

EVAL-AD8180EB/EVAL-AD8182EB

BOARD DESCRIPTION

The AD8180R and AD8182R evaluation boards have been carefully laid out and tested to demonstrate the specified high speed performance of the devices. Figures 1 and 2 show the schematics of the AD8180 and AD8182 evaluation boards respectively. For ordering information, please refer to the Ordering Guide.

Because the footprint of the AD8180 fits directly onto that of the AD8182, one board layout can be used for both devices. In the case of the AD8180, only the top half of the board is populated.

Figure 3 shows the silkscreen of the component side and Figure 5 shows the silkscreen of the solder side. Figures 4 and 6 show the layout of the component side and solder side respectively.

The evaluation board is provided with 49.9 Ω termination resistors on all inputs. This allows the performance to be evaluated at very high frequencies where 50 Ω termination is most popular. To use the evaluation board in video applications, the termination resistors should be replaced with 75 Ω resistors.

The multiplexer outputs are loaded with 4.99 k Ω resistors. In order to avoid large gain errors, these load resistors should be greater than or equal to 1 k Ω . For connection to external instruments, oscilloscope scope probe adapters are provided. This allows direct connection of FET probes to the board. For verification of data sheet specifications, use of FET probes with a bandwidth > 1 GHz is recommended because of their low input capacitance. The probe adapters used on the board have the same footprint as SMA, SMB, and SMC type connectors, allowing easy replacement if necessary.

ORDERING GUIDE

Model	Package Description
AD8180-EB	Evaluation Board
AD8182-EB	Evaluation Board

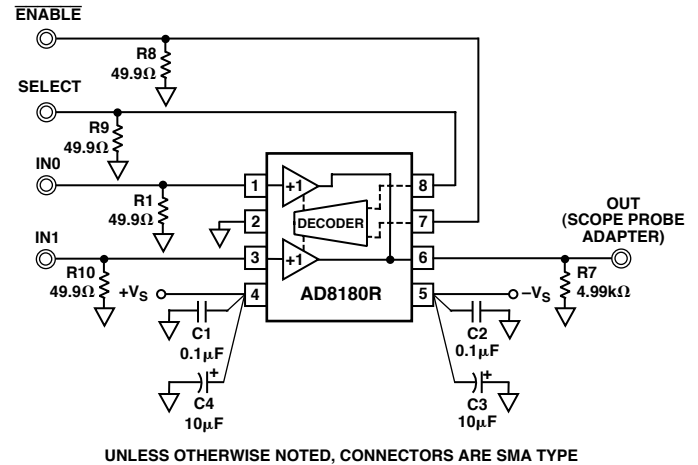


Figure 1. AD8180R Evaluation Board

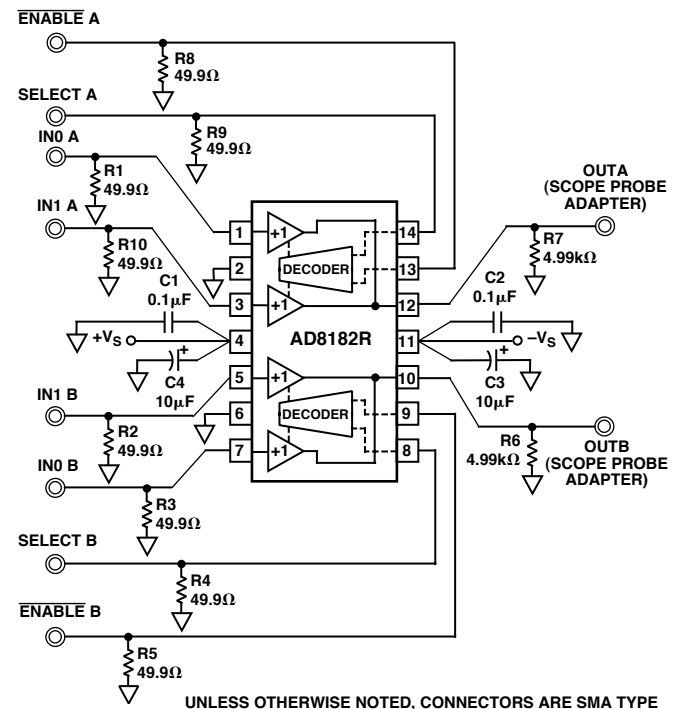


Figure 2. AD8182R Evaluation Board

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EVAL-AD8180EB/EVAL-AD8182EB

CAUTION

ESD (electrostatic discharge) sensitive device. Electrostatic charges as high as 4000 V readily accumulate on the human body and test equipment and can discharge without detection. Although the EVAL-AD8180EB/EVAL-AD8182EB features proprietary ESD protection circuitry, permanent damage may occur on devices subjected to high energy electrostatic discharges. Therefore, proper ESD precautions are recommended to avoid performance degradation or loss of functionality.

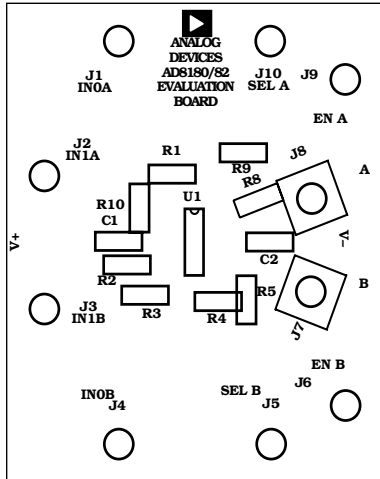


Figure 3. Component Side Silkscreen

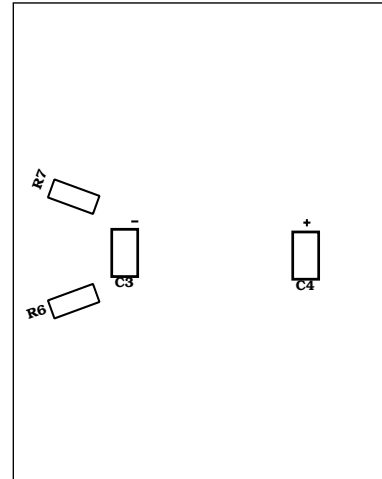


Figure 5. Solder Side Silkscreen

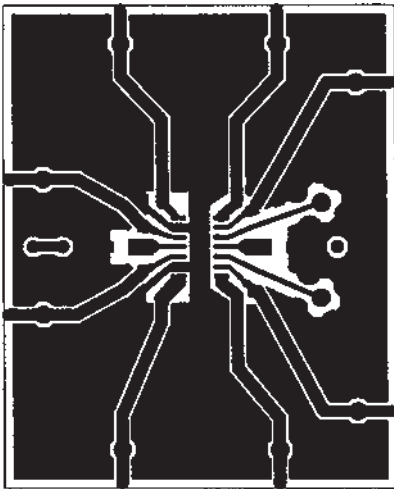


Figure 4. Board Layout (Component Side)

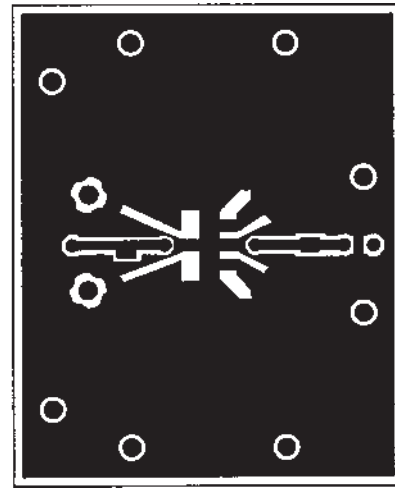


Figure 6. Board Layout (Solder Side)

NOTES

- AD8180R/AD8182R Evaluation Board inputs are configured with 50 Ω impedance striplines. This FR4 board type has the following stripline dimensions: 60-mil width, 12-mil gap between center conductor and outside ground plane “islands,” and 62-mil board thickness.
- Several types of SMA connectors can be mounted on this board: the side-mount type, which can be easily installed at the edges of the board, and the top-mount type, which is placed on top. When using the top-mount SMA connector, it is recommended that the stripline on the outside 1/8" of the board edge be removed with an X-Acto blade since this unused stripline acts as an open stub that could degrade the small-signal frequency response of the mux.
- Input termination resistor placement on the evaluation board is critical to reducing crosstalk. Each termination resistor is oriented so that ground return currents flow counterclockwise to a ground plane “island.” Although the direction of this ground current flow is arbitrary, it is important that no two input or output termination resistors share a connection to the same ground “island.”