



An ISO 9001:2015 Co.

## BJT (Transistorized) Shunt Voltage Regulator

### Model : SB-109

**SINCOM SB-109 BJT (Transistorized) Shunt Voltage Regulator** is very useful simply designed trainer to study the operation, line and load regulation characteristics of BJT Shunt Voltage Regulator with variable load 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

- ❖ User friendly Design
- ❖ Silicon NPN Transistorized circuit with two Zener Diode as controlling element
- ❖ Facility to vary wide range of applied DC Input voltage
- ❖ Variable Resistive Load
- ❖ Facility to vary regulated Output DC Voltage
- ❖ In-Built Variable regulated DC Power Supply
- ❖ Very Easy for Operation
- ❖ Multi color Circuit Diagram printed on the front panel of the white board.
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ Facility to connect external Digital/Analog Voltmeter and Ammeter
- ❖ Interconnections by 2mm high quality banana sockets and pins
- ❖ Maximum Test points to explore all the corners of experiment
- ❖ 1 Year Warranty

### Technical Specifications

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|----------------------------|--|
| ▪ AC Mains Power Supply    | : 230V $\pm$ 10%, 50Hz                       |
| ▪ DC Power Supply          | : IC Regulated Variable 0V to +12V/500mA     |
| ▪ Unregulated DC Input Vin | : 0 to 12V DC Input                          |
| ▪ Regulated DC Output Vo   | : Two DC Outputs of 6.2V and 6.8V, $\pm$ 10% |
| ▪ Output Voltage Control   | : By Two Zener Diodes at sampling network    |
| ▪ Transistors Used         | : One No-BJT NPN Silicon-BC548               |
| ▪ Zener Diodes Used        | : Two Zener diodes of 5.6V and 6.2V          |
| ▪ Forward Voltage Drop     | : 1.2V at $T_A = 25^\circ\text{C}$           |
| ▪ Load Resistor            | : 10K $\Omega$ Variable Resistive Load       |
| ▪ Regulation type          | : Line and Load Regulation                   |
| ▪ Weight                   | : 2.0 kg (approx)                            |
| ▪ Dimensions (mm)          | : L 220 x W 270 x H 110                      |
| ▪ Interconnections         | : 2mm Banana sockets                         |
| ▪ Operating Temperature    | : 0-50 $^\circ\text{C}$ , 80% RH             |

### Learning Scope

- To Study operation of Shunt Voltage Regulator using Transistor.
- To Study Change in O/P Voltage w.r.t. change in I/P Voltage with Load  $R_L$  constant (Line Regulation)
- To Study Change in O/P Voltage w.r.t change in Load  $R_L$  with I/P voltage constant (Load Regulation)

### 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.