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MOSFET Biasing Methods

Model : SC-108

SINCOM SC-108 MOSFET Biasing Trainer is a **All-In-One** simply designed trainer for the purpose to study N-Channel Enhancement type MOSFET Voltage Divider Bias, Drain to Gate (Feedback) Bias and determine the various operational parameters with a wide range of components bank in a simple experimental way.

Features

- ❖ User friendly Design
- ❖ All-In-One gate bias modules
- ❖ Easy selection of Drain to Gate (Feedback) Bias and Voltage Divider bias methods
- ❖ TO-220 Metal Transistor package
- ❖ N-Channel Enhancement type power MOSFET
- ❖ Low ON-State Resistance, Fast Switching and low thermal Resistance
- ❖ Combinational Resistor Bank at Gate
- ❖ Resistor Bank at Drain
- ❖ Resistor Bank at Source
- ❖ In-Built Dual 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

▪ AC Mains Power Supply	: 230V \pm 10%, 50Hz
▪ DC Power Supply	: IC Regulated Dual Fixed \pm 12V/500mA
▪ Biasing Method	: Drain to Gate (Feedback) Bias, Voltage Divider Bias
▪ Transistor Type and Package	: MOSFET, N-Channel Enhancement, TO-220 Package
▪ MOSFET Used	: IRF840/540
▪ Pin Count	: 3 Gate, Drain and Source
▪ Transistor Configuration	: CS mode
▪ Max. Drain Source Voltage	: 12 VDC
▪ Combinational Gate Resistor Bank	: Six Gate Resistors includes Four Fixed and Two Variable
▪ Fixed Gate Resistor Bank	: Four Fixed-MFR 10K Ω (2No) & 100K Ω (2No), \pm 5%
▪ Variable Gate Resistor Bank	: Two Variable 100K Ω Potentiometers
▪ Drain Load Resistor Bank	: One Fixed-MFR 1K Ω , \pm 5% & Variable 100K Ω Potentiometer



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| ▪ Source Resistor Bank | : Fixed-MFR 100 Ω , 1K Ω and 0 Ω , \pm 5%.
Variable 100K Ω Potentiometers |
| ▪ 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 |

Learning Scope

- To study the need of Biasing circuits.
- To study the Gate Bias circuits of MOSFET.
- To study the Voltage Divider Bias circuit of MOSFET.
- To study the Drain to Gate (Feedback) Bias circuit of MOSFET.
- To Observe & Note the change in Drain Current w.r.t. change in Biasing Resistors.

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