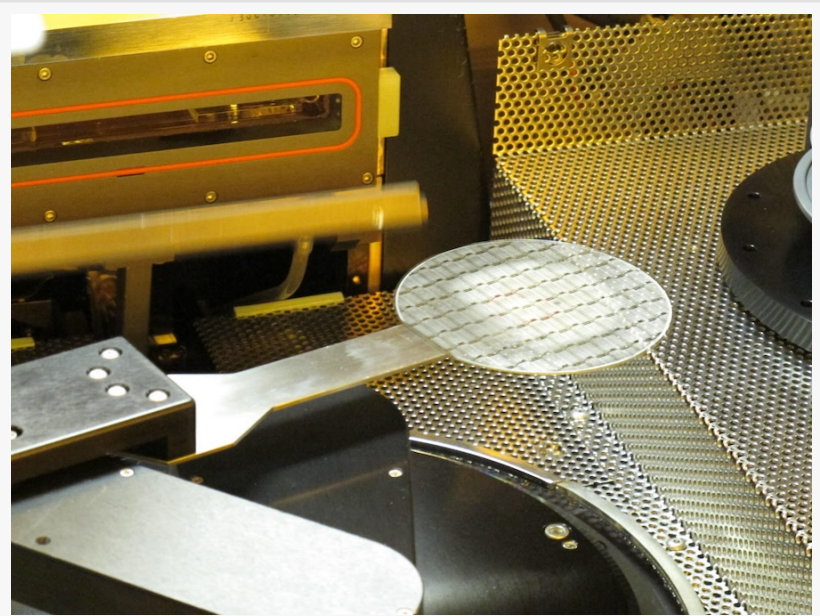


WIN Semiconductors Announces Linearity Optimized 0.12 μ m Gallium Nitride Power Process

The NP12-1B provides 28-volt operation with superior linearity, power density and efficiency for high-power applications across K-Band to V-Band frequencies

TAO YUAN, TAIWAN, June 4, 2025 /EINPresswire.com/ -- [WIN Semiconductors Corp](#) (TPEX:3105), a leader in advanced semiconductor solutions and the world's largest pure-play compound semiconductor foundry, announces the launch of its NP12-1B, a groundbreaking 0.12 μ m gate-length depletion-mode (D-mode) Gallium Nitride (GaN) High Electron Mobility Transistor (HEMT) technology on Silicon Carbide (SiC) substrates. Engineered for demanding high-power applications across K-Band to V-Band frequencies, NP12-1B delivers industry leading high power front end solutions with exceptional linearity, ruggedness, and reliability for next-generation RF and microwave systems.

NP12-1B sets new standards for high linearity amplifiers and is designed to meet the rigorous requirements for high power RF applications including high-power microwave and millimeter-wave communication systems, radar systems (including airborne, shipborne, and ground-based), electronic warfare and avionics, wireless infrastructure, ultra-wideband and broadband systems, and test & measurement equipment. The demand for high linearity to



NP12-1B Technology



minimize signal distortion and intermodulation is critical for maintaining signal integrity in densely packed spectral environments.

The NP12-1B incorporates multiple transistor improvements providing a combination of high breakdown voltage, enhanced linearity, and robust operation in continuous wave (CW) high-compression scenarios. The technology's advanced source-coupled field plate design ensures a typical gate-to-drain breakdown voltage of 120 V, supporting high power density and system reliability. NP12-1B is available with the Enhanced Moisture Ruggedness option, which provides excellent humidity resistance for use in plastic packaging.

NP12-1B is supported by a complete Process Design Kit featuring both large-signal and small-signal models, expediting the development of high-performance RF circuits. A comprehensive qualification report is available upon request.

The NP12-1B will be available for high volume production in Q3 2025. Learn more about the NP12-1B at the 2025 IEEE MTT-S International Microwave Symposium, WIN Semiconductors booth# 559.

About WIN Semiconductors Corp

WIN Semiconductors Corp. is the leading global provider of pure-play GaAs and GaN wafer foundry services for the wireless, infrastructure, and networking markets. WIN provides its foundry partners a diverse portfolio of Hetero-junction Bipolar Transistor and Pseudomorphic High Electron Mobility Transistor, Gallium Nitride High Electron Mobility Transistor, PIN Diode and Optical Device technology solutions that support leading edge products for applications from 50 MHz to 170 GHz and through light-wave. Custom products built by WIN Semiconductors Corp. are found in a vast array of markets, including smartphone, mobile infrastructure, 3-D sensing, optical communications, CATV, aerospace, defense, satellite, and automotive applications.

For more than 25 years, WIN has provided foundry services from its state of the art, ISO9001/14001 certified 150mm GaAs facility headquartered in Taoyuan City, Taiwan. This multi-site manufacturing facility has more than 2500 employees and provides WIN customers with a diverse array of device technology platforms and value-added services, including DC/RF product testing, Cu wafer bumping and advanced package solutions for accelerated product development.

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