

# WIN Semiconductors Announces 0.12 $\mu$ m Gallium Nitride Power Process Qualified for 40V Operation

*The NP12-0B technology now qualified for 40-volt operation, provides increased amplifier power levels, rugged antenna switches and robust low noise amplifiers*

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[Semiconductors Corp](#) (TPEX:3105), a leader in advanced semiconductor solutions and the world's largest pure-play compound semiconductor foundry, announces the successful qualification of NP12-0B for 40V operation. This 0.12  $\mu$ m gate-length GaN-on-SiC technology integrates multiple transistor improvements providing high ruggedness when operated in deep-saturation/high-compression pulsed and CW conditions. These enhancements proved so effective that NP12-0B has now satisfied qualification testing for reliable 40V operation of power amplifier, T/R switch and single-chip front-end MMICs.

The logo for WIN Semiconductors. It features a stylized red "i" made of three brushstrokes, followed by the word "win" in a bold, black, lowercase sans-serif font. Below this, the word "SEMICONDUCTORS" is written in a bold, black, uppercase sans-serif font.

NP12-0B is a rugged, versatile platform and provides the unique set of capabilities of high output power, low insertion loss switching and low noise figure, expanding the performance envelope of this platform. Enabling high performance amplifiers, output transistors tuned for maximum power at 18GHz and 40V provide 7.9 W/mm Psat, 13.3dB gain and 42% PAE. When tuned for maximum PAE, the same power cell exhibits 6.1W/mm Psat, with 14.6 dB gain and 55% PAE at 18GHz. When used in a switch configuration, common-gate devices show insertion loss below 0.4db, power handling greater than 42dBm, with sub 20nS switching speed using a 40V control

voltage. Adding to its power capabilities, NP12-0B also provides excellent noise figure with typical Fmin of 1 dB with 10dB associated gain at 20GHz. The comprehensive set of performance capabilities and reliable 40V operation greatly expands the trade-space for high performance front-end products used in next generation radio access networks, satellite communications and radar systems.

The NP12-0B platform has been in production since 2024 and is available with the Enhanced Moisture Ruggedness option which provides excellent humidity resistance for use in plastic packaging. The updated 40V Process Design Kit (PDK) supporting PA, switch and LNA designs will be available for customer download in Q2 2026.

To learn more about NP12-0B and WIN's entire GaN, GaAs and InP technology portfolio, visit booth# 23048 at the 2026 IEEE MTT-S International Microwave Symposium being held in Boston, MA, June 7-12, or [contact WIN Semiconductors](#).

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#### 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 and Cu wafer bumping for accelerated product development.

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