EVAL2293Q

Demonstration board mounting the L2293Q dual full-bridge driver

Data brief

Features

- 600 mA output current capability per channel
- 1.2 A peak output current (non repetitive) per channel
- Enable facility
- Overtemperature protection
- Logical “0” input voltage up to 1.5 V (high noise immunity)
- Internal clamp diodes

Description

The L2293Q is a monolithic integrated high voltage, high-current four-channel driver designed to accept standard DTL or TTL logic levels, drive inductive loads (such as relay solenoides, DC and stepping motors) and switching power transistors.

To simplify the use as two bridges, each pair of channels is equipped with an enable input. A separate supply input is provided for the logic, allowing the operation at a lower voltage and including internal clamp diodes.

This device switches applications at frequencies up to 50 kHz.

The L2293Q is assembled in a VFQFPN-32L 5x5 package which has exposed pad available for heatsinking.

1 Board description

Table 1. EVAL2293Q: electrical specifications (recommended values)

Parameter	Value
Supply voltage range (VS)	VSS to 36 V
Logic supply voltage range (VSS)	2.8 (1) to 36 V
Output current rating (OUTx)	Up to 0.6 $A_{r.m.s.}$
Switching frequency	Up to 50 kHz
Input and enable voltage range	0 to +5 V
Operating temperature range	-20 (1) to +125 °C
L2293Q thermal resistance junction-to-ambient	42 °C/W

1. Please refer to the L2293Q datasheet for further details.

Figure 1. EVAL2293Q demonstration board

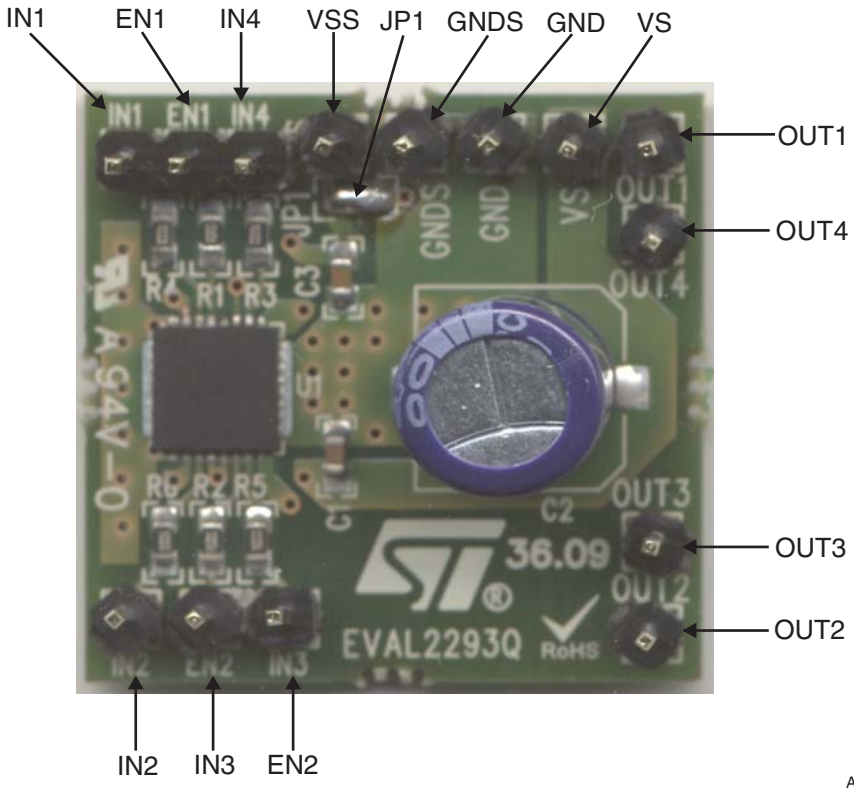


Table 2. EVAL2293Q: pin description

Name	Type	Function
VS	Power supply	Supply voltage for the power output stages
GND	Ground	Power ground terminal
VSS	Power supply	Supply voltage for the logic blocks. It is connected to VS through the closed jumper JP1
GNDS	Ground	Signal ground terminal
IN1	Logic input	Bridge 1 logic input 1
IN2	Logic input	Bridge 1 logic input 2
EN1	Logic input	Bridge 1 enable (active high). When LOW, switches off the output 1 and 2 power transistors
IN3	Logic input	Bridge 2 logic input 1
IN4	Logic input	Bridge 2 logic input 2
EN2	Logic input	Bridge 2 enable (active high). When LOW, switches off the output 3 and 4 power transistors
OUT1	Output	Output 1
OUT2	Output	Output 2
OUT3	Output	Output 3
OUT4	Output	Output 4

Figure 2. EVAL2293Q demonstration board electrical schematic

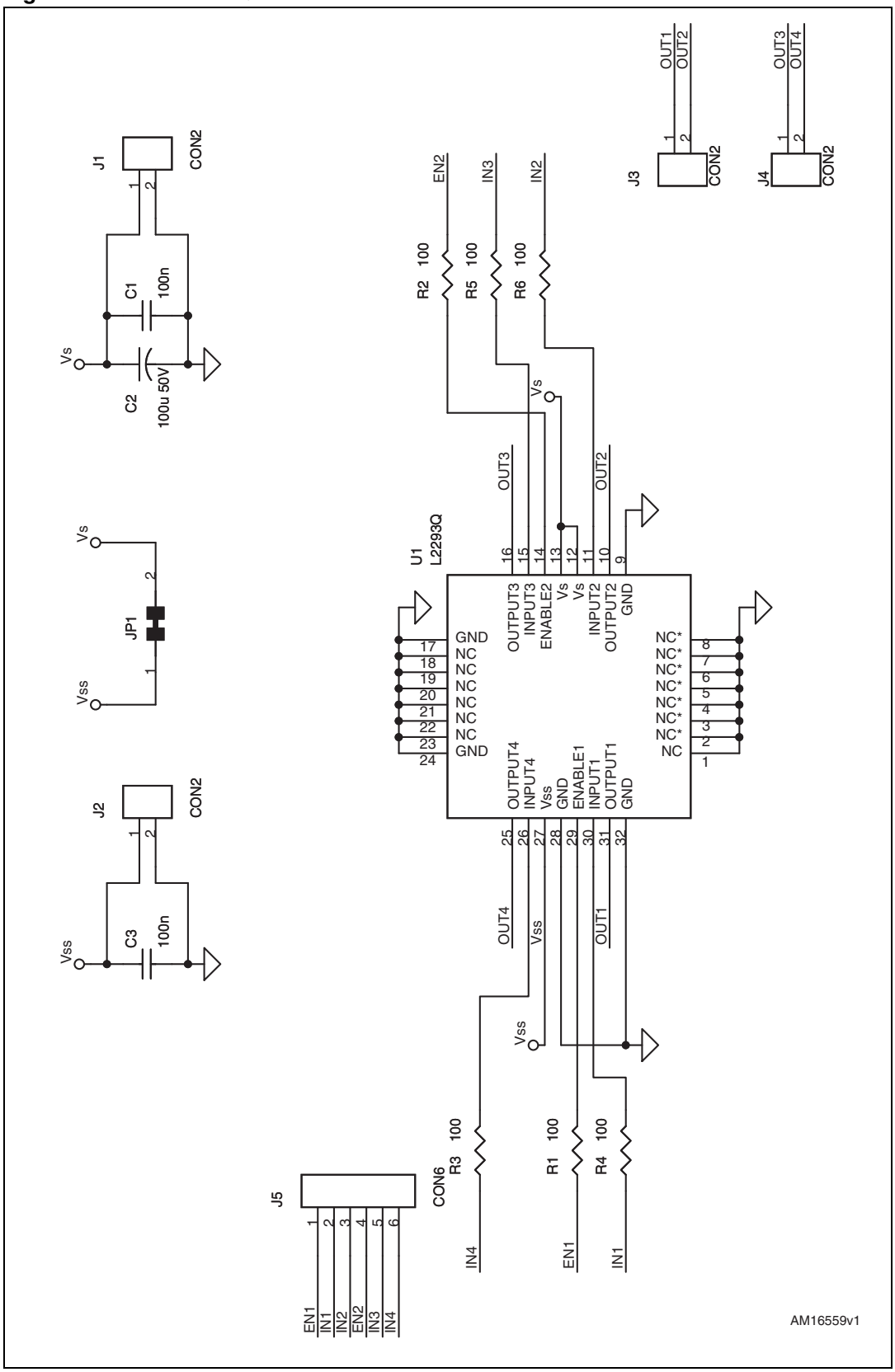


Table 3. EVAL2293Q component list

Reference	Value	Description
C1, C3	100 nF/50 V	Capacitor
C2	100 µF/50 V	Capacitor
R1, R2, R3, R4, R5, R6	100 Ω	Resistor
U1	L2293Q	Dual full-bridge in VFQFPN5x5 package

Figure 3. EVAL2293Q component placement

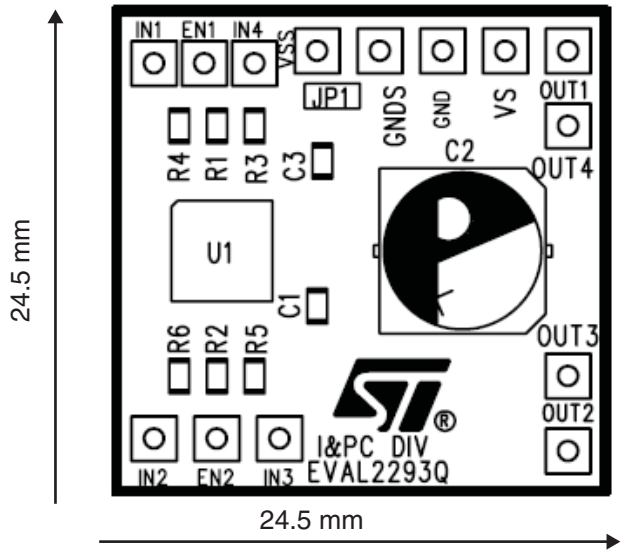


Figure 4. EVAL2293Q top layer layout

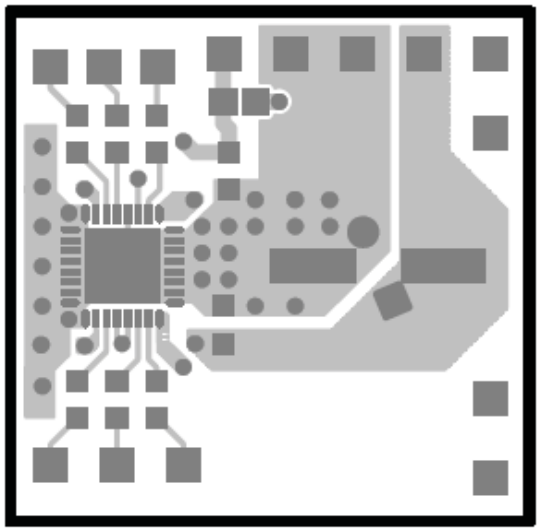
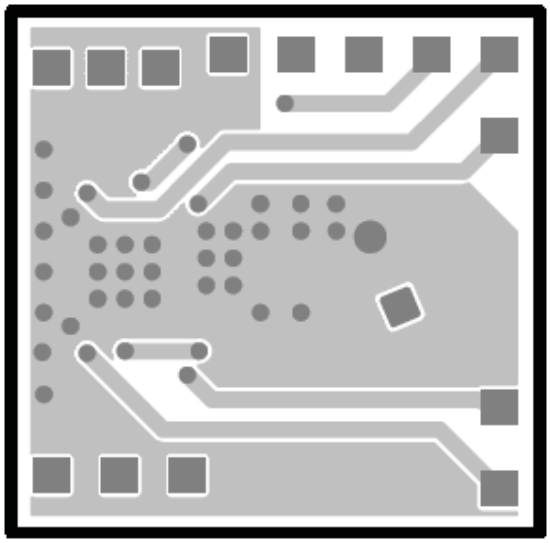


Figure 5. EVAL2293Q bottom layer layout



AM16562v1

2 Revision history

Table 4. Document revision history

Date	Revision	Changes
11-Jan-2013	1	Initial release.

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