

LEHIGHTON ELECTRONICS INC.

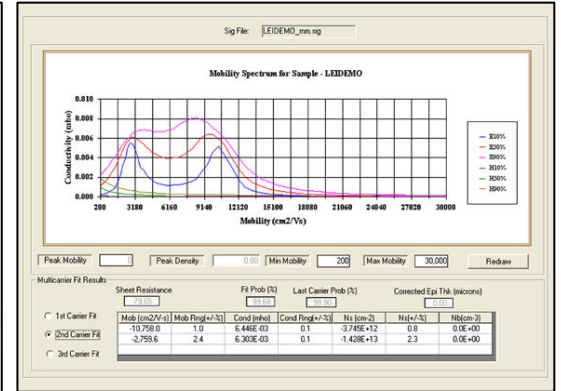
LEHIGHTON ELECTRONICS, INC.
Quality Service Since 1963
P.O. Box 328
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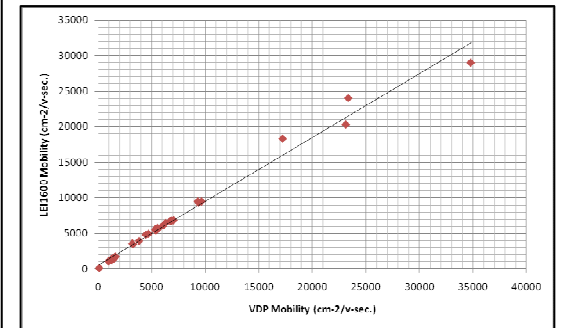
Contactless Carrier Mobility/ Carrier Density/ Sheet Resistance Measurement and Mapping Systems



LEI1610E100AM - Automatic Measurement System

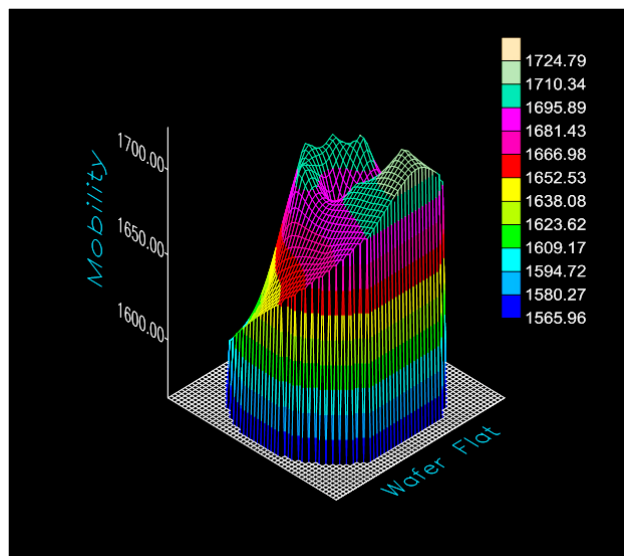


Multi-carrier Analysis on M-HEMT Structure's samples

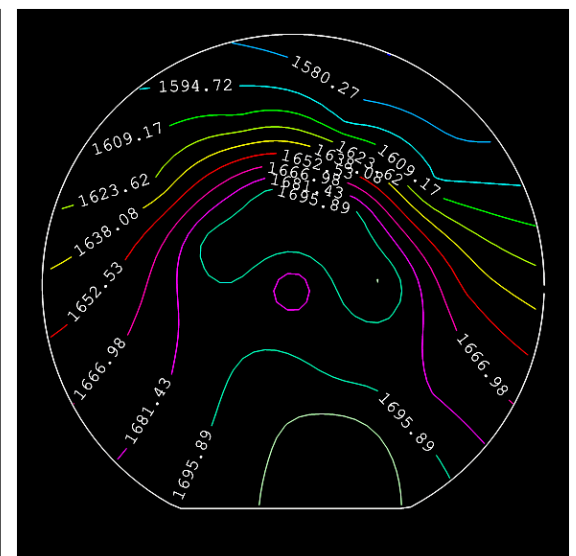


Correlation of mobility data obtained by van der Pauw Hall Measurements

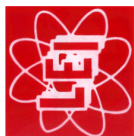
1610E100AM



Surface Map



Contour Map



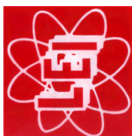


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REV003

Benefits vs. van der Pauw Hall

Less Expensive

- * No need to destroy samples
- * Rapid ROI
- * Minimal operator training required
- * Carrier Concentration/Density

Faster

- * No sample preparation; shorter measurement time means immediate feedback on wafer transport properties

Improved Repeatability

- * Lead attachment = more consistent test conditions
- * No variability

Increase Utility

- * No variability
- * Measure wafers at any point in the deposition or manufacturing process

Ease of Use

- * Eliminate the need for specially grown Hall wafers, and allow measurement of thick-cap production wafers.
- * Automated system tuning
- * Measure wafers at any point in the deposition or manufacturing process

Wafer Mapping

- * Up to 55 measurement points

Characterization of

- * GaAs, InP, InAs, GaN, AlN, Si, SiC based device structures: HEMTs, pHEMTs, HBTs, FETs, (epi on semi insulating and some doped substrates)

Performance and Features

Measurement Features

- * Hall Mobility
- * Hall Coefficient
- * Sheet Resistance
- * Carrier Concentration/Density

Measurement Capabilities

- * Sample thickness range of 450 to 800 microns
- * Normal wafer gap (\geq .035 mils)
- * Manual loading
- * Size: 2" to 8" wafers

Measurement Resolution Options

- * 21 mm or 14 mm diameter

Magnet Options

- * Electromagnets with field up to 10KG/ 1.0 Tesla

Advanced Data Analysis Software

- * Mobility Multi-carrier Analysis software resolves individual carrier mobilities, densities, and conductivity in multi-carrier or multilayer materials.

Specifications	
Measure	Measurement ranges
Mobility	~ 100 - 20,000 cm ² /v.sec
Sheet Res.	~ 100 - 3,000 ohm/ sq.

* Dynamic Repeatability

1% to 3% depends on the range

* Static Repeatability $\pm 1\%$

.5% to 1% depends on the range

* Precision (estimated) $\pm 10\%$

* Specifications subject to change; contact LEI for the latest.