Push-Pull Amplifier Trainer

(Class A, B, AB & Complementary Symmetry)

Model : SD-152

SINCOM SD-115 Push Pull Amplifier (Class-A,B, AB and Complementary Symmetry) is All-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 Class-A, Class-B Class-AB and Complementary Symmetry Push Pull Amplifier in a simple experimental way.

Features

- User friendly Design
- Separate modules of Class-A, Class-B, Class-AB and Complementary Symmetry Push Pull Amplifier
- Class-A amplifier circuit uses BJT NPN BC548 with Self base biasing
- Class-B Push Pull amplifier circuit uses two NPN BJTs wired with Input and Output Driver Transformers.
- Class-AB Push Pull amplifier circuit uses two NPN BJTs connected in a Push-Pull mode with voltage divider base biasing, emitter feedback resistor, Input & Output Driver Transformers.
- Comp. symmetry Push Pull amplifier circuit uses NPN and PNP complementary BJTs connected in a Push-Pull mode with voltage divider base biasing and emitter resistive load.
- Silicon NPN and PNP BJT of TO-92 package on board
- Wide Bandwidth AF Amplifier
- Resistive Load and Loud Speaker as Inductive Load for Class-AB
- Resistive Load for Class-A, AB and Comp. symmetry Push Pull amplifier
- Audio Tone Output
- Input and Output Driver Transformers
- In-Built Fixed Dual regulated DC Power Supply
- 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, ,+6V,-6V/500mA
- Amplifier Type : Class-A, Class-B, Class-AB and Comp. Symmetry Push Pull Amplifier
- Transistor Type and Package : Bi-Polar Silicon-NPN, PNP, TO-92 Package
- Transistor Used : Six BC548
- Biasing Method : Voltage Divider (Class-A,AB, Comp.sym), Fixed Bias (Class-B)
- Transistor Configuration : CE mode
- Max. Collector Emitter Voltage : 12 VDC
- BJT Junction Voltage : 0.7V
- Emitter Base Voltage V_{BE} : 5V

Office : 8, Shantiniketan Colony, Pratap Nagar, Nagpur- 440 022 (MS) INDIA, Phone: 91-712-2287174, 2293303
Mobile : 09372153411, E-mail: info@sincomindia.com, sincom22@hotmail.com, Web: www.sincomindia.com

- Input Output Coupling Capacitors : Two No. Electrolytic type
- Input Signal Type : Sine wave
- Max. Input Frequency Range : 60Hz-500KHz approx.
- Output Frequency Response : 100Hz-20KHz approx.
- **For Class-A Amplifier**
  - Base Resistors : Two No.
  - Emitter Resistors : One No.
  - Collector Load : 10KΩ Fixed Resistive Load
- **For Class-B Amplifier**
  - Input Output Coupling Transformer : 6V AF Driver Transformer secondary centre tap
  - Output Load : 10KΩ Fixed Resistive Load
- **For Class-AB Amplifier**
  - Input Output Coupling Transformer : 6V AF Driver Transformer secondary centre tap
  - Base Resistors : Two No.
  - Emitter Resistors : One No.
  - Resistive Output Load : 10KΩ Fixed Resistive Load
  - Inductive Output Load : 4Ω Loud Speaker Inductive Load
- **For Comp. Symmetry Push Pull Amplifier**
  - Transistor Used : NPN CL100 and PNP CK100
  - Transistor Configuration : Push-Pull configuration
  - Biasing Method : Voltage Divider Bias
  - Max. Collector Emitter Voltage : 6VDC
  - Base Resistors : Four No. MFR 1KΩ (2No) and 100Ω (2No), ±5%
  - Emitter Output Load : 10KΩ Fixed Resistive Load
- Weight : 4.0 kg (approx)
- Dimensions (mm) : L 270 x W 390 x H 130
- Interconnections : 2mm Banana sockets
- Operating Temperature : 0-50^{0}C, 80% RH

Learning Scope

- **To Study Class-A Power Amplifier circuit.** To Observe & Note change in O/P w.r.t. change in I/P Frequency. To Plot frequency response & To Determine Bandwidth, Voltage Gain, Efficiency of class-A Power amplifier.
- **To Study Class-B Push-Pull Power Amplifier circuit.** To Observe & Note change in O/P w.r.t. change in I/P Frequency. To Plot frequency response & To Determine Bandwidth, Voltage Gain, Efficiency and Cross Over Distortion of class-B Push-Pull Power amplifier.
- **To Study Class-AB Push-Pull Power Amplifier circuit.** To Observe & Note change in O/P w.r.t. change in I/P Frequency. To Plot frequency response & To Determine Bandwidth, Voltage Gain, Efficiency of class-AB Push-Pull Power amplifier.
- **To study Complementary Symmetry Push-Pull Amplifier circuit.** To Observe & Note change in O/P w.r.t. change in I/P Frequency & to study the effect of each transistor on O/P. To Plot frequency response & Determine Bandwidth, Voltage Gain, Efficiency & Distortion.

Other Instruments Required : Oscilloscope, Function Generator 1MHz.

Accessories Included : Set of Patch Cord and Details Instruction Manual.

Subject to Change