

Power-Off Protection ± 5 V, +12 V, and +5 V Quad SPST Switches

FEATURES

Full featured evaluation board for the ADG4612

Power-off protection

Switch guaranteed off with no power supplies present

Inputs are high impedance with no power

Switch turns off if input $> V_{DD} + V_T$

Overvoltage protection up to 16 V

PSS robust

Negative signal capability passes signals down to -5.5 V

GENERAL DESCRIPTION

This user guide describes the evaluation board for the ADG4612 quad SPST switches.

Figure 1 shows the EVAL-ADG4612EBZ. The 16-lead TSSOP ADG4612 is soldered onto the center of the evaluation board and is designated as U2.

The evaluation kit contains a fully fitted printed circuit board (PCB). Full details about the part are available in the ADG4612 data sheet, which should be consulted when using the EVAL-ADG4612EBZ.

When power supplies are not present, the switch remains off, and the switch inputs are high impedance, which ensures that current does not damage the switch. This is useful in applications where analog signals can be present at the switch inputs before power, or where the user has no control over the power supply sequence.

When off, signal levels up to 16 V are blocked. In addition, if the analog input signal levels exceed V_{DD} by V_T , the switch turns off.

EVALUATION BOARD PHOTOGRAPH



Figure 1.

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REVISION HISTORY

11/10—Revision 0: Initial Version

EVALUATION BOARD HARDWARE

HARDWARE DESCRIPTION

The [ADG4612](#) evaluation kit contains a fully fitted PCB.

The evaluation board allows the user to connect the signals that require switching to the ADG4612 quad SPST switch and control its operation by using the on-board links or by applying the correct control signals to the appropriate connectors. The signals present at the pins of the ADG4612 can be monitored through the test points provided on the board.

POWER SUPPLIES

To operate the ADG4612 evaluation board, you must provide an external power supply connected to the J2 power block.

The ADG4612 has single +3 V to +16 V and dual ± 3 V to ± 5.5 V operation and is fully specified for ± 5 V, +5 V, and +12 V.

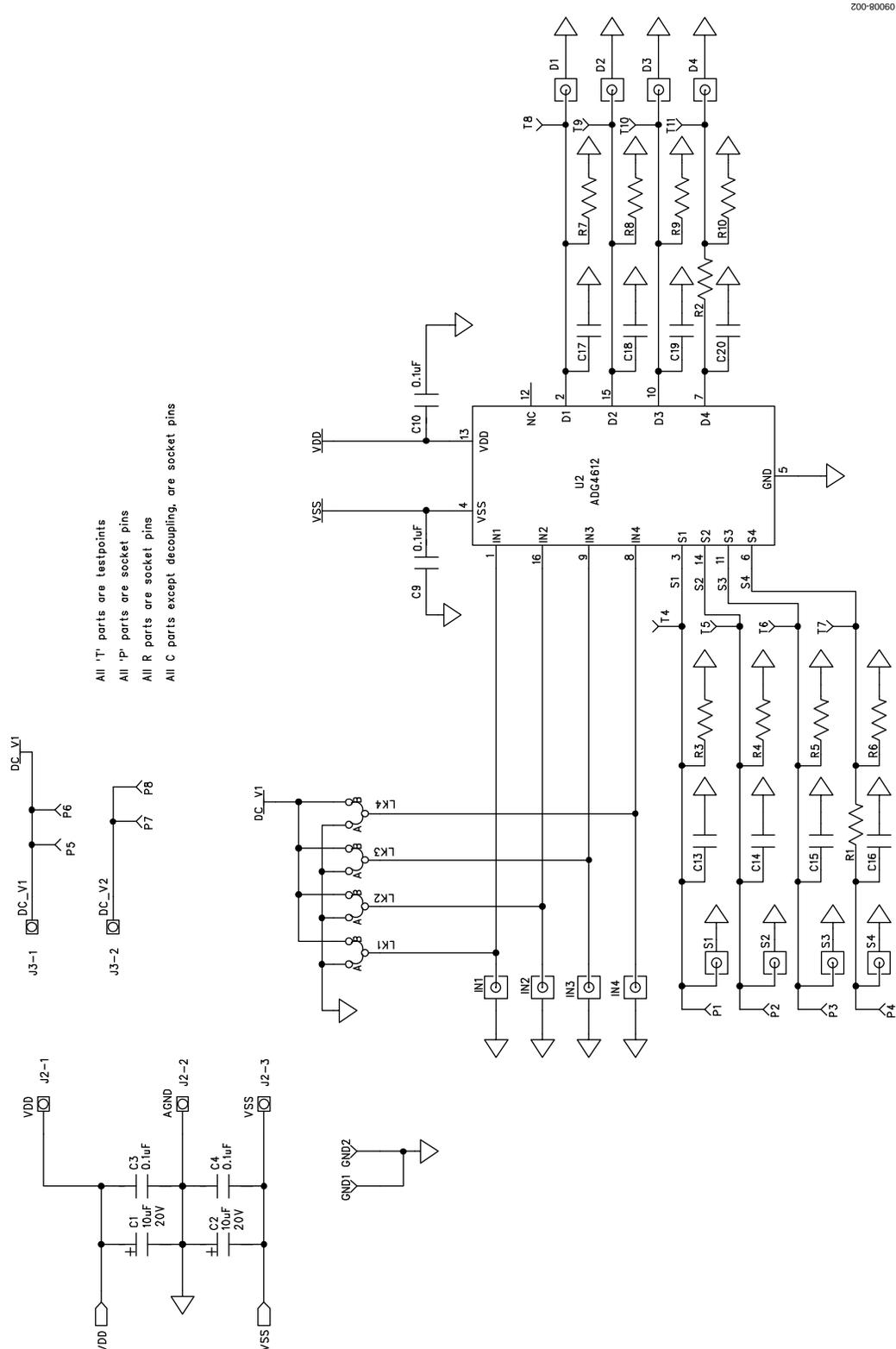
SWITCH CONTROL CONNECTORS

The ADG4612 offers a standard CMOS/LVTTL parallel interface consisting of four IN inputs. The IN1, IN2, IN3, and IN4 input pins control the switch state and operation mode of the ADG4612. The evaluation board allows the user to control the signals required to set the logic levels applied to these pins by using the LK1, LK2, LK3, and LK4 links as described in Table 1, or by applying external signals to the SMB connectors, IN1 through IN4, as described in Table 2.

Table 1. Control via the LK1 through LK4 Links

Link Position	Voltage	INx	Switch Condition
A	GND	0	Off
B	DC to V1	1	On

EVALUATION BOARD SCHEMATIC AND ARTWORK



All 'T' parts are testpoints
 All 'P' parts are socket pins
 All 'R' parts are socket pins
 All 'C' parts except decoupling, are socket pins

Z00-80060

NOTES
 1. C13 TO C20 AND R1 TO R10 ARE NOT MOUNTED ON THE EVALUATION BOARD. EVALUATION BOARD USERS CAN ADD RESISTORS AND CAPACITORS TO THE TERMINALS PROVIDED IF REQUIRED.

Figure 2. Evaluation Board Circuitry Schematic

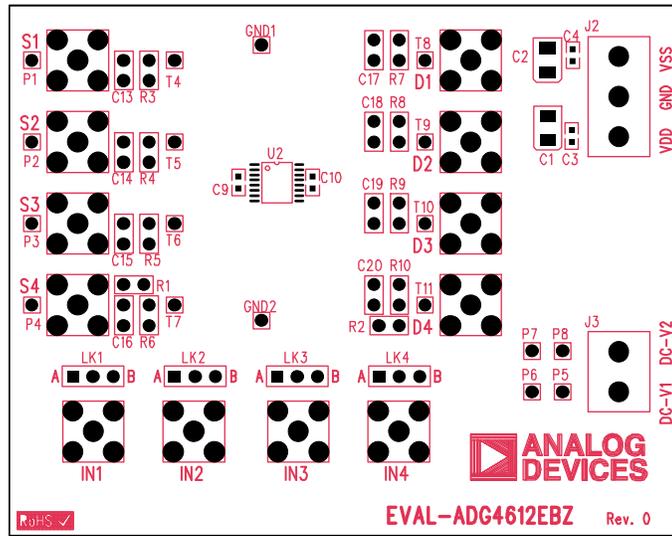


Figure 3. Evaluation Board Component Placement Drawing

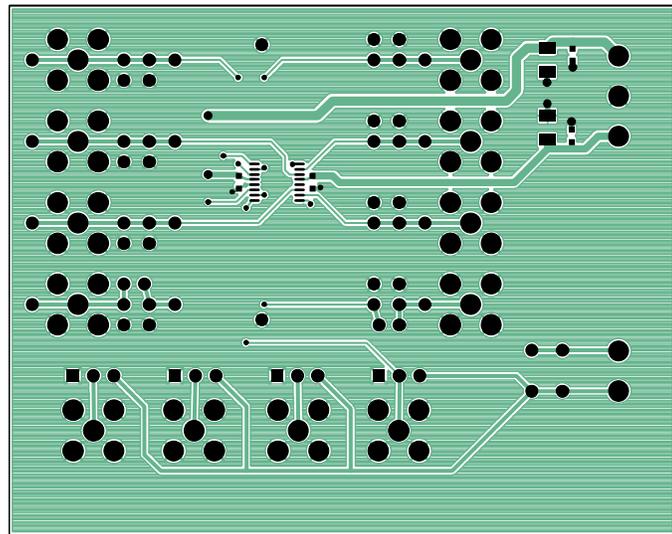


Figure 4. Evaluation Board Component Side PCB Drawing

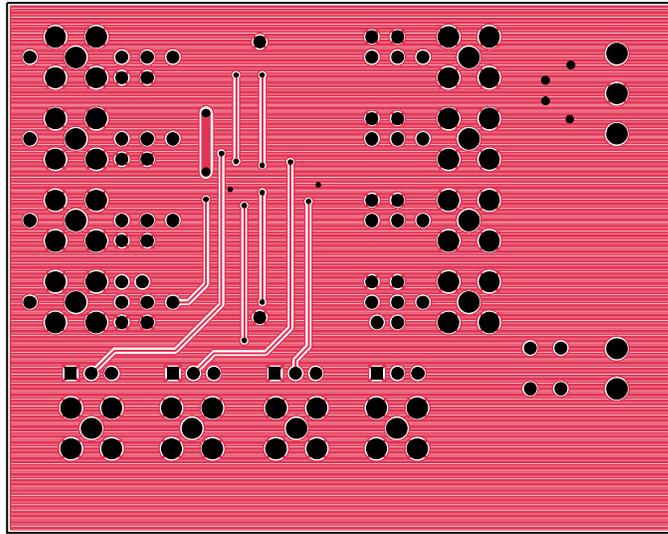


Figure 5. Evaluation Board Solder Side PCB Drawing

081008-005

ORDERING INFORMATION**COMPONENT LISTING**

Table 2.

Quantity	Reference Designator	Description	Supplier/Part Number
2	C1, C2	10 μ F, 20 V tantalum capacitor Case B	FEC 197427
4	C3, C4, C9, C10	0.1 μ F, 50 V capacitor, 0603	FEC 8820023
18	GND1, GND2, P1 to P8, T4 to T11	Terminal PCB, red, PK100	FEC 8731144
4	LK1 to LK4	Header, 1-row, 3-way and jumper socket black	FEC 1022248 and FEC 150410
12	D1 to D4, IN1 to IN4, S1 to S4	50 Ω jack SMB, PCB	FEC 1111349
1	J2	3-pin terminal block, PCB (5 mm pitch)	FEC 151790
1	J3	2-pin terminal block, PCB (5 mm pitch)	FEC 151789
1	U2	Power-off protection \pm 5 V, +12 V, quad SPST switch with 5 Ω on resistance	Analog Devices, Inc. ADG4612BRUZ

NOTES

**ESD Caution**

ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

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