

6.002 Demo# 08 (Load set up demo#08.set)

MOSFET Inverting Amp. Transfer Characteristic, Large signal Agarwal Fall 00

Lecture 8

Purpose: This demo displays the inverting MOSFET amplifier transfer characteristic by plotting the output voltage versus the input voltage (sinusoidal drive). By adjusting the DC offset of the input, we can hide or show the rightmost portion of the characteristic curve, allowing discussion of only the regions of interest. Points along the curve can be measured to verify the accuracy of the derived transfer characteristic equation.



Description: Amplifiers, operating point, analysis, biasing

- 1) To show half of transfer characteristic just have OFFSET @ -2.7 v and you should see the picture on the next page Fig 1.
- 2) To show full transfer characteristic have OFFSET @ zero and you should see the picture on the next page Fig2.

Note: for circuit connections and pins out please check next page for more detail

Oscilloscope Setup

CH	V/DIV	OFFSET	MODE	FUNC	MATH	VERTICAL	HORIZONTAL
1 off	2	3.74	DC	off	CH2-CH3		
2 off	1	-1.00	DC	off	F1/1K		
3 off	2	-2.27	DC	on	CH3 vs CH1	1 v offset 2.86	1.33 v offset 2.45
4 off	2	-1.49	DC	off	CH2-CH1		
Horizontal: 500 uS		Acquisition: AUTO		AUTO	4	Trigger:	AUX from FG1

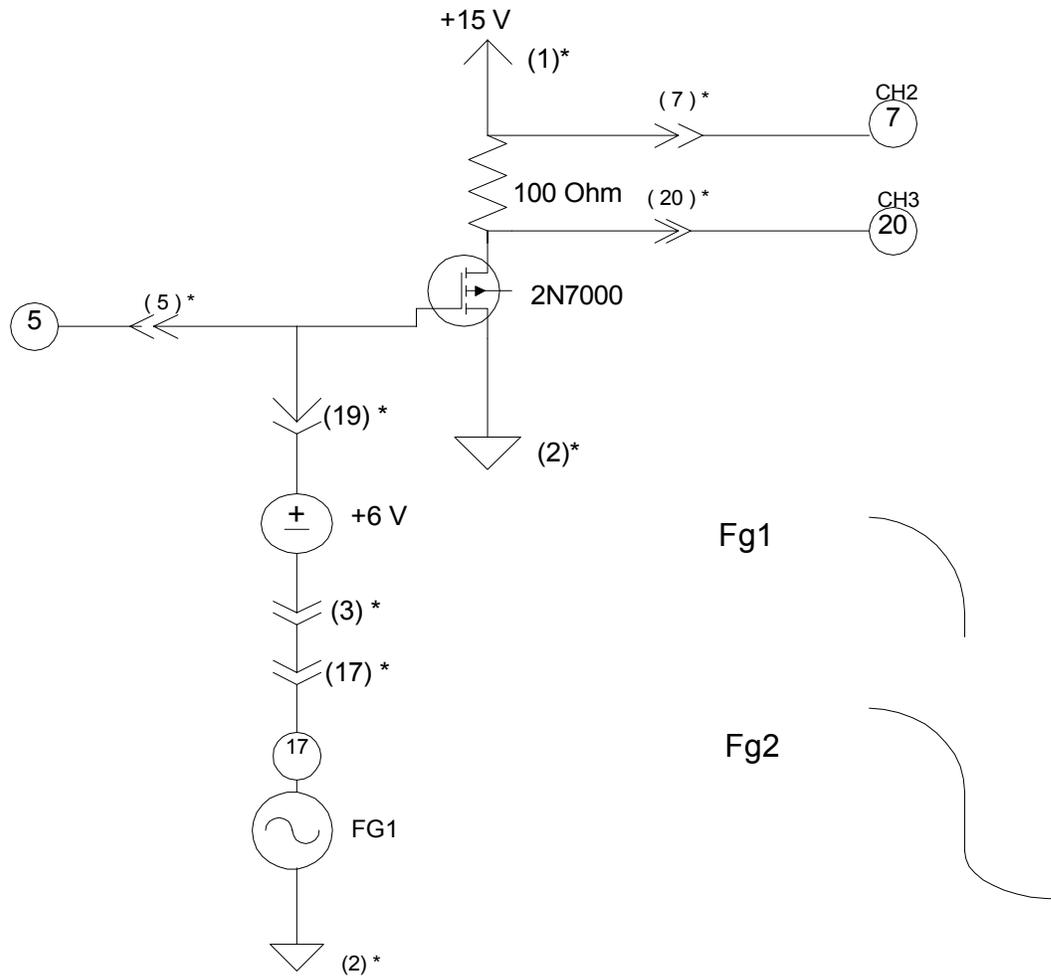
Waveform Generator Setup

Power Supply Setup

UNIT	WAVE	AMP	OFFSET	FREQ	+6	+25	-25	OUTPUT
FG1	Sine	720 mV	0	1 KHZ	Hi Z	2.6 v	5 V	

Trigger: AUX From FG1

Note: FG1 Start with Offset @ -2.00 volts later go to zero!



* Note: # of pins on the PC board and BNC connectors

○ BNC

() Pins