



MAX9583 Evaluation Kit

Evaluates: MAX9583

General Description

The MAX9583 evaluation kit (EV kit) is an assembled and tested PCB that demonstrates the MAX9583 dual-channel, standard-definition video filter amplifier with DC-coupled inputs. 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 \pm 1dB Passband
- ◆ 62dB Attenuation at 27MHz
- ◆ Fully Assembled and Tested

Component List

DESIGNATION	QTY	DESCRIPTION
C1	1	10 μ F \pm 20%, 6.3V X7R ceramic capacitor (0805) Murata GRM21BR70J106K
C2	1	0.1 μ F \pm 10%, 16V X7R ceramic capacitor (0603) Taiyo Yuden EMK107BJ104KA TDK C1608X7R1C104KT or equivalent
C3, C4	0	Not installed, aluminum electrolytic capacitors (6.3mm x 6.0mm)
IN_A, IN_B, OUT_A, OUT_B	4	75 Ω BNC PCB-mount jack connectors
R1–R4	4	75 Ω \pm 1% resistors (0603)
R5, R6	2	0 Ω \pm 5% resistors (0603)
U1	1	MAX9583AZT+T (6-pin Thin SOT23) Top Mark: AADJ
—	1	PCB: MAX9583 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 MAX9583 when contacting these component suppliers.

Ordering Information

PART	TEMP RANGE	IC PACKAGE
MAX9583EVKIT+	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 MAX9583 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 (e.g., Tektronix VM700T or equivalent)

Procedure

The MAX9583 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 MAX9583 EV kit.
- 2) Connect the desired test signals from the video signal generator to the IN_A and IN_B BNC connectors. The video signals at IN_A and IN_B must be between 0 and 1V, approximately.
- 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.

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Detailed Description

The MAX9583 EV kit demonstrates the MAX9583 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 MAX9583 has ± 1 dB (typ) passband flatness of 7MHz and 62dB attenuation at 27MHz and the outputs can be DC-coupled to a load of 75 Ω , which is the equivalent of two video loads, or AC-coupled to a load of 150 Ω .

AC-Coupling the Output

The outputs of the MAX9583 can be AC-coupled. To keep the highpass formed by the 150 Ω equivalent resistance of the video transmission line to a corner frequency of 4.8Hz or lower, remove the 0 Ω resistors on R5 and R6 and install $\geq 220\mu\text{F}$ coupling capacitors on C3 and C4 pads.

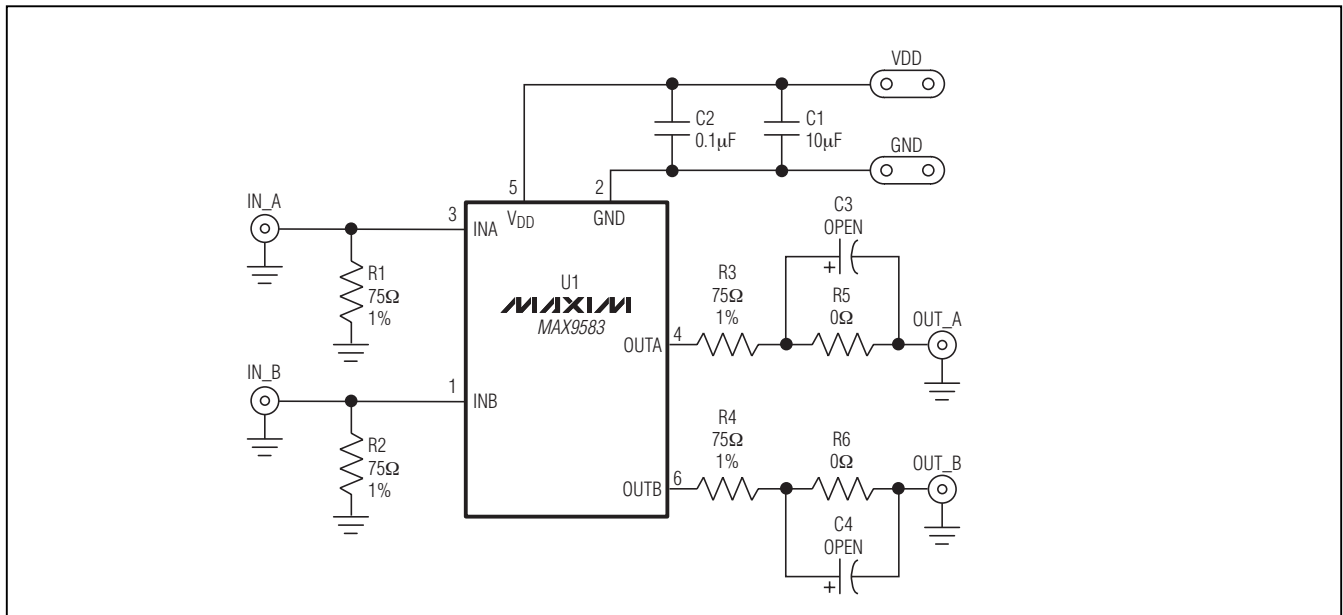


Figure 1. MAX9583 EV Kit Schematic

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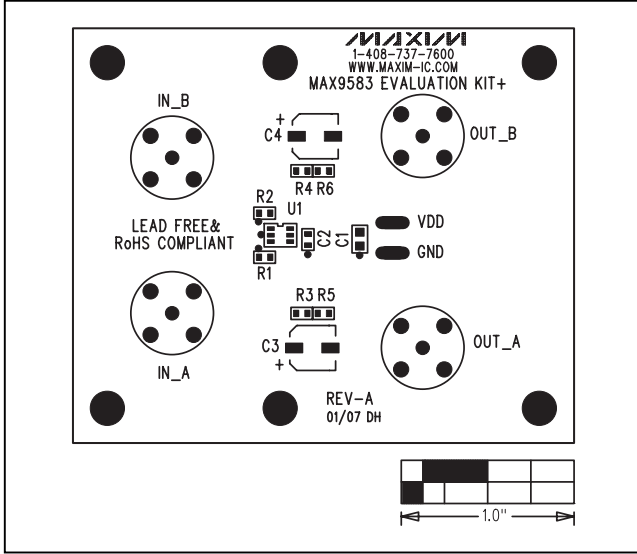


Figure 2. MAX9583 EV Kit Component Placement Guide—Component Side

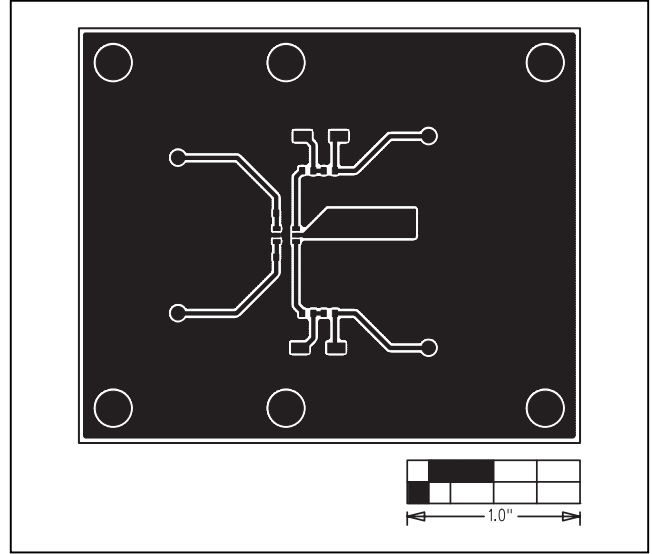


Figure 3. MAX9583 EV Kit PCB Layout—Component Side

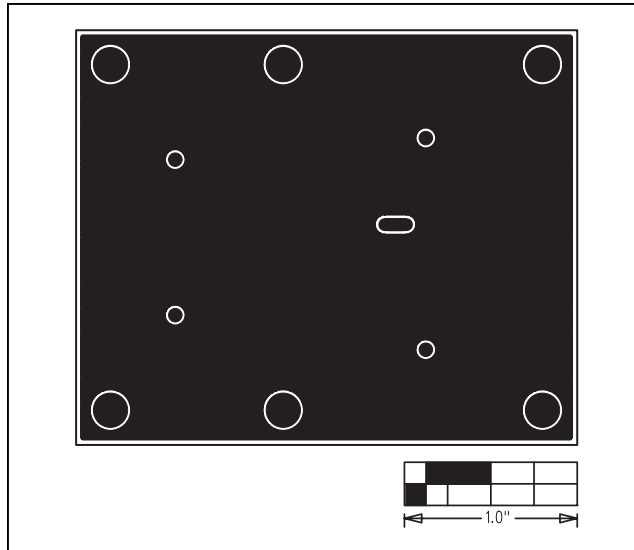


Figure 4. MAX9583 EV Kit PCB Layout—Solder Side

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