

A1569 Proto Board

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Overview

The A1569 is a unique integrated circuit which combines an ultrasensitive Hall-effect switch with a linear programmable current regulator which provides up to 150 mA for driving a string of high brightness LEDs. This document accompanies the Allegro A1569 Proto Board. The A1569 Proto Board is intended to provide the user with a small format platform for integrating the A1569 into their own prototype designs.

Refer to the latest A1569 datasheet for the operational specifications of the A1569.

Description

The A1569 Proto Board is a small two-layer double-sided PCB with the A1569 mounted on the front of the board. All of the basic components are provided. If the A1569 Proto Board is ordered with an LED installed (see below), the only requirement is to connect power (VIN) and ground (GND) via two of the through-hole connections on P1 (see Figure 1, Figure 2, and Figure 3).

Through-hole connections are provided for all of the external connections that may be required for the target application. All of the through-hole connections with square pads, which are not labeled, are the ground connections. The remaining through-hole connections, the ones with round pads, are labeled for convenience on the bottom side of the board (see Figure 3).

A mounting hole for a #2 screw is also provided (see upper-right corner of Figure 2 and upper-left corner of Figure 3). This screw should be nonferrous to prevent interference with the operation of the Hall element.

LED Placement

There are three placement options for the LED supported by the A1569 Demo Board. Only one option should be selected at any given time, as the A1569 is designed to drive a single string of LEDs.

The A1569 Proto Board can be ordered with an LED pre-installed on the front side of the board (the same side as

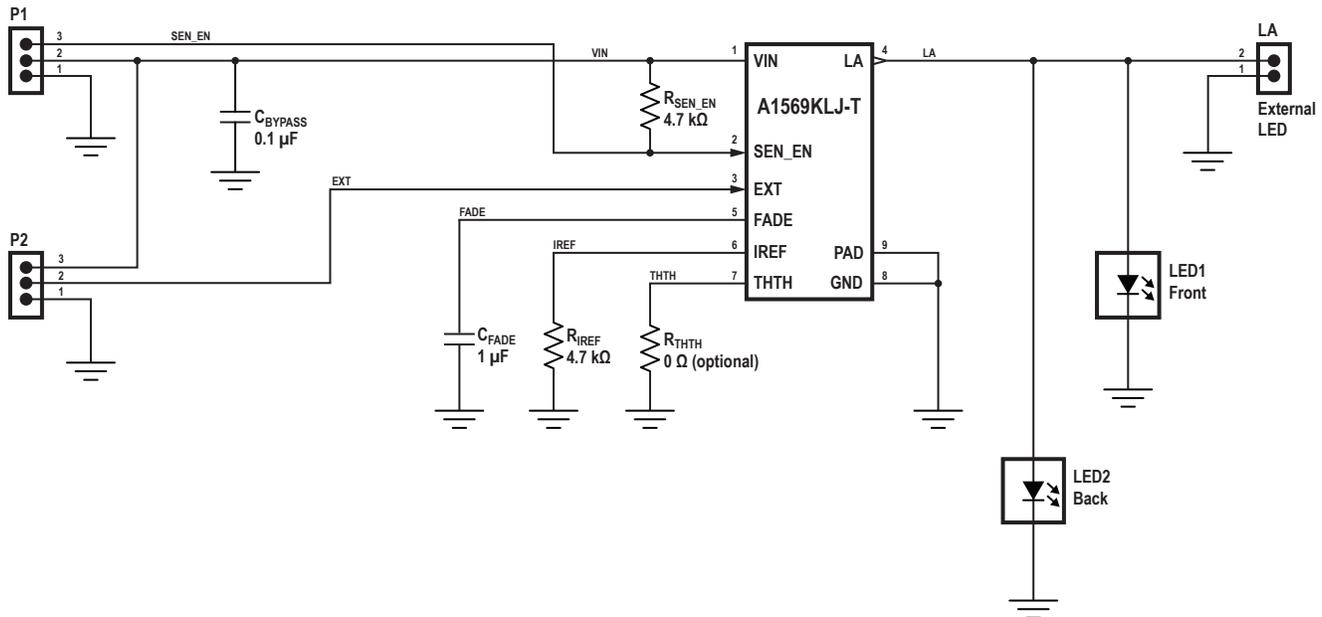


Figure 1: A1569 Proto Board Schematic

the A1569 as shown in Figure 2), pre-installed on the back side of the board (the opposite side as the A1569 as shown in Figure 3), or with no LED installed (for the case where the LED will be remotely located from the A1569).

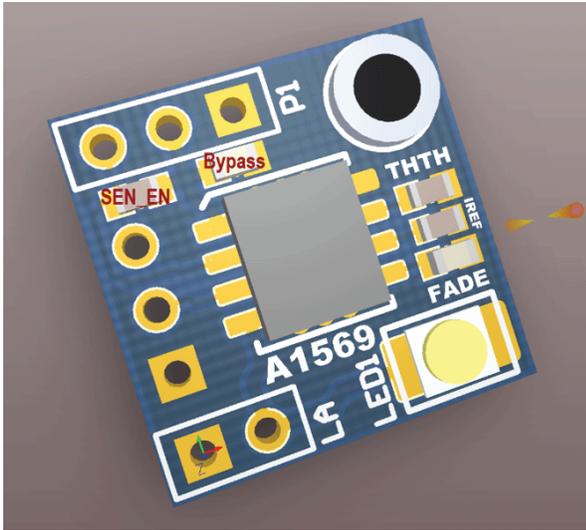


Figure 2: A1569 Proto Board – Top

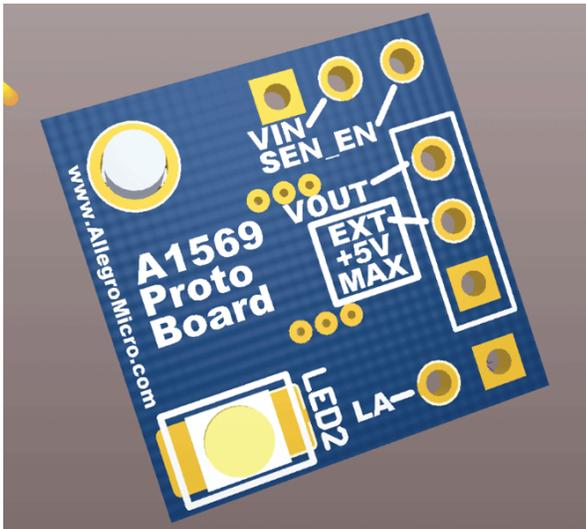


Figure 3: A1569 Proto Board – Bottom

Basic Connections

The basic connections are boxed and labeled P1 on the front of the board (see the upper-left corner of Figure 2). This is where the power and ground connections are made. By turning the board over, additional labelling can be seen (see the upper-right corner of Figure 3).

- Ground should be connected to the square pad (which has no additional labelling).

- VIN should be connected to the middle pad, which is round and is labeled on the bottom.
- If the application requires the Hall Element be selectively enabled and disabled, then a connection to SEN_EN can be made to the remaining round pad.

Connecting Remote LEDs

The A1569 Proto Board provides through-holes for connecting a string of LEDs which can be mounted remotely from the A1569 Proto Board. To make use of this feature, no other LED should be mounted on the A1569 Proto Board.

The through-holes for connecting the remote LED string are boxed and labeled LA on the front of the board (see the lower-left corner of Figure 2).

- The cathode of the remote LED string should be connected to the hole with the square pad (which has no additional labelling).
- The anode of the remote LED string should be connected to the remaining hole with the round pad (labeled LA on the back of the board; see Figure 3).

Connecting an External Hall Switch

It is possible to override the A1569 internal Hall element and turn on the LED output current by driving the EXT input of the A1569. This allows for a second sensing point, remote from the A1569, to control the LED string connected to the A1569. Allegro provides a separate A1126 Proto Board as a mate to the A1569 Proto Board for this application. Contact your Allegro sales representative for information on obtaining one of these boards.

The connections for the external Hall element is boxed and labeled on the bottom of the A1569 Proto Board (see right-hand side of Figure 3).

The connections to the A1126 Proto Board are as follows:

- The grounds of the two boards should be connected together using the square pads (which have no additional labelling).
- The OUT of the A1126 Proto Board should be connected to EXT of the A1569 Proto Board. Both of these connections are labeled on the bottom side of their respective boards and are the middle connections with the round pads.
- The VOUT of the A1569 Proto Board should be connected to the VIN of the A1126 Proto Board using the remaining round pads. Both are labeled on the bottom side of their respective boards.

Refer to the A1126 Proto Board User’s Guide for more information.

Revision History

Number	Date	Description
-	May 3, 2016	Initial release

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