

Evaluating the **ADM3252E** Isolated, Dual Channel, RS-232 Line Driver/Receiver

FEATURES

- 2.5 kV fully isolated (power and data) RS-232 transceiver**
- Convenient connections for power and signal via screw terminal blocks**
- 3.3 V or 5 V operation**
- Test points for measuring all signals**
- All external components required included for correct operation**

EVALUATION KIT CONTENTS

ADM3252E evaluation board

GENERAL DESCRIPTION

The EVAL-ADM3252EEBZ evaluation board can be used for easy evaluation of the **ADM3252E** isolated RS-232 transceiver. Screw terminal blocks provide convenient connections for the power and signal connections. Test points are included on the power and signal lines on both sides of the isolation barrier. All required external components are included on the evaluation board.

RADIATED EMISSIONS

The EVAL-ADM3252EEBZ shown in Figure 1 uses some of the techniques described in the [AN-0971 Application Note, Recommendations for Control of Radiated Emissions with isoPower Devices](#), to reduce radiated emissions. These emissions are generated by the high frequency switching elements used by the isoPower® technology to transfer power through its transformer. The evaluation board is designed to meet the EN55022 Class B emission standard (results pending).

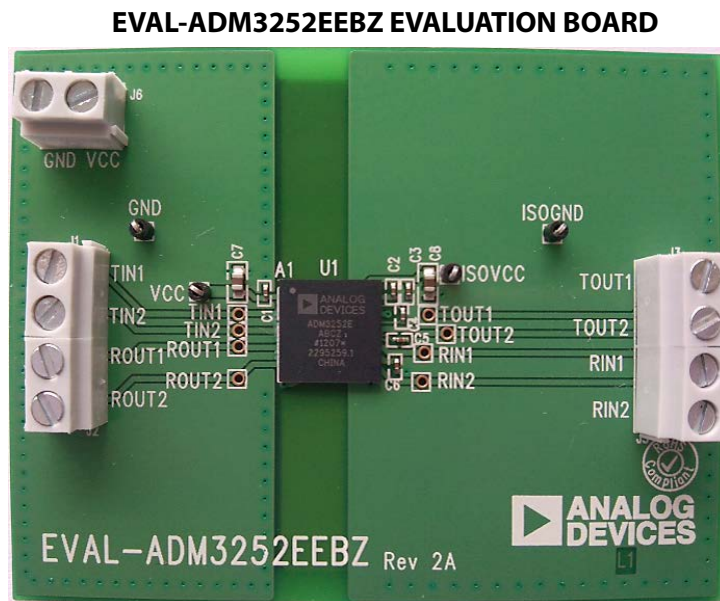


Figure 1.

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REVISION HISTORY

7/12—Revision 0: Initial Version

EVALUATION BOARD HARDWARE

CONNECTOR AND TEST POINT FUNCTIONS

Table 1. Connector Functions

| Connector | Name | Function |
|-----------|------------------|--|
| J6 | Power connector | J6-1 (VCC) connects positive supply of bench supply to the V _{CC} plane J6-2 (GND) connects ground terminal of bench supply to the GND plane |
| J1 | Signal connector | J1-1 (TIN1) connects to T _{IN1} pin of ADM3252E J1-2 (TIN2) connects to T _{IN2} pin of ADM3252E |
| J2 | Signal connector | J2-1 (ROUT1) connects to R _{OUT1} pin of ADM3252E J2-2 (ROUT2) connects to R _{OUT2} pin of ADM3252E |
| J3 | Signal connector | J3-1 (TOUT1) connects to T _{OUT1} pin of ADM3252E J3-2 (TOUT2) connects to T _{OUT2} pin of ADM3252E |
| J5 | Signal connector | J5-1 (RIN1) connects to R _{IN1} pin of ADM3252E J5-2 (RIN2) connects to R _{IN2} pin of ADM3252E |

Table 2. Test Point Functions

| Test Point | Function |
|------------|---|
| GND | Connects to GND plane at logic side |
| VCC | Connects to V _{CC} plane at logic side |
| TIN1 | Connects to T _{IN1} pin of ADM3252E |
| TIN2 | Connects to T _{IN2} pin of ADM3252E |
| ROUT1 | Connects to R _{OUT1} pin of ADM3252E |
| ROUT2 | Connects to R _{OUT2} pin of ADM3252E |
| ISOVCC | Connects to V _{ISO} plane at RS-232 side |
| ISOGND | Connects to GND plane at RS-232 side |
| TOUT1 | Connects to T _{OUT1} pin of ADM3252E |
| TOUT2 | Connects to T _{OUT2} pin of ADM3252E |
| RIN1 | Connects to R _{IN1} pin of ADM3252E |
| RIN2 | Connects to R _{IN2} pin of ADM3252E |

EVALUATION BOARD SCHEMATICS AND ARTWORK

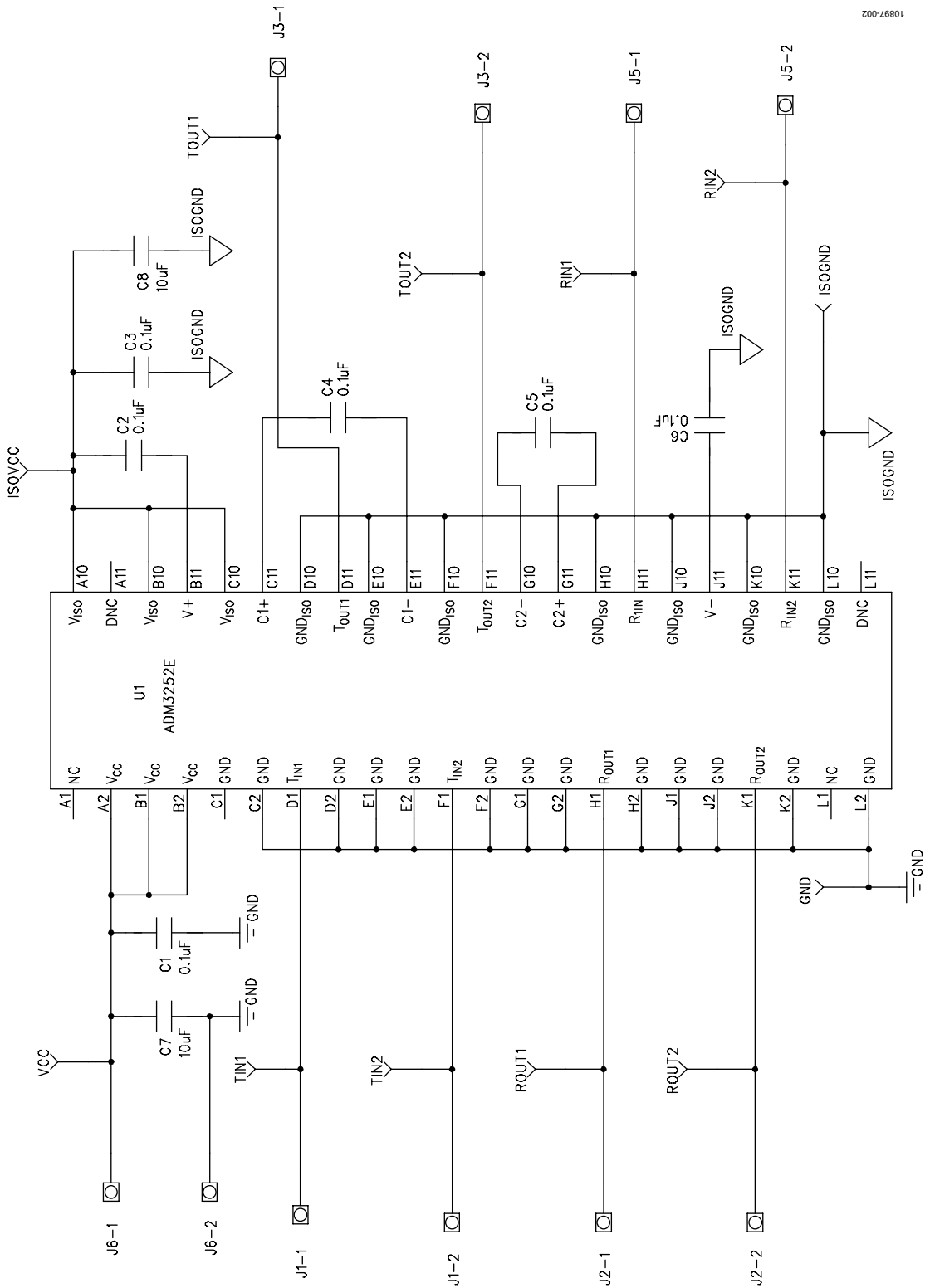
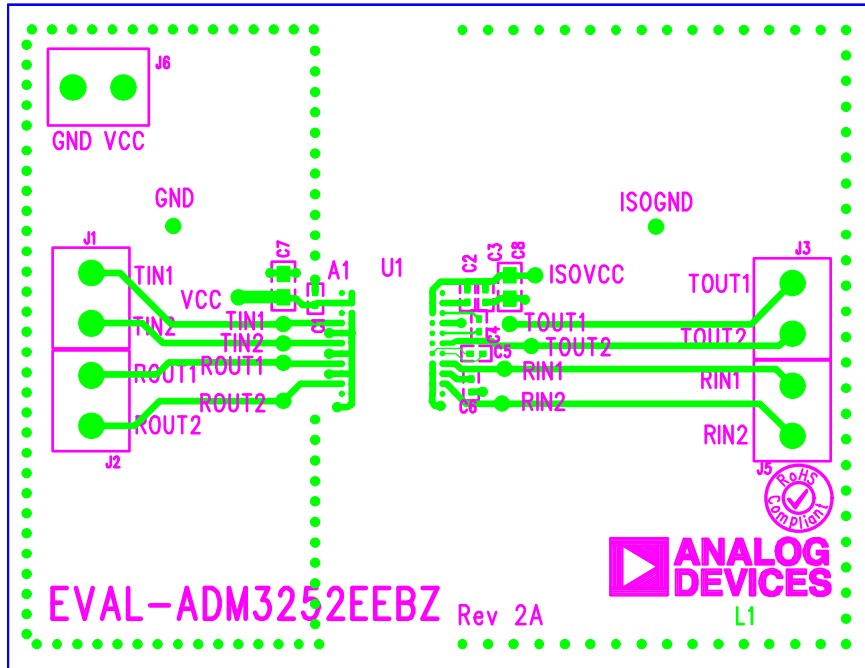
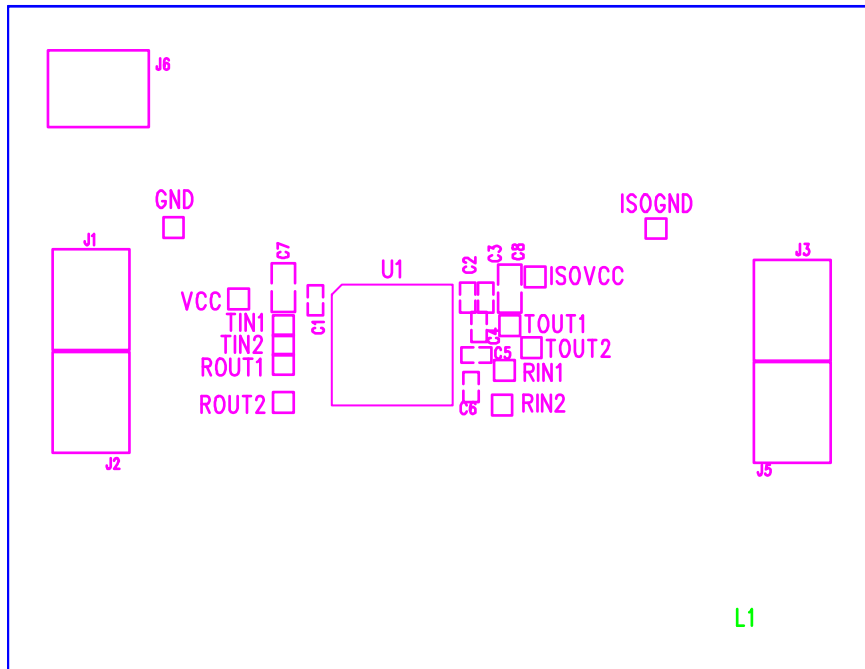


Figure 2. ADM3252E Evaluation Board Schematic



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Figure 3. EVAL-ADM3252EEBZ Silkscreen 1



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Figure 4. EVAL-ADM3252EEBZ Silkscreen 2

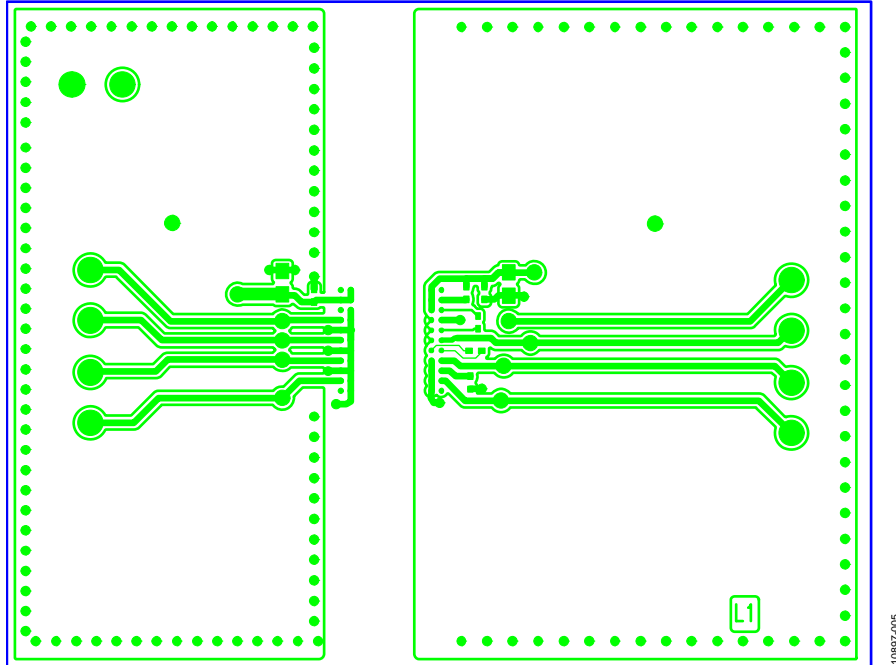


Figure 5. EVAL-ADM3252EEBZ Top Layer

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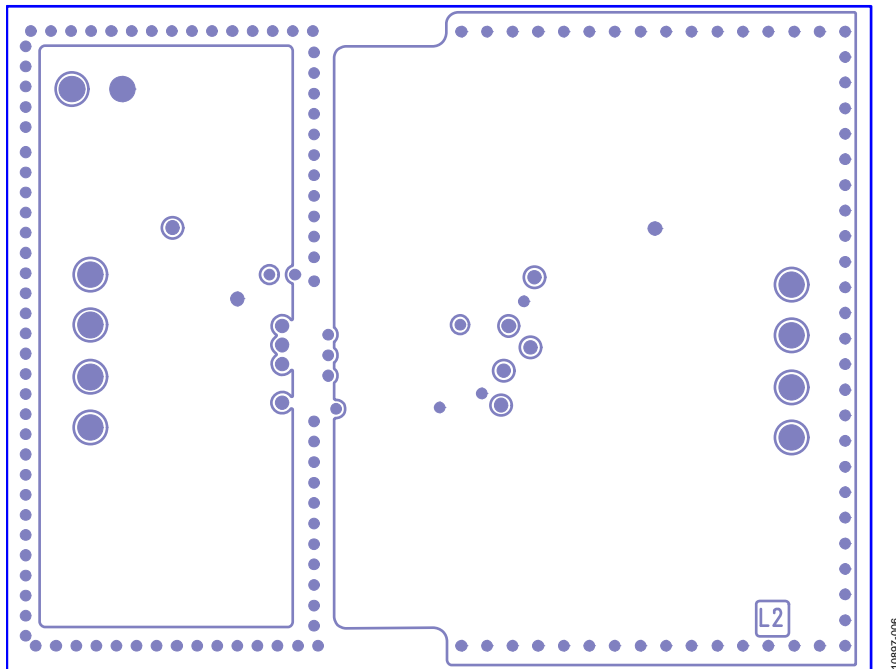
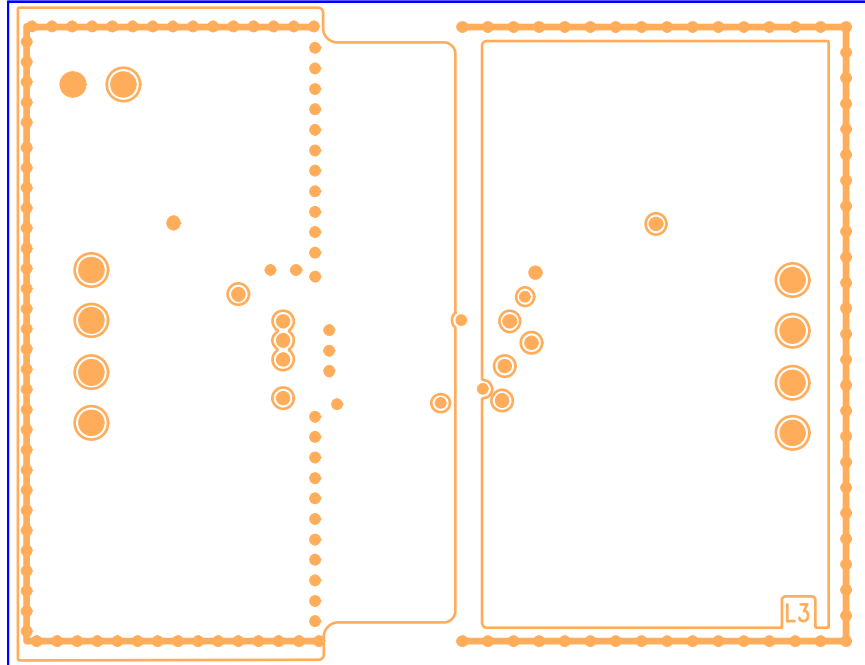


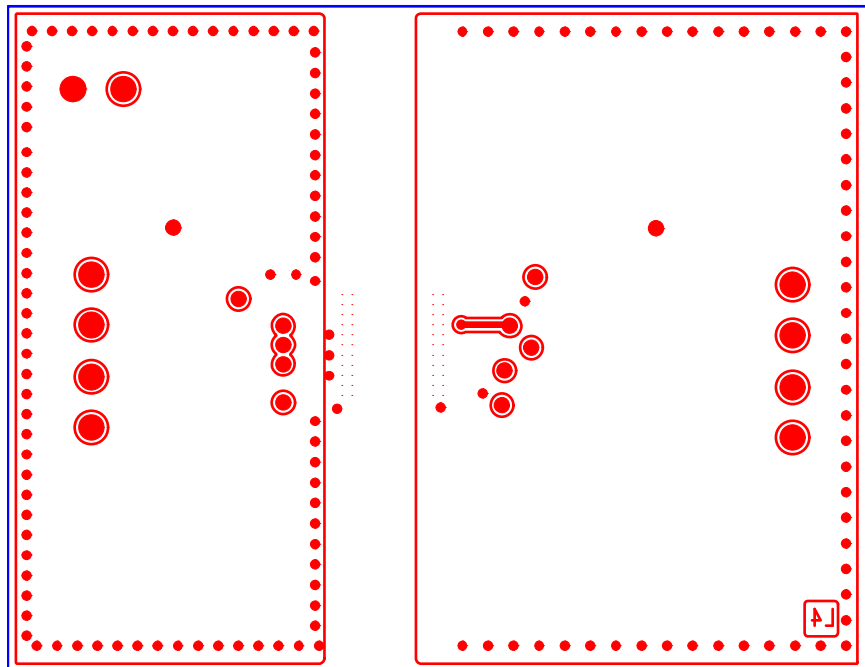
Figure 6. EVAL-ADM3252EEBZ Internal Layer 2

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Figure 7. EVAL-ADM3252EEBZ Internal Layer 3



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Figure 8. EVAL-ADM3252EEBZ Bottom Layer

ORDERING INFORMATION

BILL OF MATERIALS

Table 3.

| Reference Designator | Description | Supplier Part Number |
|------------------------|--|--|
| C1, C2, C3, C4, C5, C6 | Capacitor, 0.1 μ F, 16 V, 0402 | Farnell 1288252 |
| C7, C8 | Capacitor, 10 μ F, 35 V, 0805 | Farnell 146-3361 |
| GND, ISOGND, ISOVCC | Test point, black | Farnell 240-333 |
| J1, J2, J3, J5, J6 | 2-pin terminal block (5 mm pitch) | Farnell 151789 |
| U1 | ADM3252E , 44-ball CSP_BGA | Analog Devices, Inc., ADM3252E |



ESD Caution

ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

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