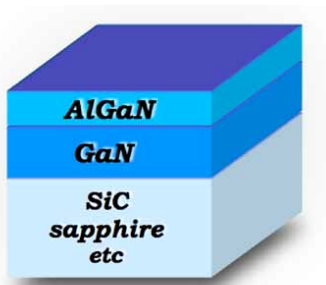


## ▶ HEMT Epi Wafer (undoped)

Typical Epi Structure

\*1 SiC, sapphire, Si, etc.  
\*2 Depending on the sapphire wafer size (2inch, 3inch, 100mm,,)

Epi-Layer	Size	Thickness	Dopant	Concentration	Al Content
Undoped AlGa <sub>N</sub> Barrier Layer	---	20 nm	none	---	22 %
Undoped Ga <sub>N</sub> Buffer Layer	---	1~3 μm	none	---	0 %
Nucleation Layer	---	---	---	---	---
Substrate *1	2inch, 3inch, 100mm,,	*2	---	---	---



Typical Characteristics

Tolerance of Epi Thickness	< ± 5 %
Uniformity of Epi Thickness	3σ < 5 %
Sheet Resistance	< 500 Ω/□
Tolerance of Al-Content	< ± 0.05
Uniformity of Al-Content	3σ < 0.07
2DEG Concentration	1 E13 cm <sup>-2</sup>
2DEG Mobility	1200 cm <sup>2</sup> /Vs
GaN Carrier Concentration (measured by C-V method, 1μm from surface)	1 E13 cm <sup>-3</sup>

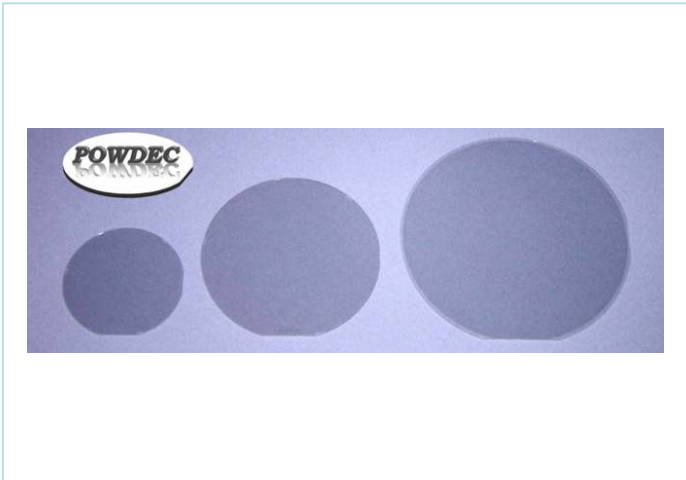
## ▶ HEMT Epi Wafer (Si-doped)



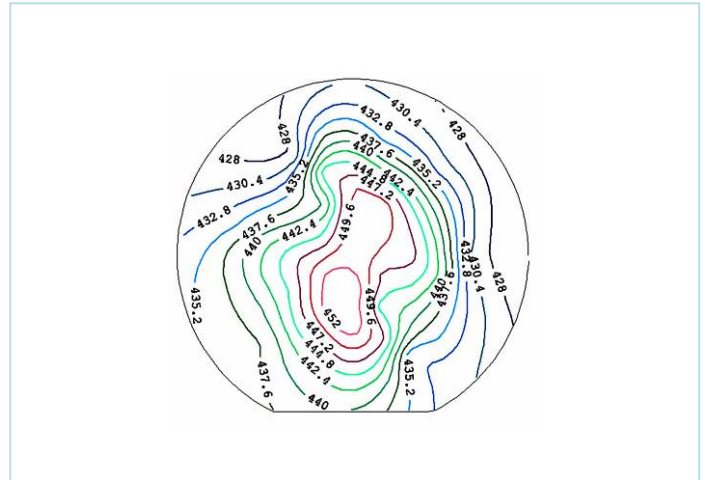
Typical Epi Structure

Epi-Layer	Size	Thickness	Dopant	Concentration	Al Content
Undoped AlGa <sub>N</sub> Layer	---	7 nm	none	---	22 %
n-AlGa <sub>N</sub> Layer	---	15 nm	Si	2 E18 cm <sup>-3</sup>	22 %
Undoped AlGa <sub>N</sub> Layer	---	3 nm	none	---	22 %
Undoped Ga <sub>N</sub> Buffer Layer	---	1~2 μm	none	---	0 %
Nucleation Layer	---	---	---	---	---
Substrate *1	2inch, 3inch, 100mm,,	*2	---	---	---

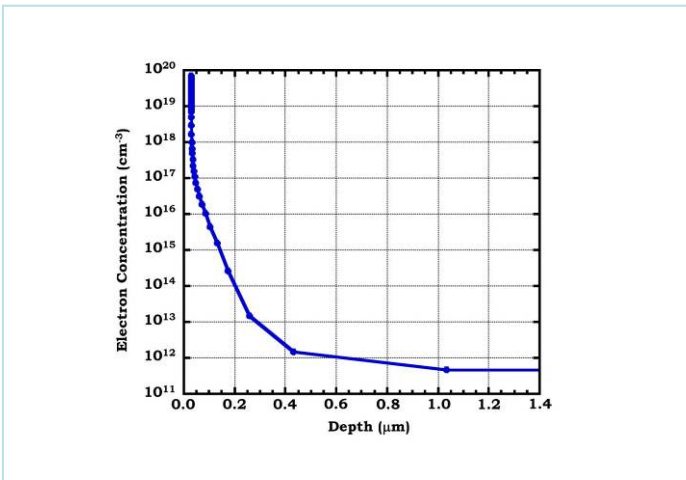
▶ HEMT wafer [ 2inch / 3inch / 100mm ]



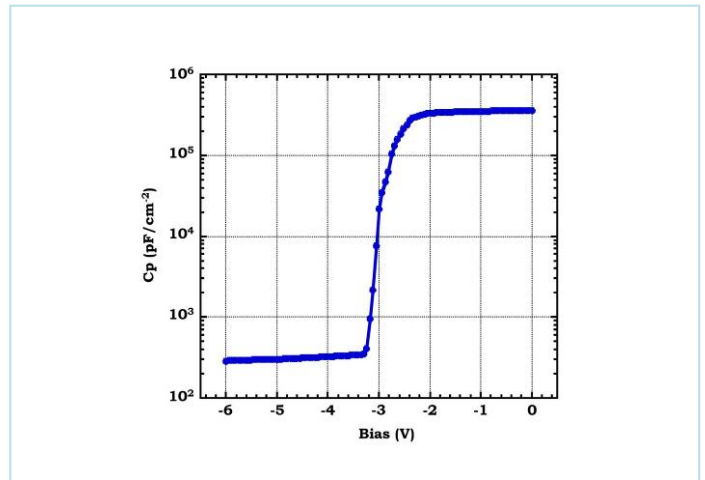
▶ Sheet Resistance MAP



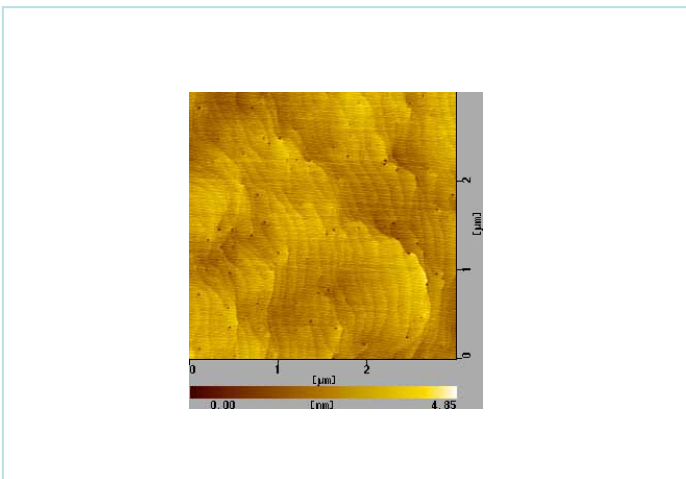
▶ 2 Dimensional Electron Gas Depth Profile



▶ C-V Measurement



▶ Atomic Force Micrograph (AFM)



▶ Optical Micrograph

