

### **AD8305 Evaluation Board**

# **EVAL-AD8305EB**

#### **BOARD DESCRIPTION**

The AD8305 evaluation board has been carefully laid out and tested to demonstrate the specified high speed performance of the device. The schematic for the EVAL-AD8305EB is shown in Figure 1. It can be configured for a wide variety of experiments. The buffer gain is factory-set to unity, providing a slope of 200 mV/decade, and the intercept is set to 1 nA. Table I describes the various configuration options.

#### **ORDERING GUIDE**

Model	Package Description
AD8305-EVAL	Evaluation Board

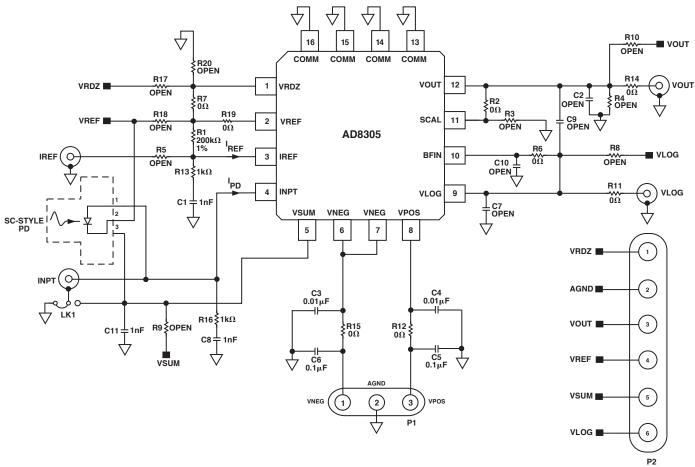


Figure 1. Evaluation Board Schematic

#### **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-AD8305EB 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.



#### REV. 0

Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Analog Devices. Trademarks and registered trademarks are the property of their respective companies.

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A. Tel: 781/329-4700 www.analog.com

Fax: 781/326-8703 © 2002 Analog Devices, Inc. All rights reserved.

## **EVAL-AD8305EB**

Table I. Evaluation Board Configuration Options

Component	Function	<b>Default Condition</b>
P1	Supply Interface. Provides access to supply pins, VNEG, COMM, and VPOS.	P1 = Installed
P2, R8, R9, R10, R11, R17, R18	Monitor Interface. By adding 0 $\Omega$ resistors to R8, R9, R10, R11, R17, and R18, the VRDZ, VREF, VSUM, VOUT, and VLOG pin voltages can be monitored using a high impedance probe.	P2 = Not Installed R8 = R9 = R10 = Open (Size 0603) R17 = R18 = Open (Size 0603)
R2, R3, R4, R6, R14, C2, C7, C9, C10	Buffer Amplifier/Output Interface. The logarithmic slope of the AD8305 can be altered using the buffer's gain-setting resistors, R2 and R3. R4, R14, and C2 allow variation in the buffer loading. R6, C7, C9, and C10 are provided for a variety of filtering applications.	R2 = R6 = 0 $\Omega$ (Size 0603) R3 = R4 = Open (Size 0603) R11 = R14 = 0 $\Omega$ (Size 0603) C2 = C7 = Open (Size 0603) C9 = C10 = Open (Size 0603) VLOG = VOUT = Installed
R1, R7, R19, R20	Intercept Adjustment. The voltage dropped across resistor R1 determines the intercept reference current, nominally set to 10 $\mu$ A using a 200 k $\Omega$ 1% resistor. R7 and R19 can be used to adjust the output-offset voltage at the VLOG output.	R1 = 200 k $\Omega$ (Size 0603) R7 = R19 = 0 $\Omega$ (Size 0603) R20 = Open (Size 0603)
R12, R15, C3, C4, C5, C6	Supply Decoupling	C3 = C4 = 0.01 $\mu$ F (Size 0603) C5 = C6 = 0.1 $\mu$ F (Size 0603) R12 = R15 = 0 $\Omega$ (Size 0603)
C11 R13, R16, C1, C8	VSUM Decoupling Capacitor Input Compensation. Provides essential HF compensation at the input pins, INPT and IREF.	C11 = 1 nF (Size 0603) R13 = R16 = 1 k $\Omega$ (Size 0603) C1 = C8 = 1 nF (Size 0603)
IREF, INPT, PD, LK1, R5	Input Interface. The test board is configured to accept a current through the SMA connector labeled INPT. An SC-style packaged photodiode can be used in place of the INPT SMA for optical interfacing. By removing R1 and adding a 0 $\Omega$ short for R5, a second current can be applied to the IREF input (also SMA) for evaluating the AD8305 in log-ratio applications.	IREF = INPT = Installed PD = Not Installed LK1 = Installed R5 = Open (Size 0603)
<u>J1</u>	SC-Style Photodiode. Allows for direct mounting of SC style photodiodes.	J1 = Not Installed

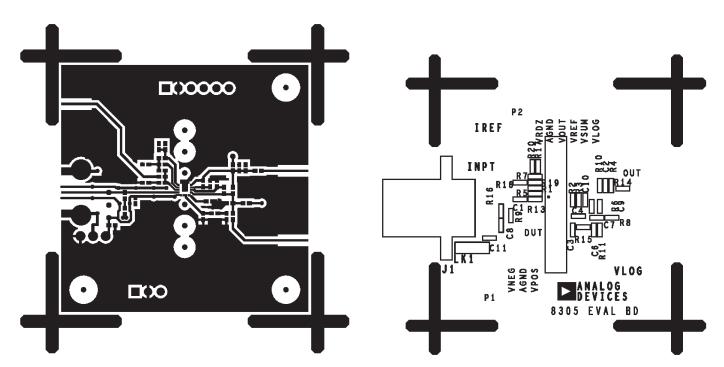


Figure 2. Component Side Layout

Figure 3. Component Side Silkscreen

-2- REV. 0