

150V Half-Bridge Driver with Floating Grounds and Adjustable Dead-Time

General Description

The EVAL-LTC7066-AZ evaluation circuit is a half-bridge driver that drives two N-channel MOSFETs. The two 5V logic-compatible PWM inputs independently drive each of the two N-channel gate outputs to each MOSFET. The eval kit has several unpopulated PCB pads to help facilitate the user in customizing the board for their application.

The LTC7066 driver has a powerful 0.8Ω pull-down and 1.5Ω pull-up MOSFET drivers driving two 150V N-channel MOSFETs. The gate drivers on the LTC7066 are capable of driving MOSFETs with different ground references; however, this eval kit has these ground references committed.

Design files for this circuit board are available.

Performance Summary (T_A = 25°C)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Logic Input Supply (VIN-LOGIC)		6		14	V
Power Input Supply (VIN-POWER)				150	V
Maximum Output Current				10	A
PWM Control Frequency				2,000+	kHz
Maximum PWM Control Voltage				5.5	V

Quick Start Procedure

The EVAL-LTC7066-AZ can be evaluated without connecting any additional components or a load. However, the user may find adding two load resistors, as shown in [Figure 1](#), provides a better means for evaluating. Alternatively, the user can configure their own application circuit. Test with a resistor divider as a load:

1. Connect two 100Ω power resistors to the SW node, as shown in [Figure 1](#).
2. Apply VIN-POWER supply.
3. Apply VIN-LOGIC supply.
4. Apply two 5V, 1kHz square-wave signals 180° apart with a 48% duty cycle, as shown below. Limiting the duty cycle to 48% and staggering them 180° apart will ensure no shoot-through.



5. Monitor the BG, TG, and SW pins with a scope.

6. See [Figure 2](#) for expected results with:

- VIN-POWER = 40V
- VIN-LOGIC = 10V

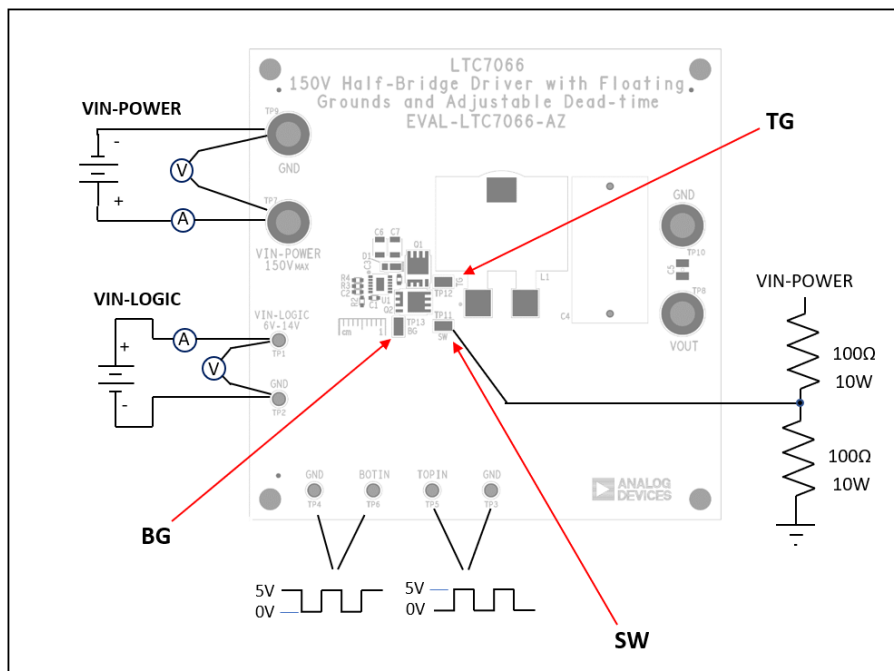


Figure 1. EVAL-LTC7066-AZ Test Setup

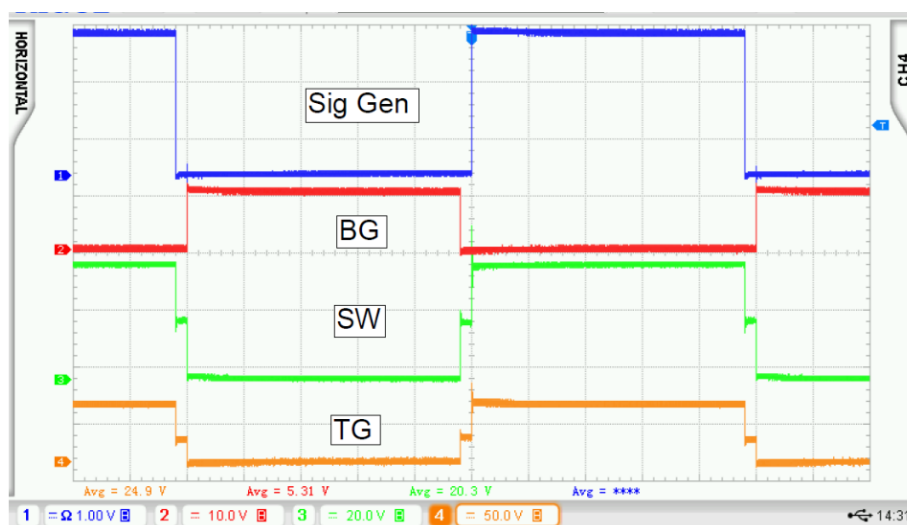
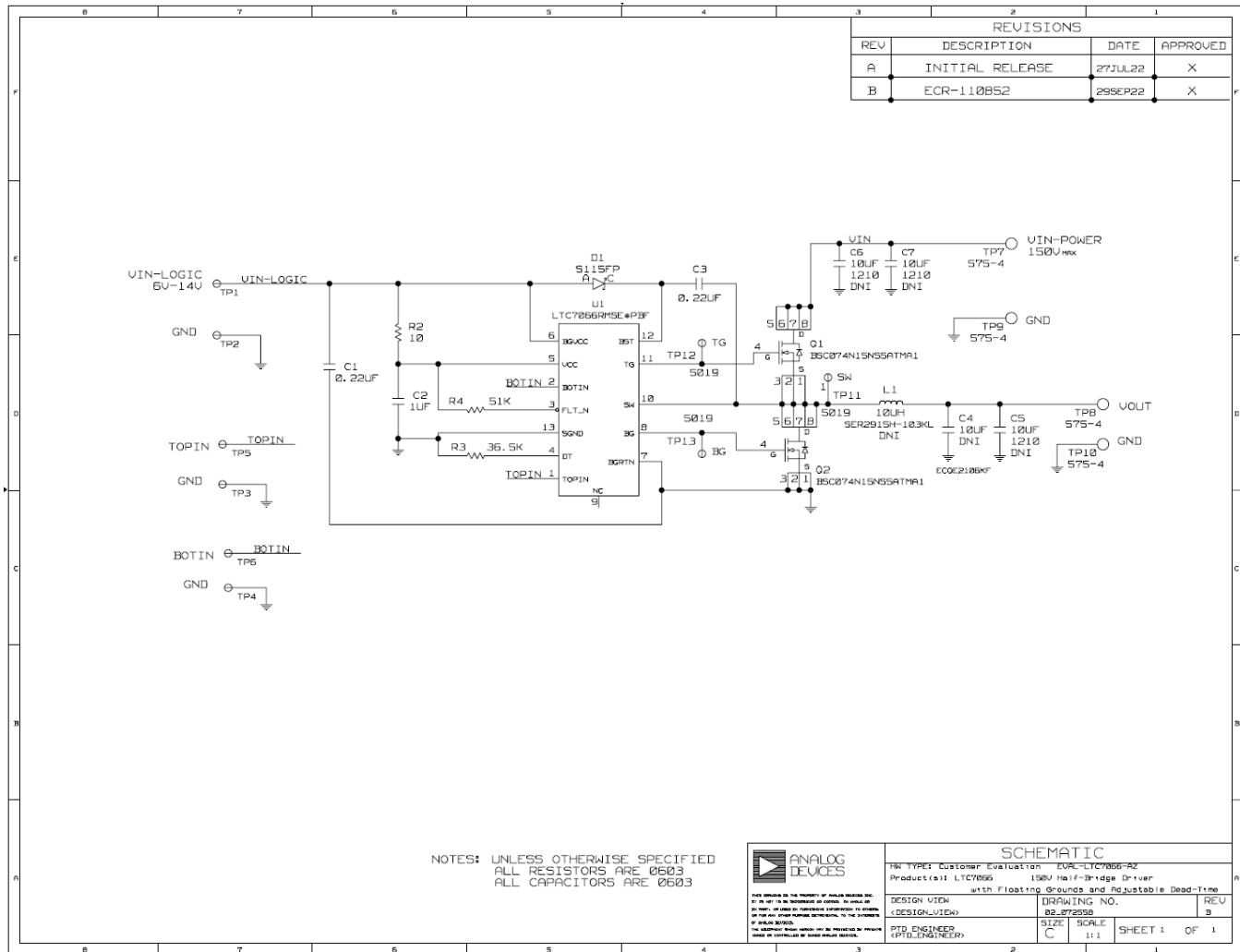


Figure 2. Test Results

Schematic



Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	6/23	Initial release	—

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. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. NO LICENCE, EITHER EXPRESSED OR IMPLIED, IS GRANTED UNDER ANY ADI PATENT RIGHT, COPYRIGHT, MASK WORK RIGHT, OR ANY OTHER ADI INTELLECTUAL PROPERTY RIGHT RELATING TO ANY COMBINATION, MACHINE, OR PROCESS WHICH ADI PRODUCTS ALL INFORMATION CONTAINED HEREIN IS PROVIDED "AS IS" WITHOUT REPRESENTATION OR WARRANTY. NO RESPONSIBILITY IS OR SERVICES ARE USED. TRADEMARKS AND REGISTERED TRADEMARKS ARE THE PROPERTY OF THEIR RESPECTIVE OWNERS.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Analog Devices Inc.:](#)

[EVAL-LTC7066-AZ](#)