UJT,JFET and MOSFET Characteristics

Model : SA-122

SINCOM SA-122 UJT,JFET & MOSFET Characteristics is useful to study V-I characteristics of UJT, JFET and MOSFET. The UJT, JFET and power MOSFET are widely used in various 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 without meters and has the facility to connect the external analog or digital voltmeter and ammeter in the circuit.

Features

- TO-18 UJT, TO-72 JFET and TO-2220AB MOSFET Transistor package
- Three separate modules of UJT, JFET and MOSFET Characteristics
- Silicon PN Uni-junction UJT, N-Channel JFET and N-Channel Enhancement power MOSFET are provided
- JFET is Low Power, High Frequency Device
- MOSFET is low ON-State Resistance, Fast Switching and low thermal Resistance device
- UJT -Individual control of Emitter and Base-2 Input DC voltages of
- JFET and MOSFET-Individual control of Gate and Drain Input DC voltages
- Current controlling resistors for UJT in Emitter, Base-1 and Base-2
- 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
- Facility to connect the external Digital/ Analog 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 UJT Characteristics**
  - DC Power Supply : Two Nos. Variable +12V/500mA
  - Emitter-Base1 V_{EB} : IC Regulated variable 0V to +12V/500mA
  - Base2-Base1 V_{BB} : IC Regulated variable 0V to +12V/500mA
  - UJT Type : TO-18 Silicon PN Uni-Junction Transistor
  - UJT Used : 2N2646
  - Emitter Current Controlling Resistor : MFR 1KΩ, ±5%
  - Base2 Current Controlling Resistor : MFR 10KΩ, ±5%
  - Base1 Current Controlling Resistor : MFR 470Ω, ±5%
  - Intrinsic Standoff Ration η : 0.56 -0.75 (V_{B2B1}=10V)
  - Max. Two bases Voltage V_{B2B1} : 35V
  - Max. Emitter Reverse Voltage V_{B2E} : 30V
  - Max. RMS Emitter Current (Ie) : 50mA
  - Max. Peak Emitter Current (Ie) : 2A
  - Max. Power Dissipation : 300mW

- Operating Junction Temperature : -65 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
- **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 : TO-220,IRF540/840, N Channel Enhancement type
  - Gate Current Controlling Resistor : MFR 10KΩ, ±5%
  - Drain Current Controlling Resistor : MFR 10KΩ, ±5%
  - Max. Drain-Source Voltage V_{DS} : 100V DC
  - Max. Gate-Source Voltage V_{GS}: 20V DC
  - Max. Gate Threshold Voltage V_{GSth} : 4V DC
  - Max. Drain Current : 30A
  - Drain Source Resistance (R_{DS}) : 0.85 Ohms
  - Operating Junction Temperature : -65 to +150^{0}c
- Weight : 3.0 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 the operation of UJT.
- To Study the V-I characteristics of UJT for the Different Values of applied V_{BB} Voltage.
- To Determine Peak-Point (Vp) & Vallay-Point (Vv) Voltage of UJT.
- To Study the Drain characteristics of JFET.
- To Study the Transfer characteristics of JFET.
- To Determine VGS Cut-off Voltage of given JFET.
- To Study the Drain characteristics of N-channel Enhancement type MOSFET
- To Study the Transfer characteristics of N-channel Enhancement type MOSFET
- To Determine VGS Threshold Voltage of given MOSFET.

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