19-0757; Rev 0; 2/07

MAX9586 Evaluation Kit

Evaluates: MAX9586

General Description

The MAX9586 evaluation kit (EV kit) is an assembled and tested PCB that demonstrates the MAX9586 low-power, single-channel video filter amplifier with AC-coupled input buffer. The EV kit operates from 2.7V to 3.6V with a fixed gain of 2V/V.

Features

- **2.7V to 3.6V Single-Supply Operation**
- **7MHz ±1dB Passband**
- **62dB Attenuation at 27MHz**
- **Fully Assembled and Tested**

Component List

DESIGNATION	QTY	DESCRIPTION
C1	1	10µF ±20%, 6.3V X7R ceramic capacitor (0805) Murata GRM21BR70J106K
C2, C3	2	0.1µF ±10%, 16V X7R ceramic capacitors (0603) Taiyo Yuden EMK107BJ104KA TDK C1608X7R1C104KT or equivalent
C4	0	Not installed, aluminum electrolytic capacitor (6.3mm x 6.0mm)
INPUT, OUTPUT	2	75Ω BNC PCB-mount jack connectors
JU1	1	3-pin header
R1, R2	2	75Ω ±1% resistors (0603)
R3	1	0Ω ± 5% resistor (0603)
U1	1	MAX9586AZK+ (5-pin Thin SOT23) Top Mark: ADSH
—	1	PCB: MAX9586 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 MAX9586 when contacting these component suppliers.*

Ordering Information

PART	TEMP RANGE	IC PACKAGE
MAX9586EVKIT+	0°C to +70°C*	5 Thin SOT23

+Denotes a lead-free and RoHS-compliant EV kit.
**This limited temperature range applies to the EV kit PCB only. The MAX9586 IC temperature range is -40°C to +125°C.*

Quick Start

Recommended Equipment

- A DC power supply capable of supplying a voltage between 2.7V to 3.6V at 500mA
- Video signal generator
- Video measurement equipment

Procedure

The MAX9586 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) Verify that a shunt is installed on jumper JU1, pins 1-2.
2) Connect the power supply to the pads labeled VDD and GND on the MAX9586 EV kit.
3) Connect the desired test signal from the video signal generator to the INPUT BNC connector.
4) Connect the output signal from the OUTPUT BNC connector to the input of the video measurement equipment.
5) Turn on the power supply and verify the output signal.

MAX9586 Evaluation Kit

Detailed Description

The MAX9586 EV kit demonstrates the MAX9586 low-power, single-channel video filter amplifier with AC-coupled input buffer. The EV kit operates from 2.7V to 3.6V with a fixed gain of 2V/V.

The MAX9586 has ±1dB (typ) passband flatness of 7MHz and 62dB attenuation at 27MHz. The output can be DC-coupled to a load of 75Ω, which is the equivalent of two video loads, or AC-coupled to a load of 150Ω.

Jumper Selection

The MAX9586 EV kit incorporates a jumper (JU1) to control the $\overline{SHDN}$ pin. See Table 1 for JU1 functions.

Table 1. JU1 Functions ($\overline{SHDN}$)

SHUNT POSITION	$\overline{SHDN}$ PIN	EV KIT OUTPUT
1-2*	Connect to VDD	Enabled
2-3	Connect to GND	Disabled

**Default position.*

AC-Coupling the Output

The outputs of the MAX9586 can be AC-coupled. To keep the highpass formed by the 150Ω equivalent resistance of the video transmission line to a corner frequency of 4.8Hz or lower, remove the 0Ω resistor on R3 and install a ≥ 220µF capacitor on the C4 pad.

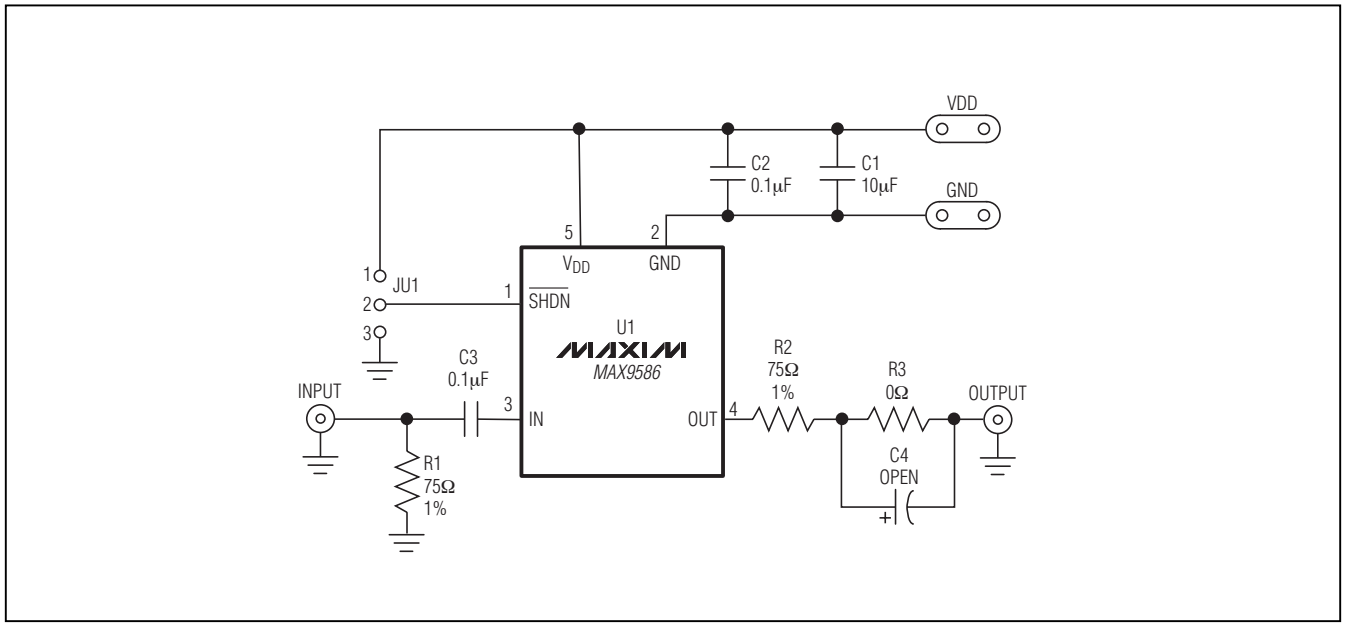

Figure 1. MAX9586 EV Kit Schematic

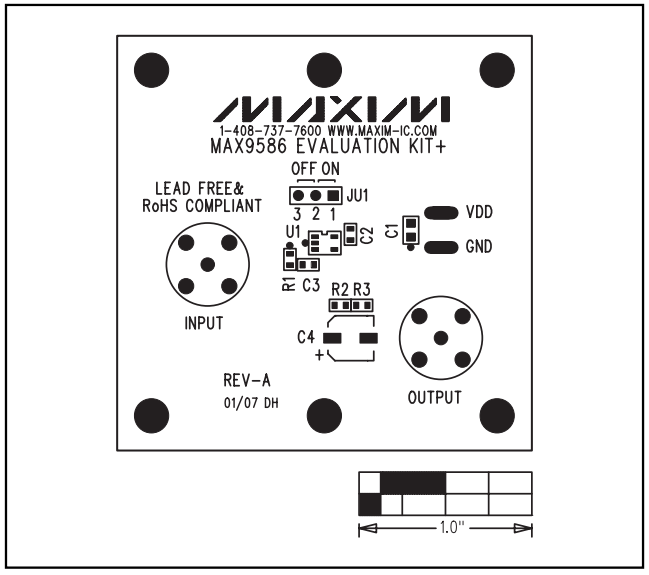

Figure 2. MAX9586 EV Kit Component Placement Guide—Component Side

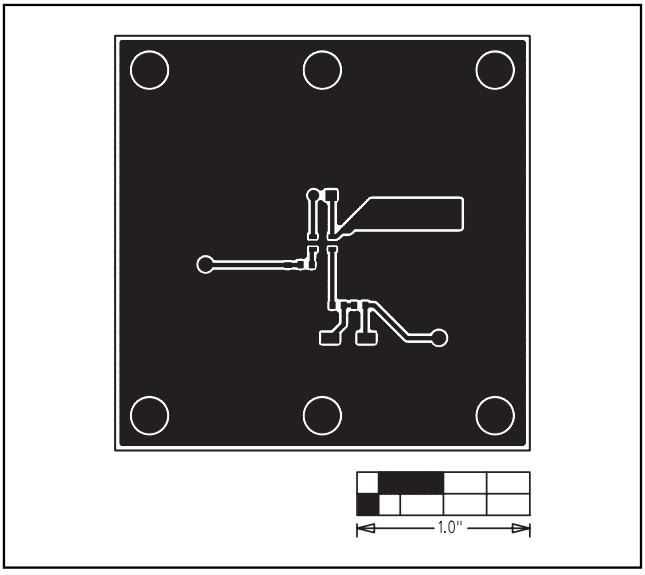

Figure 3. MAX9586 EV Kit PCB Layout—Component Side

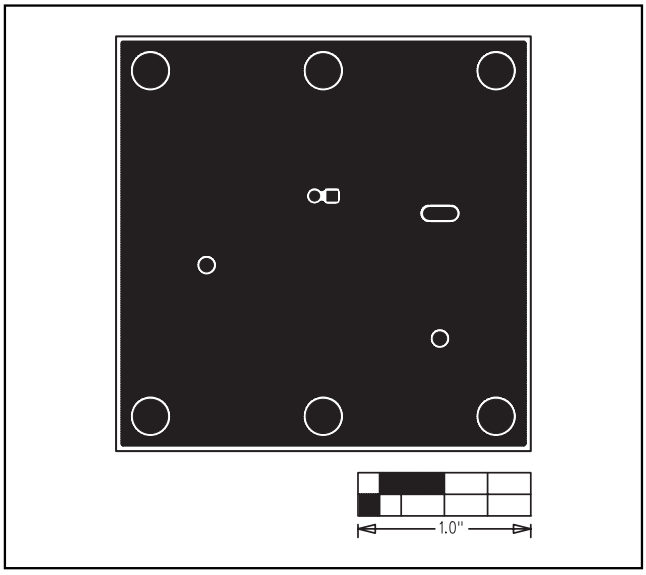

Figure 4. MAX9586 EV Kit PCB Layout—Solder Side