

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

### ■ EVB Part Number

PGA26E07BA-SWEVB006

PGA26E19BA-SWEVB006

### ■ Key Device Part Number

X-GaN 70mΩ - PGA26E07BA

X-GaN 190mΩ - PGA26E19BA

X-GaN Driver - AN34092B



### ■ Overview

The PGA26ExxBA-SWEVB006 is the chopper evaluation board for measuring the switching characteristics of the GaN power transistor using X-GaN driver.

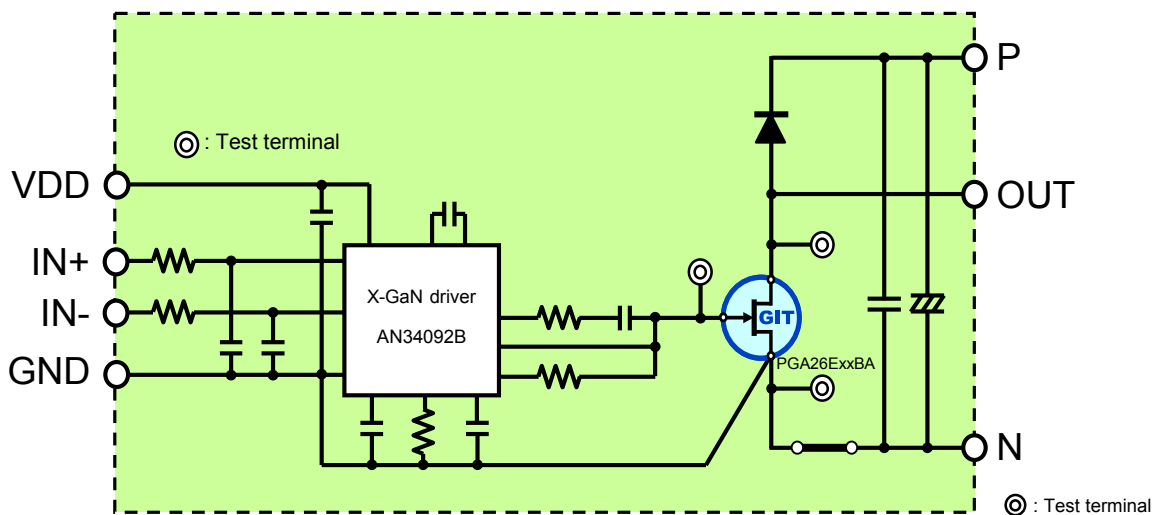
### ■ Features

- Maximum input voltage: DC 400V
- PGA26E19BA: ON resistance 190mΩ, PGA26E07BA: ON resistance 70mΩ
- X-GaN driver: AN34092B
- Support evaluation of switching characteristics using 2-pulse test using inductive load for  $dv/dt$  and  $di/dt$  measurement.
- High speed switching and high frequency operation performance.

### ■ Application

X-GaN Power FET characterization, Fly back topology

### ■ Block diagram outline



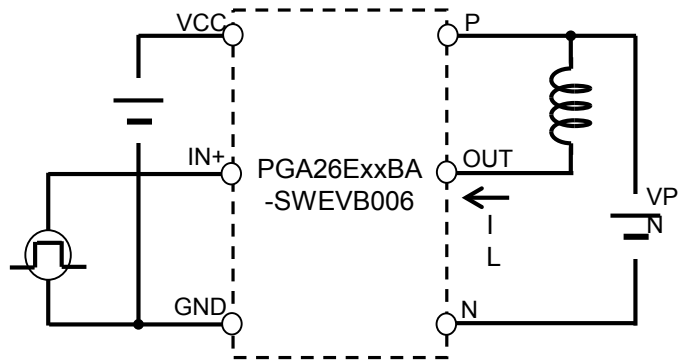
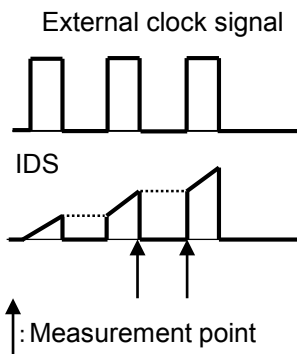
## Terminal information

Terminal Name	Function
P	Terminal connected to DC power supply(+) and the external inductor
N	Terminal connected to DC power supply(-)
OUT	Terminal connected to external inductor
VCC	Terminal connected to auxiliary power supply(+)
IN+	Terminal connected to output of the external clock signal (non-inverting input)
IN-	Terminal connected to output of the external clock signal (inverting input)

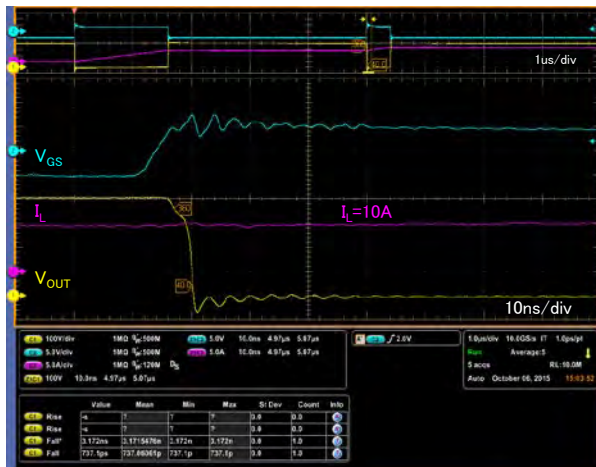
## Recommended Operating Conditions

Parameter	Condition
DC power supply	400V (Rating)
Auxiliary power supply for low side	12V
External clock signal	5V
External Inductor	120uH

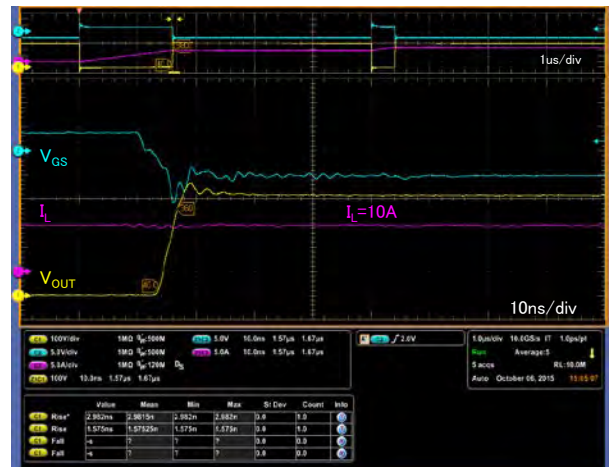
## Evaluation circuit diagram



## Examples of switching waveforms



Turn-on  
(VPN=400V, IL=10A)



Turn-off  
(VPN=400V, IL=10A)

PGA26E19BA-SWEVB006 Turn-on/off waveform

## 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..
- To avoid damaging the GaN power transistor by overheating, please don't apply a constant positive voltage as a clock signal.
- Please adjust the pulse width so the maximum drain-source current rating is not exceeded.

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