

Lead(Pb)-Free and RoHS Compliant

Proven PCB Layout

Fully Assembled and Tested

General Description

The MAX13485E evaluation kit (EV kit) provides a proven design to evaluate the MAX13485E half-duplex RS-485/RS-422 transceivers in an 8-pin µDFN package.

The MAX13485E EV kit PCB comes with a MAX13485EELA+ installed. Contact the factory for free samples of the pin-compatible MAX13486EELA+ to evaluate this device.

DESIGNATION	QTY	DESCRIPTION
C1	1	0.1µF ±10%, 16V X7R ceramic capacitor (0603) TDK C1608X7R1C104K
C2	1	1µF ±20%, 10V X5R ceramic capacitor (0603) TDK C1608X5R1A105M
J1	1	2-position terminal block
JU1, JU2, JU3	3	2-pin headers
R1	1	120Ω ±5% resistor (1206)
R2, R3, R4, R5	4	Not installed, resistors (0603)
TP1, TP2	2	Not installed, test points
U1	1	RS-485 half-duplex transceiver (8 µDFN) Maxim MAX13485EELA+
_	3	Shunts
_	1	PCB: MAX13485E Evaluation Kit+

PHONE

847-803-6100

Note: Indicate that you are using the MAX13485E when contacting

Component List

Component Supplier

WEBSITE

www.component.tdk.com

Ordering Information

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PART	ТҮРЕ
MAX13485EEVKIT+	EV Kit

+Denotes lead(Pb)-free and RoHS compliant.

Quick Start

Required Equipment

Before beginning, the following equipment is needed:

- MAX13485E EV kit
- 5V DC power supply
- Two digital voltmeters

Procedure

The MAX13485E EV kit is fully assembled and tested. Follow the steps below to verify board operation:

- Verify that the jumpers are in their default position, 1) as shown in Table 1. JU1 connects the 120Ω load resistor between A and B.
- 2) For testing purposes, remove the shunt from JU1.
- Connect the positive terminal of the 5V supply to 3) VCC and the negative terminal of the supply to GND.
- Apply 5V on the RE and DE pads. This is a logic to 4) RS-485 DC test.
- 5) Apply 5V on the DI pad and check that A-B is positive.
- Apply 0V on the DI pad and check that B-A is posi-6) tive.
- 7) Apply 0V on RE and DE. Apply 5V on A and 0V on B. This is an RS-485 to logic DC test.
- 8) Check the state of RO using a voltmeter. RO should be approximately 5V.

MXXIM

SUPPLIER

this component supplier.

TDK Corp.

Maxim Integrated Products 1

Features MAX13485E/MAX13486E

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim's website at www.maxim-ic.com.

SHUNT JUMPER DESCRIPTION POSITION Open Does not connect the 120Ω resistor differentially between A and B JU1 Closed* Connects the 120Ω resistor differentially between A and B R2 and R5 not connected Open* JU2 Connects A and B through R2 and R5 if populated for testing custom termination and common-mode Closed Keeps DE and RE electrically separate Open JU3 Shorts DE and RE Closed'

Table 1. Jumper Table (JU1, JU2, JU3)

*Default position.

_Detailed Description of Hardware

The MAX13485E EV kit provides a proven layout for the MAX13485E. On-board pads are included for adding external fail-safe resistors. JU2 can be used to monitor the A and B lines with a differential probe. A terminal block is also included to easily connect a cable to the EV kit board.

An electrical grid with vias and GND vias are present on the board to enable prototyping.

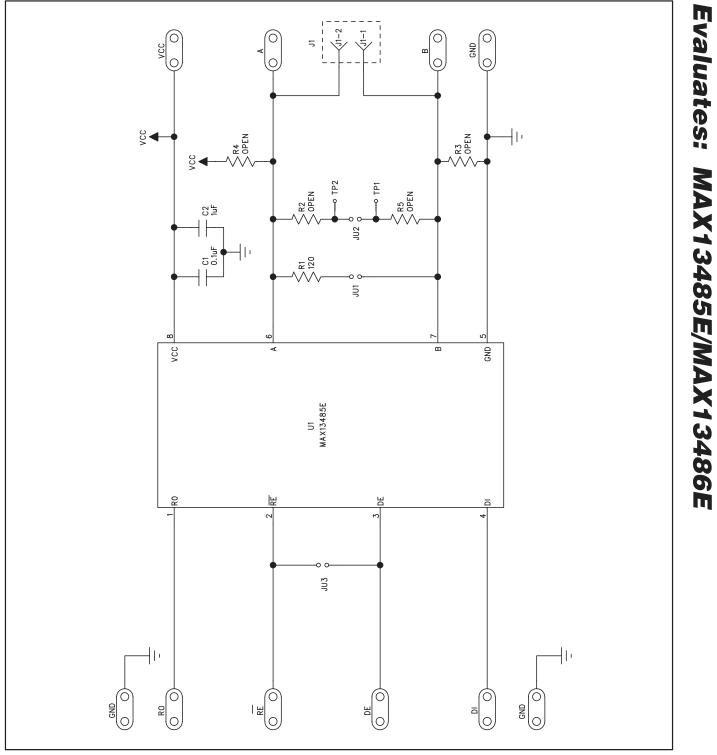


Figure 1. MAX13485E EV Kit Schematic



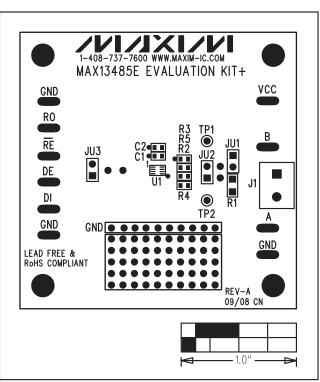


Figure 2. MAX13485E EV Kit Component Placement Guide— Component Side

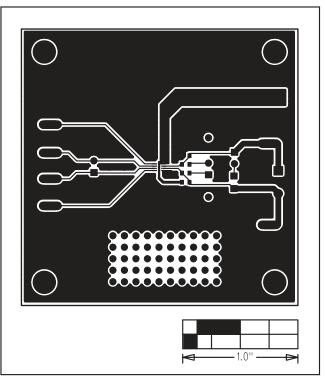


Figure 3. MAX13485E EV Kit PCB Layout—Component Side

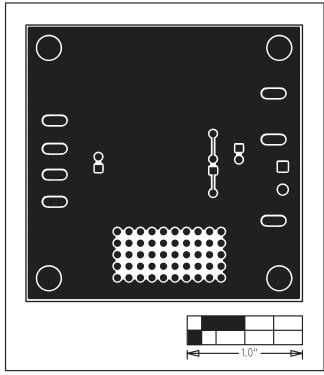


Figure 4. MAX13485E EV Kit PCB Layout—Solder Side

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