

Navitas Upgrades GaN IC Power by 50% for EV, Solar and Data Center



Next-gen semiconductor leader steps up from mobile fast-chargers to high power applications

El Segundo, CA, USA – May 10th, 2022 – Navitas Semiconductor (Nasdaq: NVTX), the industry-leader in gallium nitride (GaN) power integrated circuits has announced the NV6169, a new high-power 650/800 V-rated GaNFast™ power IC with GaNSense™ technology to address higher-power applications such as 400-1000 W 4K/8K TVs and displays, next-generation gaming systems, 500 W solar microinverters, 1.2 kW data-center SMPS, and up to 4 kW / 5 hp motor drives.

GaN is a next-generation power semiconductor technology running 20x faster than traditional silicon. Compared with traditional silicon chargers, gallium nitride chargers can achieve 3x the power or 3x faster charging with up to 40% energy savings in just half the size and weight of legacy silicon solutions. GaNFast power ICs with GaNSense technology integrates power, drive, control, with additional autonomous-protection and loss-less current-sensing to deliver the simplest, smallest, fastest and now even-higher-power performance.

The 45 mOhms NV6169 features a 36% reduction in on-resistance ($R_{DS(ON)}$), delivering 50% more power than prior designs, in an industry-standard, low-profile, low-inductance, 8 x 8 mm PQFN package for high-efficiency, high-density power systems.

“Over 50,000,000 GaN power chips have been shipped to customers including Samsung, Dell, Lenovo and Xiaomi with zero reported GaN-related field failures, and GaNSense technology enables real-time, accurate sensing of voltage, current and temperature to further improve total system performance and robustness,” noted Dan Kinzer, Navitas’ COO/CTO and co-founder. “Unprotected, so-called ‘discrete’ GaN or silicon chips can’t match Navitas’ performance and reliability, and by offering the NV6169, we extend our reach into higher-power applications such as data centers, solar and EV – with an unprecedented 20-year limited warranty to accelerate GaN adoption into these more-demanding systems”.

The NV6169 is the highest-power-rated IC from the most-advanced, third-generation integrated GaN platform. GaNFast power ICs with GaNSense technology feature GaN-industry-first features such as loss-less current sensing and the world’s fastest short-circuit protection, with a ‘detect-to-protect’ speed of only 30 ns, 6x faster than discrete solutions. In motor-drive applications, GaN ICs deliver up to 40% energy savings vs. silicon IGBTs, eliminate 30 external components, and increase system efficiency by 8%.

Unlike competing solutions, the NV6169 is rated at 650V for nominal operation plus an 800 V peak-rating for robust operation during transient events. As a truly-integrated power IC, the GaN gate is fully-protected and the whole device rated at an industry-leading electrostatic-discharge (ESD) specification of 2 kV.

The NV6169 is available immediately to customers under NDA. Mass production lead times are currently 6 to 16 weeks. Simulation models (PSPICE/LTSPICE/SiMetrix), 3D package model (STP) and application note (AN-0016) are available to designers to optimize next generation systems.

About Navitas

[Navitas Semiconductor](#) (Nasdaq: NVTX) is the industry leader in GaN power ICs, founded in 2014. GaN power ICs integrate GaN power with drive, control, protection and sensing to enable faster charging, higher power density and greater energy savings for mobile, consumer, enterprise, eMobility and new-energy markets. Over 145 Navitas patents are issued or pending, and over 50 million units have been shipped with zero reported GaN field failures. Sustainability is a core focus, as every GaNFast power IC shipped [saves 4 kg of CO₂](#) emissions. Navitas rang the Nasdaq opening bell and started trading on Nasdaq on October 20th, 2021.