



An ISO 9001:2015 Co.

Astable, Monostable and Bistable Multivibrator using Transistor

Model : SE-121

SINCOM SE-121 Astable, Monostable and Bistable Multivibrator using Transistor is a remarkable **Three-in-One combined** trainer of BJT NPN Transistors wired in CE mode with RC & R positive feedback to provide Astable Multivibrator Output and Monostable Multivibrator Output & Bistable Multivibrator Output for the applied trigger input, with facility to vary the Switching Time and Frequency of Oscillations in a simple experimental way.

Features

- ❖ Separate modules of Astable, Monostable & Bistable Multivibrator
- ❖ Silicon NPN BJT of TO-92 package on board
- ❖ Astable using 2 NPN Transistor as CE switching Amplifier & resistive capacitive feedback elements.
- ❖ Monostable using 2 NPN Transistor as CE switching Amplifier & resistive capacitive feedback elements
- ❖ Bistable using 2 NPN Transistor as CE switching Amplifier with resistive feedback elements.
- ❖ Resistive Identical collector load
- ❖ External Trigger Input for Monostable multivibrator
- ❖ Push-To-On SET and RESET Input switches for Bistable multivibrator
- ❖ Two LED load to indicate Set/Reset output
- ❖ Capacitor Bank to vary output switching time
- ❖ Wide range of oscillation frequency
- ❖ Facility to vary output frequency
- ❖ In-Built Fixed regulated DC Power Supply
- ❖ User friendly Design
- ❖ Very Easy for Operation
- ❖ Multi color Circuit Diagram is printed on the front panel of the white acrylic board
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ Facility to connect external Oscilloscope and Digital Meters.
- ❖ 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
▪ DC Power Supply	: IC Regulated Fixed +12V/300mA
▪ Multivibrator type	: Astable (Free Running), Monostable (One shot) & Bistable
▪ Transistor Type and Package	: Six BJT Silicon NPN BC548, TO-92 Package
▪ Amplifier Type	: Base Biased CE Switching Amplifier
▪ Feedback Elements	: ASM & MSM -2 Resistors & 2 Capacitors ; BSM -2 Resistors



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- Collector load : Identical Resistive load of 10K Ω
- External Trigger Input : Monostable - Square Pulse @ 100Hz-1KHz, 5Vpp
- Monostable - Internal Trigger Inputs : 10V DC Inputs by two Push-to-On switch for SET and RESET
- Output waveform : Astable - Square/Rectangular, Monostable- Pulse one shot
- Oscillation Frequency : Astable- Variable from @ 100 Hz to 100KHz
Monostable - Variable from @ 100 Hz to 10KHz
- Astable Output Frequency Control by : Two Resistors, one Dual Potentiometer and four Capacitors
- Monostable Switching Time Control by : One Resistor and two Capacitors
- Bistable Switching Control by : By Push-to-On switches
- Bistable Output Indicator : Two Red LEDs as SET and RESET output
- Max. Collector Emitter Voltage : 12 VDC
- Weight : 2.0 kg (approx)
- Dimensions (mm) : L 270 x W 390 x H 130
- Interconnections : 2mm Banana sockets
- Operating Temperature : 0-50 $^{\circ}$ C, 80% RH

Learning Scope

- To Study operation of Astable (Free-running) Multivibrator using transistor. To Observe & Note the switching waveforms at the base & collector of two transistors.
- To Study operation of Monostable (One shot or Univibrator) Multivibrator using transistor. To Observe & Note the waveforms at the base & collector of two transistors w.r.t. applied trigger I/P.
- To Study operation of Bistable Multivibrator using transistor. To Observe & Note the two outputs w.r.t. applied SET & RESET Trigger Inputs.
- To Observe & Note Change in Switching Time & Frequency of Oscillation w.r.t. change in RC feedback Components.

Other Instruments Required : Oscilloscope, Function Generator 1MHz and Digital Multimeter

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