International
IOR Rectifier
THE POWER MANAGEMENT LEADER

GaN-BASED PLATFORM

IR's Revolutionary GaN-based Power Device Technology Platform

GaNpowIR®

- The result of 5 years of R+D effort at IR
- Based on proprietary GaN-on-Si Hetero-epitaxy
- Utilizes low cost high quality 150 mm Si wafer substrates
- Highest throughput (multi-wafer) epitaxial systems used
- Device manufacturing process is CMOS compatible
- Standard high volume manufacturing disciplines applied
- Industry standard quality systems utilized
- Extensive intrinsic reliability studies performed
- Standard product reliability tests applied to device qualification

Smaller, Lighter, Cooler

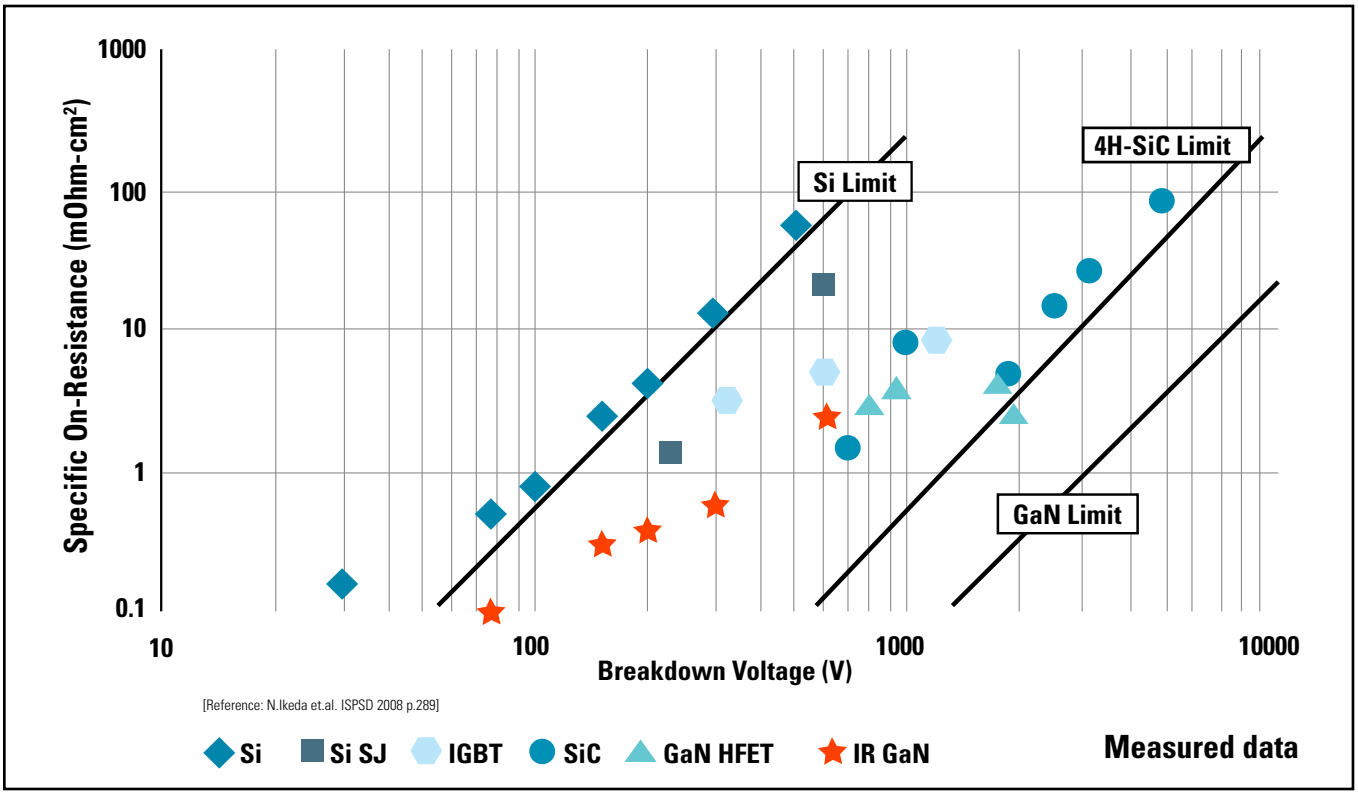
GaNpowIR®, IR's revolutionary gallium nitride (GaN)-based power device technology platform can provide customers with improvements in key application-specific figures of merit (FOM) of up to a factor of ten compared to state-of-the-art silicon-based technology platforms to dramatically increase performance and cut energy consumption in end applications in a variety of market segments such as computing and communications, automotive and appliances.

The pioneering GaN-based power device technology platform is the result of five years of research and development by IR based on the company's proprietary GaN-on-silicon epitaxial technology.

IR's GaN-based power device technology platform enables revolutionary advancements in power conversion solutions. The portfolio of system solution products and related intellectual property (IP) extends far beyond leading-edge discrete power devices by effectively deploying the company's 60-year heritage in power conversion expertise in a wide variety of applications including AC-DC power conversion, DC-DC power conversion, motor drives, lighting, high density audio and automotive systems.

The high throughput, 150mm GaN-on-Si epitaxy, together with subsequent device fabrication processes which are fully compatible with IR's cost effective silicon manufacturing facilities, offers customers a world-class, commercially viable manufacturing platform for GaN-based power devices.

GaNpowIR® – Dramatic Improvements in Power Device Figure of Merit



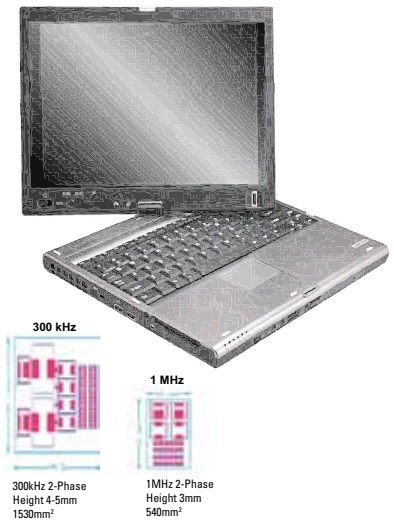
Ref: N. Ikeda et.al. ISPSD 2008 p.289

Ecrit : Si = 20 V/µm , GaN = 300 V/ µm

GaN vs. Silicon in Class D Amplifiers

GaN devices offer system shrink, low THD and high fidelity

GaN vs. Silicon in Computing



Traditional low frequency solution occupies almost 3x more PCB area than 1MHz solution

- GaN-based devices offer roadmap for up to 10x improvement in Figures of Merit (FOM).
- Application benefits include higher efficiency, high density, lower system cost or better combination of all three.
- Radically improved device performance drives a revolution in power electronics in terms of both architectures and control schemes

For more information on GaNpowIR visit www.irf.com/product-info/ganpowir and register for EMail News