

ELEC-313
Lab 1: Amplifier Models

September 13, 2013

Date Performed: September 11, 2013
Partners: Charles Pittman
Stephen W-something?

1 Objective

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2 Schematics

Circuit Tested

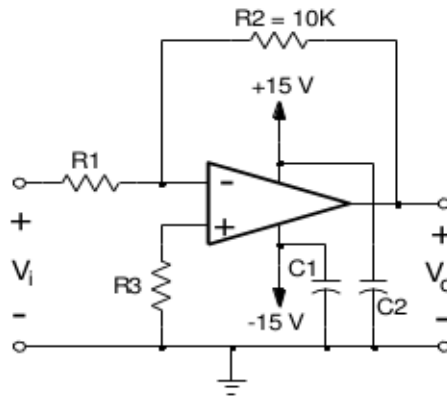


Figure 1: Circuit being tested. $C_1 = C_2 = 1\mu F$

Test Configuration

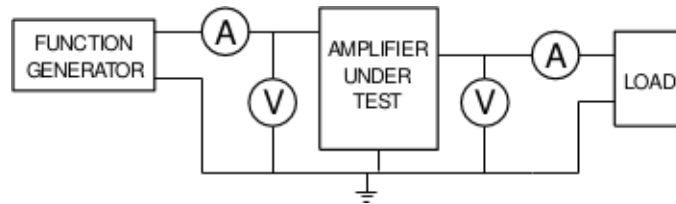


Figure 2: Test Configuration

3 Procedure

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4 Results

Name	Nominal (k Ω)	Measured (k Ω)	% Error
R_1	1	0.986	1.40
R_2	10	9.88	1.20
R_3	1	0.983	1.70

Table 1:

	Voltage		Current	
	$V_i(\text{mV}_{\text{rms}})$	$V_o(\text{V}_{\text{rms}})$	$I_i(\text{mA}_{\text{rms}})$	$I_o(\text{mA}_{\text{rms}})$
No Load	200	1.98	0.2	nil
Load	200	1.98	0.2	9.52

Table 2:

5 Conclusions

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Equations

$$\%_{error} = \frac{|measured - nominal|}{nominal} \times 100\%$$

$$R_i = \frac{V_i}{I_i}$$

$$R_o = \frac{V_{noload} - V_{load}}{I_{load}}$$

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

$$G_m = \frac{A_v}{R_o}$$

$$A_i = A_v \left(\frac{R_i}{R_o} \right)$$

$$R_m = A_v R_i$$