

High-Voltage High-Power GaN is a Holistic Challenge

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**Bodo's
Wide Bandgap
Event 2025**

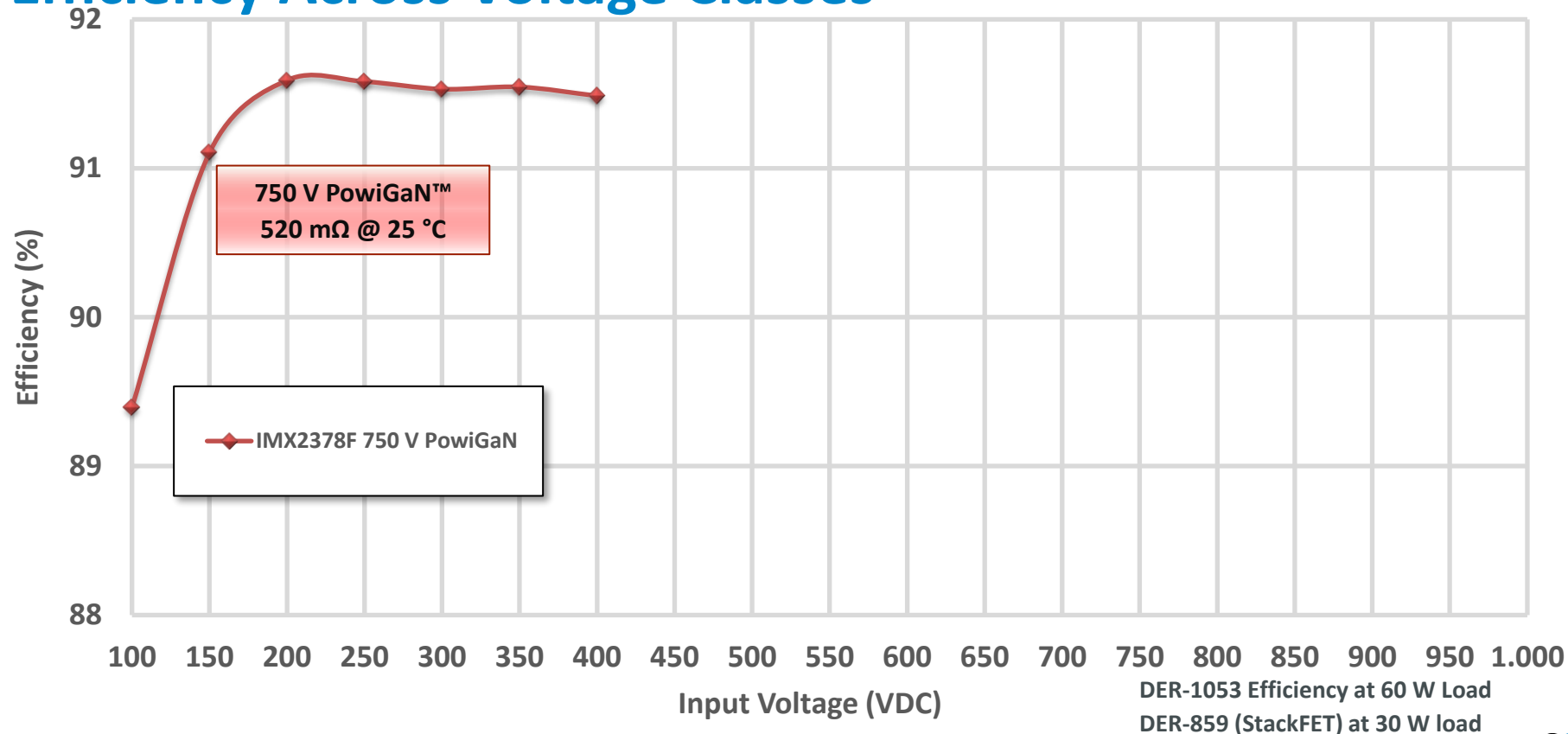
Making WBG Designs Happen

GaN

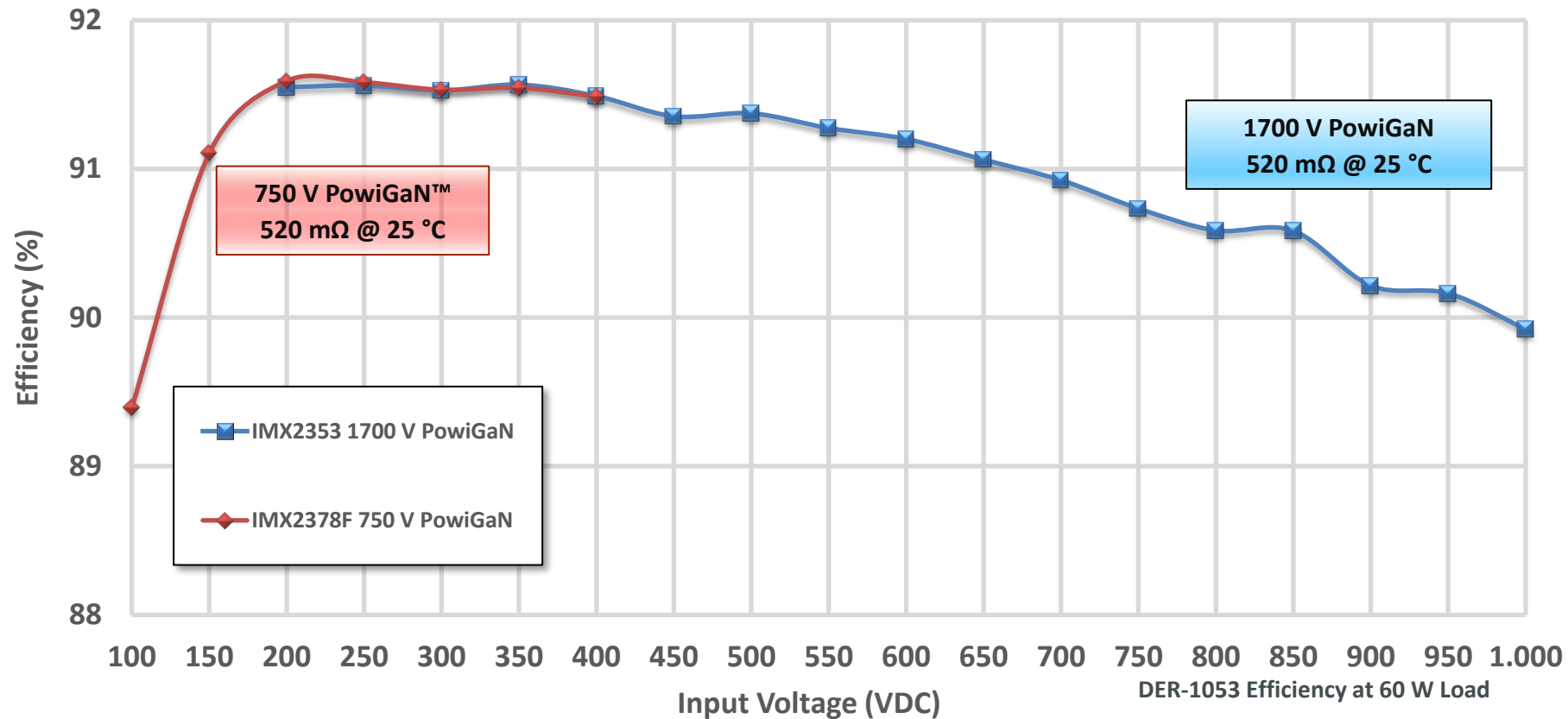


GaN Switch Circuit Topology Packaging

PowiGaN Cascode Technology Has Constant High Efficiency Across Voltage Classes



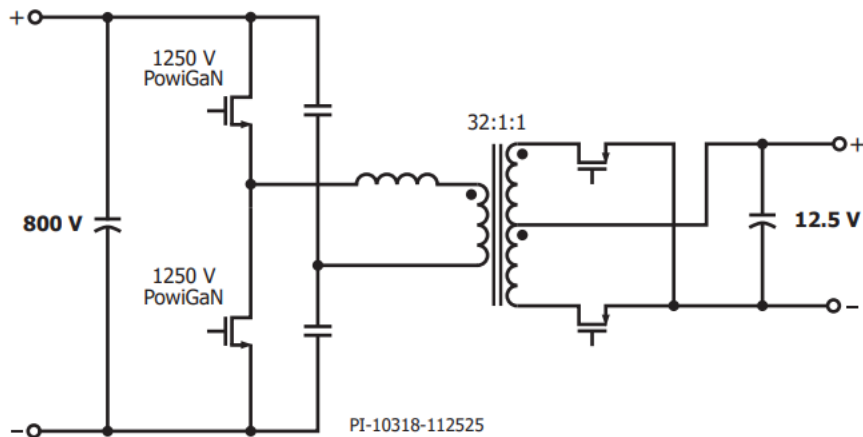
1700 V and 750 V PowiGaN Have Same Efficiency



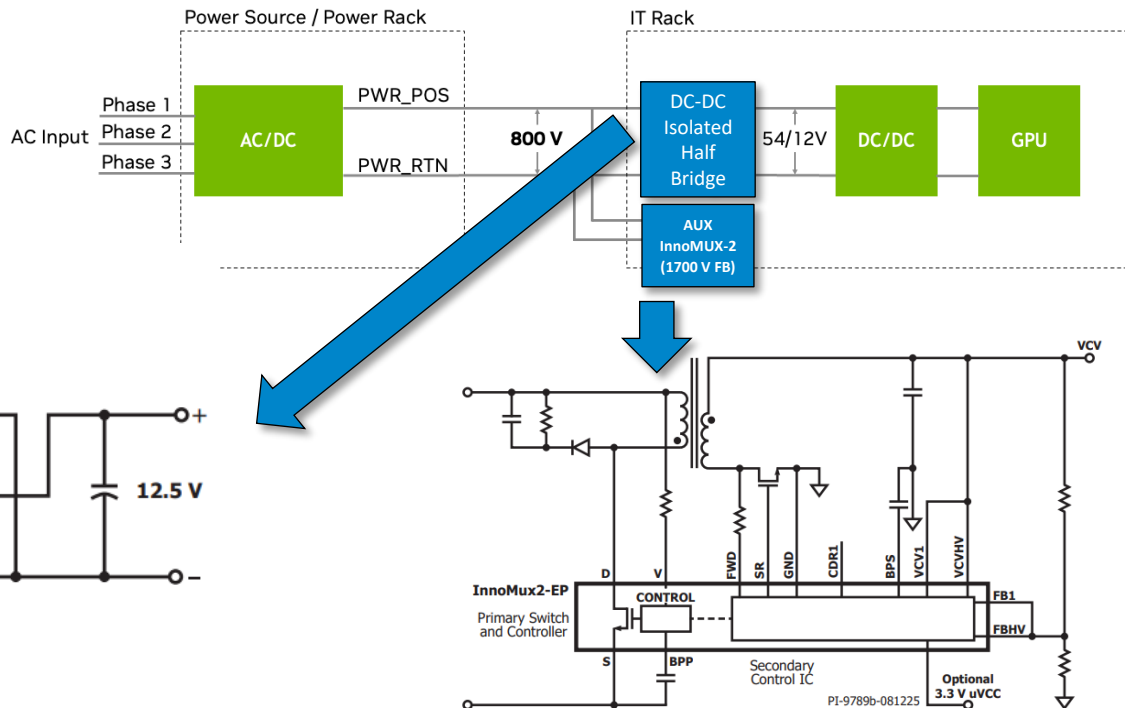
1250 V Switch Simplifies 800 V AI Data Center Architecture

■ 1250 V half-bridge GaN solution

- Simplifies topology
- Achieves high-density 800 V power conversion

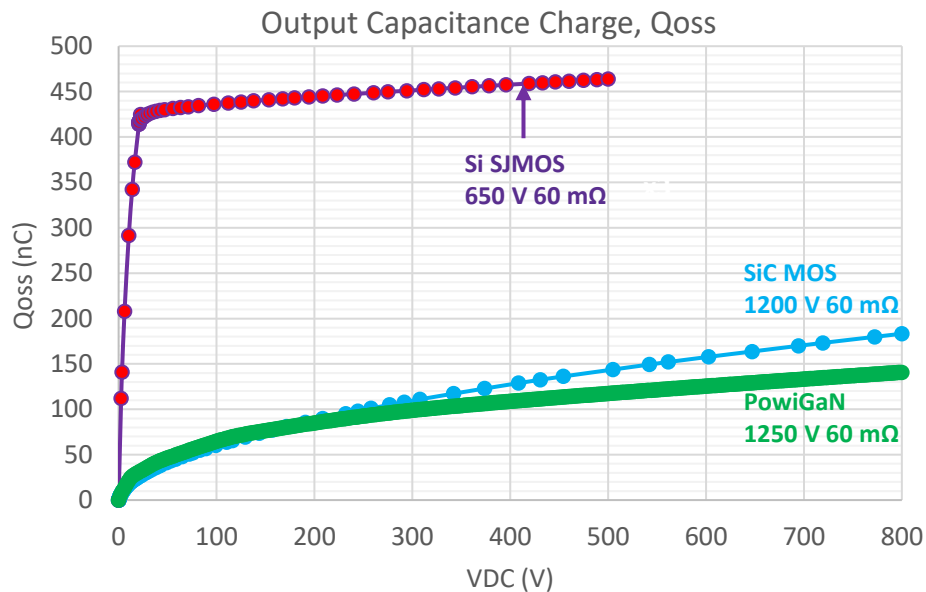


1250 V PowiGaN in Half-bridge SR-LLC



1700 V PowiGaN Flyback + SR ZVS

Optimizes Switching for 800 V Power Conversion

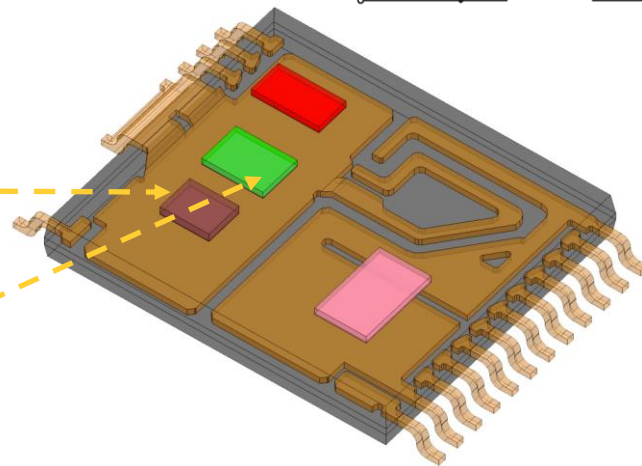
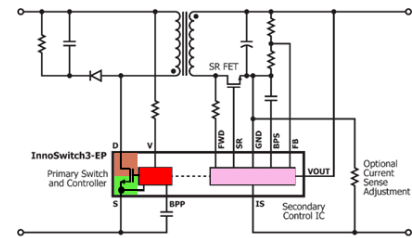
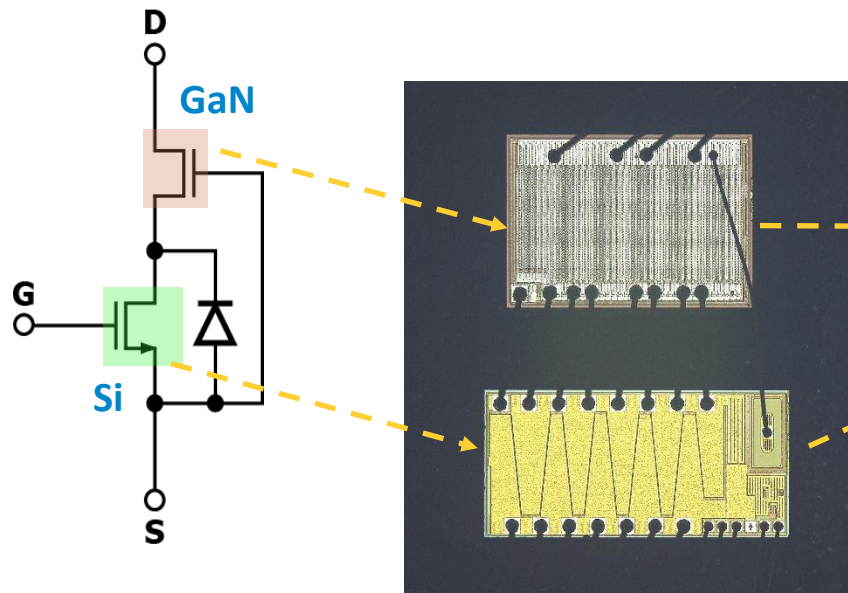


Specification	PowiGaN	SiC MOSFET	Si SJ MOSFET	GaN Value Proposition
BV Voltage	1250	1200	650	Higher BV
V_{TH}, V	3	3	4	Reliable
R_{DS(ON)} mΩ 25C°	60	60	60	Same R _{DS(ON)}
Q_{oss}@800 V; nC	140	180	450	High Frequency
Q_G; nC	45	106	79	Low drive loss
T_{D(OFF)}, ns	15	48	97	Low turn-off loss

■ 1250 V PowiGaN enables 800 V to 54 V/12 V power conversion

- Supports 1 MHz switching for high power (low-charge Q_{oss})
- High efficiency reduces thermal challenges (low R_{DS(ON)}/low charge)

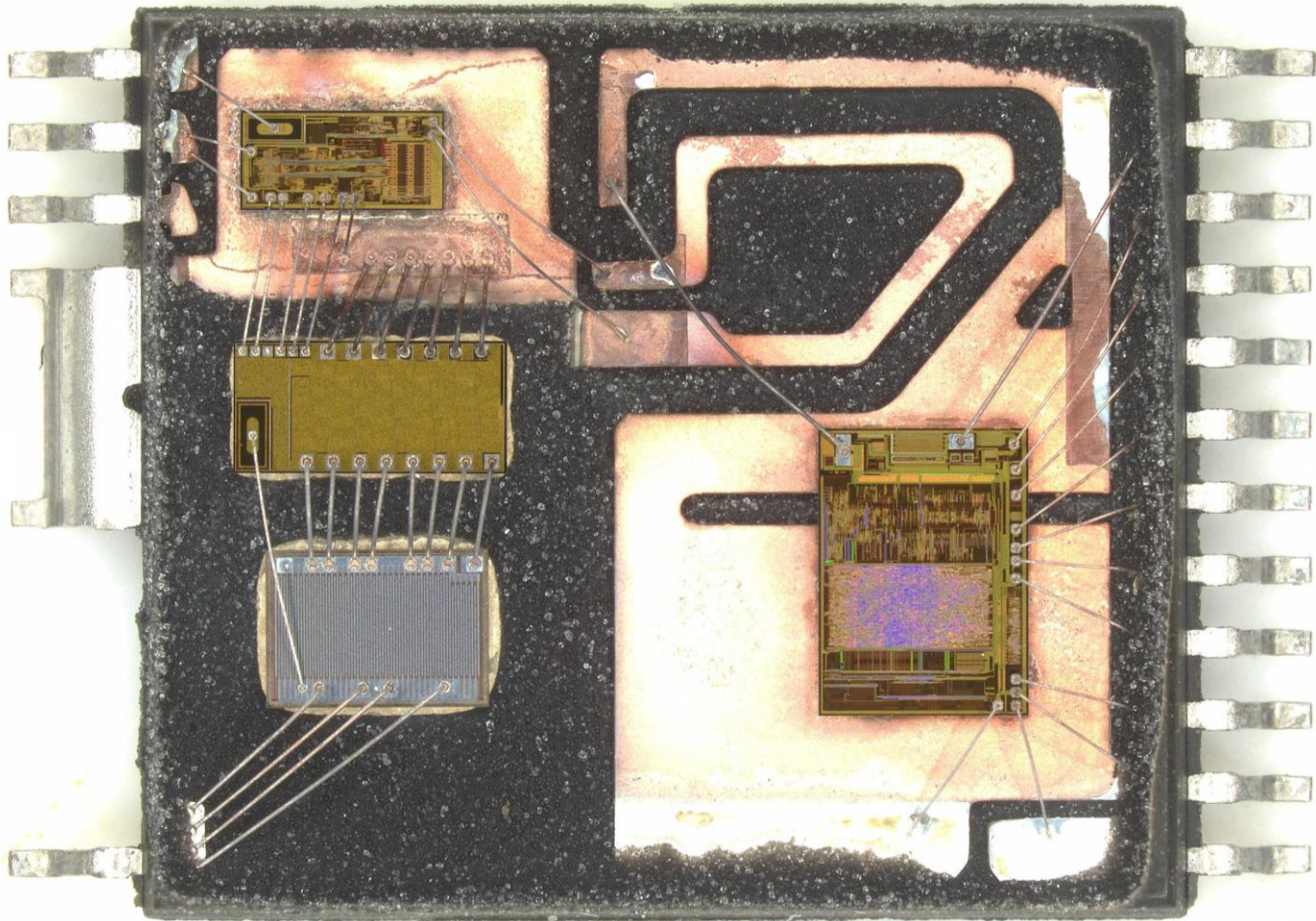
Highly Integrated Solution Suitable For Auxiliary Power Applications



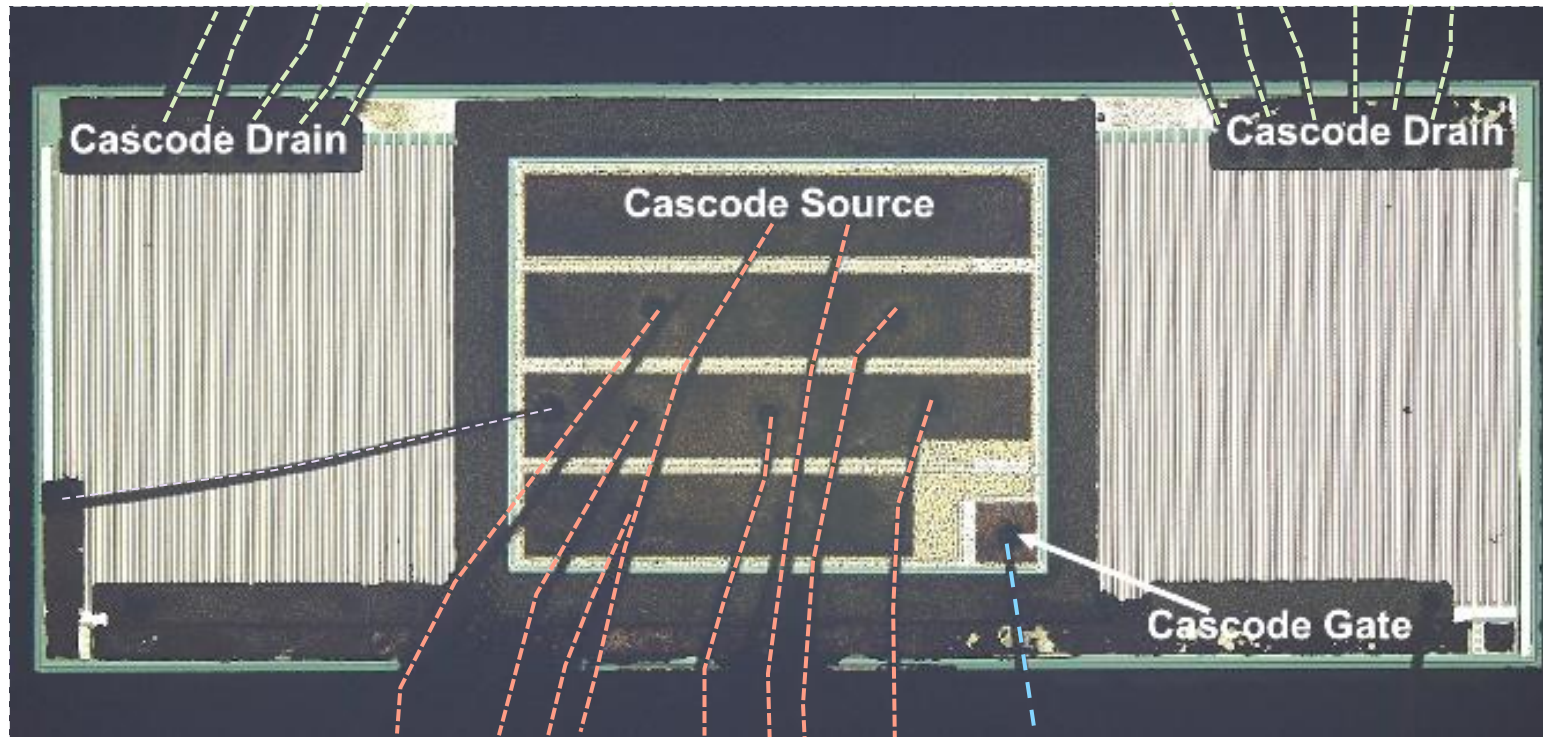
InnoSwitch3 MCM with PowiGaN Cascode

Accurate control of driver size and trace inductance optimizes switching performance

9.4 mm



To Reduce Switching Parasitic Effects a High Power Stacked-Switch Approach is Employed



1250 V 60 mΩ PowiGaN Cascode Stacked Switch Arrangement

