



LATTICE-ENGINEERED HEMT (LEHEMT) on GaAs

n ⁺ :InGaAs
n:InAlAs
i:InAlAs
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InAlAs/InGaAs SL
Lattice Engineered Buffer
SI GaAs Substrate

OPTIONS

- In-mole fractions from 0 to 0.53
- Pseudomorphic InGaAs channels
- Planar doped layers
- 2 or 3 inch GaAs substrates

VARIATIONS

- HIGFET
- PHEMT

FEATURES

- Sheet resistance uniformity $\leq 3\%$
- LEHEMT has the transport properties of a LMHEMT on InP, but on a GaAs substrate
- Defects $\leq 75 \text{ cm}^{-2}$

APPLICATIONS

- **Commercial Satellite Communications** - intersatellite links, mm-wave transceivers to 100 GHz
- **Vehicular Radar Sensors** - collision avoidance to 100 GHz
- **Digital Microwave Receivers** - mm-wave bands to 50 GHz
- **Digital ICs, Multifunction Digital/Microwave/Photonic ICs** - digital RF memory, digital beam forming for phased array antennas, GaAs ASICs, high speed digital optical links
- **Personal Communications** - Base station interconnects (mm-wave bands)

TYPICAL TRANSPORT PROPERTIES

	$\mu \text{ (cm}^2/\text{V-s)}$	$N_s \text{ (cm}^{-2}\text{)}$
RT	8520	2.2e12
77K	25230	2.3e12