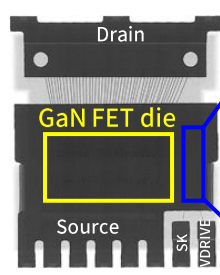


NEW RELEASE

GaN FET(650V) : Navitas NV6514C Circuit analysis report of controller die



Package

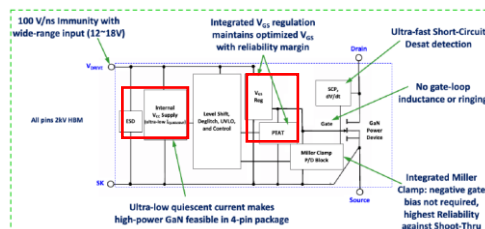


Package X-ray



Die Image

(Controller)



Block Diagram

Source: Datasheet P.11 Figure 20. GaNSafeBlock Diagram
https://navitassemi.com/wp-content/plugins/gb-navitas-stock-checker/product_files/NV6514C-Q_GaNSafe_TOLL_25mO%20Max_Datasheet.pdf

Report Outline

Navitas Semiconductor has launched GaNSafe, the 4th generation of Navitas products. By integrating the controller, driver, sensing, and critical protection functions, it enables unprecedented reliability and robustness. Additionally, it uses a simple 4-pin package, eliminating the need for the previously required VCC pin.

This report presents a circuit analysis focusing on the Internal V_{CC} Supply and the V_{GS} Reg used to drive the GaN FET, both generated from the VDRIVE pin in the controller die. The results clarify the circuit elements and circuit configurations that eliminate the need for the VCC pin.

Product Info.

Product type : NV6514C $V_{DS}=90A$ $R_{DS(on)}=18m\Omega$ Release date : Jul. 2024

- Normally-off GaN FET
- ESD, High-speed short circuit protection, Miller clamp
- AEC-Q100 Grade1 (ordering option)
- Typical applications include data center, solar inverter, EV OBC, and DC-DC converter.
- It uses a simple 4-pin package. The package can be treated as an individual GaN device, eliminating the need for the VCC pin.

Price, Analysis contents

Circuit analysis report of controller die (65 pages)

Analysis target : Die images of each layer, Comments about distinctive functions and circuit configurations, and circuit analysis results [Regulator (Internal V_{CC} Supply), V_{GS} Regulator].

Deliverables : Report PDF, Schematic viewer program, CAD data (EDIF format)

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

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Analysis result

No.	Function	Comment
1	Regulator1	
2	Regulator2	
3	VGS Regulator	
4		
5		
6		
7		
8		

