



An ISO 9001:2015 Co.

BJT (Transistorized) Shunt Voltage Regulator with Digital Meters

Model : SB-109DM

SINCOM SB-109DM BJT (Transistorized) Shunt Voltage Regulator with Digital meters is remarkable self contained 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 equipped with on board Digital voltmeter & Digital Ammeter.

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
- ❖ On Board $3^{1/2}$ Digit Digital 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 V_{in} | : 0 to 12V DC Input |
| ▪ Regulated DC Output V_o | : 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 Ω Variable Resistive Load |
| ▪ Regulation type | : Line and Load Regulation |
| ▪ Total Digital Meters | : 03 (2 Voltmeter and 1 Ammeter) |
| ▪ Digital Voltmeter | : 0-20V (2 No.) |
| ▪ Digital Ammeter | : 0-20mA (1No.) |
| ▪ Meter Display | : Red Color, $3^{1/2}$ Digit , LED Display |
| ▪ Weight | : 2.0 kg (approx) |
| ▪ Dimensions (mm) | : L 220 x W 270 x H 110 |
| ▪ Interconnections | : 2mm Banana sockets |



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- Operating Temperature : 0-50°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 RL constant (Line Regulation)
- To Study Change in O/P Voltage w.r.t change in Load RL 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.