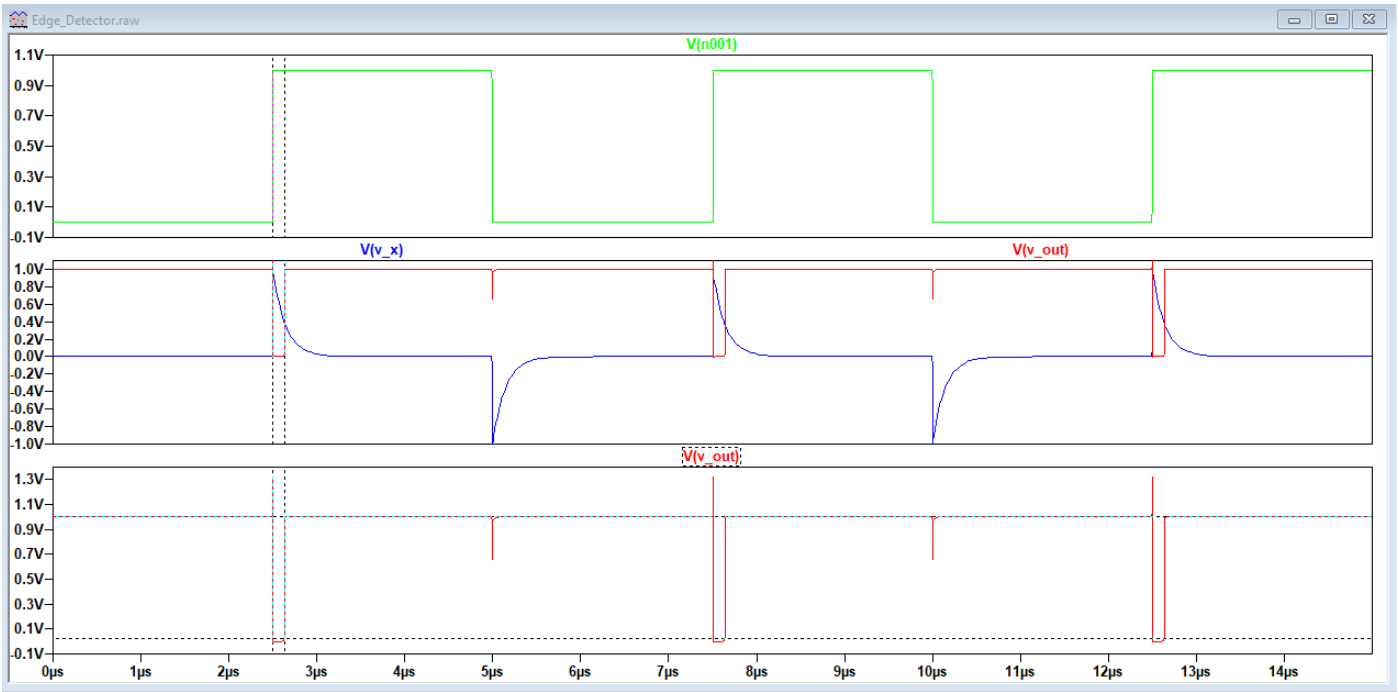
Tatu Bogdan – CTI EN 3.1

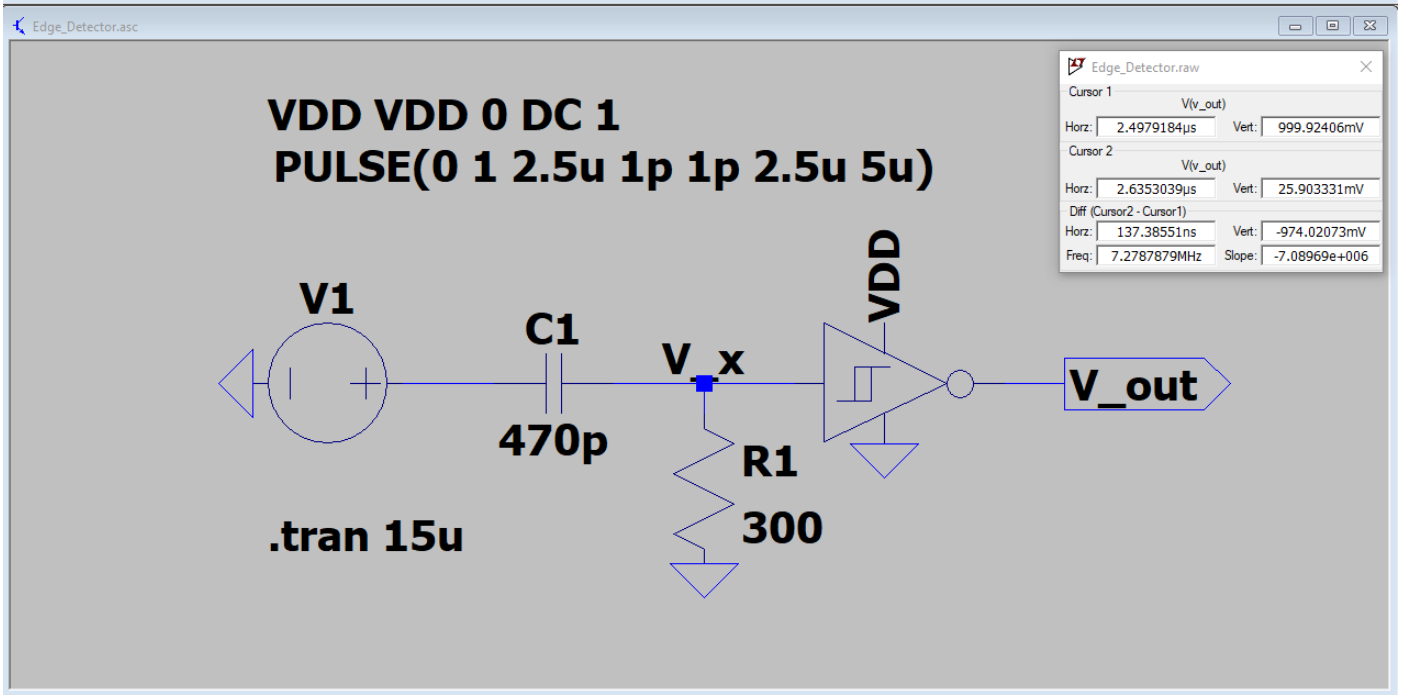
SCHMITT TRIGGER EDGE DETECTOR

Changed the Frequency → 200KHz (so some cases will have T1 < 2.2RC)

Changed the Input Voltage Amplitude & VDD → 1V (so V_x & V_{out} will drop to 0V, otherwise its about the same)

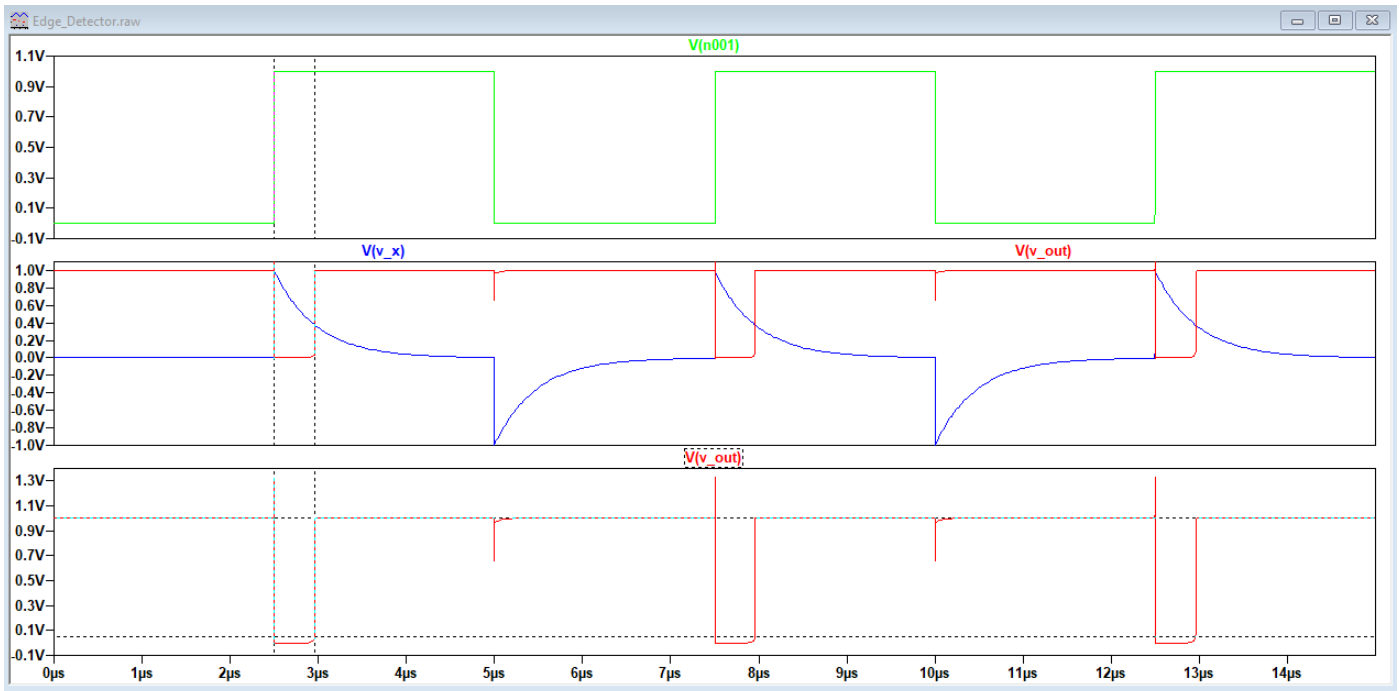
- C = 470pF R = 300Ω

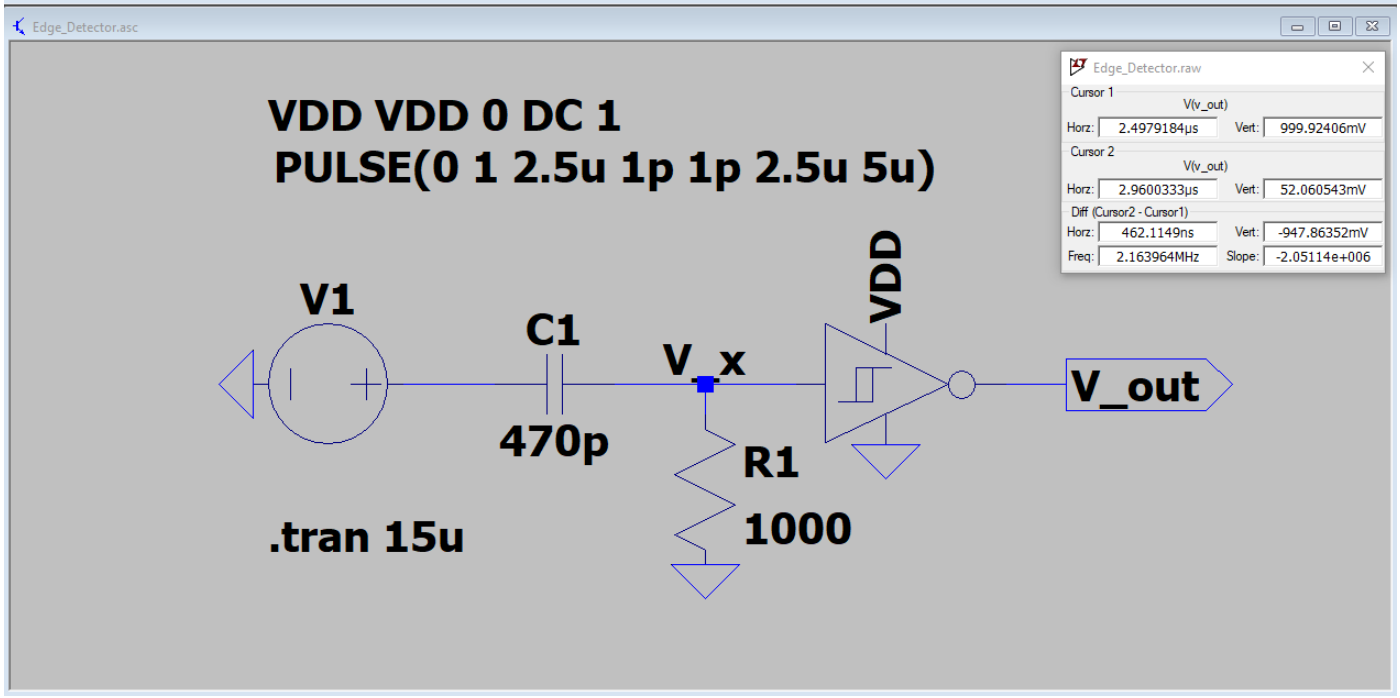




Duration of Pulse: 137ns

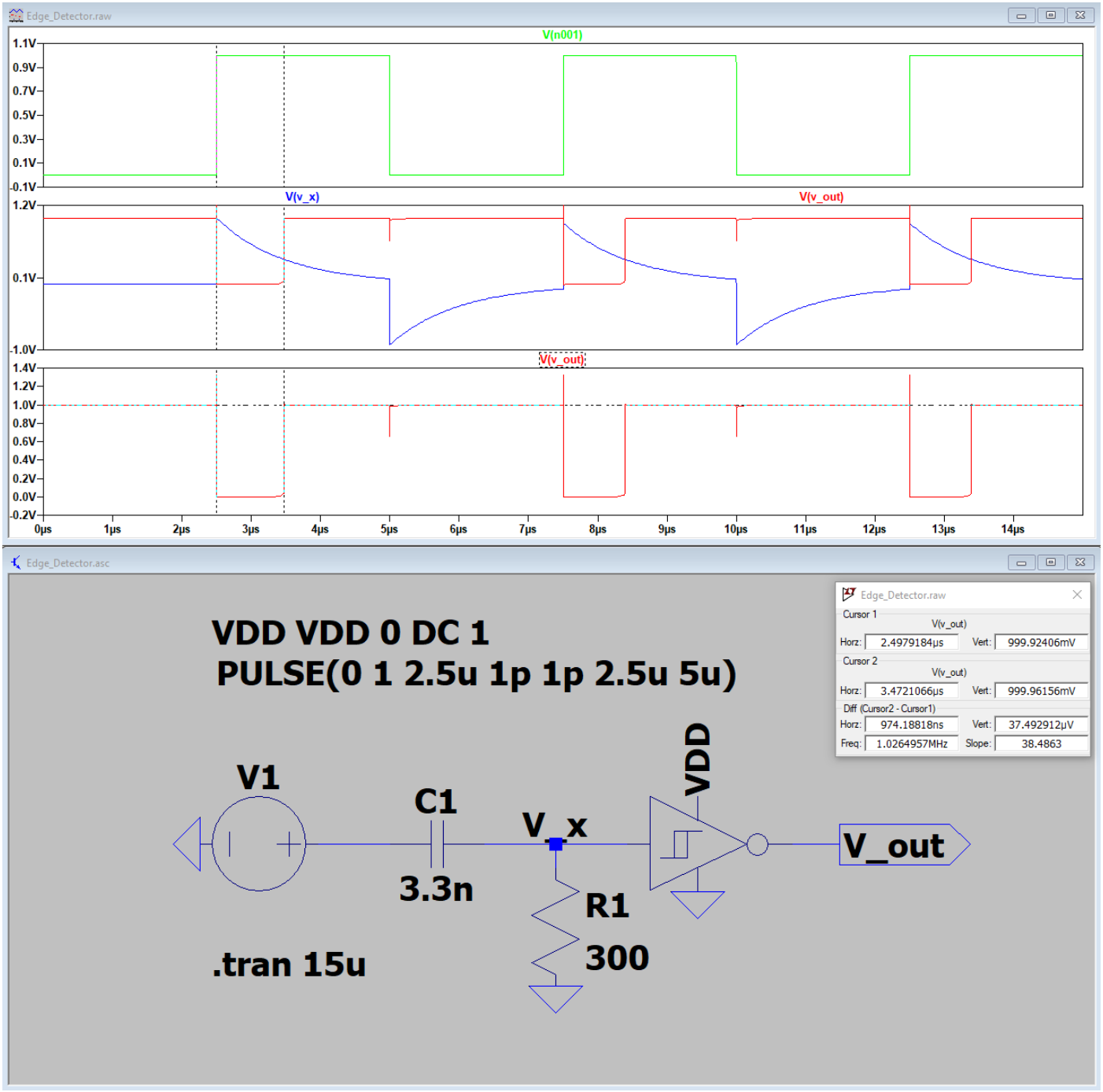
- C = 470pF R = 1000Ω





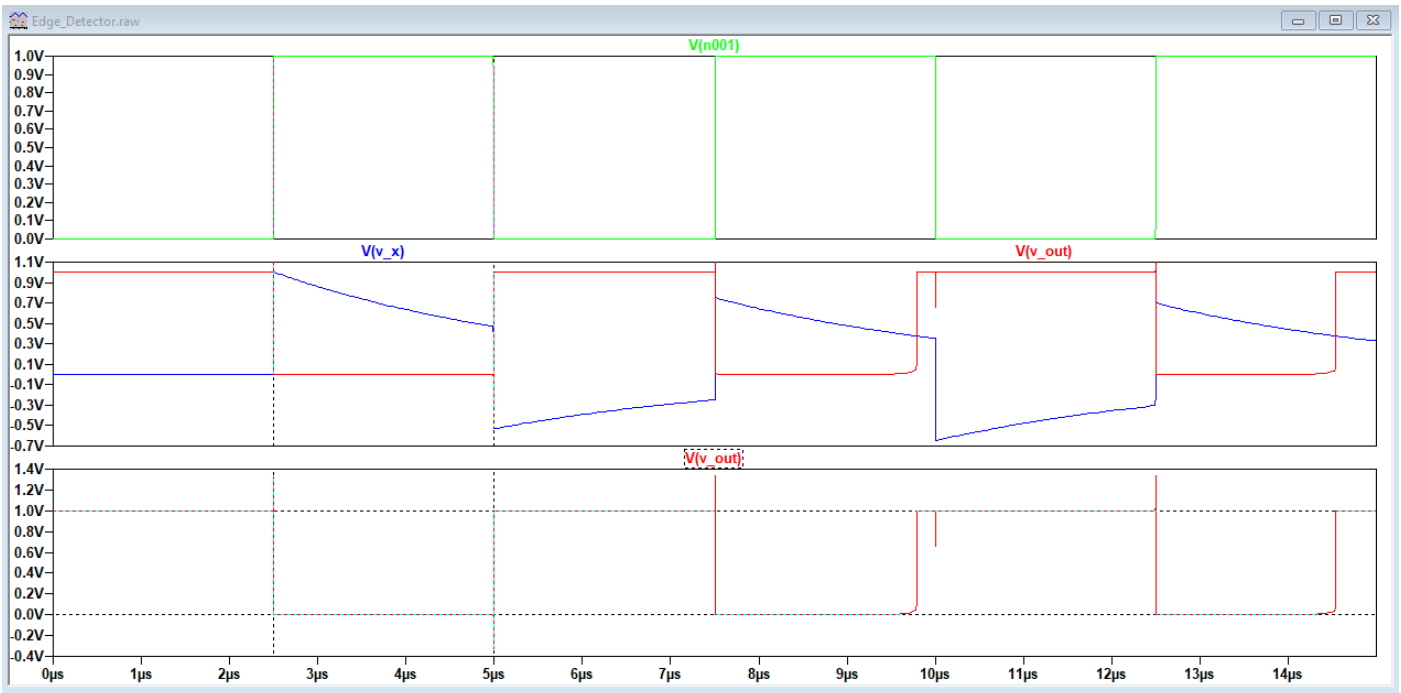
Duration of Pulse: 460ns

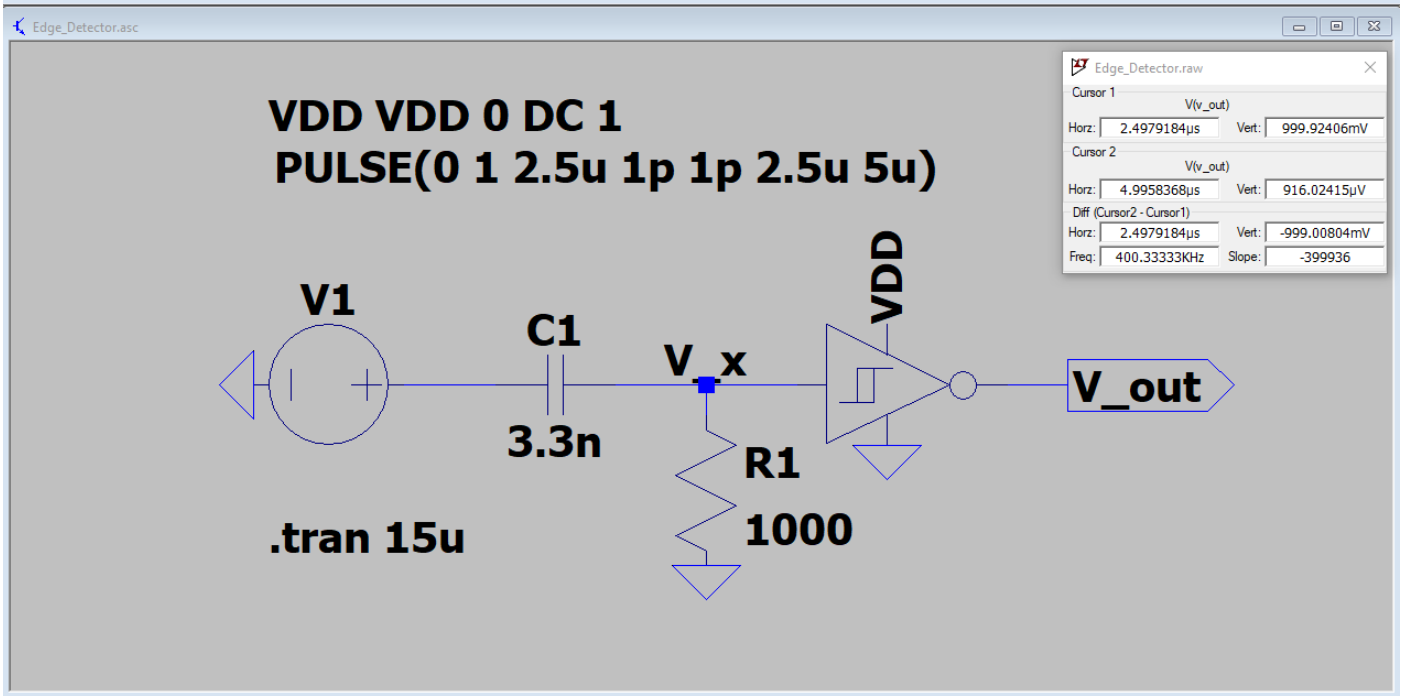
- C = 3.3nF R = 300Ω



Duration of Pulse: 974ns

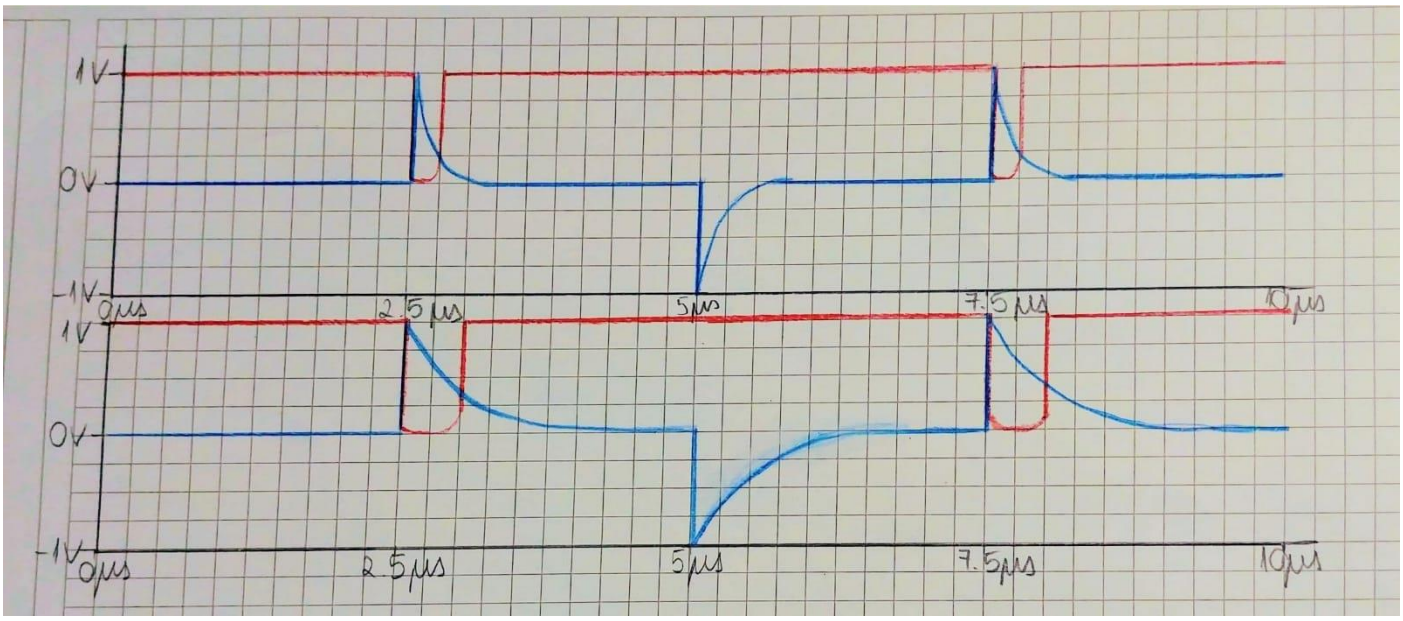
- C = 3.3nF R = 1000Ω



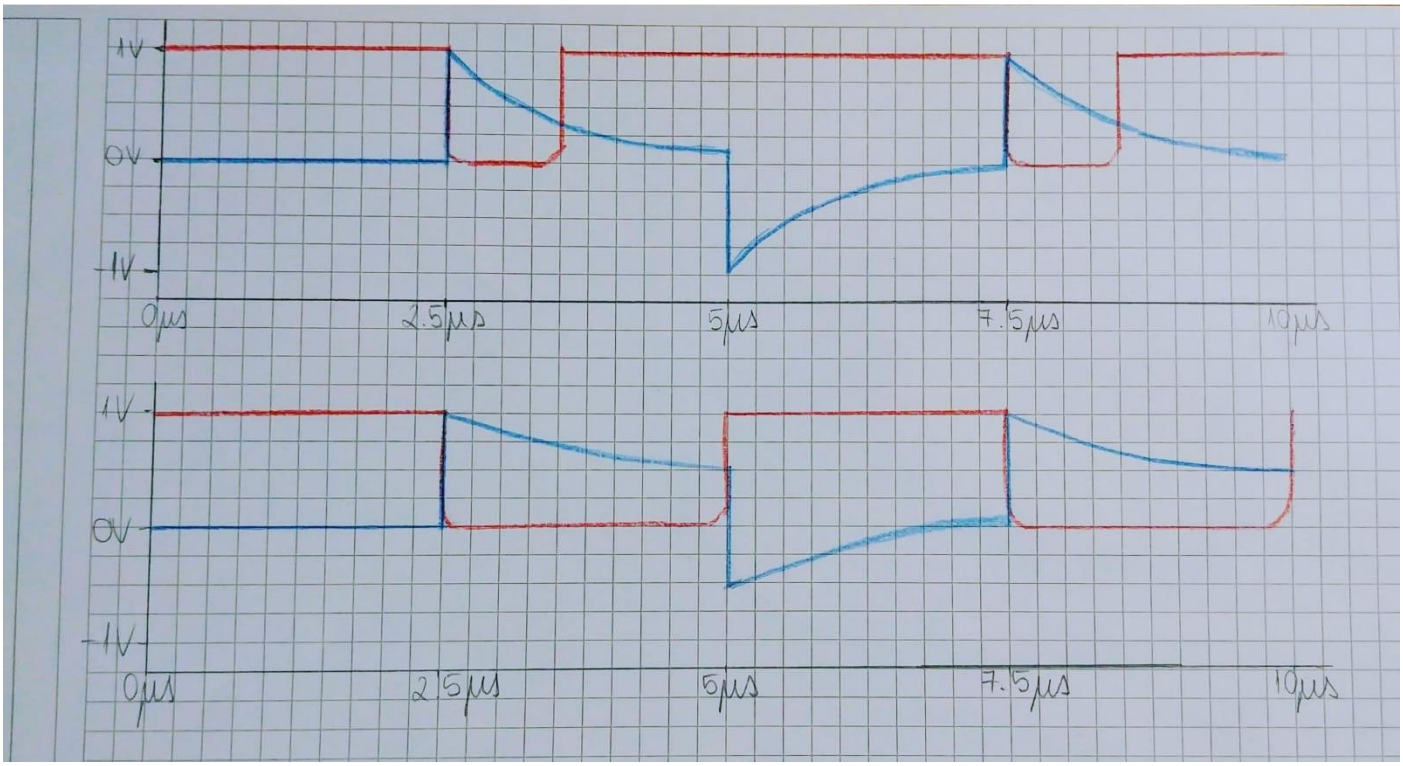


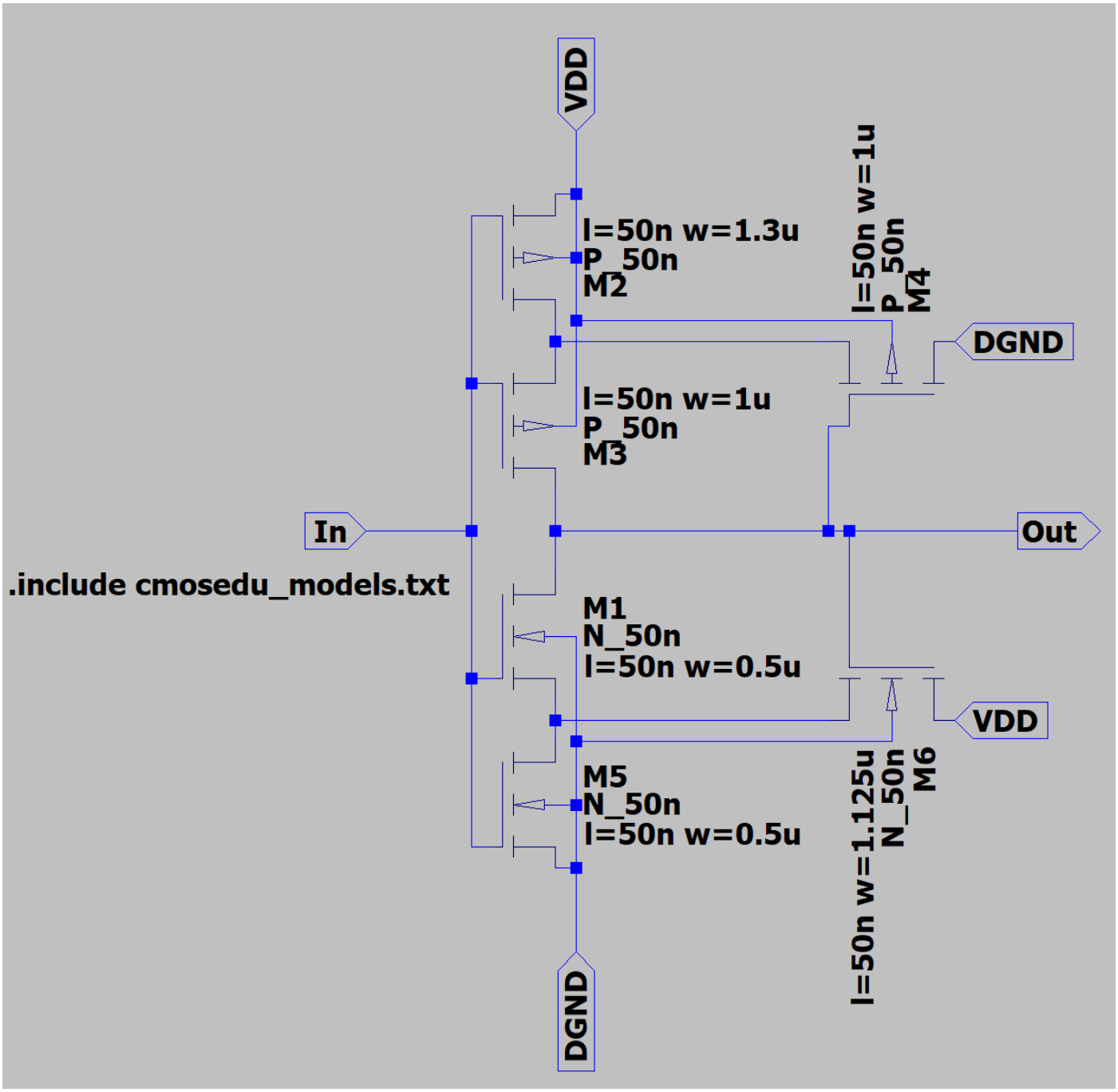
Duration of Pulse: ≈2.5µs = T1 of Input Voltage, since T1 > 2.2RC

- C = 470pF R = 300Ω
- C = 470pF R = 1000Ω



- C = 3.3nF R = 300Ω
- C = 3.3nF R = 1000Ω




VDD
l=50n w=1.3u
P_50n
M2
l=50n w=1u
P_50n
M4
DGND
l=50n w=1u
P_50n
M3
In
Out
.include cmosedu_models.txt
M1
N_50n
l=50n w=0.5u
VDD
M5
N_50n
l=50n w=0.5u
l=50n w=1.125u
N_50n
M6
DGND