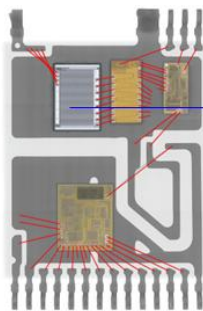


## GaN FET (1700V) : Power Integrations PowiGaN IMX2353F Structure Analysis Report



Package



Package internal layout



GaN FET Die

### Report Overview

November 2024, Power Integrations announced PowiGaN, the industry's first 1700V GaN switch. As the only manufacturer to mass-produce and supply 1250V and 1700V class GaN switches, the company represents the cutting edge of high-voltage GaN power device technology.

1700V GaN switches are designed for use in applications such as industrial equipment, high-voltage power supplies, automotive on-board chargers (OBCs), auxiliary power supplies for solar inverters, smart meters, and various industrial power systems.

Traditionally, high-cost SiC transistors have been considered essential in these high-voltage regions, but with the advent of this device, a full-scale replacement with GaN has become a realistic option.

Furthermore, this technology is highly anticipated as a key device supporting power architectures for next-generation AI data centers. This report reveals the technical characteristics and internal structure of Power Integrations' 1700V GaN switch.

### Product Features

Product type: IMX2353F (InnoMux2-EP family)、 $V_{DS}=1700V$   $R_{DS(on)}=0.52\Omega$   
Released data: Nov. 2024

[InnoMux2-EP Family IMX2353F Datasheet](#)

Equipped on the RDK-1053 evaluation board

### Analysis result summary

#### GaN FET Structure Analysis Report (67 pages)

- Confirmation of layer layout and connectivity through Plane-view analysis.
- Confirmation of layer thicknesses (including the GaN epi-layer) and pitches through cross-section analysis.
- Comparison with the company's 900V GaN FET (INN3690C) regarding the GaN epi-layer, channel length, Lgd spacing, and S-D pitch.
- Presentation of technologies enabling high-voltage operation.

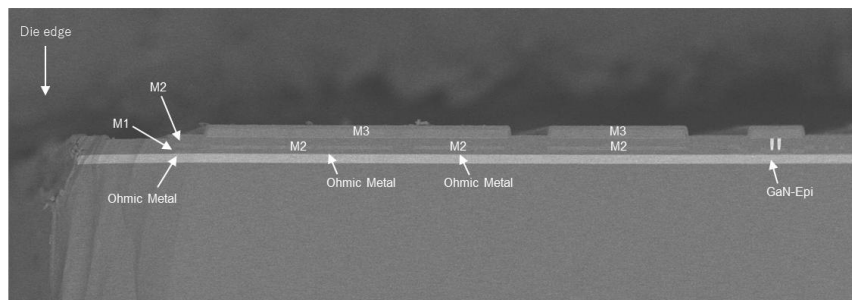
### Report price

\*Power Integrations 900V GaN FET INN3690C Structure analysis Report is available for purchase (24G-0314-1).

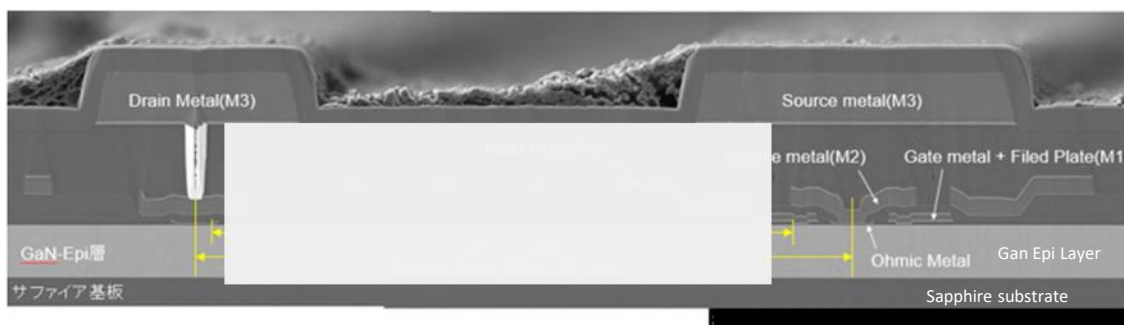
Delivered one week after order placement. Please contact us for report pricing.

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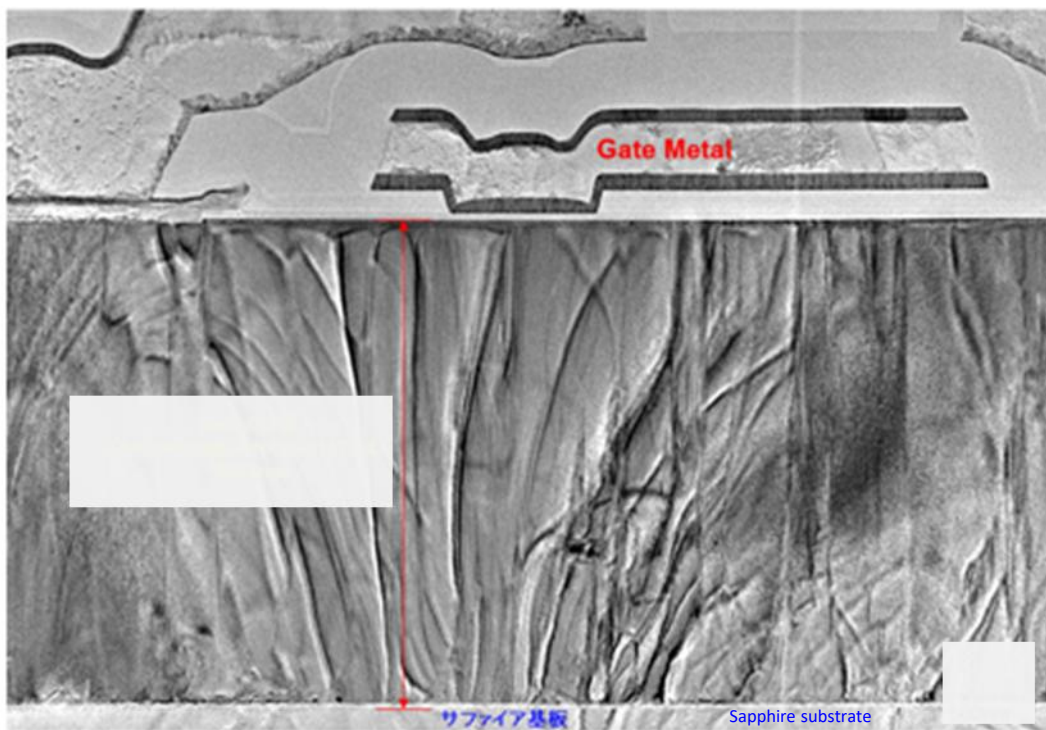
## Excerpt from GaN FET Structure Analysis Report



Die edge cross-sectional SEM image



Cell array cross-sectional SEM image



Cell array cross-sectional TEM image (GaN-Epi layer)