



# MAX9626 Evaluation Kit

## General Description

The MAX9626 evaluation kit (EV kit) provides a proven design to evaluate the MAX9626 low-noise, low-distortion, and high-bandwidth differential amplifier/ADC driver in a 12-pin TQFN package. The EV kit circuit is preconfigured as an ADC driver. SMA connectors are provided for the board input/output and the EV kit operates off a single 2.85V to 5.25V power supply. The EV kit also evaluates the MAX9627/MAX9628. Request a free MAX9627/MAX9628 IC sample from the factory when ordering the EV kit.

## Features

- ◆ 2.85V to 5.25V Single-Supply Range
- ◆ Factory-Set 1V/V Gain
- ◆ Adjustable-Output Common-Mode Voltage
- ◆ Shutdown Input
- ◆ Also Evaluates the MAX9627/MAX9628 (IC Replacement)
- ◆ Fully Assembled and Tested

## Ordering Information

| PART          | TYPE   |
|---------------|--------|
| MAX9626EVKIT+ | EV Kit |

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

## Component List

| DESIGNATION                | QTY | DESCRIPTION  |
|----------------------------|-----|--|
| C1, C6                     | 2   | 1000pF $\pm$ 10%, 50V X7R ceramic capacitors (0402)<br>Murata GRM155R71H102K<br>TDK C1005X7R1H102K           |
| C2, C3, C4, C8             | 4   | 0.1 $\mu$ F $\pm$ 10%, 10V X5R ceramic capacitors (0402)<br>Murata GRM155R61A104K<br>TDK C1005X5R1A104K      |
| C5, C7                     | 2   | 10 $\mu$ F $\pm$ 10%, 10V tantalum capacitors (A case)<br>AVX TAJA106K010R<br>Vishay/Sprague 595D106X9010A2T |
| IN+, IN-, OUT+, OUT-, VOVM | 5   | Edge-mount receptacle SMA connectors   |
| JU1                        | 1   | 2-pin header   |
| R1, R2, R17                | 3   | 0 $\Omega$ resistors (0402)  |

| DESIGNATION           | QTY | DESCRIPTION   |
|-----------------------|-----|---|
| R3, R4, R14, R15, R16 | 0   | Not installed, resistors (0402)                                 |
| R5                    | 1   | 100k $\Omega$ $\pm$ 5% resistor (0402)                          |
| R6, R7                | 2   | 64.9 $\Omega$ $\pm$ 1% resistors (0402)                         |
| R8, R9                | 2   | 100 $\Omega$ $\pm$ 1% resistors (0402)                          |
| R10, R11              | 2   | 10k $\Omega$ $\pm$ 1% resistors (0402)                          |
| R12, R13              | 2   | 249 $\Omega$ $\pm$ 1% resistors (0402)                          |
| SHDB, TP1, TP2, TP3   | 4   | Test points   |
| T1                    | 1   | Surface-mount RF transformer<br>Coilcraft Z9314-AL              |
| U1                    | 1   | Low-noise differential amplifier (12 TQFN)<br>Maxim MAX9626ATC+ |
| —                     | 1   | Shunts  |
| —                     | 1   | PCB: MAX9626/27/28 EVALUATION KIT+                              |

## Component Suppliers

| SUPPLIER                               | PHONE        | WEBSITE                     |
|--|--------------|-----------------------------|
| AVX Corporation                        | 843-946-0238 | www.avxcorp.com             |
| Coilcraft, Inc.                        | 847-639-6400 | www.coilcraft.com           |
| Murata Electronics North America, Inc. | 770-436-1300 | www.murata-northamerica.com |
| TDK Corp.                              | 847-803-6100 | www.component.tdk.com       |
| Vishay                                 | 402-563-6866 | www.vishay.com              |

**Note:** Indicate that you are using the MAX9626 when contacting these component suppliers.



# MAX9626 Evaluation Kit

## Quick Start

### Required Equipment

- MAX9626 EV kit
- 2.85V to 5.25V, 100mA DC power supply (VCC)
- Oscilloscope
- Signal generator

### Procedure

The EV kit is fully assembled and tested. Follow the steps below to verify board operation. **Caution: Do not turn on the power supply until all connections are completed.**

- 1) This circuit requires a supply voltage of 2.85V to 5.25V. For evaluation purposes, connect a 5V supply to the VCC PCB pad.
- 2) Connect the power-supply ground to the GND PCB pad.
- 3) Connect the OUT+ SMA connector to the oscilloscope.
- 4) Turn on the power supply.
- 5) Apply a signal at the IN+ and IN- SMA connectors.
- 6) Verify the output signal on the oscilloscope.

**Table 1. JU1 Jumper Selection**

| SHUNT POSITION | SHDB PIN                    | EV KIT FUNCTION |
|----------------|-----------------------------|-----------------|
| Installed      | Connected to GND            | Disabled        |
| Not installed* | Connected to VCC through R5 | Enabled         |

\*Default position.

## Detailed Description of Hardware

### Input/Output

The MAX9626 EV kit provides SMA connectors at the inputs to accept differential signals at IN+ and IN-. At the output, SMA connectors OUT+ and OUT- are provided to monitor the output signal. By default, OUT- is connected to GND through resistor R17.

### Input Termination Resistors

The EV kit provides placeholders (R3 and R4) to terminate IN+ and IN-, respectively. Install resistors on R3 and R4 if input termination is required. When internal terminations are used, remove external termination resistors R6 and R7.

### Shutdown Mode (SHDB)

Jumper JU1 controls the shutdown mode (SHDB) of the device. When SHDB is pulled low, the device is disabled. When the SHDB pin is pulled high, the device is enabled. See Table 1 for JU1 jumper selection.

### Output Common-Mode Voltage (VOCM)

The output common mode can be easily set by applying a voltage at the VOCM input PCB pad on the EV kit, thus eliminating the need for a coupling transformer or AC-coupling capacitors. An SMA connector is also provided at VOCM to allow a high-frequency signal to characterize the bandwidth of the VOCM path. In this case, a resistor must be installed at R16 and capacitors C3, C6, and C7 should be removed.



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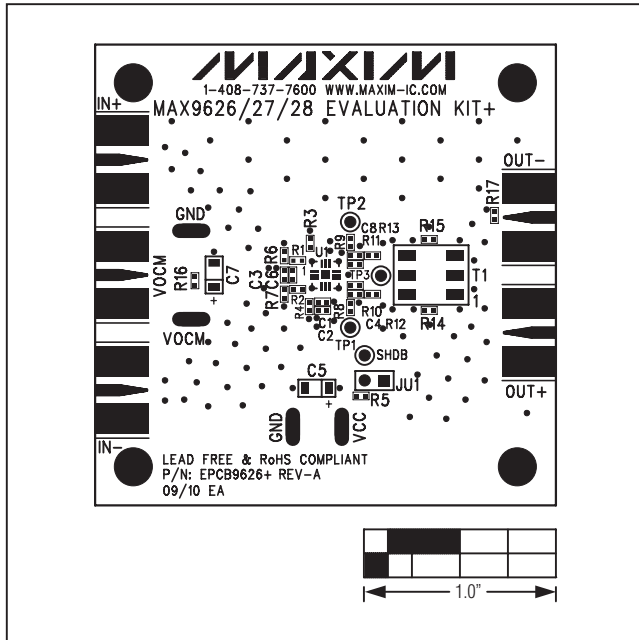


Figure 2. MAX9626 EV Kit Component Placement Guide—Component Side

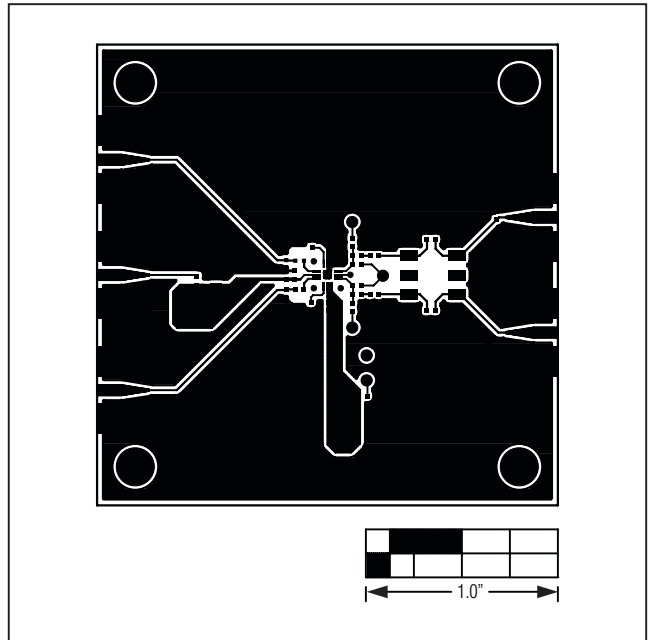


Figure 3. MAX9626 EV Kit PCB Layout—Component Side

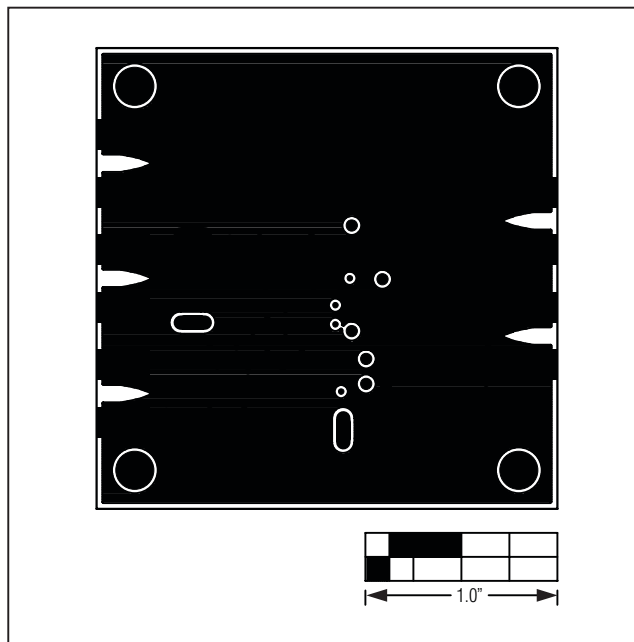


Figure 4. MAX9626 EV Kit PCB Layout—Internal Layer 2 (GND)

# MAX9626 Evaluation Kit

Evaluates: MAX9626/MAX9627/MAX9628

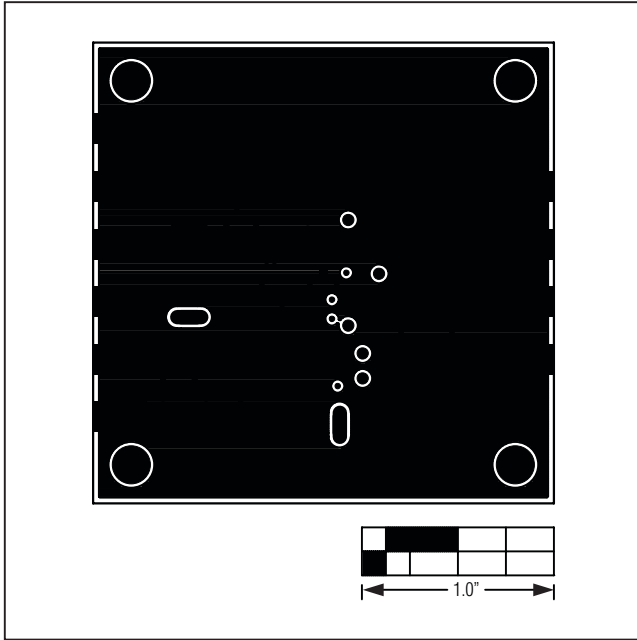


Figure 5. MAX9626 EV Kit PCB Layout—Internal Layer 3 (GND)

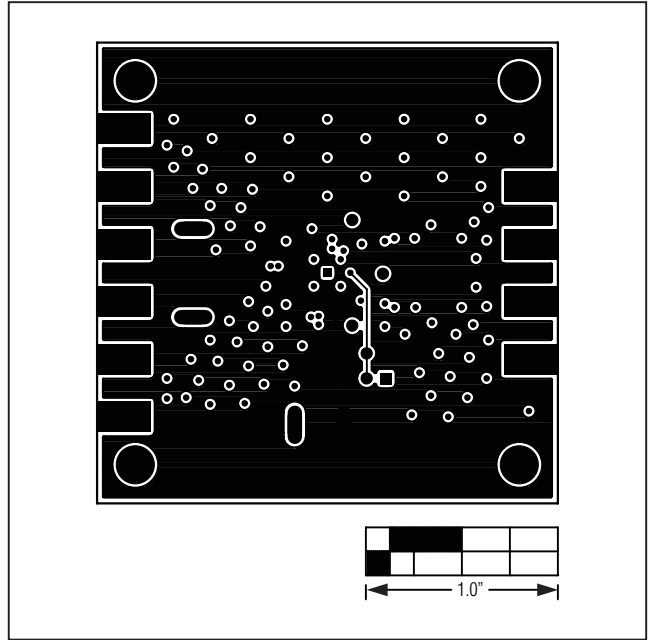


Figure 6. MAX9626 EV Kit PCB Layout—Solder Side