

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:
 - a. VIN-POWER = 40V
 - b. VIN-LOGIC = 10V

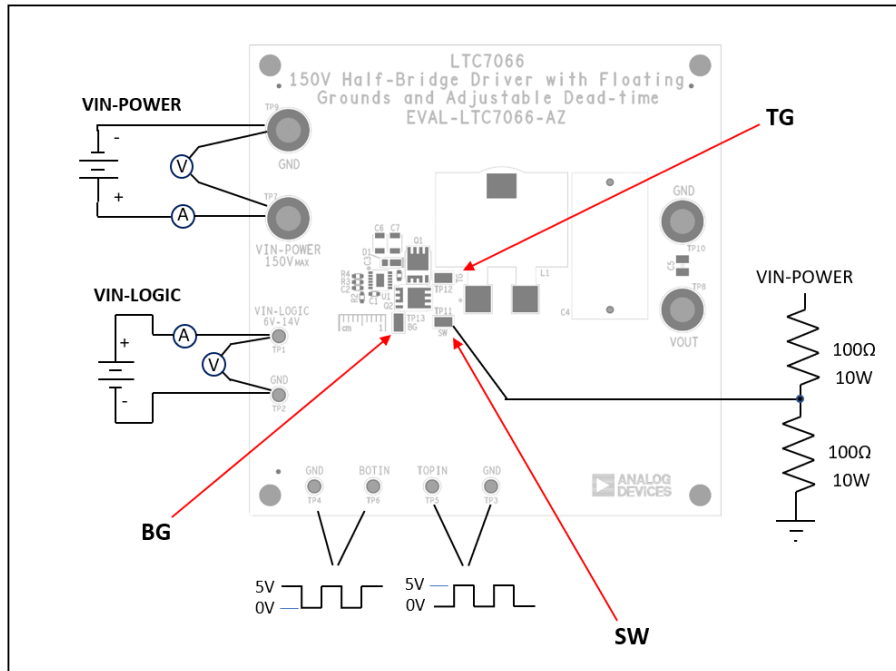


Figure 1. EVAL-LTC7066-AZ Test Setup

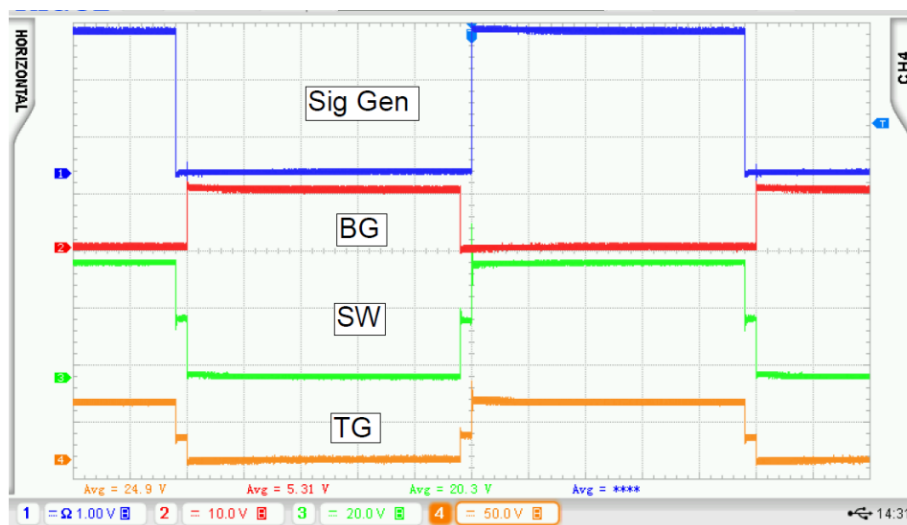
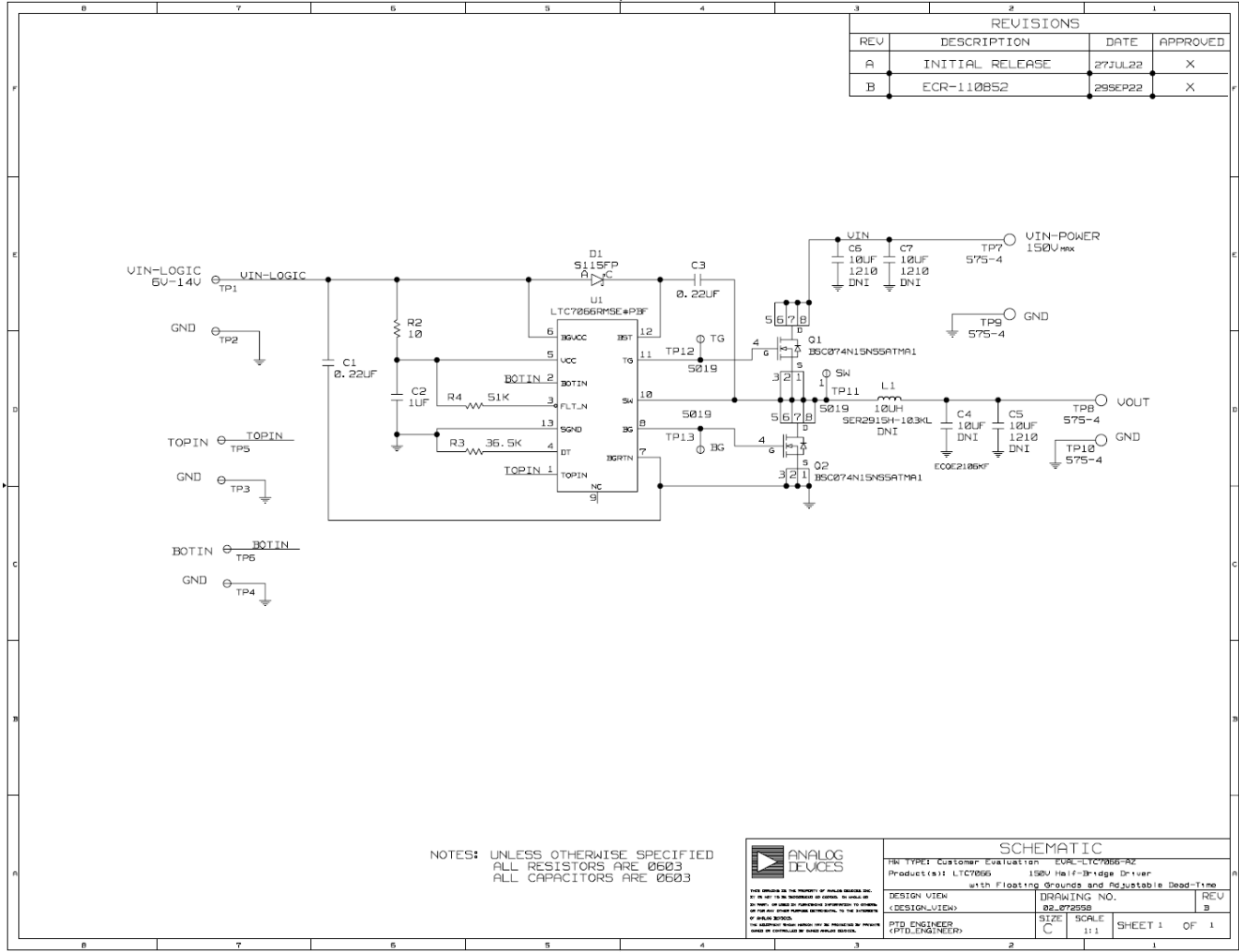


Figure 2. Test Results

Schematic



Revision History

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

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