

VIPERGAN50W/65W VIPERGAN100W/100WB



HV converter with 700V GaN HEMT



Advanced 700 V GaN converters boost power density, efficiency, and speed

Continuing to invest in GaN based-devices, STMicroelectronics launches the new VIPerGaN 'W' family, which embeds an advanced PWM controller and a 700V HEMT GaN switch, in a tiny QFN 5x6 package.

The family consists of four part numbers:

VIPerGaN50W,
VIPerGaN65W,
VIPerGaN100W and
VIPerGaN100WB.

These part numbers are all pin-to-pin compatible with power ranges from 50W to 100W.

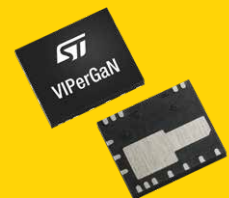
KEY FEATURES AND BENEFITS

- Quasi-resonant (QR) flyback Controller
- 700V E-mode power GaN transistor (800V transient voltage)
- Minimal standby power consumptions
- Embedded sense FET
- Dynamic blanking time and adjustable valley synchronization delay
- Output OVP protection
- Input voltage feedforward
- Compensation for mains independent OPP variation
- Brown-in and brown-out

- Input OVP protection
- Embedded thermal shutdown
- Frequency jitter for EMI suppression

KEY APPLICATIONS

- High efficiency power adapters
- Fast battery chargers
- Auxiliary power supply for
- Appliances
- Industrial
- 5G/Communication infrastructure
- Consumer
- Lighting



GaN-based power solutions

The VIPerGaN 'W' is a high-voltage converter, embedding a PWM controller and 700V GaN power transistor (800V max transient voltage), designed for flyback converters. The quasi-resonant operation with the dynamic blanking time feature and the valley synchronization function, reduces switching losses and maximizes the overall efficiency at any input line and load condition. The advanced power management with the low quiescent helps to achieve low standby consumptions. The feedforward compensation minimizes the input peak power variation over the entire input voltage range.

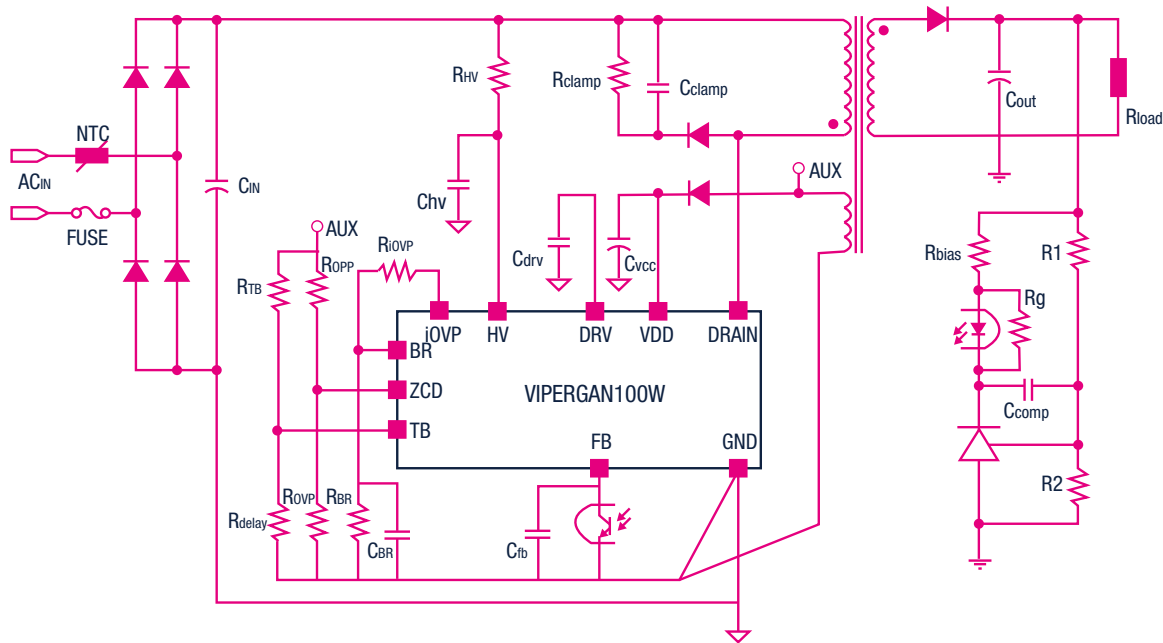
The device supports Secondary Side Regulation Flyback (SSR) configuration with a standard optocoupler. Packaged in QFN 5x6: VIPerGaN50W, VIPerGaN65W, VIPerGaN100W and VIPerGaN100WB are pin-to-pin compatible and capable of managing power up to 100 W.

Following the roadmap for the global energy sector, the device's low standby consumption makes a direct contribution to reducing energy usage, aligning with the ambitious goal of achieving net-zero emissions

over the coming decades. The device compactness combined with high-end features, enables a highly integrated design with high power density, resulting in a final product that is light, compact, and easy to carry.

The very limited number of external components required for the setup greatly simplifies its use in relevant applications. VIPerGaN 'W' covers chargers, adapters, home appliances, the industrial sector, lighting, and air conditioning.

Application block diagram



Main characteristics

	Package	RDS(ON) @ 25°C	Max GaN HEMT transient voltage	Max POUT @ 85-265VAC	Max POUT @ 185-265VAC	Evaluation board order code
VIPERGAN50WTR*	QFN 5X6	0.47 Ω	800 V	50 W	75 W	EVLVIPGAN50WP EVLVIPGAN50WF
VIPERGAN65WTR	QFN 5X6	0.29 Ω	800 V	65 W	85 W	EVLVIPGAN65WP EVLVIPGAN65WF
VIPERGAN100WTR	QFN 5X6	0.27 Ω	800 V	85 W	100 W	EVLVIPGAN100WP
VIPERGAN100WBTR	QFN 5X6	0.27 Ω	800 V	85 W	100 W	EVLVIPGAN100WB

Note: * Availability Q3 2025



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