



## JFET and MOSFET Characteristics with Digital Meters

### Model : SA-120DM

**SINCOM SA-120DM JFET & MOSFET Characteristics** with Digital meters is comprehensive remarkable trainer 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 equipped with on board Digital voltmeter and Digital Ammeter.

### 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
- ❖ On Board 3<sup>1/2</sup> 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  $\pm$ 10%, 50Hz
- **For JFET Characteristics**
  - DC Power Supply : Two Nos. Variable  $\pm$ 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
  - Transistor Package : TO-72
  - JFET Type : BFW10, N Channel
  - Gate Current Controlling Resistor : MFR 100K $\Omega$ ,  $\pm$ 5%
  - Drain Current Controlling Resistor : MFR 10K $\Omega$ ,  $\pm$ 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



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▪ **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  $V_{DD}$  : 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 $\Omega$ ,  $\pm 5\%$
- Drain Current Controlling Resistor : MFR 10K $\Omega$ ,  $\pm 5\%$
- 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
- 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 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 :** Nil

**Accessories Included :** Set of Patch Cord and Details Instruction Manual