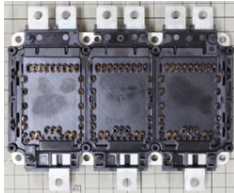


## SiC power module (1200V) : Infineon HybridPACK DriveG2 FS02MR12A8MA Module structure, SiC MOSFET Overview, and Structure Analysis Reports



Module appearance



Inside the module



SiC MOSFET die

### Overview

Infineon has released the second generation (G2) of its new HybridPACK Drive. It is a highly compact B6 bridge power module(1200V/390A) optimized for different inverter power classes. LTEC released three reports. (1) Structure analysis report for its module (2) Die overview analysis report of SiC (3) Detailed structure analysis report of SiC

### Product features

- Product number: FS02MR12A8MA2B  $V_{DSS} = 1200V$ ,  $I_D = 390A$ ,  $RON = 15.2 \text{ m}\Omega$  (Per transistor)  
Product release date: April 2024
- Equipped with second generation CoolSiC Automotive MOSFET(\*)
- For automotive applications (\*) The second generation CoolSiC Gen2 (IMBG120R078M2H) report is now on sale. Please contact Ltec for more information.

### Report Contents (Please see pages 2 to 6)

#### **1. Module Structure Analysis Report (40 pages)**

- An external Si temperature sensing diode is used as the temperature detection element.
- A thin Ag sinter is used as the die attach material.

#### **2. SiC MOSFET Overview Analysis Report (11 pages)**

- Package and die observations, cross-sectional observations of the die cell and die edge

#### **3. SiC MOSFET Structure Analysis Report (60 pages)**

- When comparing the structure of this product with the second generation discrete product (IMBG120R078M2H), differences were found in the top metal material, barrier metal thickness, and ILD shape.
- Cell cross-sectional observation by TEM.
- The contents of the summary analysis report are also included.

### Report price

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

# (1) Module Structure Analysis Report

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## (2) SiC MOSFET Overview Analysis Report :

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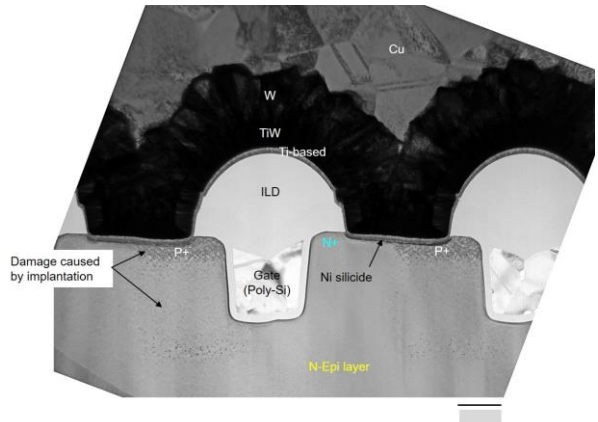
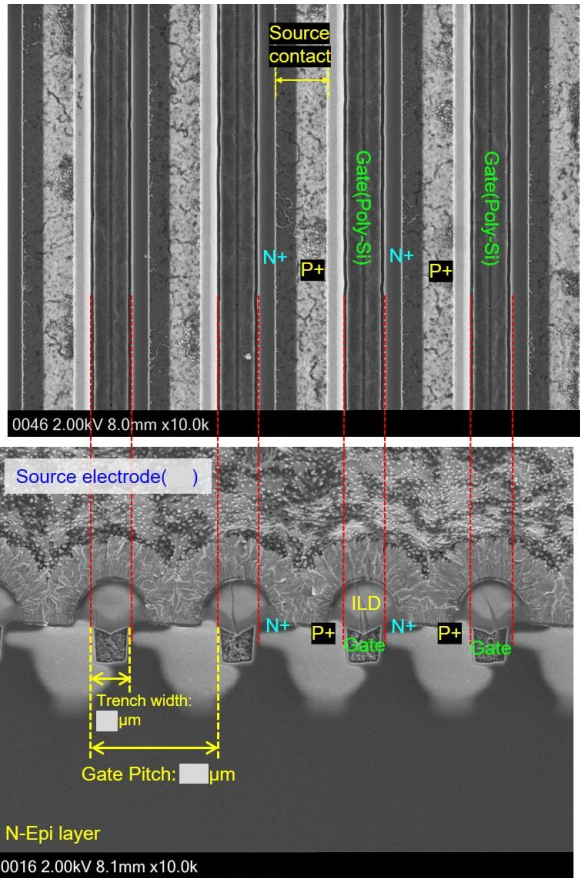
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## (3) SiC MOSFET Structure Analysis Report :

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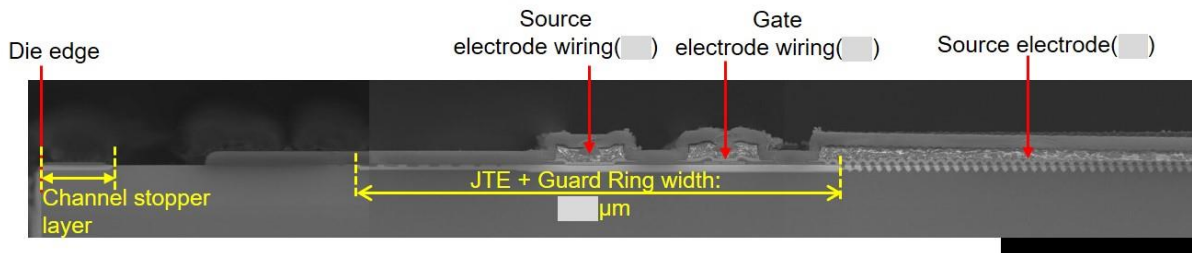
# Excerpt from (3) SiC MOSFET Structure Analysis Report



**Cross-sectional TEM image of Cell array**

**Upper figure: Plane SEM image of Cell array (Poly-Si layer)**

**Lower figure: Cross-sectional SEM image of Cell array**



**Cross-sectional SEM image of die outer periphery**