



An ISO 9001:2015 Co.

BJT Voltage Divider/Self Biasing

Model : SC-103

SINCOM SC-103 BJT Voltage Divider/Self Biasing with and without Emitter Resistor is simply designed trainer for the purpose to study BJT Voltage Divider/Self Base Bias method with and without Emitter Resistor and determine the various operational parameters with a wide range of components bank in a simple experimental way.

Features

- ❖ User friendly Design
- ❖ One Silicon NPN BJT of TO-92 package on board
- ❖ NPN BJT with higher β
- ❖ Combinational Resistor Bank at Base
- ❖ Resistor Bank at Emitter
- ❖ Resistive Collector Load
- ❖ In-Built Fixed regulated DC Power Supply
- ❖ Easy to select the different biasing resistors
- ❖ Facility to plot DC Load Line
- ❖ Very Easy for Operation
- ❖ Multi color Circuit Diagram is printed on the front panel of the board
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ Facility to connect external Digital/Analog Voltmeter and Ammeter or Digital Meters
- ❖ Interconnections by 2mm high quality banana sockets and pins
- ❖ Maximum Test points to explore all the corners of experiment
- ❖ 1 Year Warranty

Technical Specifications

▪ DC Power Supply	: IC Regulated Fixed +12V/500mA
▪ Biasing Method	: Voltage Divider/Self Bias with & without Emitter Feedback
▪ Transistor Type and Package	: BJT-Silicon-NPN, TO-92 Package
▪ Transistor Used	: One SL/CL100
▪ Transistor β	: @170-180
▪ Transistor Configuration	: CE mode
▪ BJT Junction Voltage	: 0.7V
▪ Max. Collector Emitter Voltage	: 12 VDC
▪ Combinational Base Resistor Bank	: Four- MFR 100K Ω , 180K Ω , 10K Ω and 100K Ω , $\pm 5\%$
▪ Emitter Resistor Bank	: Two- MFR 180 Ω and 0 Ω , $\pm 5\%$
▪ Collector Load	: 470 Ω Fixed Resistive Load
▪ AC Mains Power Supply	: 230V $\pm 10\%$, 50Hz
▪ Weight	: 2.0 kg (approx)
▪ Dimensions (mm)	: L 220 x W 270 x H 110
▪ Interconnections	: 2mm Banana sockets
▪ Operating Temperature	: 0-50 $^{\circ}$ C, 80% RH



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Learning Scope

- To study BJT Voltage Divider/ Self Bias circuit. To observe & Note the change in Collector Current & Voltage w.r.t. change in biasing resistors.
- To Determine the various Currents & Voltages $I_B, I_C, V_B, V_C, V_{CE}, V_E$ and Stability factor
- To Plot DC load line & observe the change w.r.t. change in base resistor & emitter feedback resistor bank.

Other Instruments Required

SINCOM Digital Multi VI meter (DMVI) : Model DMVI-03 Range $V_1-20V, I_1-20mA, V_2-20V, I_2-200mA$ DC

Accessories Included : Set of Patch Cord and Details Instruction Manual