MOSFET, JFET and IGBT Characteristics with Digital Meters

Model : SA-132DM

SINCOM SA-132DM MOSFET, JFET & IGBT Characteristics with Digital meters is comprehensive remarkable trainer useful to study V-I characteristics of MOSFET, JFET and IGBT. The MOSFET, JFET and IGBT are widely used in various power electronics circuits for switching, timing and amplification processes. The trainer is simply designed to plot its characteristics and determine the various operational parameters in a simple experimental way. The trainer is equipped with on board Digital voltmeter and Digital Ammeter.

Features

- Three separate modules of MOSFET, JFET and IGBT Characteristics.
- TO-2220AB MOSFET, TO-72 JFET and TO-2220AB IGBT package
- N-Channel E type MOSFET, N-Channel JFET and N-Channel IGBT are provided
- MOSFET is low ON-State Resistance, Fast Switching and low thermal Resistance device
- IGBT is of Low forward voltage drop, High switching speed, Low tail current, Latch-up free, Avalanche rated.
- Individual control of IGBT Gate and Collector Input DC voltages
- JFET and MOSFET-Individual control of Gate and Drain Input DC voltages
- Current controlling resistors for JFET and MOSFET in Gate and Drain
- In-Built Variable regulated DC Power Supply
- Multi color Circuit Diagram printed on the front of the white board
- Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- On Board $3^{1/2}$ Digit Digital Voltmeter and Ammeter
- User friendly Designed
- Very Easy for Operation
- 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
- **For MOSFET Characteristics**
  - DC Power Supply : Two Nos. Variable +12V/500mA
  - Gate-Source Voltage V_{GG} : IC Regulated variable 0V to +12V/500mA
  - Drain-Source Voltage V_{DD} : IC Regulated variable 0V to +12V/500mA
  - MOSFET Type : IRF540/840, N Channel Enhancement type
  - Gate Current Controlling Resistor : MFR 10KΩ, ±5%
  - Drain Current Controlling Resistor : MFR 10KΩ, ±5%
  - Max. Gate-Source Voltage V_{GS}: 20V DC
  - Max. Gate Threshold Voltage V_{GSth} : 4V DC
  - Drain Source Resistance (R_{DS}) : 0.85 Ohms
  - Operating Junction Temperature : -65 to $+150^0$c
- **For IGBT Characteristics**
  - DC Power Supply : Two Nos. Variable +12V/500mA

- Gate-Emitter Voltage V_{GG} : IC Regulated variable 0V to +12V/500mA
- Collector-Emitter Voltage V_1 : IC Regulated variable 0V to +12V/500mA
- IGBT Type : N Channel IGBT
- IGBT Used : BUP Series
- Pin Count : 3 Gate, Collector and Emitter
- Gate Current Controlling Resistor : MFR 10KΩ, ±5%
- Collector Current Controlling Resistor : MFR 10KΩ, ±5%
- Max. Collector-Emitter Voltage V_{CE} : 600V DC
- Max. Collector Current Ic : 36A
- Operating Junction Temperature : -55^0 to $+150^0$c

▪ **For JFET Characteristics**

- DC Power Supply : Two Nos. Variable ±12V/500mA
- Gate-Source Voltage V_{GG} : IC Regulated variable 0V to -12V/500mA
- Drain-Source Voltage V_{DD} : IC Regulated variable 0V to +12V/500mA
- JFET Type : TO-72,BFW10, N Channel
- Gate Current Controlling Resistor : MFR 100KΩ, ±5%
- Drain Current Controlling Resistor : MFR 10KΩ, ±5%
- Max. Drain-Source Voltage V_{DS} : 30V DC
- Max. Drain-Gate Voltage V_{DG} : 30V DC
- Reverse Gate-Source Voltage V_{GSR} : -30V DC
- Forward Gate Current I_{GF} : 10mA DC
- Operating Junction Temperature : -65 to $+150^0$c

▪ Total Digital Meters : 03 (2 Voltmeter and 1 Ammeter)

▪ Digital Voltmeters : 0-20V (Two Nos.)

▪ Digital Ammeter : 0-20mA (One No.)

▪ Meter Display : Red Color, $3^{1/2}$ Digit , LED Display

▪ Weight : 3.0 kg (approx)

▪ Dimensions (mm) : L 270 x W 390 x H 130

▪ Interconnections : 2mm Banana sockets

▪ Operating Temperature : 0-50^0C, 80% RH

Learning Scope

- To Study the V-I characteristics and Transfer characteristics of N-channel IGBT.
- To Study the Drain and Transfer characteristics of N-channel Enhancement type MOSFET. To Determine VGS Threshold Voltage of given MOSFET.
- To Study the Drain and Transfer characteristics of JFET. To Determine VGS Cut-off Voltage of given JFET.

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.

Subject to Change