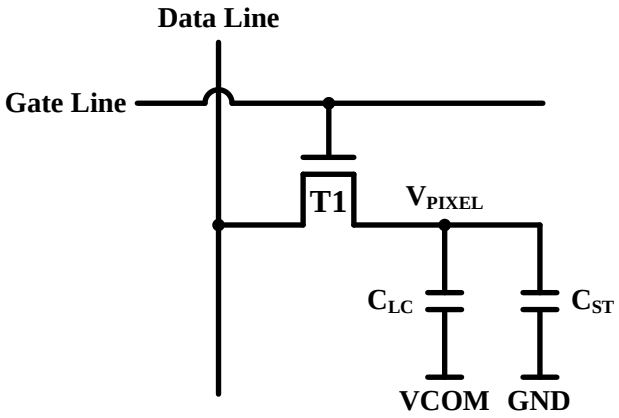
TFT LCD Simulation

1-1 Pixel operation



Simulated parameter:

C_{LC} = 0.3 pF

C_{ST} = 0.3 pF

M_{T1} = 10

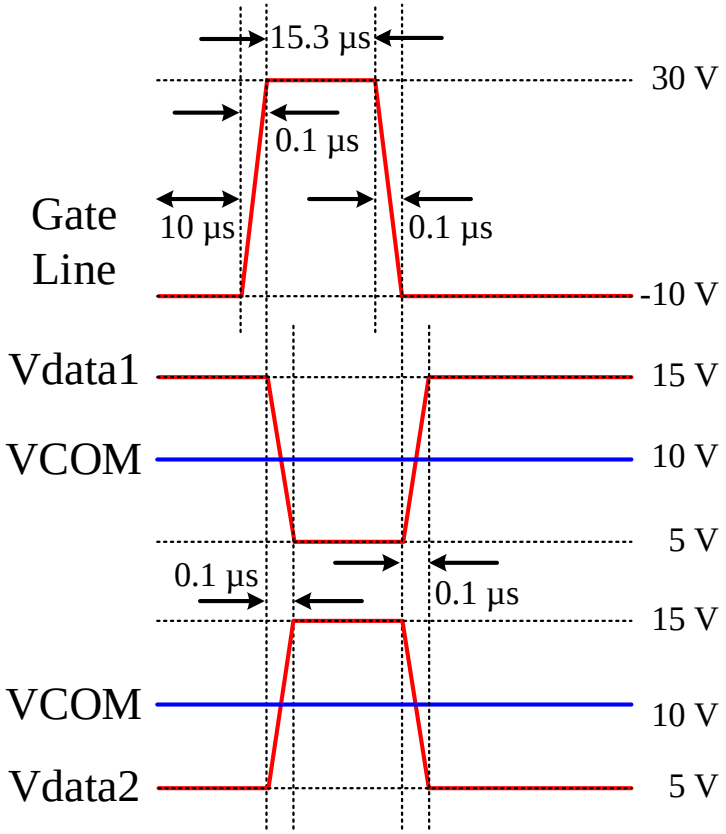
VCOM = 10 V

For Vdata1

Initial V_{PIXEL} = 15 V

For Vdata2

Initial V_{PIXEL} = 5 V



- Please simulate the pixel operation by PSPICE
- Perform two conditions, the first is negative polarity and the second is positive polarity

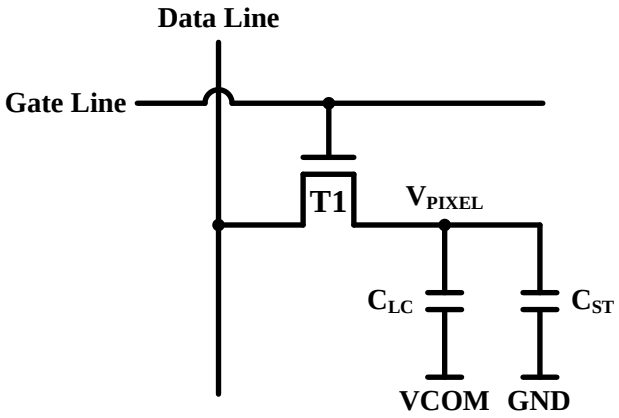
TFT LCD Simulation

- i. Set two different sizes of the switch TFT and observe the waveform of V_{PIXEL}, describe what you see and why.

- ii. According to the pulse width of gate line, please answer the display resolution in this practice.

TFT LCD Simulation

1-2 Pixel operation



Simulated parameter:

C_{LC} = 0.3 pF

C_{ST} = 0.3 pF

M_{T1} = 10

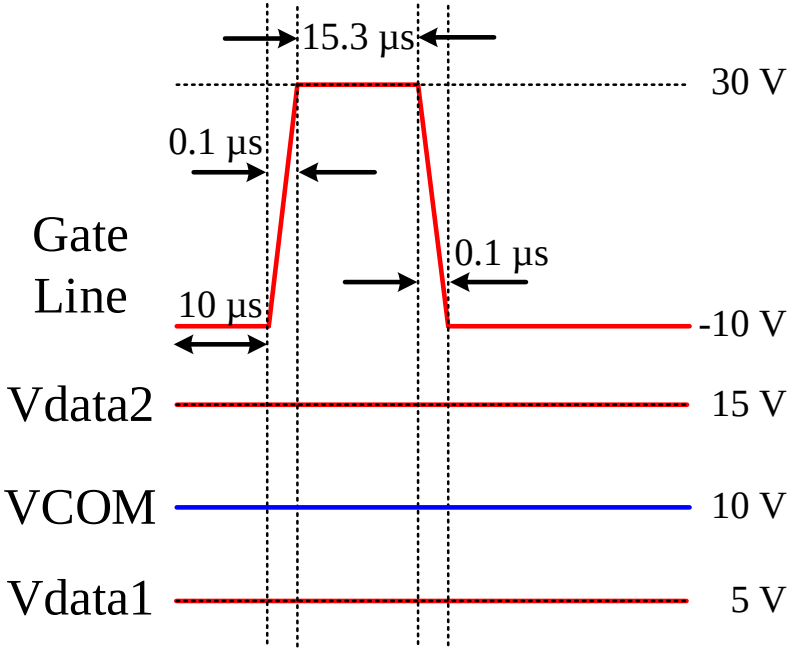
VCOM = 10 V

For Vdata1

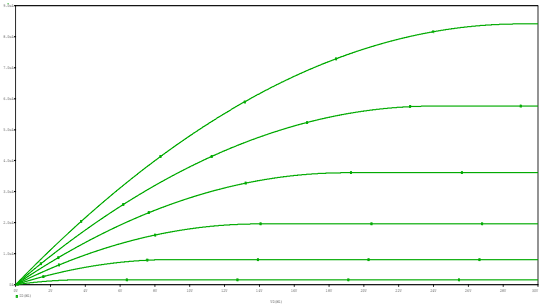
Initial V_{PIXEL} = 15 V

For Vdata2

Initial V_{PIXEL} = 5 V

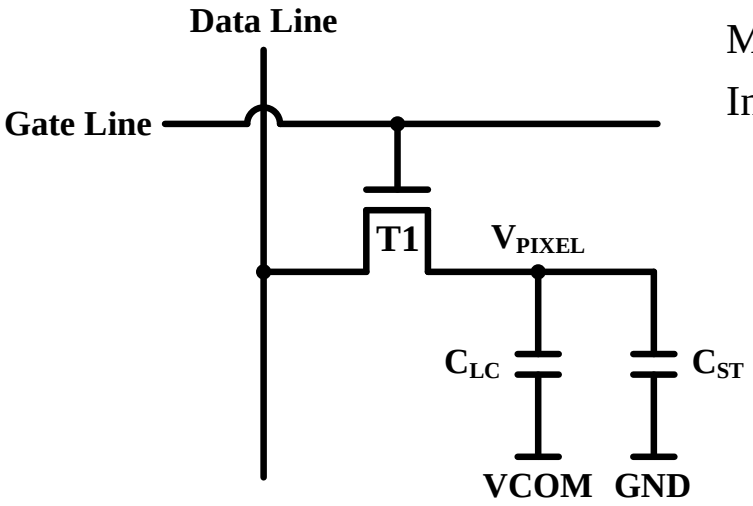


- Plot the operation point curve of T1 on the output characteristics, and try to explain operation condition of T1 by this curve.



TFT LCD Simulation (Optional)

2. Pixel operation



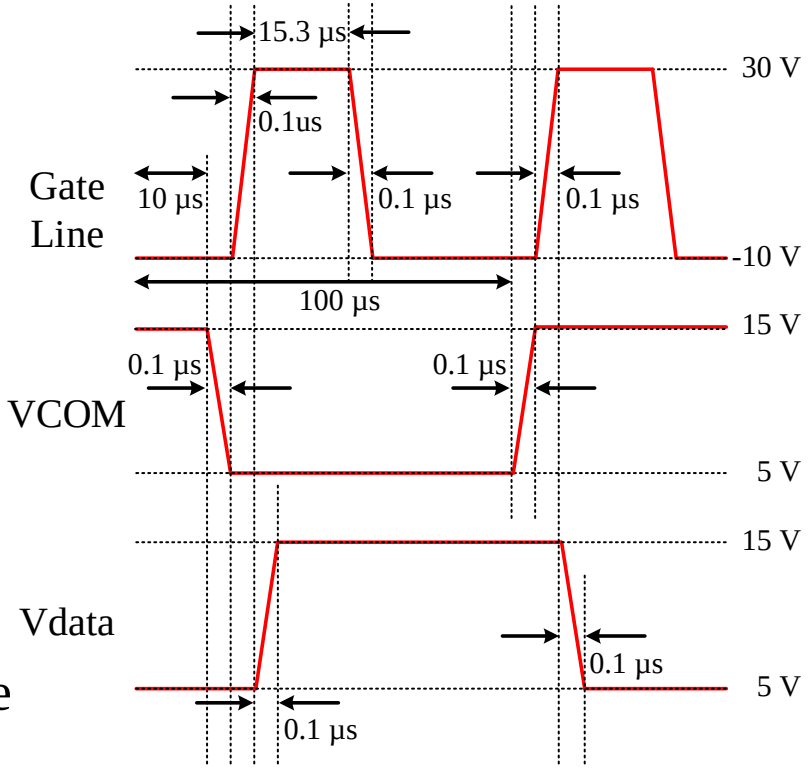
Simulated parameter:

C_{LC} = 0.3 pF

C_{ST} = 0.3 pF

M_{T1} = 10

Initial V_{PIXEL} = 5 V



- VCOM is changed frame by frame
- Perform two frames, the first frame is positive polarity and the second is negative polarity
- Provide your simulated waveform of V_{PIXEL}