



**OMEGA TYPE ETB-270** Experimental Training Board has been designed specifically to study the FET characteristics and amplifier.

The board is absolutely self contained and requires no other apparatus.

Practical experience on this board carries great educative value for Science and Engineering Students.

#### OBJECT

To study the characteristics of Field Effect Transistor.

- 01 Measurement of  $I_{DSS}$
- 02 Plot the static drain characteristics of FET
  - 2.1 Drain Current V/s Drain Voltage Characteristics for different fixed values of  $V_{GS}$
  - 2.2 Drain Current V/s Gate Bias Characteristics for different fixed values of  $V_{DS}$
- 03 Show that FET work as VVR (voltage variable resistance).
- 04 To design and calculate the finite gain of FET Amplifier.
- 05 To draw the overload characteristics of FET.
- 06 To draw the frequency response of FET.
- 07 To measure the input impedance of FET.
- 08 To measure the output impedance of FET.
- 09 Calculate the FET parameters (drain dynamic resistance  $r_d$ , mutual conductance  $g_m$ , and amplification factor  $m$ ) at a given operating point.

#### FEATURES

The Board consists of the following built-in parts:

- 01 0 to 20V DC at 50mA, variable Power Supply.
- 02 0 to 12V DC at 50mA, variable Power Supply.
- 03 Two Digital Voltmeter DC 3½ Digit Having range of 0-20V.
- 04 Digital Current meter DC 3½ Digit Having range of 0-20mA
- 05 Sine Wave Oscillator 15Hz to 150KHz in four ranges with amplifier & amplitude adjustable.
- 06 Three decade resistances bank in steps of 1K, 10K & 100K per steps total step 30.
- 07 Field Effect Transistor (FET).
- 08 Four capacitors.
- 09 Five resistances.
- 10 Mains ON/OFF switch, Fuse and Jewel light.
- 11 The unit is operative on 230V  $\pm 10\%$  at 50Hz AC Mains.
- 12 Good Quality, reliable terminal/sockets are provided at appropriate places on panel for connections /observation of waveforms.
- 13 Strongly supported by detailed Operating Instructions, giving details of Object, Theory, Design procedures, Report Suggestions and Book References.
- 14 Weight : 4.200 Kg
- 15 Dimension : W 415 x H 165 x D 315

#### LIST OF ACCESSORIES:

- 01 Patch cords 4 mm length 50cm Red.....06
- 02 Patch cords 4 mm length 5cm Black.....06

#### OTHER APPARATUS REQUIRED

- 01 Cathode Ray Oscilloscope 20MHz  
OMEGA TYPE CRO-20

We are committed to the continuous development of our products, and therefore reserve the right to amend specifications without prior notice.

## OMEGA ELECTRONICS