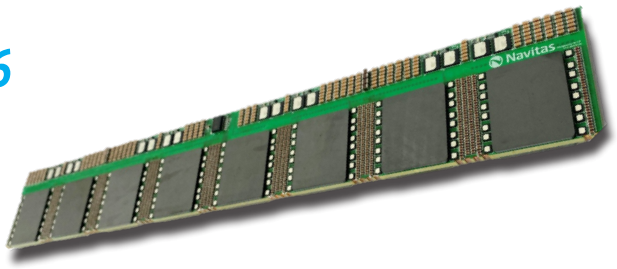
20 kW DC-DC Platform Delivering 96.5% for 800 V DC AI Data Centers

Navitas
Electrify Our World™

DC-DC power delivery board (PDB) powered by GaNFast™ technology, enabling direct conversion from 800 V to 6 V in one power stage. This breakthrough solution eliminates the traditional 48 V intermediate bus converter (IBC) stage within the compute server trays, maximizing system efficiency, reliability, and valuable real estate, to deliver a simple power delivery solution to support advanced NVIDIA AI infrastructure.

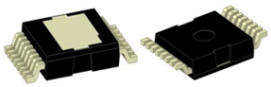
Displayed by NVIDIA at GTC 2026

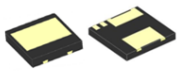
- ***650 V 8x8 Dual Side Cooled GaN***
- ***1 MHz switching frequency***
- ***6.5mm ultra low-profile design***
- ***96.5% full-load efficiency***
- ***2100 W/in³ power density***



16 x GaNFETs: NV6034 (650 V, 17 mΩ, DFN8x8-DC)

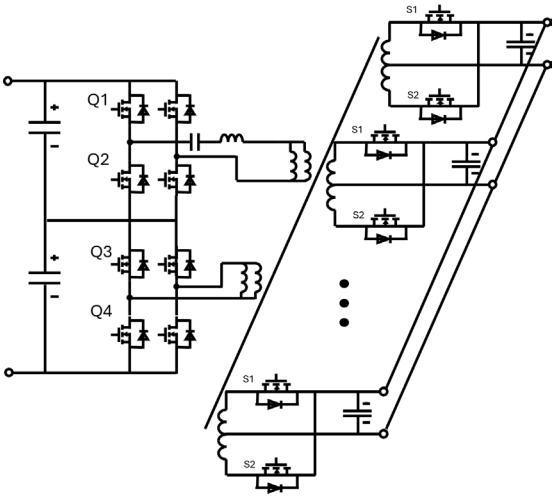
Navitas's 800 V–6 V DC-DC PDB targets to deliver up to 96.5% peak efficiency at full load with 1 MHz switching frequency, enabling a power density of 2100 W/in³. Approximately 20% thinner than a mobile phone, its ultra-low profile allows for extremely close integration with the GPU board, maximizing transient performance and enhancing power distribution efficiency.





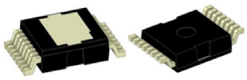
	TOLT	DFN 8x8 Dual-Cool	
Power loss per device (W)	12.5	12.5	
Thermal pad metal contact area (mm²)	48.7	34.4	30% reduction in PCB metal contact area
Tjmax (°C)	**106.9**	**100.9**	6°C reduction in operating temp
Rthjf (K/W)	3.35	2.87	15% lower thermal resistance

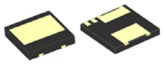
Basic Schematic



Next-gen 800 V–6 V DC-DC PDB eliminates the 48 V IBC stage, increasing system efficiency, reliability, and saving valuable PCB area.

The primary side employs 16 × 650 V GaNFast FETs in the latest DFN8×8 dual-cooled package, configured in a stacked full-bridge. Center-tapped outputs use 25 V silicon MOSFETs. 1 MHz switching enables the use of the smallest passives and planar magnetics, delivering maximum power density.





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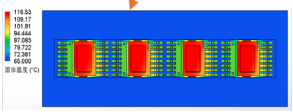

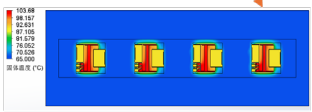

DFN 8x8-DC offers improved thermal dissipation (dual-sided) and reduces RthJF by 15% 6°C lower operating temperature improves efficiency, thermal management, & lifetime system reliability.

GaNFET Portfolio

Family	Part #	Blocking Voltage (V)	$R_{DS(ON)}$ Typical 25°C (mΩ)	Package
	NVG011C10LC	100	0.8	RTQFN5x6 DC
	NVG015C10LC		1.1	RTQFN5x6 DC
	NVG033C10LC		2.2	RTQFN5x6 DC
	NV6064	650	17	TOLT
	NV6066		11	TOLT
	NV6036		17	DFN 8x8 DC
	NV6034		11	DFN 8x8 DC