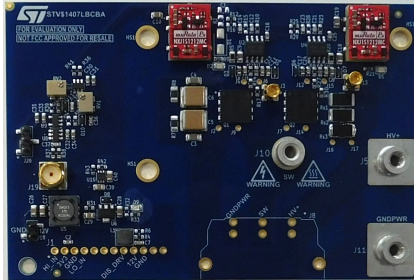


Evaluation board for half-bridge with SGT140R70ILB, 106 mΩ typ., 17 A e-mode PowerGaN transistor



The picture shown is for illustration purpose only.
Actual product may vary depending on buyer's selection and availability.

Features

- Half-bridge topology featuring 630 V peak voltage
- Equipped with 700 V, 106 mΩ typ., 17 A, e-mode PowerGaN transistor
- Bottom solder mask aperture for high heat-sink performance
- 10°C/W junction-to-heat-sink thermal resistance to evaluate large power topologies
- -3.0 VCC/+6.2 VCC gate driver supply voltage
- On-board adjustable deadtime generator to convert single PWM signals into independent high-side and Low-Side signals with deadtimes from 10 to 150 ns
- Dedicated input connector for external deadtime PWM
- Up to 1 MHz switching frequency operation
- MMCX high frequency connector for high-side GaN gate voltage measurement
- 5.08 mm pitch for GaN drain-source voltage monitoring
- Optional low-side shunt for transistor source current monitoring

Description

The **STEVAL-G1407LBCB** is designed for evaluating the electrical and thermal characteristics of the **SGT140R70ILB** 700-V e-mode PowerGaN transistor using the isolated gate driver **STGAP2GSN**.

The half-bridge configuration enables the emulation of buck, boost, PFC, and inverter topologies with a dedicated external controller and filtering.

The **STEVAL-G1407LBCB** is optimized to reduce voltage undershoots and overshoots while ensuring fast switching times.

As the PowerGaN switches are mounted on the top side of the FR4 PCB, it facilitates the evaluation of different thermal interface materials (TIM), enabling the PowerGaN to deliver maximum power with an efficient thermal interface.

The **SGT140R70ILB** is a 106 mΩ typ, 700 V, 17 A e-mode GaN power transistor combined with an innovative PowerFLAT 8x8 HV bottom-side cooling packaging technology. This device provides low conduction losses, high current capability, and ultrafast switching operation, enabling high-power density and efficiency performance.

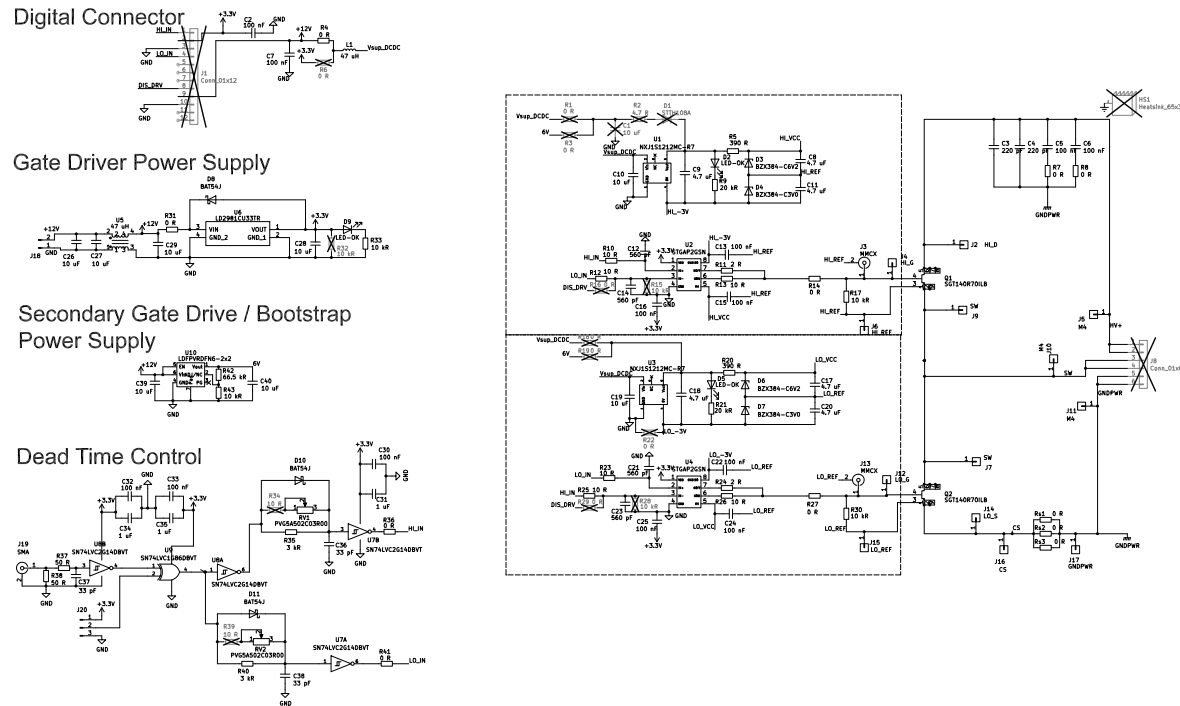
The **STEVAL-G1407LBCB** is controlled by the **STGAP2GSN**, a galvanically isolated 3 A single gate driver for enhancement-mode GaN FETs. The board allows independent optimization of turn-on and turn-off using dedicated gate resistors.

Product summary	
Evaluation board for half-bridge with SGT140R70ILB, 106 mΩ typ., 17 A e-mode PowerGaN transistor	STEVAL-G1407LBCB
700 V, 106 mΩ typ., 17 A, e-mode PowerGaN transistor	SGT140R70ILB
Isolated 3 A single gate driver for Enhancement mode GaN FETs	STGAP2GSNCTR
Applications	AC-DC converters/ DC-DC converters

Schematic diagrams

Notice: These schematics are for illustration purpose only. Actual product may vary depending on buyer's selection and availability.

Figure 1. STEVAL-G1407LBCB - Circuit schematic



2 Custom evaluation boards information

Notice: *These evaluation boards are custom designed and built, in small quantities, according to specific requests from customers and are destined for evaluation and testing of ST products in a research and development setting. Please contact ST to provide your specific requests and get your custom built board(s).*

Revision history

Table 1. Document revision history

Date	Revision	Changes
02-Sep-2026	1	Initial release.

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