Voltage Series and Voltage Shunt Negative Feedback Amplifier using BJT

Model : SD-134

SINCOM SD-134 Voltage Series and Voltage Shunt Negative Feedback Amplifier using BJT is a Two-In-One remarkable simply designed trainer for the purpose to study the concept, operation, Frequency response and determine the Bandwidth, Voltage gain and other parameters of a Voltage Series and Voltage Shunt negative feedback Amplifier in a simple experimental way.

Features

- ❖ Two Separate modules of Voltage Series and Voltage Shunt negative feedback circuits
- ❖ Voltage Series Negative feedback amplifier uses BJT NPN BC548 in CC mode with voltage divider base bias and emitter feedback resistor
- ❖ Voltage Shunt Negative feedback amplifier uses BJT NPN BC548 in CE mode with collector to base bias and emitter resistive capacitive feedback network.
- ❖ Silicon NPN BJT of TO-92 package on board
- ❖ Resistive Emitter Load for Voltage series circuit
- ❖ Resistive Collector Load for Voltage Shunt circuit
- ❖ Input and Output Coupling Capacitors
- ❖ In-Built Fixed regulated DC Power Supply
- ❖ User friendly Design
- ❖ Very Easy for Operation
- ❖ Multi color Circuit Diagram is printed on the front panel of the white board
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ Facility to connect external Function Generator and Oscilloscope
- ❖ Interconnections by 2mm high quality banana sockets and pins
- ❖ Maximum Test points to explore all the corners of experiment
- ❖ 1 Year Warranty

Technical Specifications

- ▪ AC Mains Power Supply : 230V ±10%, 50Hz
- ▪ DC Power Supply : IC Regulated Fixed +12V/500mA
- ▪ Amplifier Types : Voltage Series and Voltage Shunt Negative F/B Amplifier
- ▪ Transistor Type and Package : Bi-Polar Silicon-NPN, TO-92 Package
- ▪ Transistor Used : Two BC548
- ▪ BJT Junction Voltage : 0.7V
- ▪ Max. Collector Emitter Voltage : 12 VDC
- ▪ Emitter Base Voltage V_{BE} : 5V
- ▪ Transistor Configuration : CC mode for Voltage Series and CE mode for Voltage Shunt
- ▪ Biasing Method : Voltage Divider Bias for Voltage Series and collector to base bias for Voltage Shunt
- ▪ Base Resistors : One for Voltage Series and Two for Voltage Shunt

- Emitter Load : 10KΩ Fixed Resistive Load for Voltage Series
- Collector Load : 10KΩ Fixed Resistive Load for Voltage Shunt
- Emitter Resistors : One No. with capacitor for Voltage Shunt
- Input Output Coupling Capacitors : Two No. Electrolytic type
- Input Signal Type : Sine wave
- Max. Input Frequency Range : 60Hz-500KHz approx.
- Output Frequency Response : 60Hz-100KHz approx.
- Weight : 3.0 kg (approx)
- Dimensions (mm) : L 245 x W 320 x H 115
- Interconnections : 2mm Banana sockets
- Operating Temperature : 0-50^{0}C, 80% RH

Learning Scope

- **To study Voltage Series Negative Feedback Amplifier.**
  To observe and Note the change in O/P voltage w.r.t. change in I/P frequency. To Plot the Frequency response curve and to Determine Voltage Gain and Bandwidth.
- **To study Voltage Shunt Negative Feedback Amplifier.**
  To observe and Note the change in O/P voltage w.r.t. change in I/P frequency. To Plot the Frequency response curve and to Determine Voltage Gain and Bandwidth.

Other Instruments Required : Oscilloscope, Function Generator 1MHz.

Accessories Included : Set of Patch Cord and Details Instruction Manual

Subject to Change