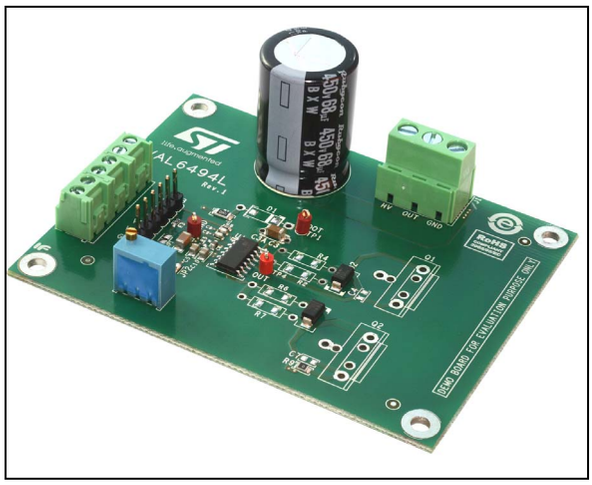
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# EVAL6494L

## Demonstration board for L6494L gate driver

**Data brief**



## Features

- Driver current capability: 2 A source, 2.5 A sink
- Integrated bootstrap diode
- Single input and shutdown pin
- Adjustable deadtime
- 3.3 V, 5 V TTL/CMOS inputs with hysteresis
- UVLO on both high-side and low-side sections
- dV/dt immunity: 50 V/ns in full temperature range
- Compact and simplified layout
- Bill of material reduction
- Flexible, easy and fast design

## Description

The L6494L is a high voltage device manufactured with the BCD6 “OFF-LINE” technology. It is a single-chip half-bridge gate driver for N-channel power MOSFETs or IGBTs.

Both device outputs can sink 2.5 A and source 2 A, making the L6494L particularly suited for medium and high capacity power MOSFETs\IGBTs.

The integrated bootstrap diode as well as all of the integrated features of this driver make the application's PCB design simpler and more compact, and help reducing the overall bill of material.

The EVAL6494L board allows evaluating all of the L6494L features while driving a power switch in the TO-220 or TO-247 package.

The board allows easily to select and modify the values of relevant external components in order to ease driver performance evaluation under different applicative conditions and fine pre-tuning of final application components.



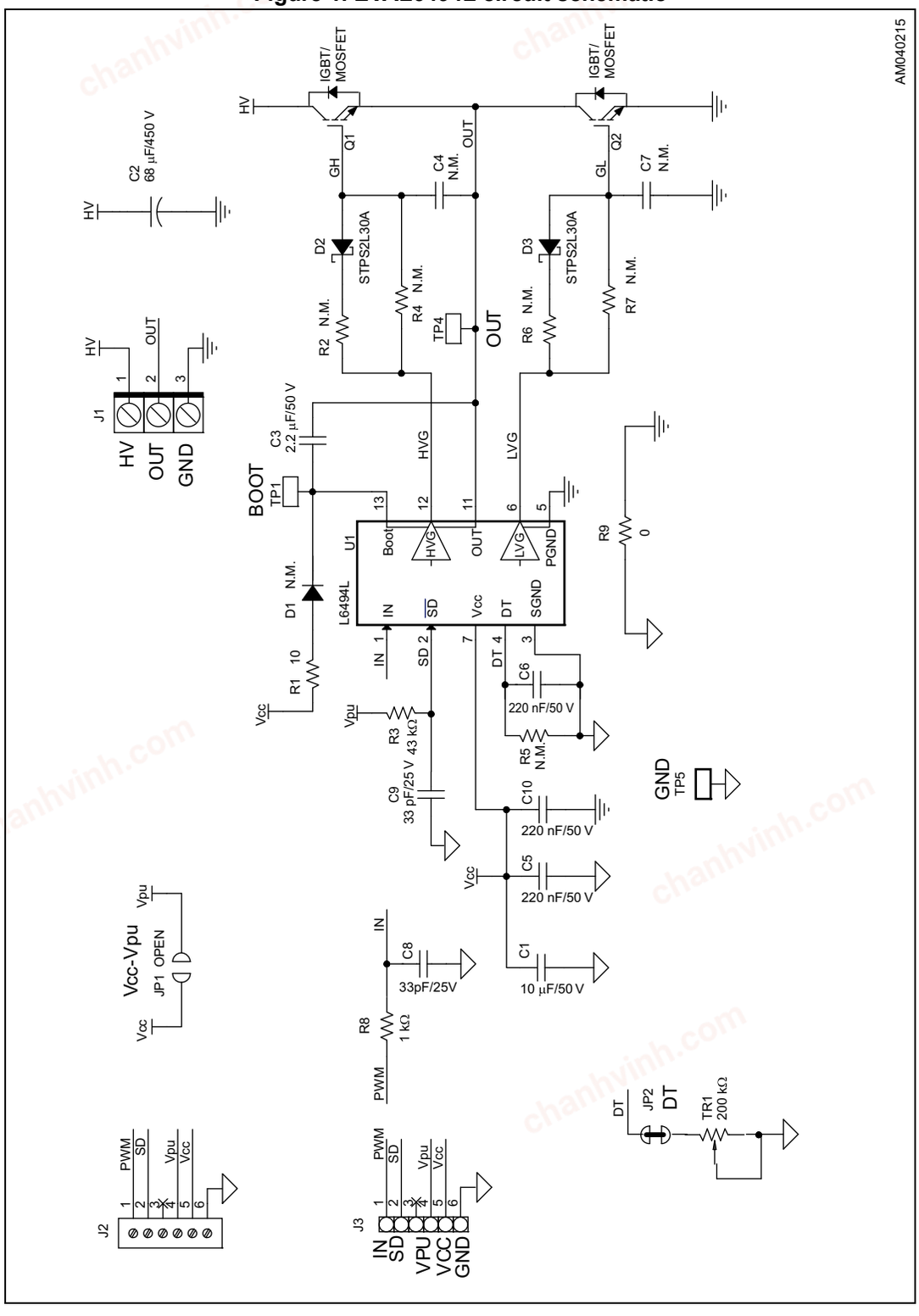
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# 1 Schematic diagram

**Figure 1. EVAL6494L circuit schematic**



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# 2 Bill of material

**Table 1. EVAL6494L - bill of material**

| Part reference | Part value | Part description |
|---|---|---|
| C1 | 10 µF / 50 V | Ceramic capacitor, SMT 1206 |
| C2 | 68 µF / 450 V | Electrolytic capacitor, 68 µF, 450 V, 20% radial P7.5 mm 18 x 25 |
| C3 | 2.2 µF / 50 V | Ceramic capacitor, SMT 1206 or T.H. |
| C4, C7 | N. M. | Ceramic capacitor, SMT 0805 |
| C5, C10 | 220 nF / 50 V | Ceramic capacitor, SMT 0805 |
| C6 | 220 nF / 50 V | Ceramic capacitor, SMT 0603 |
| C8, C9 | 33 pF / 25 V | Ceramic capacitor, SMT 0603 |
| D1 | N. M. | Diode DO-41 or SMA |
| D2, D3 | STPS2L30A | Schottky diode 30 V, 2 A, SMA |
| JP1 | Jumper - OPEN | SMT jumper |
| JP2 | Jumper - CLOSED | SMT jumper |
| J1 | Phoenix Contact 1985991 or similar | Conn. term. block. T.H. 3 POS 5.08 mm |
| J2 | 2 x Phoenix Contact 1984950 or similar | Conn. term. block. T.H. 6 POS 3.5 mm |
| J3 | FCI 68000-406HLF or similar | Conn. header 6 POS 2.54 mm STR TIN |
| Q1, Q2 | To be selected by customer | IGBT/MOSFET, TO-220 or TO-247 |
| R1 | 10 Ω | Resistor, SMT 1206 |
| R2, R4, R6, R7 | To be selected by customer | Resistor, SMT 1206 or T.H. |
| R3 | 43 kΩ | Resistor, SMT 0603 |
| R5 | N. M. | Resistor, SMT 0603 |
| R8 | 1 kΩ | Resistor, SMT 0603 |
| R9 | 0 Ω | Resistor, SMT 0805 |
| TP1, TP4, TP5 | RS 200-207 or similar | PCB test terminal 1 mm |
| TR1 | Murata PV36W204C01B00 or similar | Trimmer 200 kΩ, 0.5 W, T. H. |
| U1 | L6494LD | High voltage high and low-side gate driver, SO-14 |

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# 3 Layout

Figure 2. EVAL6494L - layout (top layer)

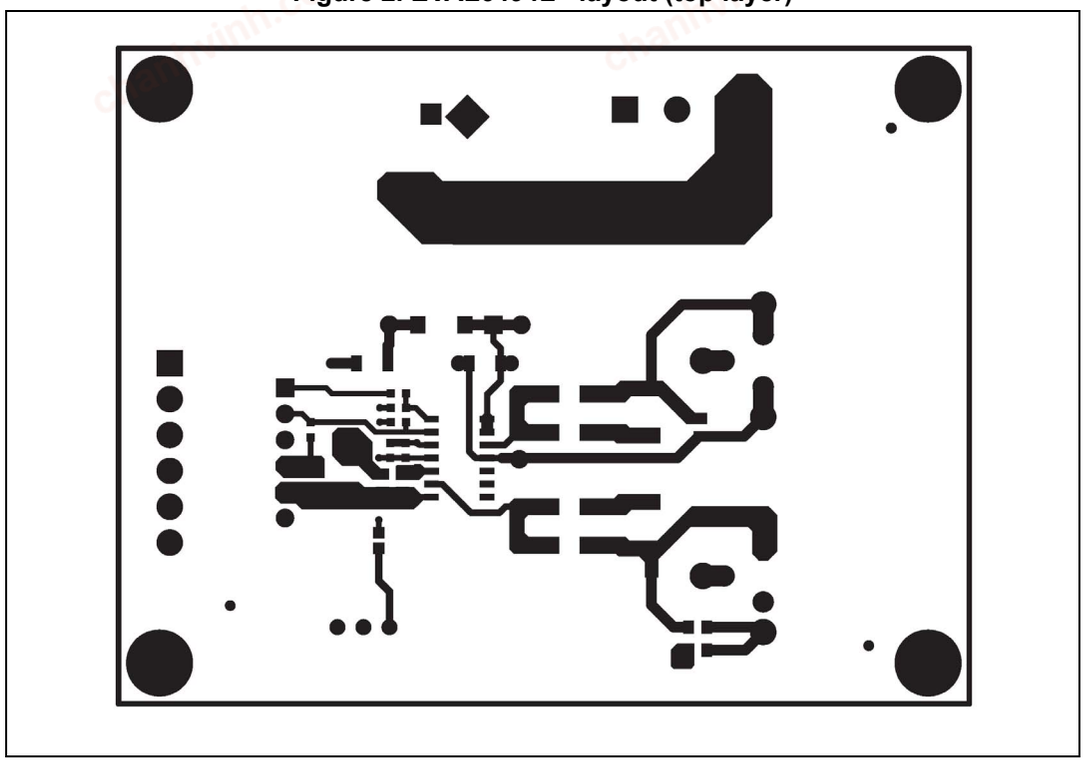
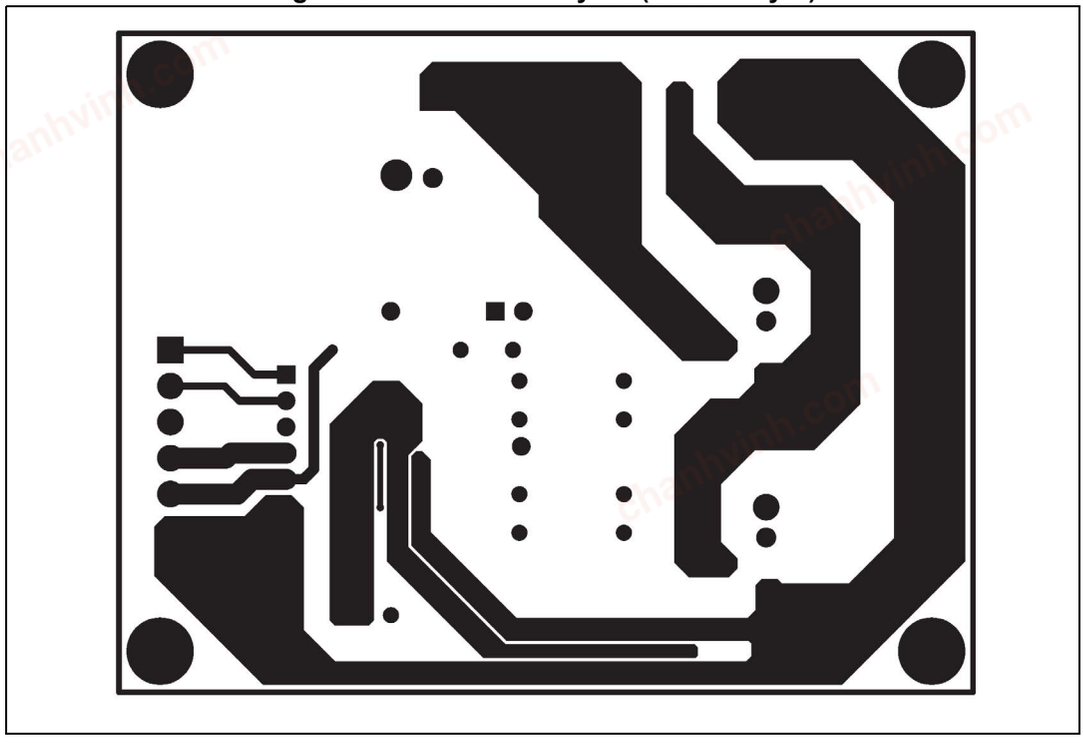


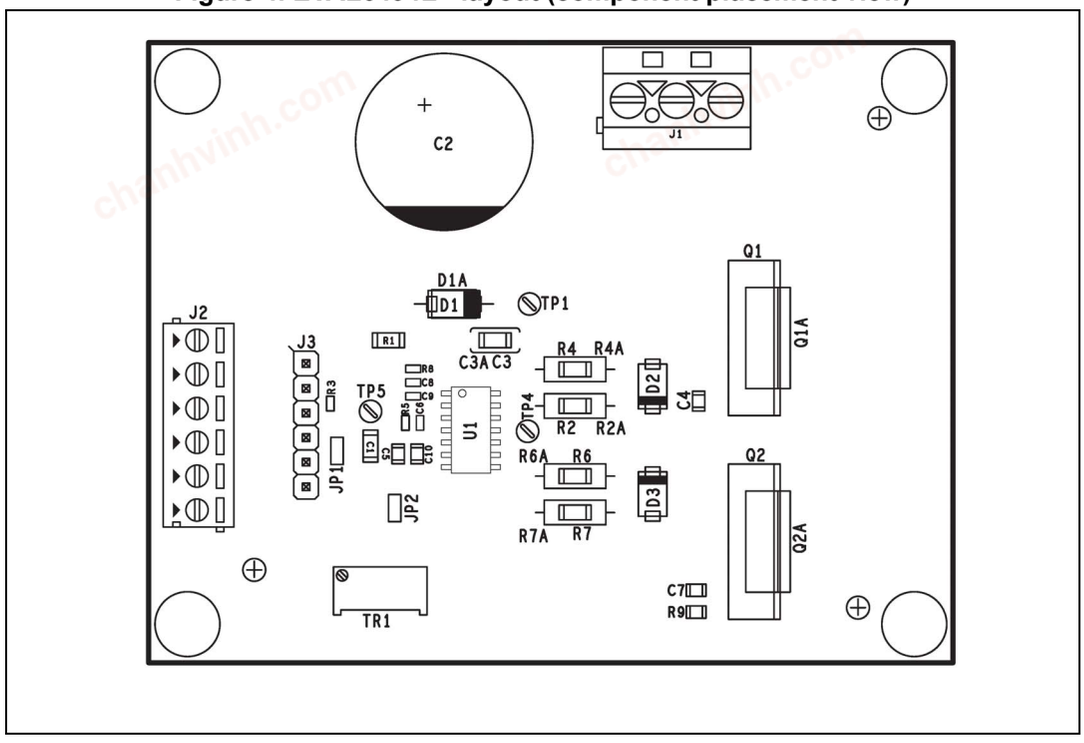
Figure 3. EVAL6494L - layout (bottom layer)



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Figure 4. EVAL6494L - layout (component placement view)



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# 4 Revision history

Table 2. Document revision history

| Date | Revision | Changes |
|---|---|---|
| 14-Nov-2017 | 1 | Initial release. |

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