



LATTICE-ENGINEERED HEMT on InP

n ⁺ :InGaAs
n:InAlAs
i:InAlAs
i:InGaAs (Engineered)
i:InAlAs
InAlAs/InGaAs SL
Fe:InP Substrate

OPTIONS

- Pseudomorphic InGaAs channels
- Engineered ΔE_C and ΔE_V
- Low-Temperature (LT) buffer/barrier
- Planar doped layers
- 2 or 3 inch InP substrates

VARIATIONS

- HIGFET
- PHEMT
- OEICs

FEATURES

- Defects $\leq 75 \text{ cm}^{-2}$
- Sheet resistance uniformity $\leq 3 \%$
- Superior transport properties utilizing high In-mole fraction HEMTs

APPLICATIONS

- **Vehicular Radar Sensors** - collision avoidance to 100 GHz
- **Optoelectronic Multi-function MMICs** - 1.3 μm photodetectors, photoreceivers, microwave optical links
- **Personal Communications** - Microcell transceivers

TYPICAL TRANSPORT PROPERTIES

	$\mu \text{ (cm}^2/\text{V-s)}$	$N_s \text{ (cm}^{-2}\text{)}$
RT	11000	4.0e12
77K	48000	4.0e12