Panasonic



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 70m Ω - PGA26E07BA X-GaN 190m Ω - PGA26E19BA X-GaN Driver - AN34092B Isolator - Silab Si8275



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



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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
DC power supply	100V ~ 410V
Auxiliary power supply	10V ~ 13V

Parameter	Condition
External clock signal	3.3V~ 5V
Temperature	25°C

Evaluation circuit diagram

Low Side Test



Examples of switching waveforms

Low Side: (VPN=400V, IDS=15A)

VGS 4V/div

VDS1 100V/div

IL 5A/div

VGS 4V/div

IL 5A/div VDS1 100V/div





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...

Turn On

20ns/div

Turn Off

20ns/div

• Please adjust the pulse width so the maximum drain-source current rating is not exceeded.

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