Voltage Series and Current Series Negative Feedback Amplifier using BJT

Model : SD-132

SINCOM SD-132 Voltage Series and Current Series 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 Current Series negative feedback Amplifier in a simple experimental way.

Features

- ❖ Two Separate modules of Voltage Series and Current Series Negative Feedback circuits
- ❖ Voltage Series Negative feedback amplifier uses BJT NPN BC548 in CC mode with voltage divider base bias and emitter feedback resistor
- ❖ Current Series Negative feedback amplifier uses BJT NPN BC548 in CE mode with voltage divider base bias and emitter resistor capacitor feedback elements
- ❖ Silicon NPN BJT of TO-92 package on board
- ❖ Resistive Emitter Load for Voltage series circuit
- ❖ Resistive Collector and Output Load for Current series circuit
- ❖ Switch to select/deselect the RC feedback elements in the circuit for Current series 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 Current Series 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 Current Series
- ▪ Biasing Method   : Voltage Divider Bias for both type
- ▪ Base Resistors   : Two No. for each types

- Emitter Load   : 10KΩ Fixed Resistive Load for Voltage Series
- Emitter Feedback Resistors R_E : One No. for Current Series
- Emitter Feedback Capacitor C_E : One No. with Switch select to R_E for Current Series
- Collector and Output Load   : 10KΩ Fixed Resistive Load for Current Series
- 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 Current 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.

Other Instruments Required : Oscilloscope, Function Generator 1MHz.

Accessories Included : Set of Patch Cord and Details Instruction Manual

Subject to Change