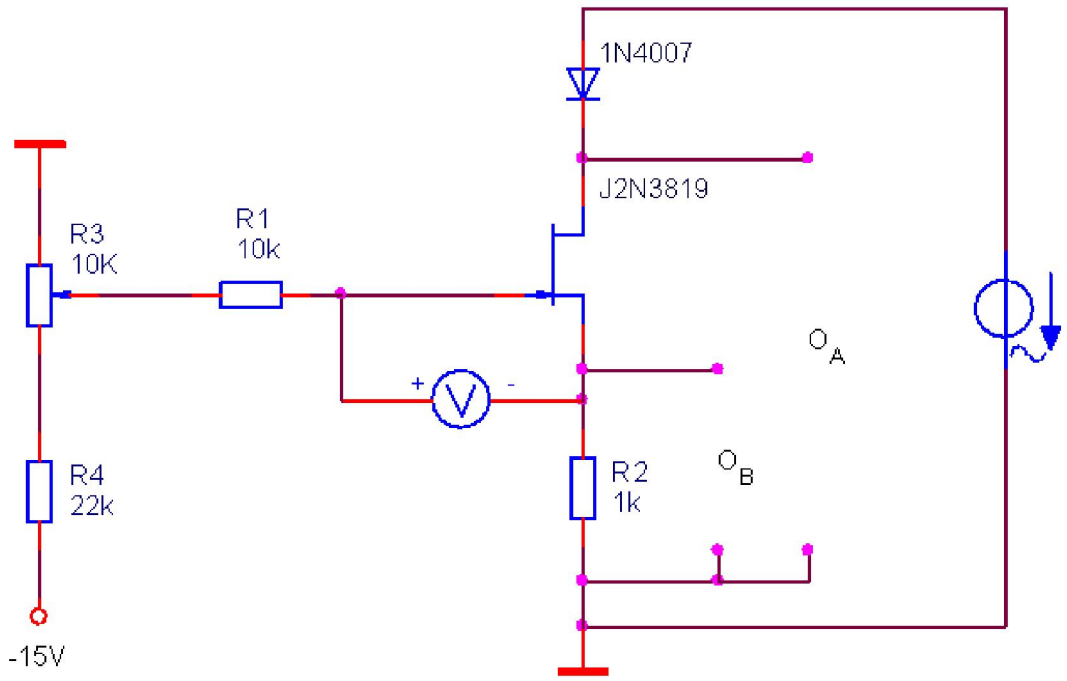
Experiment 1

Circuit diagram

The following circuit diagram is used for this experiment:



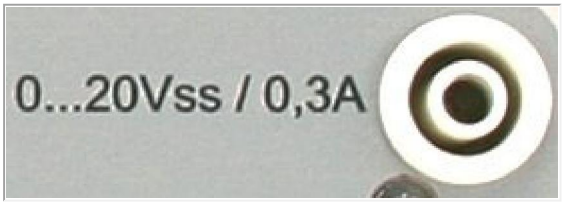
Components

The following components are needed for this experiment:

Parts	Id no.	Designation
3	SO5126-5M	Cables
15	SO5124-6F	Bridges, small
1	PS4121-3C	R 1k
1	PS4121-3Q	R 10k
1	PS4121-3U	R 22k
1	PS4121-8G	Potentiometer 10k
1	PS4122-7C	Diode 1N4007
1	PS4123-2H	FET 2N3819

Cable connections

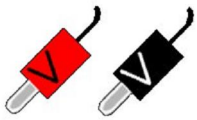
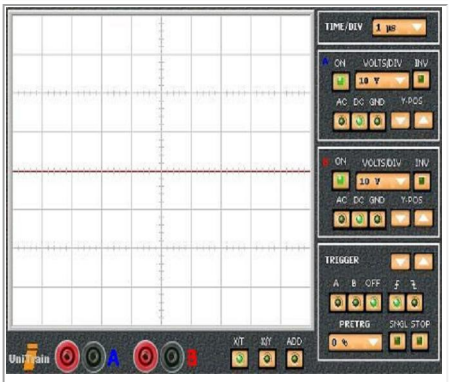
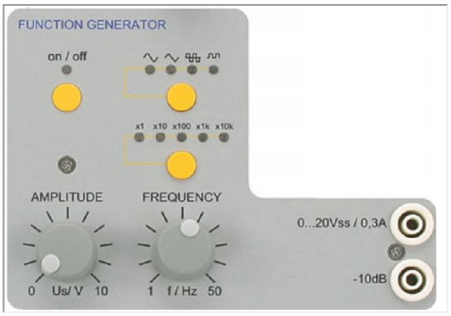
The following cable connections are used in this experiment:

Designation	Symbol	Equipment	Sockets
FG		FUNCTION GENERATOR	
GND		MULTI POWER SUPPLY 60VA / 500KHz	

Connect the specified sockets to the plug-in connection locations indicated on the layout diagram.

Equipment

The following equipment is needed for this experiment including the corresponding settings:

Equipment	Settings
	Black cable: Ground Red cable: V Ohm input Control knob: V DC  Please insert the red and black probes into the connection locations indicated
	
	

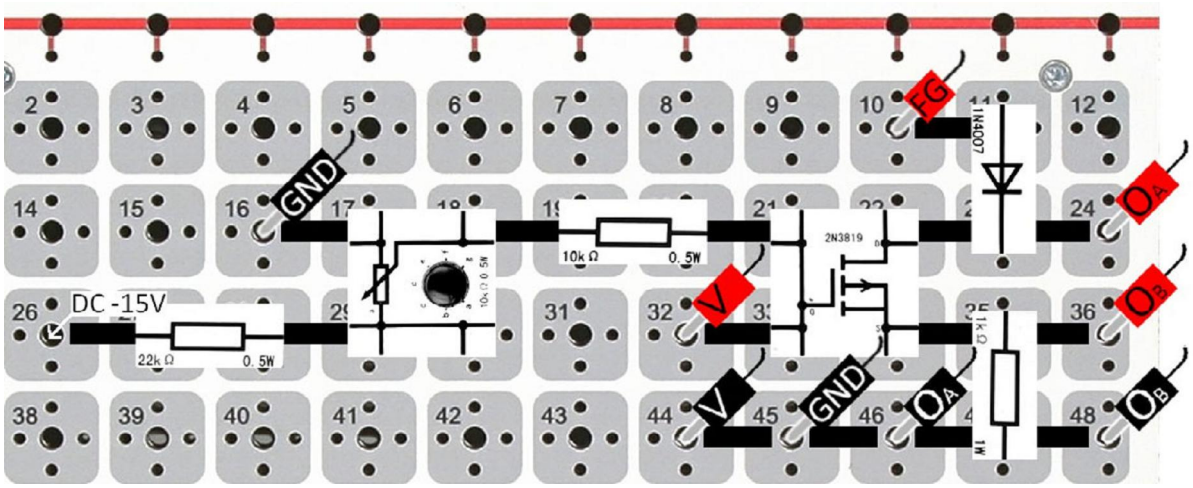
	Channel A	Channel B
Sensitivity	1 V/DIV	2 V/DIV
Coupling	DC	DC
Polarity	norm	norm
y-pos	0	0
Time base	2 msec/DIV	
Mode	X/Y	
Trigger channel	-	
Trigger edge	-	

Curve shape	sinusoidal
Amplitude	4V
Frequency factor	x1
Frequency	50Hz

Experiment set-up

Now please assemble the experiment as a testing station in the upper right hand corner of the patch panel. Commence with:

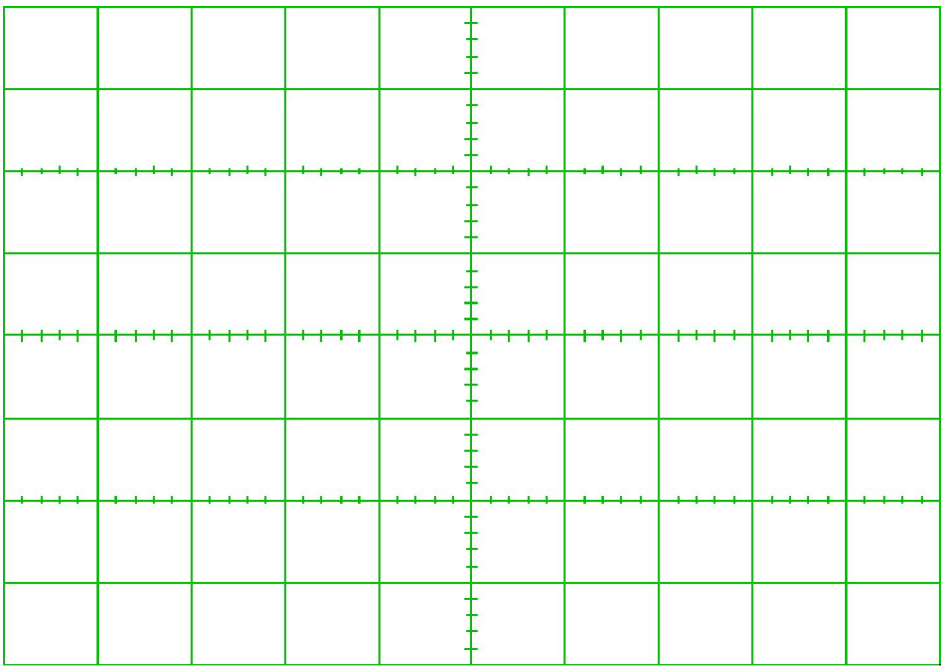
- Bridging plugs
- Electronic components
- Measuring instruments and cables



Experiment procedure and exercises

Use the values specified above for the oscilloscope and function generator settings. Set the potentiometer so that the voltage at the gate of the FET is approximately 230 mV.

Display the output characteristics on the oscilloscope and enter the oscillograph trace below:



Then repeat the procedure but for voltage levels of 0.6 V, 0.9 V and 1.3 V.

Next draw the working line for the FET in the diagram.

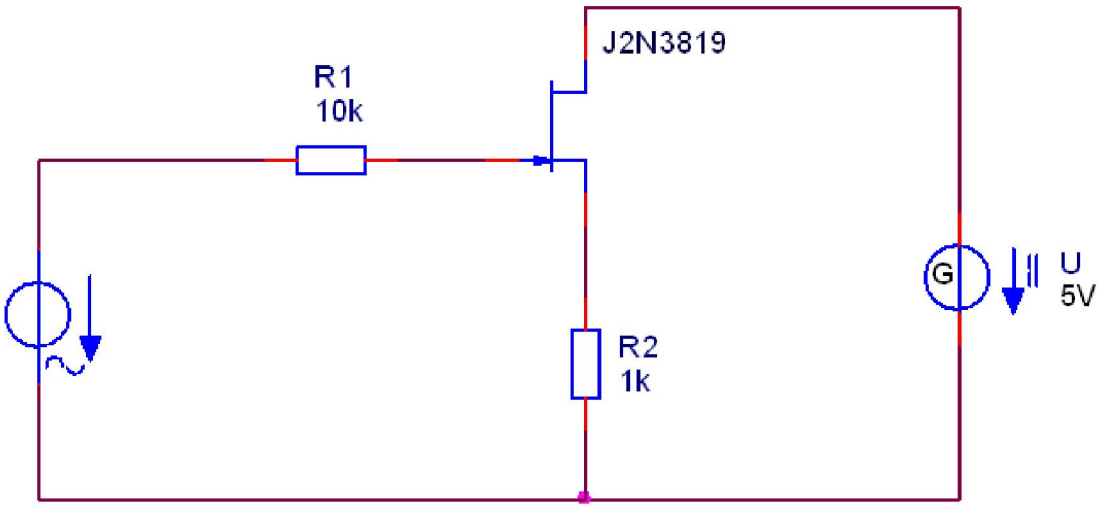
How high is the no-load voltage?

U_{DD} = V

Experiment 2

Circuit diagram

The following circuit diagram is used for this experiment:



Components

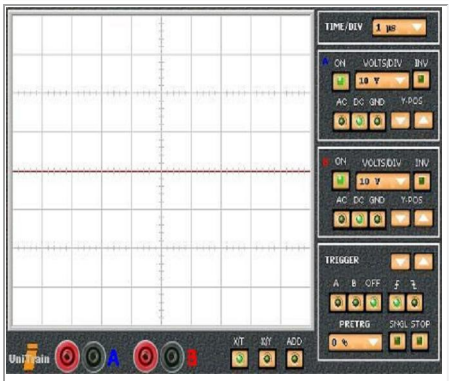
The following components are needed for this experiment:

Parts	Id no.	Designation
2	SO5126-5M	Cables
1	SO5126-5E	Bridges, large
10	SO5124-6F	Bridges, small
1	PS4121-3C	R 1k
1	PS4121-3Q	R 10k
1	PS4123-2H	FET 2N3819

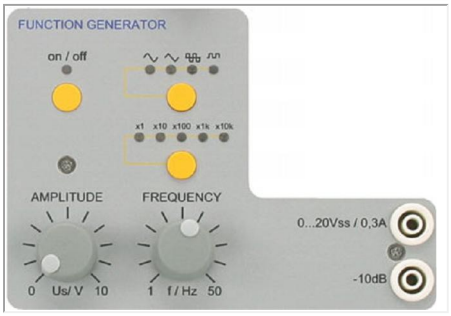
Equipment

The following equipment including the corresponding settings are needed for this experiment:

Equipment	Settings



	Channel A	Channel B
Sensitivity	1 V/DIV	2 V/DIV
Coupling	DC	DC
Polarity	norm	norm
y-pos	0	0
Time base	2 msec/DIV	
Mode	X/Y	
Trigger channel	-	
Trigger edge	-	

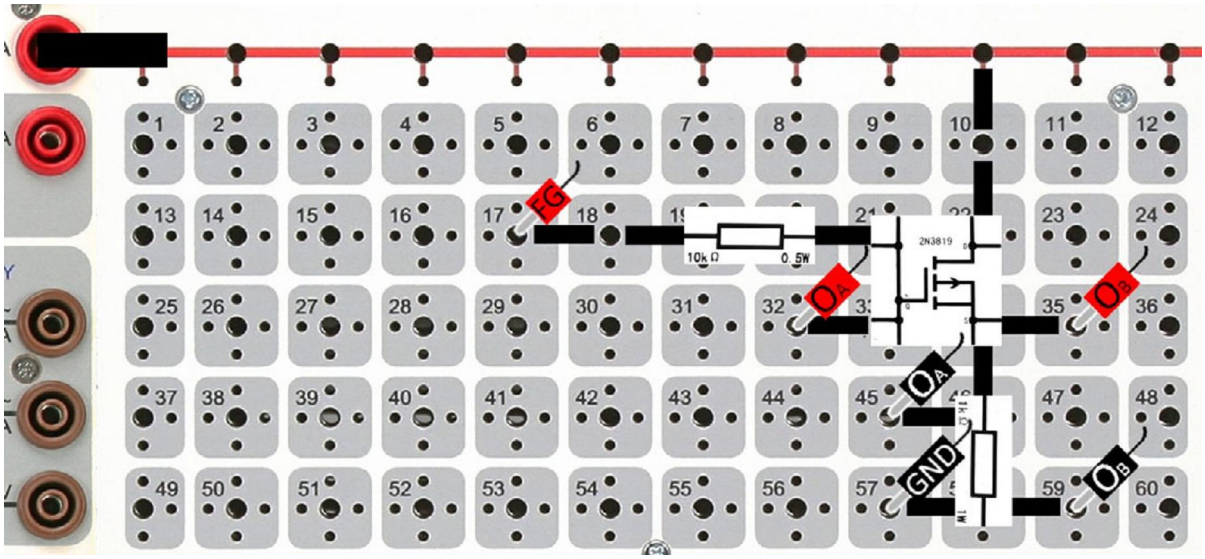


Curve shape	sinusoidal
Amplitude	5V
Frequency Factor	x1
Frequency	50Hz

Experiment set-up

Now please set up the experiment as a testing station in the upper right hand corner of the patch panel. Commence with the following:

- Bridging plugs
- Electronic components
- Measuring instruments and cables



Experiment procedure and exercises

- Record the characteristics of the circuit on the oscilloscope and enter the oscillograph trace below: