

Exp. No. :

Date :

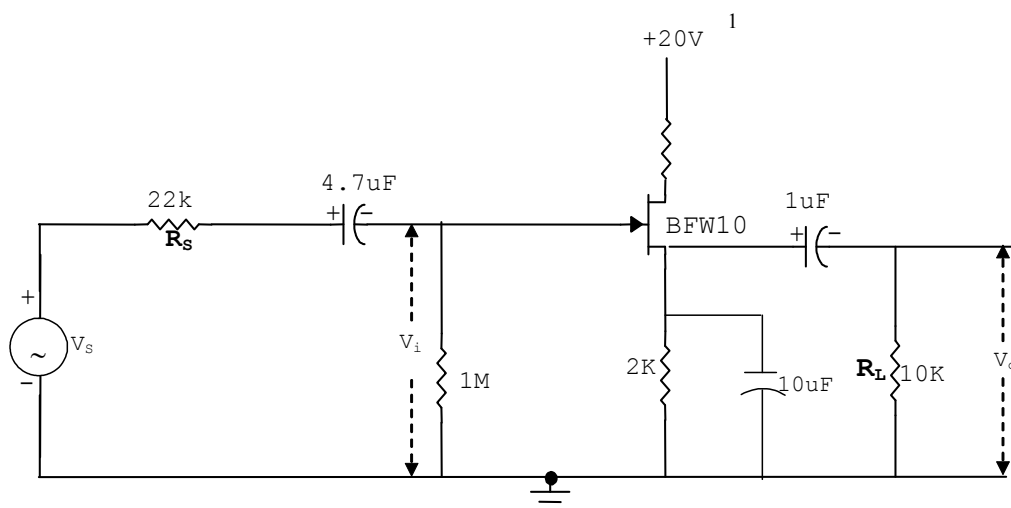
FET AMPLIFIER (COMMON SOURCE)

AIM: To determine Bandwidth, Input & Output impedances, voltage gain, current gain and Power gain of the FET Amplifier in CS Configuration.

APPARATUS :

S.No.	Name of the Apparatus	Range	Quantity
1.	BFW10	-	1No.
2.	Power Supply	0-30V	1No.
3.	Resistors (Ω)	1M, 22K, 6.8K & 2K	Each 1No.
4.	Capacitor	10 μ F, 4.7 μ F & 1 μ F	Each 1No.
5.	CRO	-	1No.

CIRCUIT DIAGRAM:



PROCEDURE:

1. Connect the circuit as shown in figure.
2. Apply the biasing voltage of 10 V.
3. Adjust the Signal generator voltage so as to get $V_i = 1V$ and measure V_s .
4. Vary the frequency of the signal generator from 100Hz to 1MHz, in steps and note down corresponding output voltage.
5. In the mid band range remove R_L and note down the output which is V_{NL} .
6. Plot the frequency response and determine the bandwidth.
7. Calculate the input and output impedance in the mid band range using

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$$R_O = \frac{V_{NL} - V_{FL}}{V_{FL}} \times R_L =$$

$$A_I = \frac{I_o}{I_i} =$$

$$I_O = \frac{V_O}{R_O} =$$

$$A_V = \frac{V_o}{V_i} =$$

$$I_i = \frac{V_s - V_i}{R_s} =$$

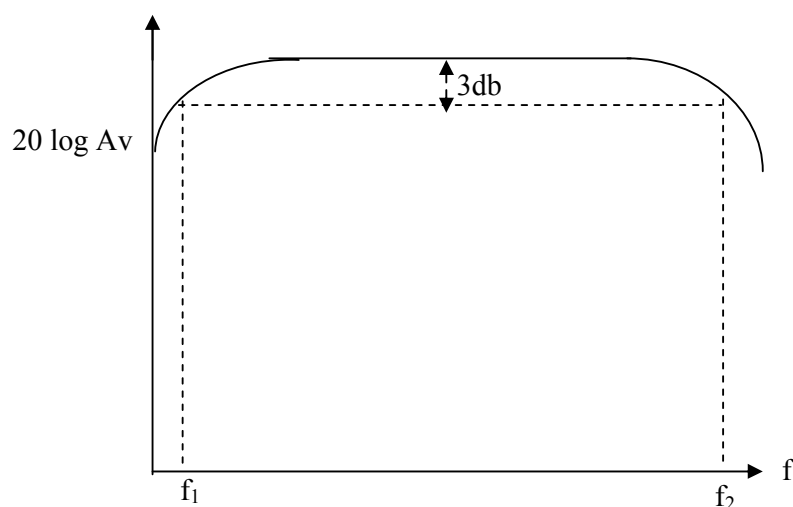
Power gain (A_P) = $A_V \cdot A_I$ =

 $V_s =$
$$\mathbf{V}_{NL} =$$
[illegible]

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S No.	Frequency (Hz)	V_i (V)	V_o (V)	$A_v = \frac{V_o}{V_i}$	$20 \log A_v$

MODEL GRAPH:

$$\text{Bandwidth} = f_2 - f_1 =$$

RESULTS: Input impedance(R_i) =
 Output impedance(R_o) =
 Current gain(A_i) =
 Voltage gain(A_v) =
 Power gain(A_p) =
 Bandwidth =