



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.

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

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+

Ordering Information

PART	TYPE
MAX3397EEVKIT+	EV Kit

+ Denotes lead-free and RoHS-compliant.

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.

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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 VCC from +1.65V to +5.5V. The voltage on V_L must be less than or equal to the voltage on VCC.

When V_L is connected and VCC 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 VCC. If VCC falls more than +0.8V (typ) below V_L, the device disconnects the pullup resistors at I/O V_L and I/O VCC. To achieve the lowest possible supply current from V_L when VCC is disconnected, it is recommended that the voltage at the VCC supply input be approximately equal to GND.

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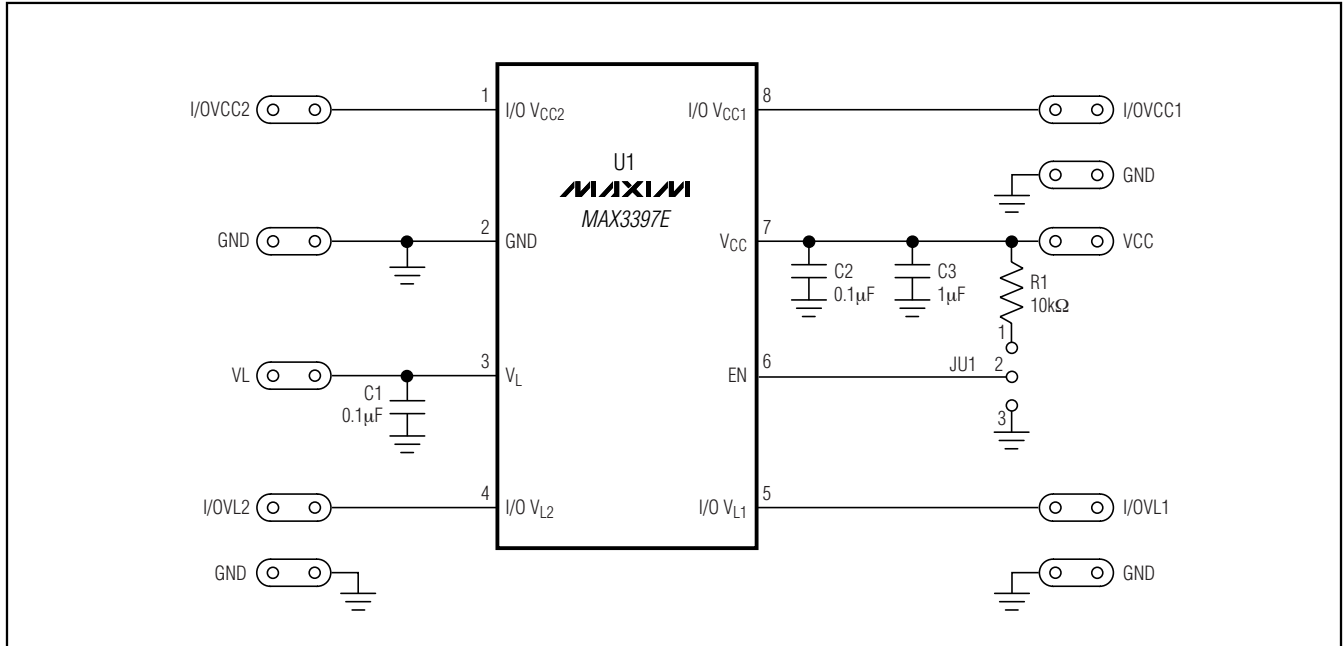


Figure 1. MAX3397E EV Kit Schematic

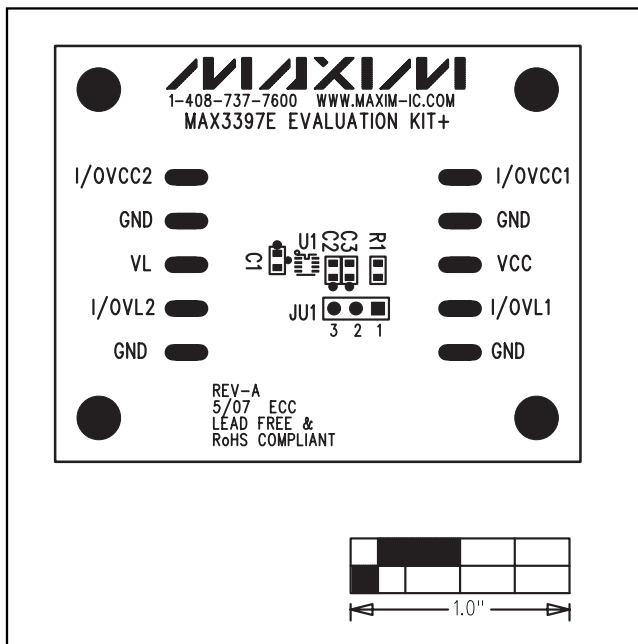


Figure 2. MAX3397E EV Kit Component Placement Guide—Component Side

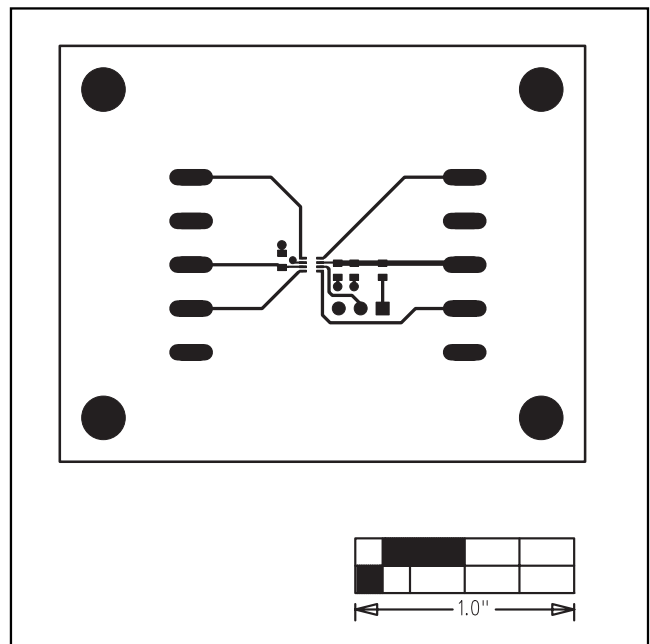


Figure 3. MAX3397E EV Kit PCB Layout—Component Side

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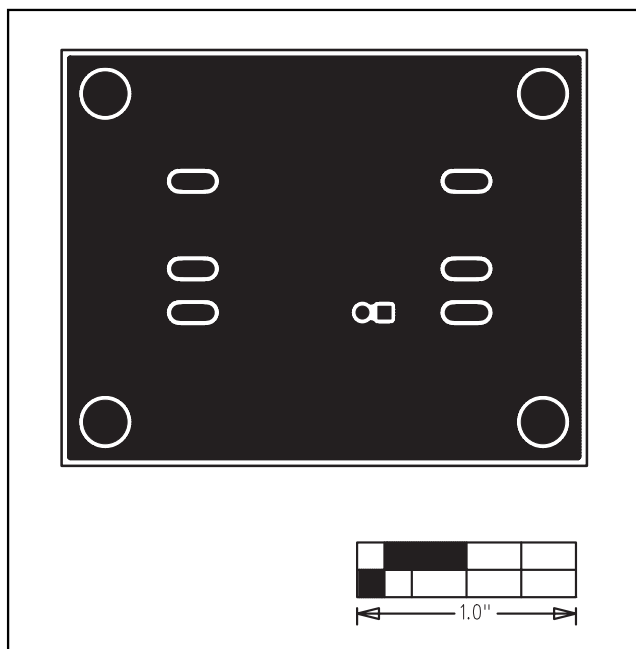


Figure 4. MAX3397E EV Kit PCB Layout—Solder Side

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