Band Gap Measurement (Four Probe Method)

Nvis 6105

Nvis 6105 Resistivity and Band Gap Measurement of Semiconductor is a versatile and useful training system for Physics and basic Electronics laboratories. In Nvis 6105, Band Gap can be measured by using Four Probe method.

This is one of the most widely used method for measuring the Resistivity and Band Gap of semiconductors in which a collinear four-probe arrangement has been used. In this system, we provide pressure contacts with sample to take quick measurement at different positions. The setup is equipped with microcontroller based display for simultaneous measurement of voltage, current and temperature. Computer interfacing helps in automatic calculations and analysis.

Features

- A complete setup for measuring the Resistivity and Band Gap
- Four individually spring loaded probe arrangement
- Collinear and equally spaced probes
- LCD display
- Probes are mounted on a Teflon bush, which ensure a good electrical insulation
- PC Interfacing using USB/RS232 ports and supporting software
- Sample-Germanium crystal
- Ωnline product tutorial

Scope of Learning

- Determination of Resistivity and Band Gap of Semiconductors by Four Probe Method at different temperatures.

Technical Specifications

Four Probes

Contacts	:	Spring loaded
Space between Probes	:	2 mm ±2%
Probes	:	Collinear

Sample

Material	:	Germanium crystal

Oven

Maximum Temperature	:	Ambient to 150 °C
Heater Resistance	:	45Ω
Heater Voltage	:	50V AC
Temperature Sensor	:	LM35 (0 to 150 °C)

Measurement Unit

Display	:	LCD 16 x 2 characters
Measuring Parameter	:	Current, voltage, temperature simultaneously

Constant Current Generator

Current Range	:	0 to 15mA (approximately)
Resolution	:	1mA
Open Circuit Voltage	:	18V

Power Supply : 230V AC, 50Hz

Subject to change - Version 2.0

Designed & Manufactured in India by

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