



VIPERGAN65D

65 W quasi-resonant high voltage flyback converter



Advanced PWM controller with 700 V GaN HEMT for consumer and industrial applications

VIPerGaN65D is a high voltage converter, embedding an advanced PWM controller and 700 V GaN power transistor in a SO16N package. Designed for SSR flyback applications, it leverages the GaN technology to build high-efficiency, slim, fast chargers, adapters and power supplies for major home appliances, home/building automation, and air conditioning systems. It supports output power up to 65 W within a wide input range.

KEY FEATURE & BENEFITS

- Quasi-resonant (QR) flyback controller
- 700 V E-mode power GaN transistor (800 V transient voltage)
- Less than 30 mW standby power
- 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
- Home appliances
- 5G/Communication infrastructure
- Consumer
- Industrial
- Lighting



Maximize power density & efficiency

The VIPeRgaN65D is a high voltage converter, embedding a PWM controller and 700 V GaN power transistor (800 V max transient voltage), designed for flyback converters. The quasi-resonant operation with the dynamic blanking time feature and the valley synchronization function, reduces the 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 stand-by consumptions. The feedforward compensation minimizes the input peak power variation over the entire input voltage range.

The device supports secondary side

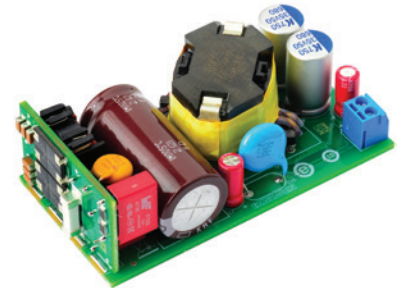
regulation flyback (SSR) configuration with a standard optocoupler.

Packaged in SO14N, the ViperGaN65D can manage power levels up to 65 W within a wide input voltage range. Following the roadmap for the global energy sector, its low stand-by consumption offers a direct contribution in reducing energy usage aligning with the ambitious goal of achieving net-zero emissions over the coming decades. The small device dimensions, combined with high-end features, enable 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 set

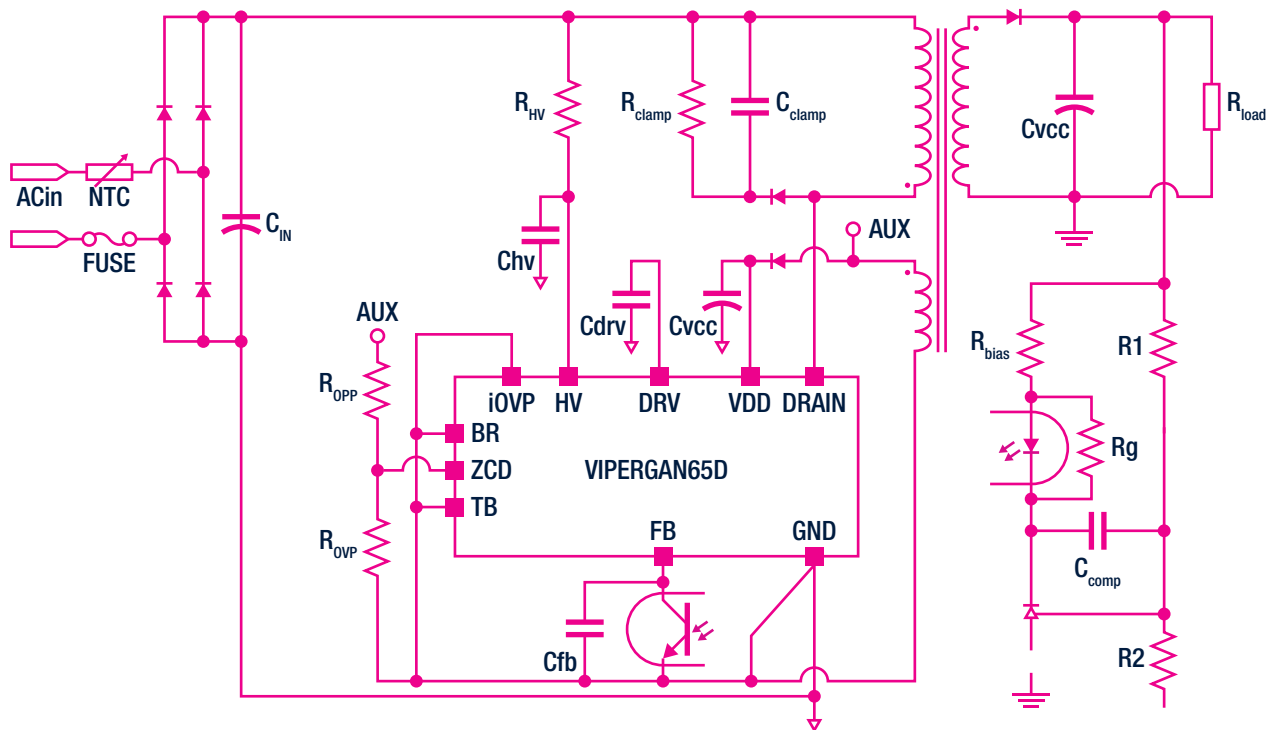
up significantly simplifies its use in relevant applications.

The VIPERGAN65D covers applications like chargers, adapter, home appliances, the industrial market, lighting, and air conditioning.



EVLVIPGAN65DF
24 V/65 W reference design based on VIPERGAN65D

Application block diagram



Typical configuration: basic features

Main characteristics

Order code	Package	Header $R_{DS(ON)}$ @ 25 °C	Max GaN HEMT transient voltage	Max POUT @ 85-265 V _{AC}	Max POUT @ 185-265 V _{AC}	Evaluation board order code
VIPERGAN65D	SO16n-14L	0.27 Ω	800 V	65 W	85 W	EVLVIPGAN65DF

For more information, please visit www.st.com/vipergan65d



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