

JFET and MOSFET Characteristics

Model : SA-120



SINCOM SA-120 JFET & MOSFET Characteristics is useful to study Drain and Transfer characteristics of JFET and MOSFET. The JFET and power MOSFET are widely used for very fast switching operations as well as for 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-72 JFET and TO-2220AB MOSFET Transistor package
- ❖ Two separate modules of JFET and MOSFET Characteristics
- ❖ N-Channel JFET and N-Channel Enhancement type power MOSFET are provided
- ❖ JFET is Low Power, High Frequency Device
- ❖ MOSFET is low ON-State Resistance, Fast Switching and low thermal Resistance device
- ❖ Individual control of Gate and Drain Input DC voltages
- ❖ Current controlling resistors 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	: $230V \pm 10\%$, 50Hz
▪ For JFET Characteristics	
• DC Power Supply	: Two Nos. Variable $\pm 12V/500mA$



An ISO 9001:2015 Co.

- Gate-Source Voltage V_{GS} : IC Regulated variable 0V to -12V/500mA
- Drain-Source Voltage V_{DS} : IC Regulated variable 0V to +12V/500mA
- Transistor Package : TO-72
- JFET Type : BFW10, N Channel
- Gate Current Controlling Resistor : MFR 100K Ω , $\pm 5\%$
- Drain Current Controlling Resistor : MFR 10K Ω , $\pm 5\%$
- 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 $^{\circ}$ C

▪ **For MOSFET Characteristics**

- DC Power Supply : Two Nos. Variable +12V/500mA
- Gate-Source Voltage V_{GS} : IC Regulated variable 0V to +12V/500mA
- Drain-Source Voltage V_{DS} : IC Regulated variable 0V to +12V/500mA
- Transistor Package : TO-220
- MOSFET Type : IRF540/840, N Channel Enhancement type
- Gate Current Controlling Resistor : MFR 10K Ω , $\pm 5\%$
- Drain Current Controlling Resistor : MFR 10K Ω , $\pm 5\%$
- 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 $^{\circ}$ C
- Weight : 3.0 kg (approx)
- Dimensions (mm) : L 245 x W 320 x H 115
- Interconnections : 2mm Banana sockets
- Operating Temperature : 0-50 $^{\circ}$ C, 80% RH

Learning Scope

- 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