

STMicroelectronics adds MasterGaN7 devices to integrated high-efficiency power family

Combining the latest GaN technology, LDO-stabilized driving, and pin-driven shutdown

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STMicroelectronics has extended its MasterGaN integrated transistor/driver family with new [MasterGaN7](#) devices that contain 650V enhancement-mode GaN transistors with 6A maximum current rating. The new series helps designers boost efficiency and power density in applications such as power adapters, chargers, industrial lighting equipment, and solar microinverters.



MasterGaN7 connects the two 650V GaN transistors in half-bridge configuration, with a high-voltage, high-frequency gate driver, in a QFN package that shares its pinout and footprint with other MasterGaN devices. Leveraging the latest-generation GaN technology for enhanced speed and efficiency, MasterGaN7 also introduces low drop-out (LDO) regulators to stabilize the gate-drive voltage for optimal switching performance. The new devices also feature a pin-driven shutdown mode with ultra-fast wakeup that helps designers minimize no-load power consumption.

Combining propagation delay of 45ns with ultra-fast wake-up time and short minimum on-time, the new MasterGaN7 devices can operate at switching frequency of up to 2MHz. By requiring only small external magnetic and passive circuit components to complete the circuit design, this helps minimize circuit footprint, lower BOM costs, and maximize power density. There is also an integrated bootstrap diode to supply the high-side driver.

All MasterGaN devices support a wide variety of topologies including active clamp flyback and asymmetrical half bridge converters, inverse buck converter, resonant LLC converter, power factor correction (PFC) converters, and DC-to-AC inverters. Their high level of integration, with protection including interlocking to prevent cross-conduction, undervoltage lock-out (UVLO), and thermal shutdown, helps minimize system footprint, reduce bill-of-materials (BoM) costs, and

simplify circuit layout.

MasterGaN7 operates from -40°C to 125°C and is in production now in a 9mm x 9mm QFN package. Pricing starts from \$3.83 for orders of 1000 pieces.

The EVLMG7 evaluation board helps designers quickly setup hardware to begin development and is available now in the STMicroelectronics eStore.

For more information please visit www.st.com/mastergan7

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