

Exp. No.

Date :

PN JUNCTION DIODE CHARACTERISTICS

AIM : To obtain the V-I characteristics of PN junction diode (both Ge and Si)
in forward & reverse bias conditions and also determine the cutin Voltage,
forward & reverse resistances.

APPARATUS :

S.No.	Name of the Apparatus	Range	Quantity
1.	IN4007 & DR25	-	Each 1No.
2.	Power Supply	0-30V	1No.
3.	Ammeter	0-50mA	1No.
4.	Voltmeter	0-5V	1No.
5.	Resistor	470Ω	1No.

CIRCUIT DIAGRAM :

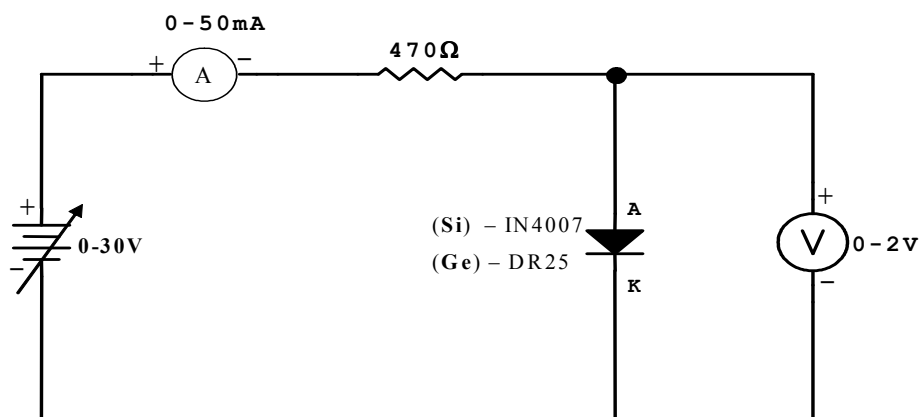
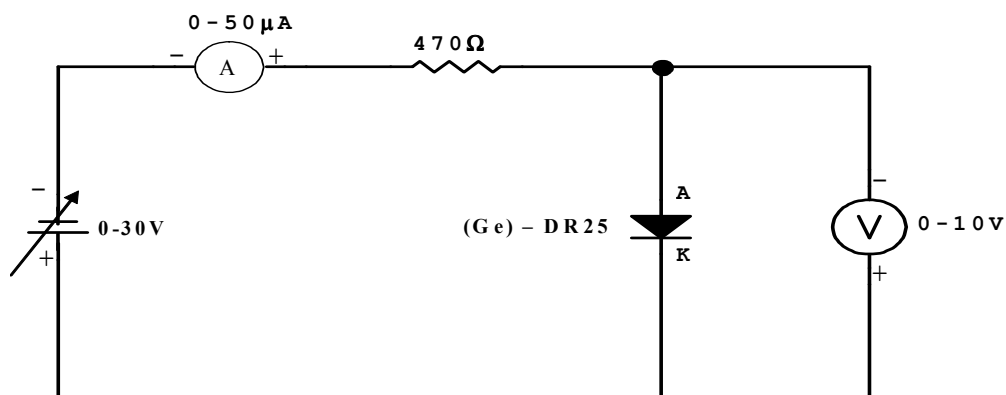


Fig 1: Forward Bias

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**Fig 2: Reverse Bias****PROCEDURE:**

1. Connect the circuit for forward bias as shown in fig.1.
2. Vary the supply voltage and note down the voltage drop across diode and current through the diode.
3. Connect the circuit for reverse bias as shown in fig. 2 and repeat the steps 2.
4. Draw the V-I characteristic and find cutin voltage from the graph .
5. From the graph also find
 - a. dc Forward resistance using $R_f = \frac{V}{I}$
 - b. ac Forward resistance using $R_f = \frac{\Delta V}{\Delta I}$
 - c. the reverse resistance using $R_r = \frac{V}{I}$

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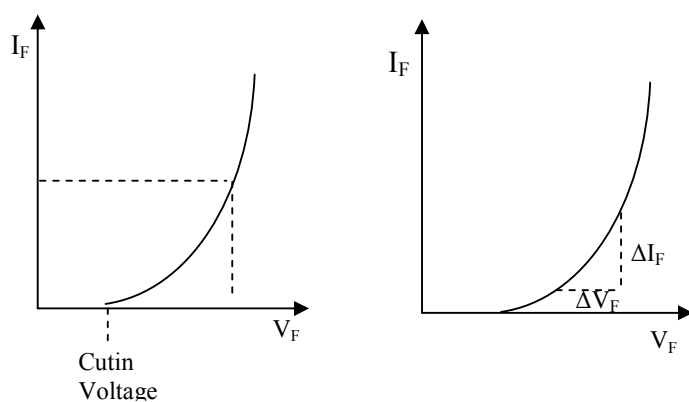
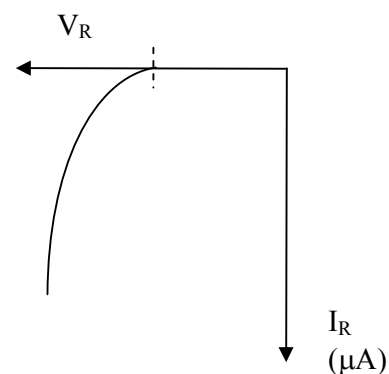
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READINGS:**a. Forward Bias**

Sl No.	$V_F(V)$	$I_F(mA)$

b. Reverse Bias

Sl. No.	$V_R(V)$	$I_R(\mu A)$

MODEL GRAPHS:**Forward Bias****Reverse Bias****RESULTS:**

	Si Diode	Ge Diode
Cutin Voltage		
Forward Resistance(Static)		
Forward Resistance(Dynamic)		
Reverse Resistance		