Navitas Partners with Great Wall for Next Generation 400V-DC Power Architecture for AI Data Centers

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GaNSense™ technology boosts 8x power for AI data centers, telecommunications, and industrial equipment in ultra-high power density DC-DC converters

TORRANCE, Calif., April 03, 2025 (GLOBE NEWSWIRE) -- Navitas Semiconductor (Nasdaq: NVTS), the only pure-play, next-generation power semiconductor company and industry leader in gallium nitride (GaN) power ICs and silicon carbide (SiC) technology, has announced its GaNSense power ICs will power GreatWall's latest 2.5kW ultra-high power density DC-DC converter for AI data centers.

The rapid development of AI has imposed higher requirements for computing power on data centers. To accommodate more GPUs for computing, the architecture of 400V independent cabinets will become a new development trend. Module power supplies with small size, high efficiency, and greater independence will free up valuable cabinet space, directly enhance computing power, reduce energy consumption, and contribute to achieving dual-carbon goals.

Great Wall has developed an industry-leading 2.5kW DC-DC converter in 1/4 brick outline with the world's highest power density of 92.36W/cm³, up to 8 times higher than the output power of traditional silicon designs. With a record half-load efficiency of 97.9% and a wide input range of 320-420 VDC, this solution achieves the increasingly stringent efficiency guidelines and regulations from Open Compute Project (OCP) and can be widely used in applications from AI data centers, telecommunications, and industrial equipment.

This ultra-high power density DC-DC converter is powered by Navitas' GaNSense NV6169. The 650V, 45 mΩ, delivers 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. 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.

Unlike competing solutions, 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.

"With its faster switching frequency and higher efficiency, GaN has become a key factor in unlocking the next generation of power supplies. We are very pleased to collaborate with Navitas, an industry leader in GaN technology, and successfully enable this industry-leading ultra-high-power density and ultra-high efficiency DC-DC converter," said Michael Zhang, head of DC Product Line at Greatwall Power. "We look forward to deepening our collaboration with Navitas to unlock the application of GaN in more fields, continuously improve power supply efficiency to reduce energy consumption, and accelerate the low-carbon transformation of various industries."

"Navitas is deeply honored to cooperate with Great Wall Power to successfully create this ultra-high-power density 2.5 kW DC-DC converter. The profound heritage and innovative strength of Great Wall Power in the power supply field have enabled our GaNFast power ICs to fully demonstrate their advantages,' said Charles Zha, SVP and GM of Navitas Asia-Pacific. "Navitas firmly believes that continuous cooperation with Great Wall will make GaN technology shine in multiple fields such as AI data centers and telecommunications and promote the industry to develop towards a more efficient and environmentally friendly direction."

About Great Wall
Greatwall Power Technology Co., Ltd. was established in 1989 and has been committed to the research, development, production, and sales in the field of switching power supplies. It is the manufacturer of the first computer power supply in China. Its products cover server power supplies, desktop computer power supplies, communication power supplies, industrial power supplies, brick power supplies, On-Board Charger (OBC), medical power supplies, etc.

With 36 years of experience in power supply development, design, and production, Greatwall Power is one of the largest power supply suppliers in China and one of the main drafters of China's national power supply standards.

Greatwall Power has six R&D centers in Shenzhen, Nanjing, Beijing, Hangzhou, Shanghai, and Taiyuan, with more than 800 R&D personnel. The company continues to invest firmly in R&D and innovation, possessing a solid technical foundation and strong R&D capabilities. It has established key enterprise laboratories for power supply key technologies and CNAS-accredited laboratories and has accumulated many core technologies with independent intellectual property rights, covering many technical fields such as power electronics conversion, software control, and structural technology.

The company will continue to follow the development strategy of "high-end, international, diversified, and intelligent", actively expand overseas, and strive to become a power supply product supplier in the global market and a world-leading technology supplier in the power supply field.

About Navitas
Navitas Semiconductor (Nasdaq: NVTS) is the only pure-play, next-generation power-semiconductor company, celebrating 10 years of power innovation founded in 2014. GaNFast™ power ICs integrate gallium nitride (GaN) power and drive, with control, sensing, and protection to enable faster charging, higher power density, and greater energy savings. Complementary GeneSiC™ power devices are optimized high-power, high-voltage, and high-reliability silicon carbide (SiC) solutions. Focus markets include AI data centers, EV, solar, energy storage, home appliance / industrial, mobile, and consumer. Over 300 Navitas patents are issued or pending, with the industry's first and only 20-year GaNFast warranty. Navitas was the world's first semiconductor company to be CarbonNeutral®-certified.

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A photo accompanying this announcement is available at https://www.globenewswire.com/NewsRoom/AttachmentNg/2f3e48cb-9a6a-4abf-b6e7-83b57db242d3

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Source: Navitas Semiconductor Corporation