

MAXIM

MAX4278 Evaluation Kit

Evaluates: MAX4178/MAX4278

General Description

The MAX4278 evaluation kit (EV kit) simplifies evaluation of the MAX4178/MAX4278 330MHz/310MHz high-speed buffers. RF-style connectors (SMA) and 75Ω terminating resistors are included for video test equipment compatibility.

The EV kit comes with the MAX4278 installed. To evaluate the MAX4178, simply order a free sample (MAX4178ESA) and replace the MAX4278 with the MAX4178. No other changes are necessary.

Component List

| DESIGNATION | QTY | DESCRIPTION |
|-------------|-----|---|
| U1 | 1 | Maxim MAX4278ESA |
| C1, C6 | 2 | 10μF, 10V, 20% tantalum capacitors AVX TAJB106M010 or Sprague 293D106X0010B |
| C2, C5 | 2 | 0.1μF, 10% ceramic capacitors Vitramon VJ1206Y104KXX |
| C3, C4 | 2 | 1000pF, 10% ceramic capacitors Vitramon VJ1206Y102KXX |
| R1, R2 | 2 | 75Ω, 5% resistors |
| RG | 1 | 0Ω resistor |
| IN, OUT | 2 | SMA connectors |
| None | 1 | High-frequency amplifier PC board |

Component Suppliers

| SUPPLIER | PHONE | FAX |
|-----------------|----------------|----------------|
| AVX | (803) 946-0690 | (803) 626-3123 |
| Sprague | (603) 224-1961 | (603) 224-1430 |
| Vishay/Vitramon | (203) 268-6261 | (203) 452-5670 |

Features

- ◆ 310MHz -3dB Bandwidth
- ◆ 75Ω Terminated Input and Output
- ◆ Fully Assembled and Tested

Ordering Information

| PART | TEMP. RANGE | BOARD TYPE |
|-----------------|-------------|---------------|
| MAX4278EVKIT-SO | +25°C | Surface Mount |

Note: To evaluate the MAX4178, request a MAX4178ESA free sample.

Quick Start

The MAX4278 evaluation kit is fully assembled and tested. Follow these steps to verify board operation. **Do not turn on the power supply until all connections are completed.**

- 1) The circuit requires supply voltages of ±5V. Connect the +5V supply to the V+ pad, and the -5V supply to the V- pad. Connect the power-supply ground to the pad marked GND.
- 2) Apply a signal of ±1.5V maximum to the SMA connector marked IN.
- 3) Connect the output marked OUT to an oscilloscope through a terminated 75Ω cable.
- 4) Turn on the power supply and verify the output signal on the oscilloscope.

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Detailed Description

Shutdown Control

Although the EV kit provides shutdown control circuitry (J1) for other amplifiers, the MAX4278 and MAX4178 do not have a shutdown feature. Therefore, pin 8 is not connected.

Layout Considerations

The MAX4278 EV kit layout is optimized for high-speed signals. Careful attention was given to grounding, power-supply bypassing, and signal path layout. Small,

surface-mount ceramic capacitors are placed as close to the MAX4278 supply pins as possible. The N.C. pins (pins 1 and 5) are grounded to prevent unwanted noise from coupling into the circuit. Refer to the *Grounding, Bypassing, and PC Board Layout* section of the MAX4178/MAX4278 data sheet for further details.

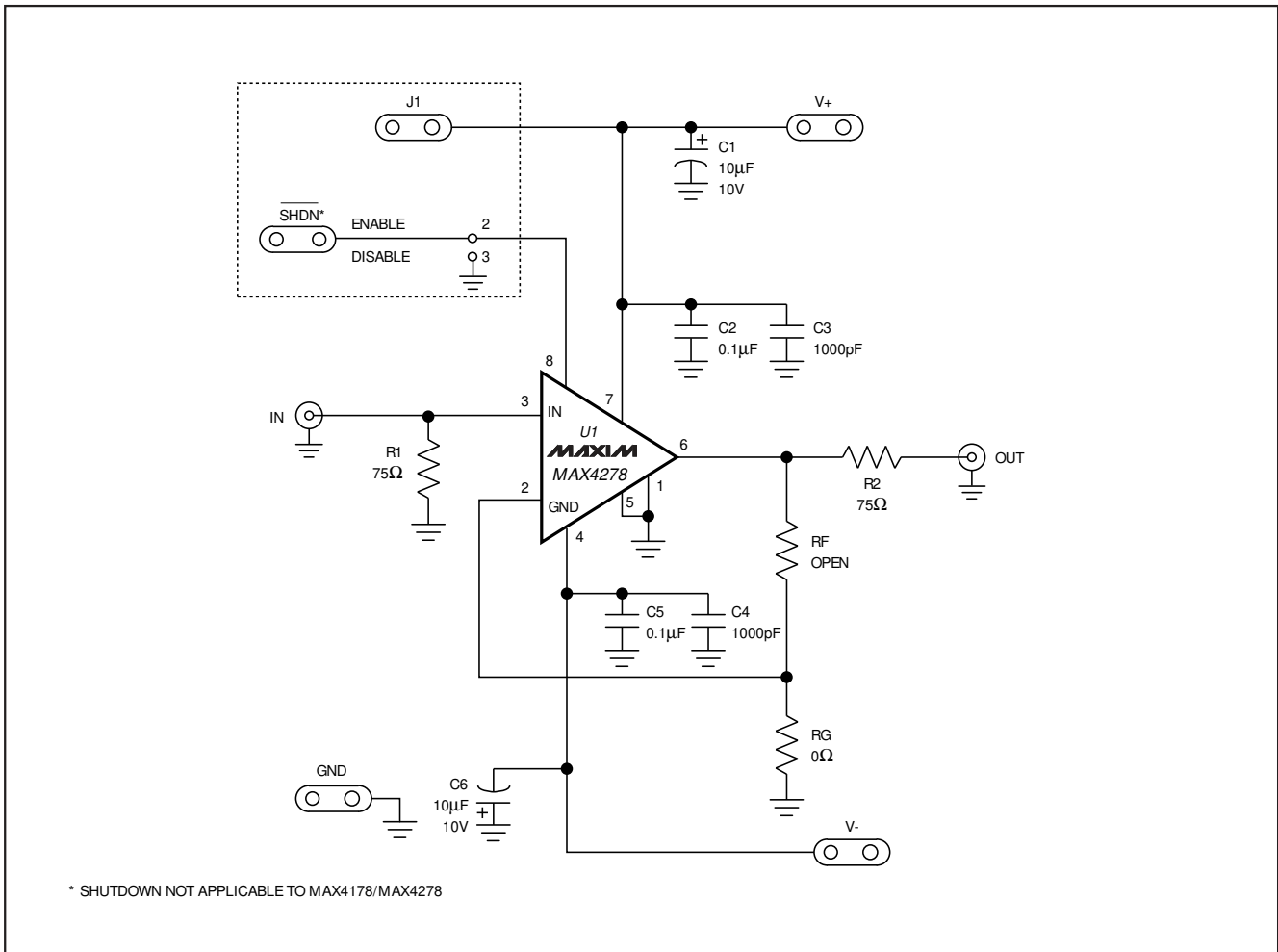


Figure 1. MAX4278 EV Kit Schematic

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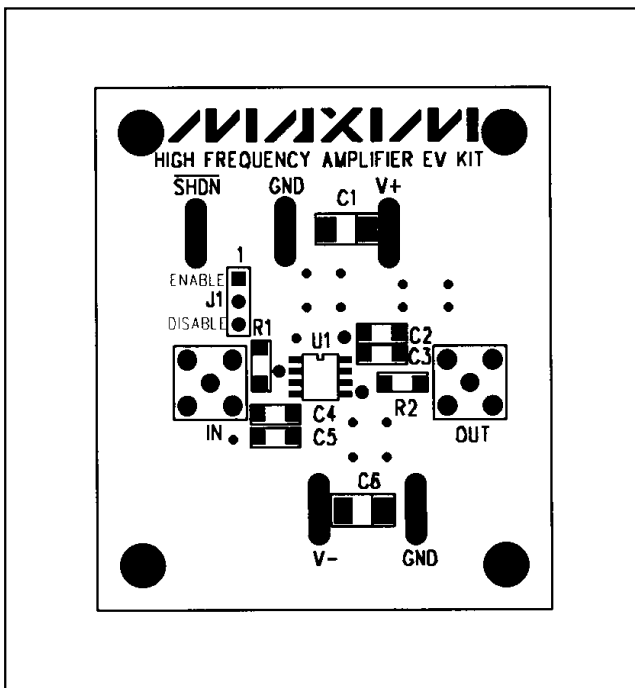


Figure 2. MAX4278 EV Kit Component Placement Guide—Component Side

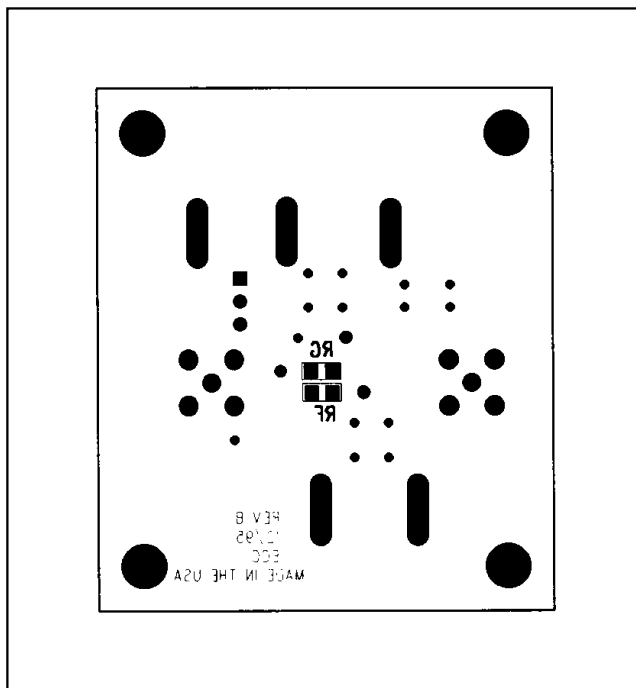


Figure 3. MAX4278 EV Kit Component Placement Guide—Solder Side

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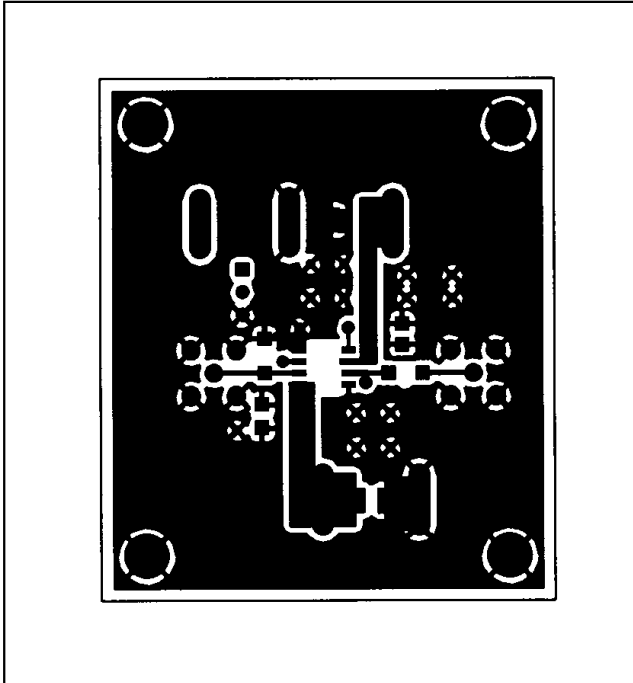


Figure 4. MAX4278 EV Kit PC Board Layout—Component Side

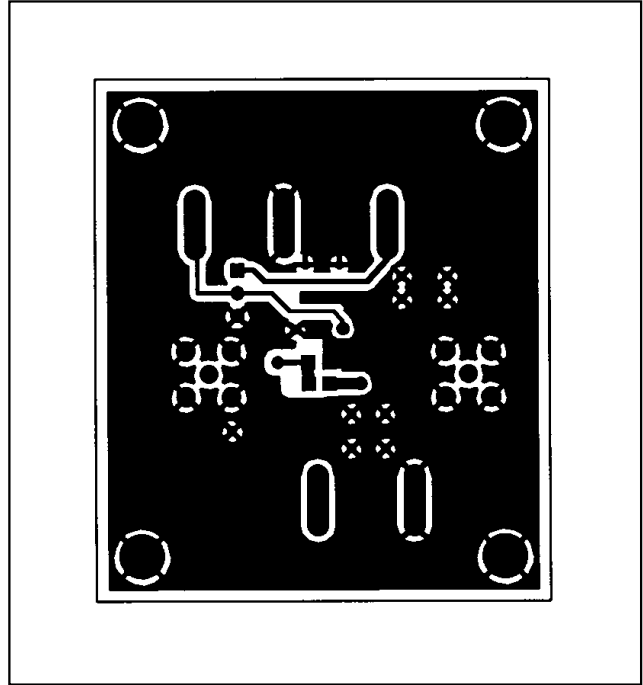


Figure 5. MAX4278 EV Kit Board Layout—Solder Side

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