Half bridge evaluation board (with dedicated X-GaN driver + general isolator) for evaluating the performance of X-GaN power transistor

■ EVB Part Number

PGA26E07BA-SWEVB008 (~800W)
PGA26E19BA-SWEVB008 (~400W)

■ Key Device Part Number

X-GaN 70mΩ - PGA26E07BA
X-GaN 190mΩ - PGA26E19BA
X-GaN Driver - AN34092B
Isolator - Silab Si8275
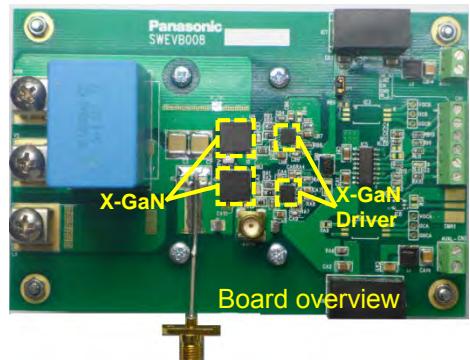
Board overview

■ Overview

The PGA26ExxBA-SWEVB008 is a half bridge evaluation board
 for measuring the switching characteristics of the GaN power transistor and can be
easily configured into any half bridge topology for power supply evaluation.

■ Features

• Maximum input voltage: DC 410V

• Support evaluation of switching characteristics using 2-pulse test

• Support continuous power supply test depending on thermal design

   (up to 400W / 800W using attached heatsink)

• Reference design for PCB layout and gate driver circuit

• High speed switching and high frequency operation performance

• Include isolated DCDC and able to configure to bootstraps design easily

■ Application

  Half bridge topology for power supply testing

■ Block diagram outline
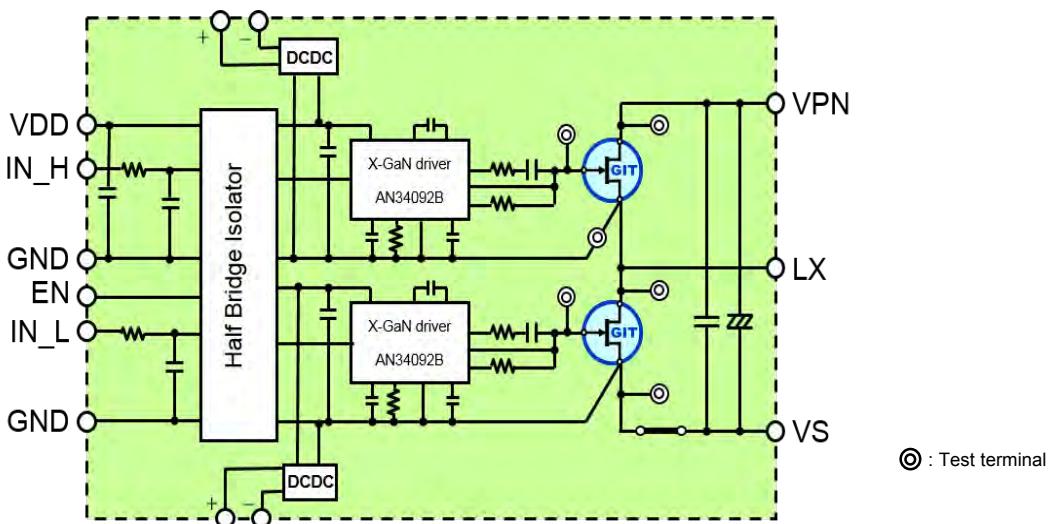
⊚ : Test terminal

■ Terminal information

Terminal Name	Function	Terminal Name	Function
IN_L	Low side input signal with 3.3V/5V CMOS logic option	AUXH-	Auxiliary power supply ground
GND	Input ground	AUXL+	Auxiliary power supply
IN_H	High side input signal with 3.3V/5V CMOS logic option	AUXL-	Auxiliary power supply ground
EN	Enable	VPN	Half bridge input power supply
VDD	Isolator input supply (3.3V~5.5V)	LX	Half bridge output
AUXH+	Auxiliary power supply	VS	Half bridge power ground

■ Recommended Operating Conditions

Parameter	Condition	Parameter	Condition
DC power supply	100V ~ 410V	External clock signal	3.3V~ 5V
Auxiliary power supply	10V ~ 13V	Temperature	25°C

## ■ Evaluation circuit diagram

Low Side Test
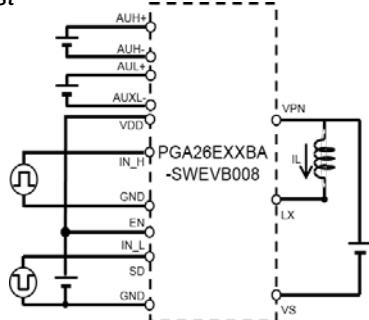
High Side Test
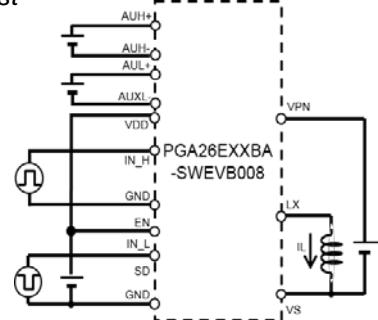
■ Examples of switching waveforms
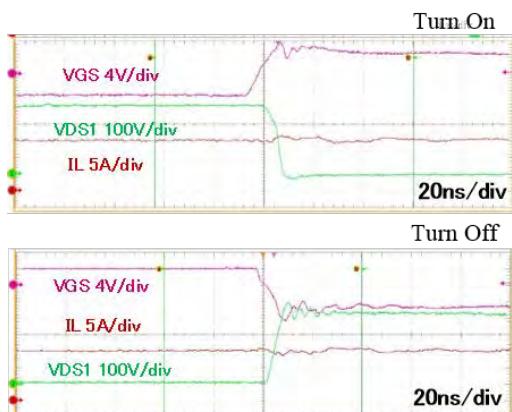
Low Side: (VPN=400V, IDS=15A)
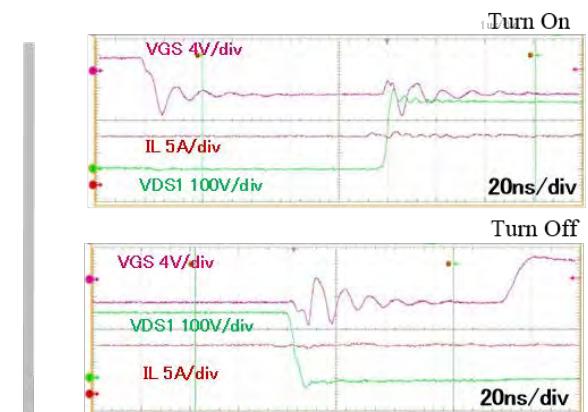
High Side: (VPN=400V, IDS=15A)

■ Important notice

- To avoid electric shock, please ensure to check the capacitor connected with line VPN and VS is discharged after evaluation.
- Depending on the conditions of the evaluation, please use an appropriate inductor for the DC superposition characteristics.
  Otherwise, there is possibility that GaN power transistor is damaged due to large current by magnetic saturation..
- Please adjust the pulse width so the maximum drain-source current rating is not exceeded.

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