

Zener Diode as Shunt Voltage Regulator

Model : SB-107



SINCOM SB-107 Zener Diode as Shunt Voltage Regulator is very useful simply designed trainer to study the operation, line and load regulation characteristics of Zener Diode as 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
- ❖ Two Zener diodes of different voltage ratings are provided
- ❖ Facility to vary wide range of applied DC Input voltage
- ❖ Variable Resistive Load
- ❖ In-Built Variable regulated DC Power Supply
- ❖ Easy to select the different Zener Diodes
- ❖ 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 V_{in} | : 0 to 12V DC Input |
| ▪ Regulated DC Output V_o | : 6.2V and 6.8V DC \pm 10% |
| ▪ Zener Diodes Used | : Two Nos. |
| ▪ Zener Voltage V_z | : 6.2V and 6.8V, \pm 10% |



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| ▪ Diode Package | : DO-41 Tape and Reel type |
| ▪ Forward Voltage Drop | : 1.2V at $T_A = 25^{\circ}\text{C}$ |
| ▪ Current Controlling Resistor | : MFR 470Ω , $\pm 5\%$ in series |
| ▪ Load Resistor | : $10\text{K}\Omega$ 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 Zener Diode as a Shunt Voltage Regulator.
- 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 $V_1-20\text{V}$, $I_1-20\text{mA}$, $V_2-20\text{V}$, $I_2-200\text{mA}$ DC

Accessories Included : Set of Patch Cord and Details Instruction Manual