针 | | | |
| 3 | NFAULT, NSLEEP, GND | | Test Point | | | |
| 1 | U1 | | H-Bridge Gate Driver | QFN28 (4x4mm) | MPS | MP6528GR |

PRINTED CIRCUIT BOARD LAYOUT

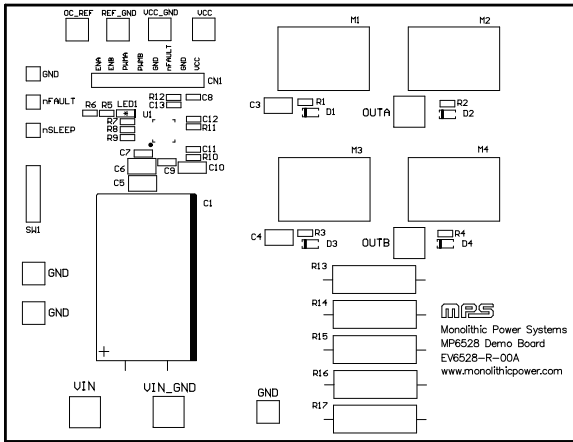


Figure 1: Top Silkscreen Layer

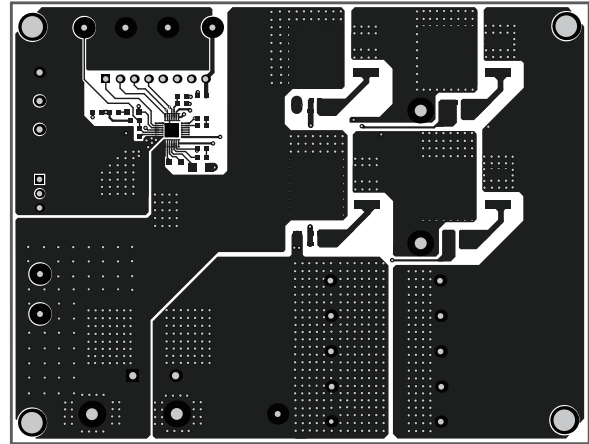


Figure 2: Top Layer

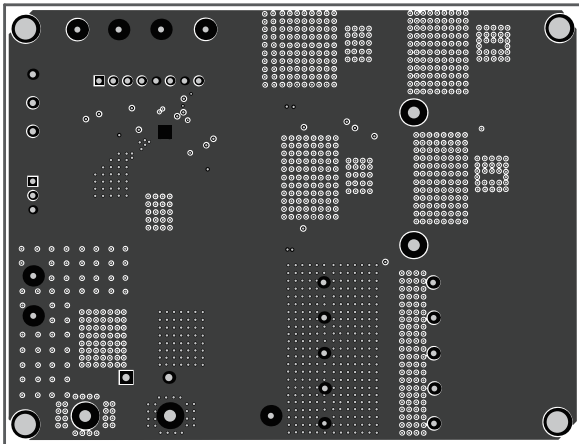


Figure 3: Inner 1

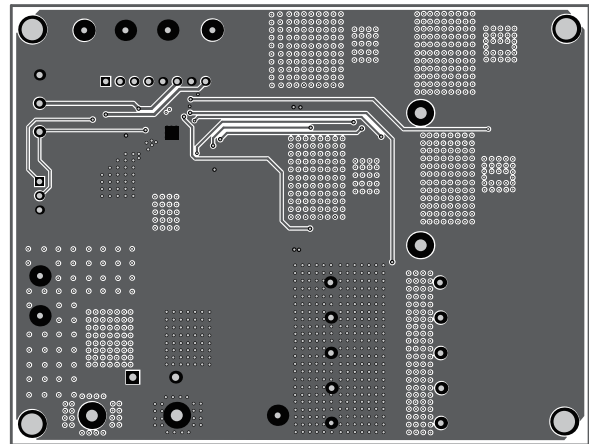


Figure 4: Inner 2

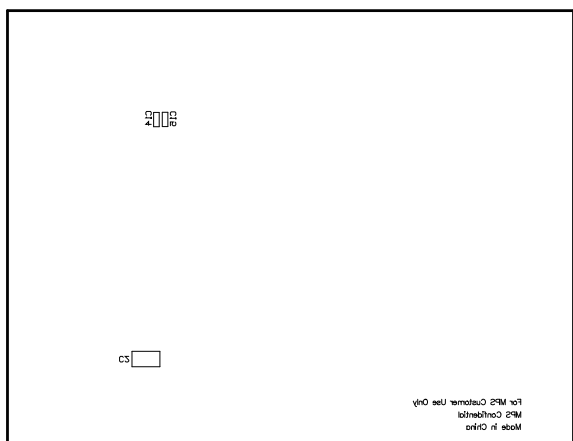


Figure 5: Bottom Silkscreen Layer

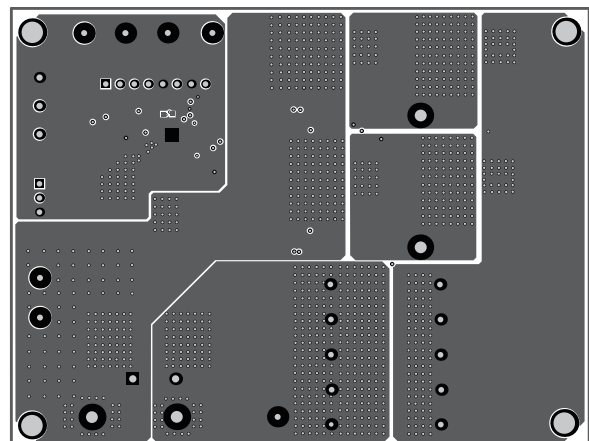


Figure 6: Bottom Layer

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