



MAX3397E Evaluation Kit

Evaluates: MAX3397E

General Description

The MAX3397E evaluation kit (EV kit) is a fully assembled and tested printed-circuit board (PCB) that demonstrates the capabilities of the MAX3397E ESD-protected, dual bidirectional low-level translator. The MAX3397E allows data translation in either direction ($V_L \leftrightarrow V_{CC}$) on any single data line. The MAX3397E EV kit accepts V_L from +1.2V to +5.5V and V_{CC} from +1.65V to +5.5V. The EV kit comes with the MAX3397EELA+ installed.

Component List

DESIGNATION	QTY	DESCRIPTION
C1, C2	2	0.1 μ F \pm 10%, 16V X7R ceramic capacitors (0603) Murata GRM188R71C104K
C3	1	1 μ F \pm 10%, 16V X7R ceramic capacitor (0603) Murata GRM188R71C105K
JU1	1	3-pin header
R1	1	10k Ω \pm 5% resistor (0603)
U1	1	MAX3397EELA+ (8-pin μ DFN, 2mm x 2mm)
—	1	PCB: MAX3397E Evaluation Kit+

Component Supplier

SUPPLIER	PHONE	WEBSITE
Murata Mfg. Co., Ltd.	770-436-1300	www.murata.com

Note: Indicate that you are using the MAX3397E when contacting this component supplier.

Features

- ◆ Jumper-Selectable Enable/Shutdown Configuration
- ◆ +1.2V to +5.5V Supply Range for V_L
- ◆ +1.65V to +5.5V Supply Range for V_{CC}
- ◆ Proven PCB Layout
- ◆ Fully Assembled and Tested

Ordering Information

PART	TYPE
MAX3397EEVKIT+	EV Kit

+Denotes lead-free and RoHS-compliant.

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Quick Start

Recommended Equipment

Before beginning, the following equipment is needed:

- One +5V DC power supply
- One +3.3V DC power supply
- One function generator
- One oscilloscope

Procedure

The MAX3397E EV kit is fully assembled and tested. Follow the steps below to verify board operation.

Caution: Do not turn on power supplies until all connections are completed.

- 1) Turn off the +5V DC and +3.3V DC power supplies.
- 2) Turn off the function generator.
- 3) Make sure the shunt is on pin 1-2 of JU1.
- 4) Connect the positive (+) terminal of the +5V DC power supply to the VCC pad and connect the negative (-) terminal to the adjacent GND pad.
- 5) Connect the positive (+) terminal of the +3.3V DC power supply to the VL pad and connect the negative (-) terminal to the adjacent GND pad.
- 6) Connect the positive (+) terminal of the function generator to I/OVCC1 pad of the MAX3397E EV kit. Connect the negative (-) terminal of the DC signal source to the GND pad.
- 7) Turn on the +5V DC and +3.3V DC power supplies.
- 8) Turn on the function generator.
- 9) Set the function generator to a 5V_{P-P}, 1MHz, 2.5V DC offset square wave.
- 10) Use the oscilloscope to measure the I/O VL₁ output at pin 5. Verify that the waveform is a 1MHz square wave and is approximately 3.3 V_{P-P} with 1.625V DC offset.

Detailed Description of Hardware

The MAX3397E is an ESD-protected, dual bidirectional low-level translator. The MAX3397E EV kit board provides a proven layout for evaluating the MAX3397E. The EV kit comes with a MAX3397EELA+ installed.

Enable/Shutdown Control

Place the shunt on pin 1-2 of JU1 (as shown in Table 1) to drive the EN pin of the MAX3397E high and to enable the device. Place the shunt on pin 2-3 of JU1 to drive the EN pin of the MAX3397E low and to put the device in shutdown state.

Table 1. Jumper JU1 Configuration

JUMPER	SHUNT POSITION	DESCRIPTION
JU1	1-2*	Enable
	2-3	Shutdown

*Default position.

Power Supply

The MAX3397E accepts V_L from +1.2V to +5.5V and V_{CC} from +1.65V to +5.5V. The voltage on V_L must be less than or equal to the voltage on V_{CC}.

When V_L is connected and V_{CC} is disconnected or connected to ground, the device enters shutdown mode. In this mode, I/O V_L can still be driven without damage to the device; however, data does not translate from I/O V_L to I/O V_{CC}. If V_{CC} falls more than +0.8V (typ) below V_L, the device disconnects the pullup resistors at I/O V_L and I/O V_{CC}. To achieve the lowest possible supply current from V_L when V_{CC} is disconnected, it is recommended that the voltage at the V_{CC} supply input be approximately equal to GND.

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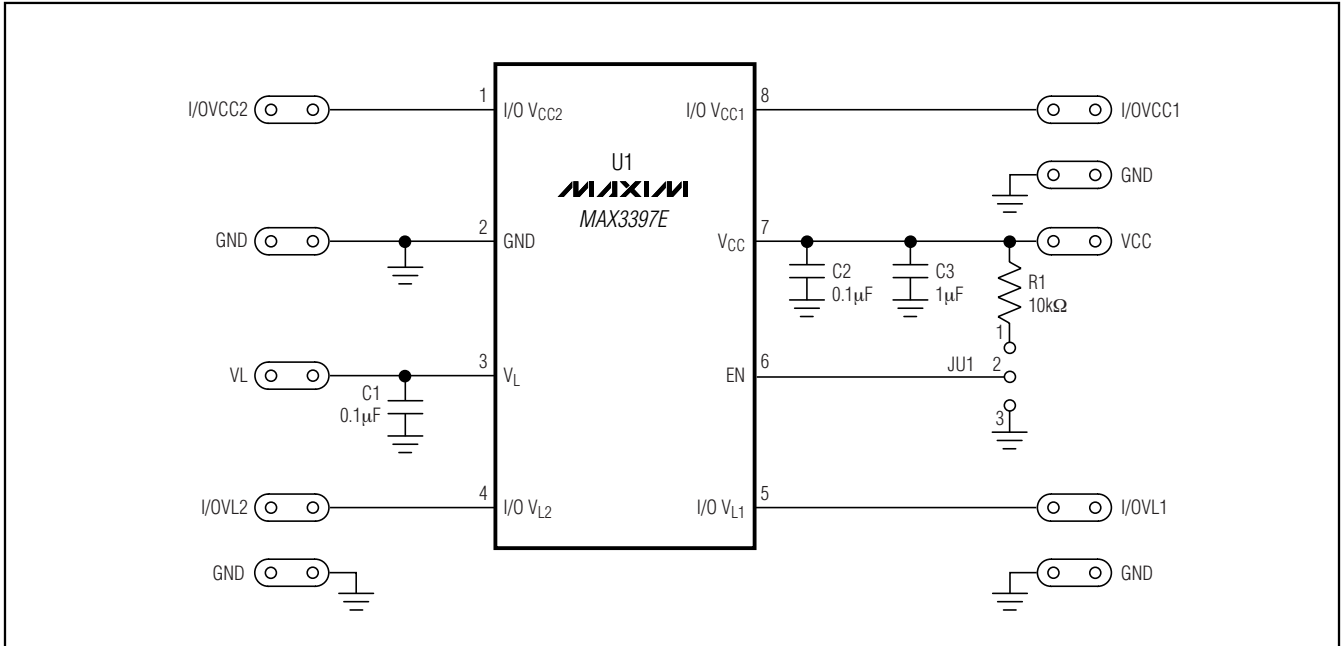


Figure 1. MAX3397E EV Kit Schematic

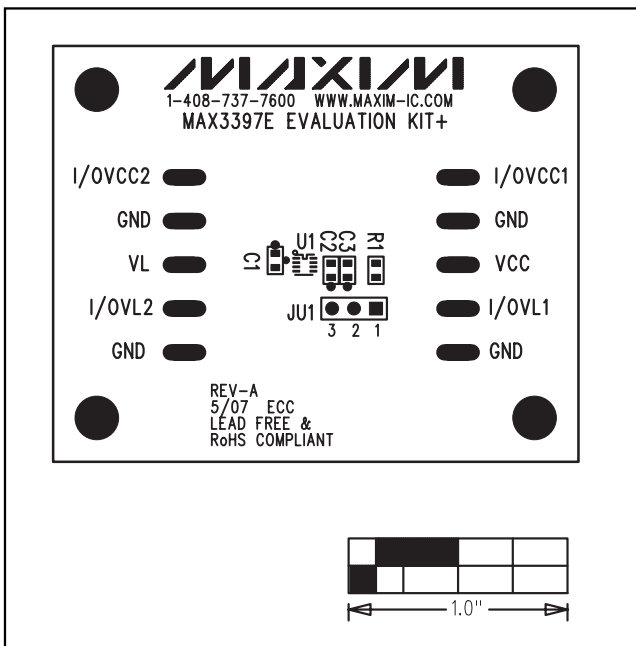


Figure 2. MAX3397E EV Kit Component Placement Guide—Component Side

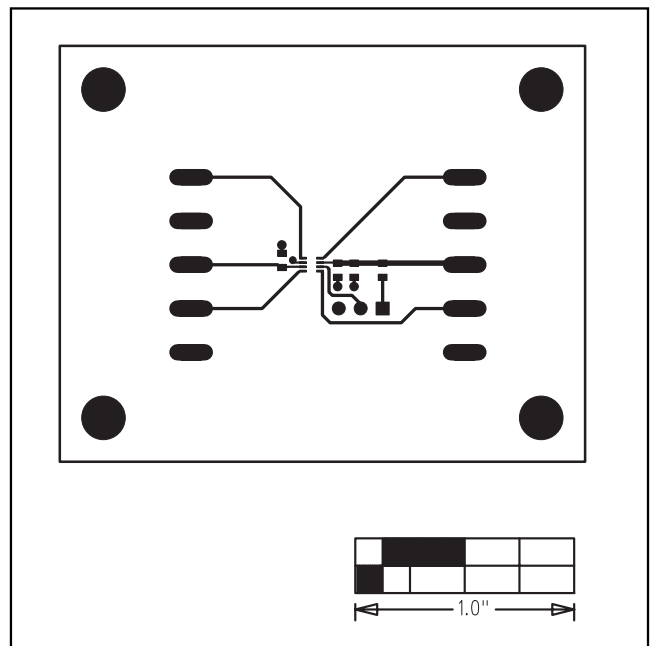


Figure 3. MAX3397E EV Kit PCB Layout—Component Side

MAX3397E Evaluation Kit

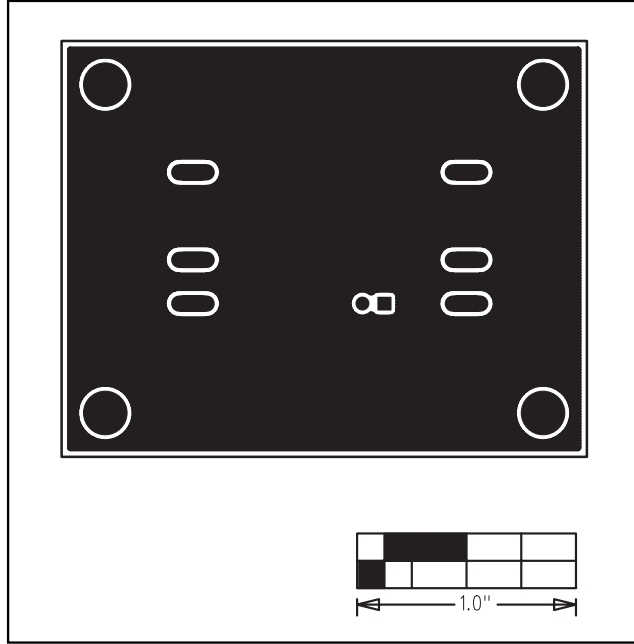


Figure 4. MAX3397E EV Kit PCB Layout—Solder Side

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