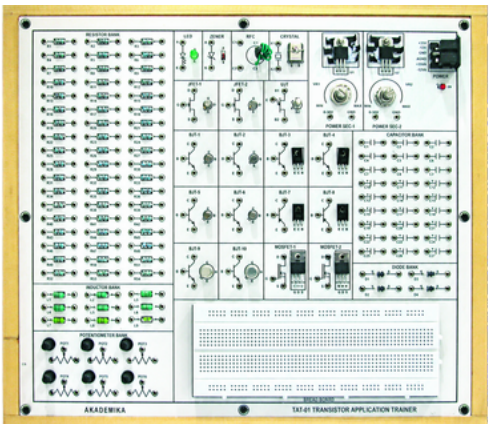
BEL-TAT

Transistor Application Trainer Kit



FEATURES

- Single board system, capable of covering over 20 Experiments
- Suitable for studying the characteristics and applications of different transistor devices.
- IEEE symbol of all components provided on the PCB.
- All Components visible clearly on the top of the PCB.
- Mobile based Interactive e-Manual

SPECIFICATIONS

- On-board dual variable DC power supply of 0–30 V, suitable for circuit experimentation.
- Resistor Bank (54 resistors)
  Range from 100Ω to 1MΩ for ¼ watt
- Capacitor Bank (27 capacitors)
  Range from 47 pF to 100 µF
- Inductor Bank (9 inductors)
  Range from 2.2 mH to 47 µH
- Potentiometer Bank (6 potentiometer)
  Range from 1K to 1M
- Light Emitting Diode (GREEN LED 5mm)
- Diode (4 – 1N4007)
- Zener Diode (5.1V)
- Transistor Bank (15 transistors)
  1) BC-107 : 2 nos. 2) BD139 : 2 nos
  3) 2N2222 : 2 nos 4) BD138 : 2 nos
  5) SL100 : 2 nos 6) BFW10 : 2 nos
  7) IRFZ44N : 2 nos 8) 2N2646 : 1 nos
- Breadboard (175mmX63mm)

EXPERIMENTS

- To identify and check type of Transistor NPN, PNP
- BJT as Switch
- Logic gates using BJT
- BJT as a DC amplifier

Amplifier

- CE amplifier-frequency response, signal handling capacity, input and output impedance
- Cascade amplifier-frequency response, signal handling capacity, input and output impedance
- Single stage CB amplifier gain versus frequency

Feedback amplifier

- Voltage series feedback (negative) amplitude, frequency response, input and output impedance calculation
- Voltage shunt feedback (negative) amplitude, frequency response, input and output impedance calculation
- Current series feedback (negative) amplitude, frequency response, input and output impedance calculation
- Class-A / Class-B power amplifier
- Fixed bias amplifier using BJT
- Design and construct BJT common emitter amplifier using voltage divider bias (self-bias) with and without bypass emitter resistors
- Design and construct BJT common collector amplifier using voltage divider bias (self-bias)
- RC coupled amplifier · Emitter follower amplifier
- Darlington amplifier · Oscillator · Multi-vibrator

Regulator

- Series and shunt regulator, calculate ripple factor

FET / MOSFET

- FET common source amplifiers, gain versus frequency, bandwidth, input output impedance and maximum signal handling capacity
- Common drain FET amplifier, frequency response, signal handling capacity, input and output impedance
- FET biasing circuit (self, voltage divider, fixed)
- UJT relaxation oscillator / UJT saw-tooth generator
- Construct different bias circuit and analyze the wave form a) Fixed bias b) Emitter bias c) Voltage divider bias
- Transistor as switch with timing calculation
- Verify digital logic gate using transistor (NOT, NAND, NOR)
- DC amplifier
- Transistor time delay circuit
- Schmitt trigger circuit
- Frequency response of single tuned coupled circuit (tuned class C)
- Bootstrap sweep circuit
- Sweep wave generator