Exp. No. Date :

ZENER DIODE CHARACTERISTICS

AIM : a) To determine zener breakdown voltage and zener resistance from reverse characteristic.

b) To determine zener voltage regulation characteristics.

APPARATUS :

S.No.	Name of the Apparatus	Range	Quantity
1.	BZX 6.2	-	1No.
2.	Power Supply	0-30V	1No.
3.	Ammeter	0-50mA	1No.
4.	Voltmeter	0-5V	1No.
5.	Resistor	390Ω	1No.

CIRCUIT DIAGRAM :

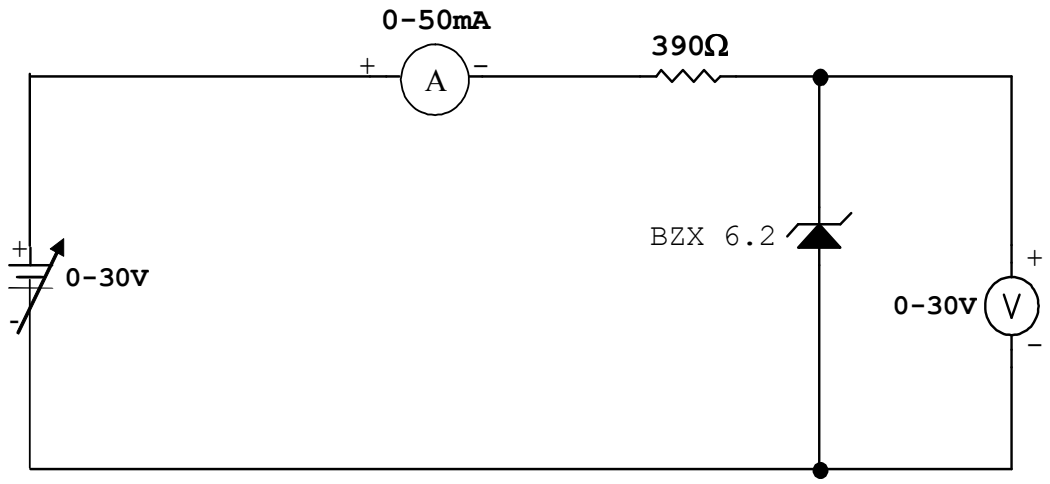


Fig 1: V-I Characteristics

Exp. No. Date :

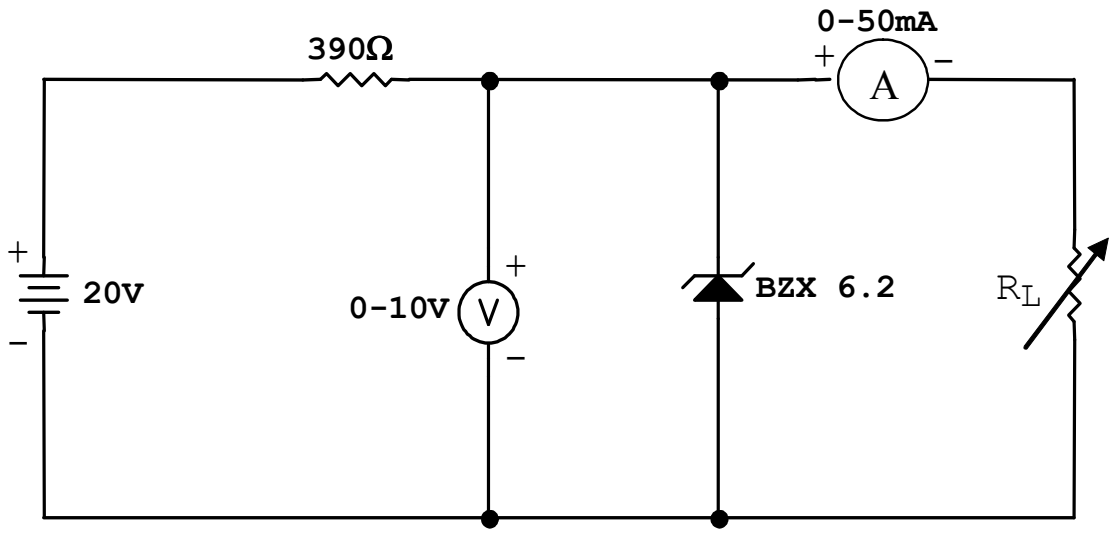


Fig-2: Voltage Regulation

PROCEDURE:

1. Connect the circuit as shown in fig.1 for V-I characteristics.

2. Vary the supply voltage in steps and note down the voltage across the zener and current flowing through it.

3. Connect the circuit as shown in fig. 2 for voltage regulation characteristics.

4. Fix the supply voltage at 20V.

5. Change the load resistance R_L and note down V_Z and I_L(up to 30mA).

6. Plot V-I and Voltage Regulation characteristics.

7. From the graph

   a) find Zener breakdown voltage (at which current increases rapidly).

   b) find the Zener resistance using $R_Z = \frac{V}{I}$

   c) calculate % regulation = $\frac{V_{NL} - V_{FL}}{V_{FL}} \times 100$

Exp. No. Date :

READINGS:

a. V-I Characteristic

S.No.	V_Z(V)	I_Z(mA)

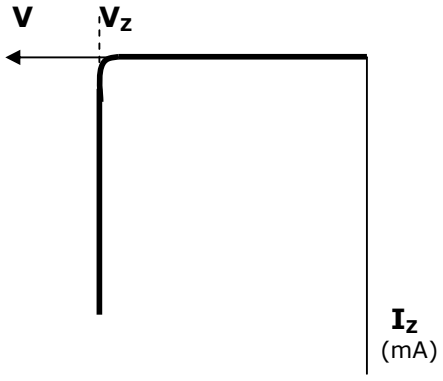
b. Voltage regulation Characteristic

SNo.	I_L (mA)	V_Z(V)

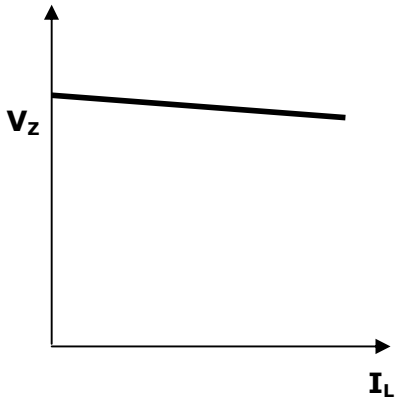
% regulation = $\frac{V_{NL} - V_{FL}}{V_{FL}} \times 100$ =

MODEL GRAPHS:

V-I *Characteristic*



Voltage regulation characteristic



RESULTS:

1. Zener breakdown voltage =
2. Zener resistance =
3. % regulation =