

Description

Vertical GaN™ junction field effect transistors (JFETs) from NexGen are made from gallium nitride (GaN). They use a vertical GaN-on-GaN device structure which delivers high switching frequencies of GaN devices at very high breakdown voltages.

NexGen's 700V Vertical GaN™ devices use the same robust technology as their 1200V counterparts. In lower voltage applications, they still provide additional design headroom compared to 600/650V devices while maintaining superior fast switching performance.

Only Vertical GaN™ devices provides the unique combination of superior switching performance and very high breakdown voltage thus removing traditional design constraints and making new generations of power systems possible.

By employing homoepitaxy, i.e. growing GaN on GaN substrates, NexGen's Vertical GaN™ solves the reliability problems that plague GaN-on-Si or similar heterogenous devices. Vertical GaN™ devices are inherently reliable since they are made from purely GaN. In addition, Vertical GaN™ is avalanche rugged, enabling use in industrial and automotive power systems with very reliable designs operating at high switching frequencies.

Features

- 700V Enhancement-Mode GaN JFET
- Very low C_{oss} and Q_G
- Low $R_{DS(on)}$
- Avalanche tolerant
- No reverse recovery charge (Q_{rr})
- Logic level V_{th}

Application Benefits

- Very high switching frequency operation
- Very low switching losses for high efficiency
- Additional breakdown voltage headroom
- Compatible with std MOSFET drivers
- High system reliability with GaN devices
- Cost efficient high performance designs

Typical Applications

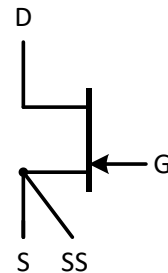
Vertical GaN™ enables highly efficient hard and soft switching applications utilizing high switching frequencies at high voltages

- AC/DC Switching Power Supplies
- LED Lighting
- Solar Inverters
- Motor Drives
- Electric Vehicles

Critical Performance Parameters

Parameter	Value
V_{DS}	700 V
I_D	10.5 A
$R_{DS(on)}$ (typ)	170 mΩ
Q_G	4.4 nC
C_{oss}	5.8 pf

Schematic Symbol



Package View



Ordering Information

Part Number	Package	Marking
NXG2EA070R170	DFN	TBD