



# MAX9587 Evaluation Kit

Evaluates: MAX9587

## General Description

The MAX9587 evaluation kit (EV kit) is an assembled and tested printed circuit board (PCB) that demonstrates the MAX9587 dual-channel, standard-definition video filter amplifier with AC-coupled inputs. The EV kit operates from 2.7V to 3.6V with a fixed gain of 2V/V.

## Ordering Information

PART	TEMP RANGE	IC PACKAGE
MAX9587EVKIT+	0°C to +70°C*	6 Thin SOT23

+Denotes a lead-free and RoHS-compliant EV kit.

\*This limited temperature range applies to the EV kit PCB only. The MAX9587 IC temperature range is -40°C to +125°C.

## Component List

DESIGNATION	QTY	DESCRIPTION
C1	1	10 $\mu$ F $\pm$ 20%, 6.3V X7R ceramic capacitor (0805) Murata GRM21BR70J106K
C2, C3, C4	3	0.1 $\mu$ F $\pm$ 10%, 16V X7R ceramic capacitors (0603) Taiyo Yuden EMK107BJ104KA TDK C1608X7R1C104KT or equivalent
C5, C6	0	Not installed, aluminum electrolytic capacitors (6.3mm x 6.0mm)
IN_A, IN_B, OUT_A, OUT_B	4	75 $\Omega$ BNC PCB-mount jack connectors
R1–R4	4	75 $\Omega$ $\pm$ 1% resistors (0603)
R5, R6	2	0 $\Omega$ $\pm$ 5% resistors (0603)
U1	1	MAX9587AZT+ (6-pin Thin SOT23) Top Mark: AADI
—	1	PCB: MAX9587 Evaluation Kit+

## Component Suppliers

SUPPLIER	PHONE	WEBSITE
Murata Mfg. Co., Ltd.	770-436-1300	www.murata.com
Taiyo Yuden	800-348-2496	www.t-yuden.com
TDK Corp.	847-803-6100	www.component.tdk.com

**Note:** Indicate that you are using the MAX9587 when contacting these component suppliers.

## Features

- ◆ 2.7V to 3.6V Single-Supply Operation
- ◆ 7MHz  $\pm$ 1dB Passband
- ◆ 62dB Attenuation at 27MHz
- ◆ Fully Assembled and Tested
- ◆ Dual-Channel (S-Video)

## Quick Start

### Recommended Equipment

- A DC power supply capable of supplying a voltage between 2.7V to 3.6V at 500mA
- S-Video signal generator
- Video measurement equipment (e.g., Tektronix VM700T or equivalent)

### Procedure

The MAX9587 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) Connect the power supply to the pads labeled VDD and GND on the MAX9587 EV kit.
- 2) Connect the desired test signals from the video signal generator to the IN\_A/LUMA (Y) and IN\_B/CHROMA (C) BNC connectors.
- 3) Connect the output signals from the OUT\_A and OUT\_B BNC connectors to the inputs of the video measurement equipment.
- 4) Turn on the power supply and verify the output signals.

## Detailed Description

The MAX9587 EV kit demonstrates the MAX9587 low-power, dual-channel video filter amplifier with integrated reconstruction filters. The EV kit operates from 2.7V to 3.6V with a fixed gain of 2V/V.

The MAX9587 has  $\pm$ 1dB (typ) passband flatness of 7MHz and 62dB attenuation at 27MHz and the outputs can be DC-coupled to a load of 75 $\Omega$ , which is the equivalent of two video loads, or AC-coupled to a load of 150 $\Omega$ .

### AC-Coupling the Output

The output of the MAX9587 can be AC-coupled. To keep the highpass formed by the 150 $\Omega$  equivalent resistance of the video transmission line to a corner frequency of 4.8Hz or lower, remove the 0 $\Omega$  resistors on R5 and R6 and install  $\geq$ 220 $\mu$ F coupling capacitors on C5 and C6 pads.

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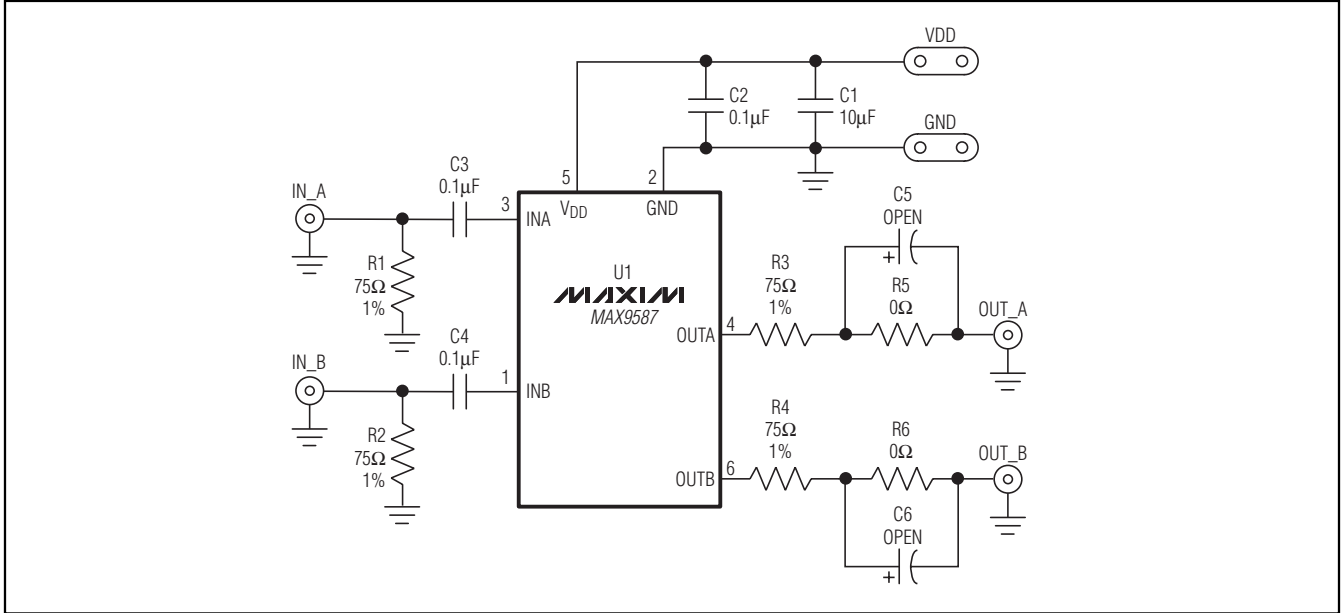


Figure 1. MAX9587 EV Kit Schematic

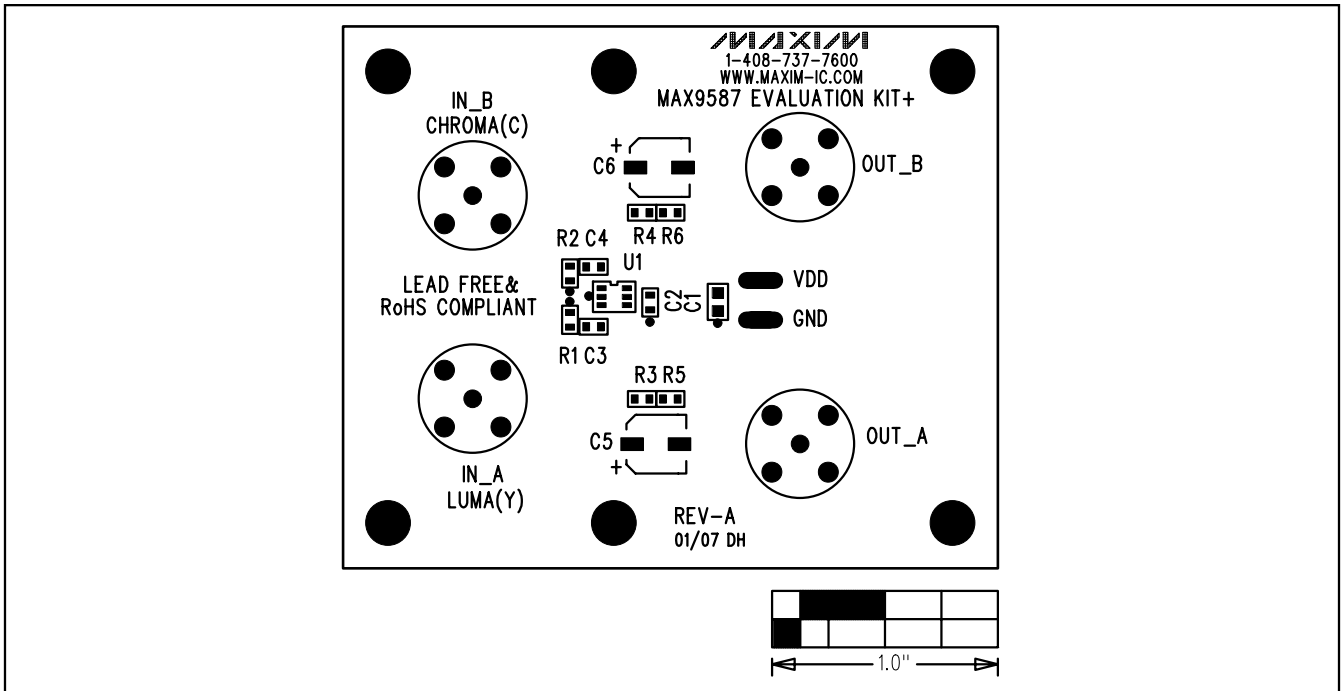


Figure 2. MAX9587 EV Kit Component Placement Guide—Component Side

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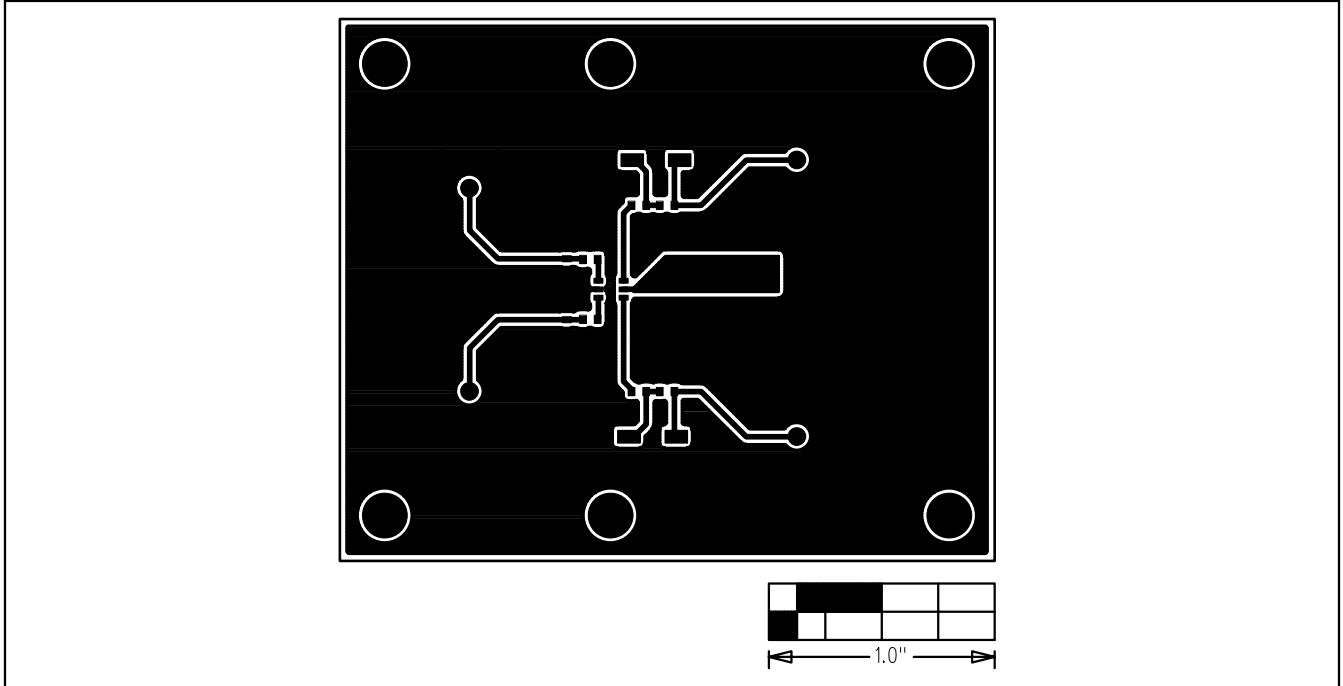


Figure 3. MAX9587 EV Kit PCB Layout—Component Side

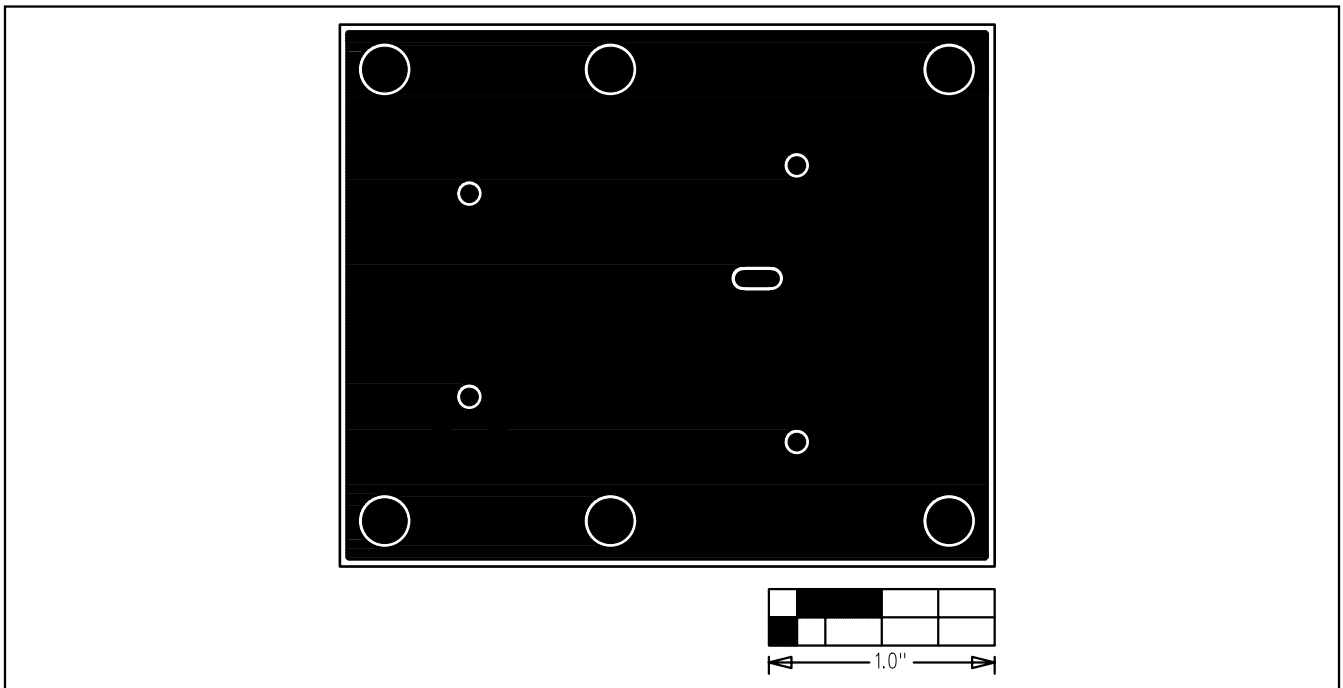


Figure 4. MAX9587 EV Kit PCB Layout—Solder Side

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