

## Direct Emitter Coupled Amplifier

### Model : SD-120

**SINCOM SD-120 Direct Emitter Coupled Amplifier** is very useful simply designed trainer to study the concept, operation, Frequency response and determine the Bandwidth, over all Voltage gain and other parameters of a BJT Direct Emitter coupled Amplifier in a simple experimental way.

### Features

- ❖ Two single stage CE amplifiers using NPN Transistor BC548 with Self base biasing
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- ❖ First stage Output Direct Emitter Coupled to the second stage Input
- ❖ Silicon NPN BJTs of TO-92 package on board
- ❖ Wide Bandwidth AF Amplifier
- ❖ Resistive Collector Load for each stage
- ❖ Facility to study each stage separately
- ❖ 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 $\pm$ 10%, 50Hz
▪ DC Power Supply	: IC Regulated Fixed +12V/500mA
▪ Amplifier Type	: Two Stage Direct Emitter Coupled CE Amplifier
▪ Transistor Type and Package	: Bi-Polar Silicon-NPN, TO-92 Package
▪ Transistor Used	: Two BC548
▪ Transistor Configuration	: CE mode
▪ Amplifier Stages	: Two
▪ Amplifiers Inter coupling type	: Emitter Direct Coupled
▪ Biasing Method	: Self Bias
▪ BJT Junction Voltage	: 0.7V
▪ Max. Collector Emitter Voltage	: 12VDC
▪ Emitter Base Voltage $V_{BE}$	: 5V
▪ Base Resistors	: Two No. for each stage
▪ Emitter Resistors	: One No. with bypass capacitor for each stage
▪ Input Output Coupling Capacitors	: Two No. Electrolytic type
▪ Collector Load	: 10K $\Omega$ Fixed Resistive Load for each stage
▪ Input Signal Type	: Sine wave



An ISO 9001:2015 Co.

▪ Max. Input Frequency Range	: 60Hz-500KHz approx.
▪ Output Frequency Response	: 100Hz-20KHz approx.
▪ Weight	: 2.0 kg (approx)
▪ Dimensions (mm)	: L 220 x W 270 x H 110
▪ Interconnections	: 2mm Banana sockets
▪ Operating Temperature	: 0-50°C, 80% RH

## Learning Scope

- To Study the Transistor as a CE Amplifier.
- To Study the Two Stage Direct Emitter Coupled Amplifier using Transistor.
- To Observe & Note change in O/P of second stage w.r.t. change in I/P Freq. of first stage.
- To Plot the frequency response & Determine Bandwidth.
- To Calculate Voltage gain of each stage & Overall Voltage Gain of circuit & to verify  $AV = AV_1 \times AV_2$

**Other Instruments Required :** Oscilloscope, Function Generator 1MHz.

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