



PlyGaN™

PlyGaN™ is a patent-pending, single-crystal all-nitride material that can be applied onto a variety of substrates, used freestanding or laminated into multilayered structures.

On a custom basis, laminated PlyGaN™ is available in semi-insulating, undoped, doped or gradient-doped version with both insulating and conductive bonding layers.

Applications

PlyGaN™ can be used to improve device performance in virtually every application using nitrides and silicon carbides. Nitrides offer a unique combination of optical, thermal, electrical, and biological properties which make it ideally suited for a wide range of applications. PlyGaN™ is the first cost effective all nitride material in the market to enable:

- Regrowth substrates (MBE, MOCVD, and CVD)
- Multi-layered packages
- High powered electronics, solar cells and LEDs
- Heatsinks (up to 200 W/m/K)
- 3D MEMS devices
- Piezoelectric elements
- Optical waveguides
- Biocompatible devices
- Optical windows
- Electrochemical electrodes
- High performance interconnect substrates



1 cm x 1cm
30 μm thick PlyGaN™



PlyGaN™

Product Description

PlyGaN™ is freestanding GaN (no substrate) that offers superior crystal, optical, thermal, and electrical properties. PlyGaN™ is flexible and can be applied to flat or non-flat surfaces depending on the application.

Typical Properties

Purity:	typ	100%
GaN orientation	typ	1
Dislocation density	typ	(8 to 5 x 10 ⁽⁷⁾) cm ⁽⁻²⁾
Top Surface Roughness	typ	Rms < 1 nm
Bottom surface	typ	Textured
FWHM of x-ray RC omega-scan (002)	typ	< 270 arcsec
Electron mobility	typ	>500 cm ² /V sec
Absorption coefficient	typ	< 1 cm ⁻¹ from 400 to 800 nm

Thermal Properties

Thermal Conductivity	typ	200 watt/M°K
Expansion Coefficient	typ	c 3.2 x 10 ⁽⁻⁶⁾ /K a 5.6 x 10 ⁽⁻⁶⁾ /K

Available Sizes

PlyGaN™ is currently available in 30 micron thick, 1 cm x 1 cm squares. Custom cuts and thicker material may be available according to application and quantity. Contact sales@goldeneyeled.com for more information.

Custom cuts and optional configurations available, including doped/un-doped and additional epitaxial layers such as InGaN, ZnO and AlGaN

Pricing: Subject to quantity

For more information and pricing call:

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