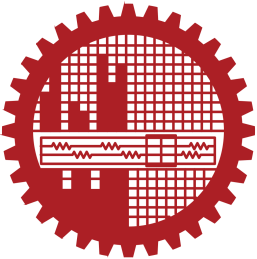
**BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY**



**Gate Driver Using HEMT GS66504B and ADuM4121A**

**Prepared by- Submitted to-**

Sagar Kumar Das **Dr.** **Cheng Zhang**

Ratul Kundu Lecturer,

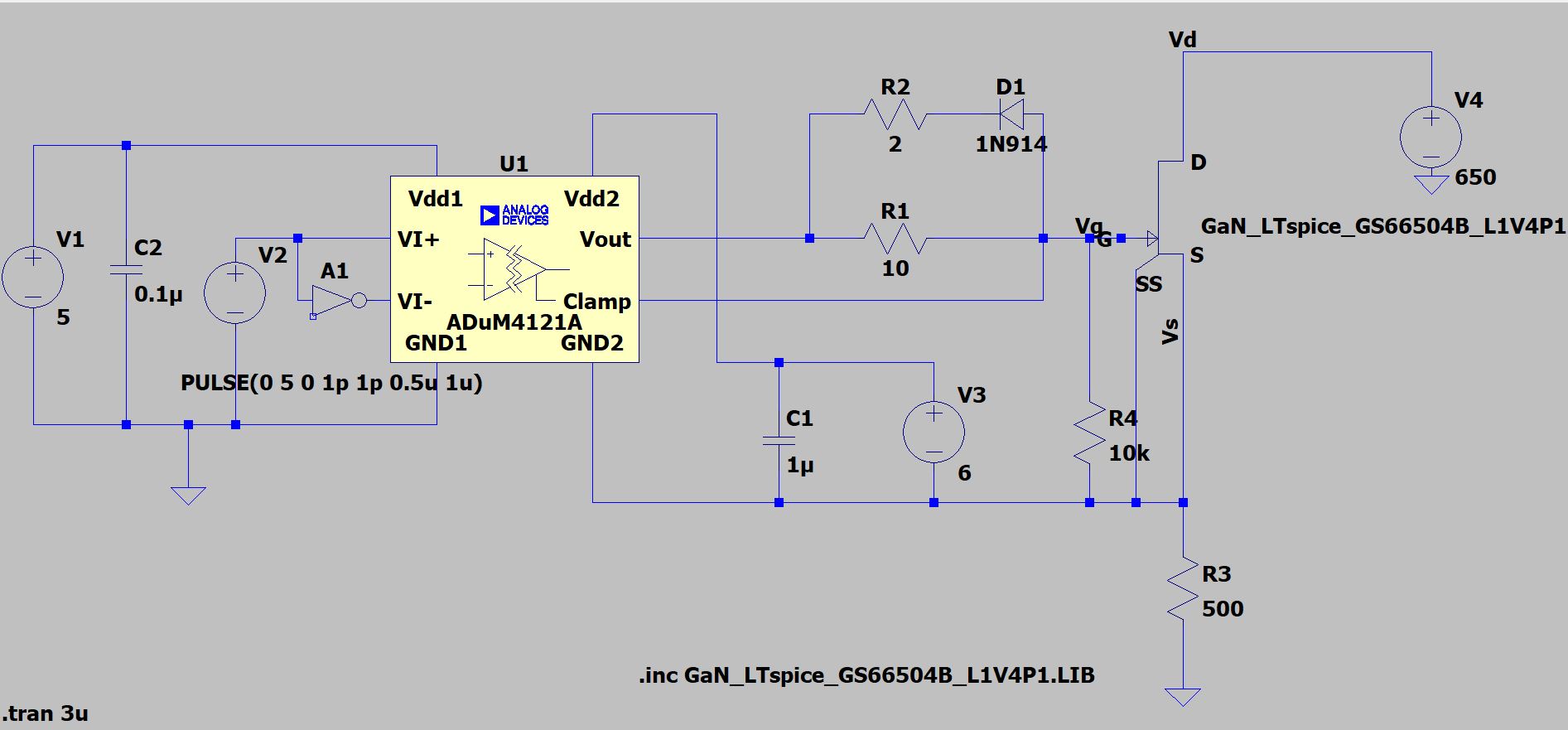
MSc’22, BUET University of Manchester

**Supervised by-**

**Nadim Chowdhury Sir**

Assistant Professor, BUET

**Schematic Diagram:**

****

**Here,**

**VIN= 650V**

**Load Resistor = 500Ω**

**Switch\_On\_Current=**

**VPulse**

**VGS**

**Output:**

At Switching Frequency = **500KHz**

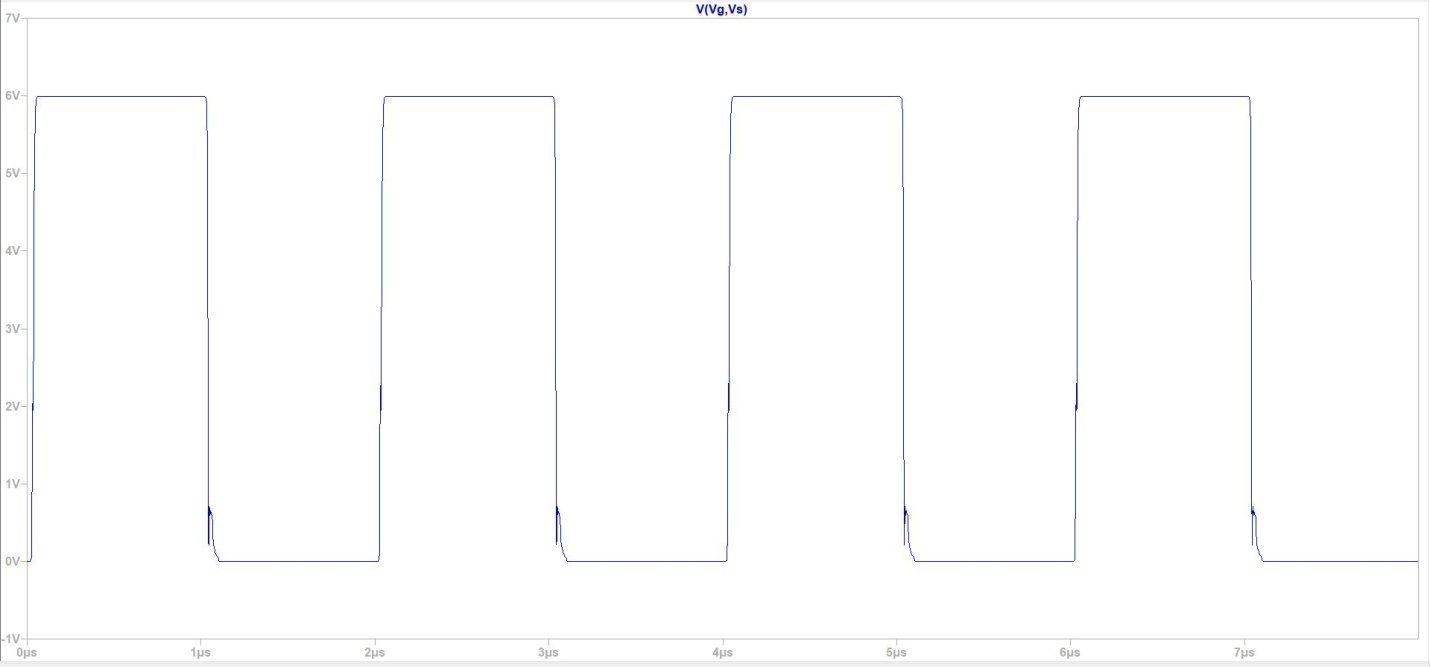
Turning ON, (approx.)

Turning OFF, (approx.)

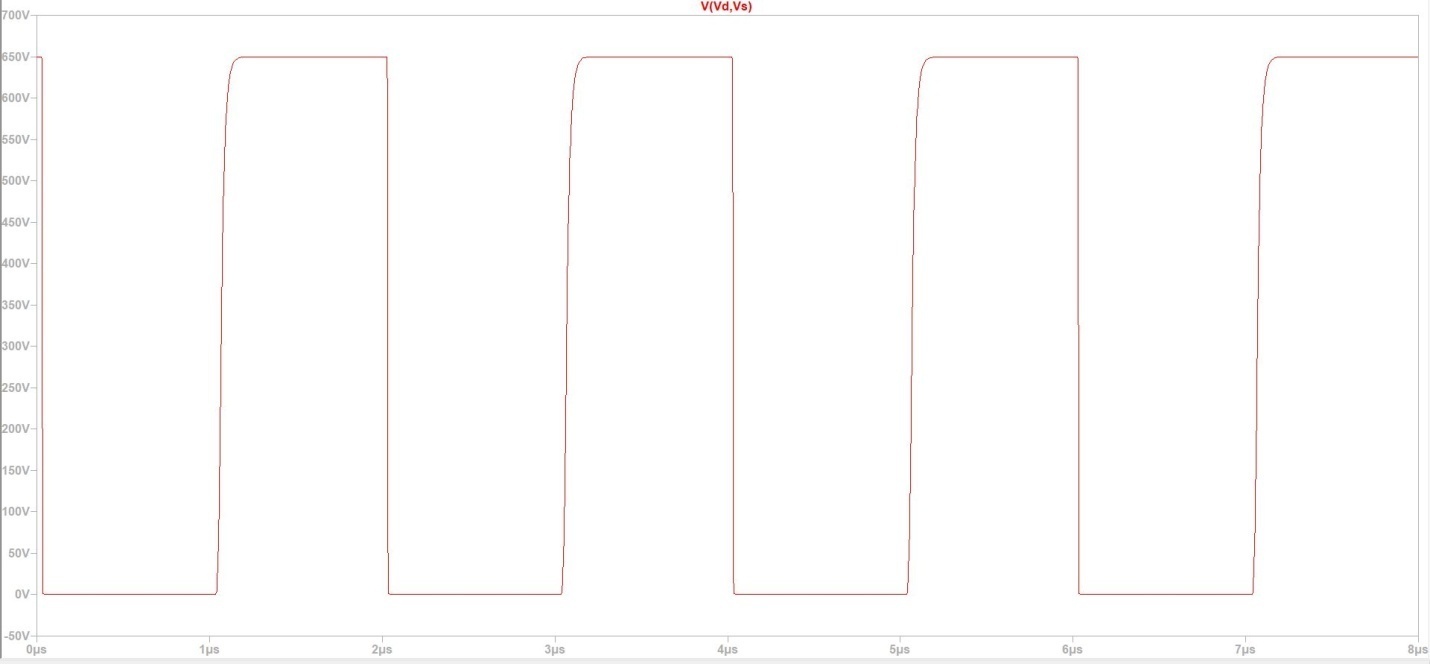
If, VGS=6 V 🡪 VDS=0V & I=1.3A

If, VGS=0V 🡪 VDS=650V & I=0A

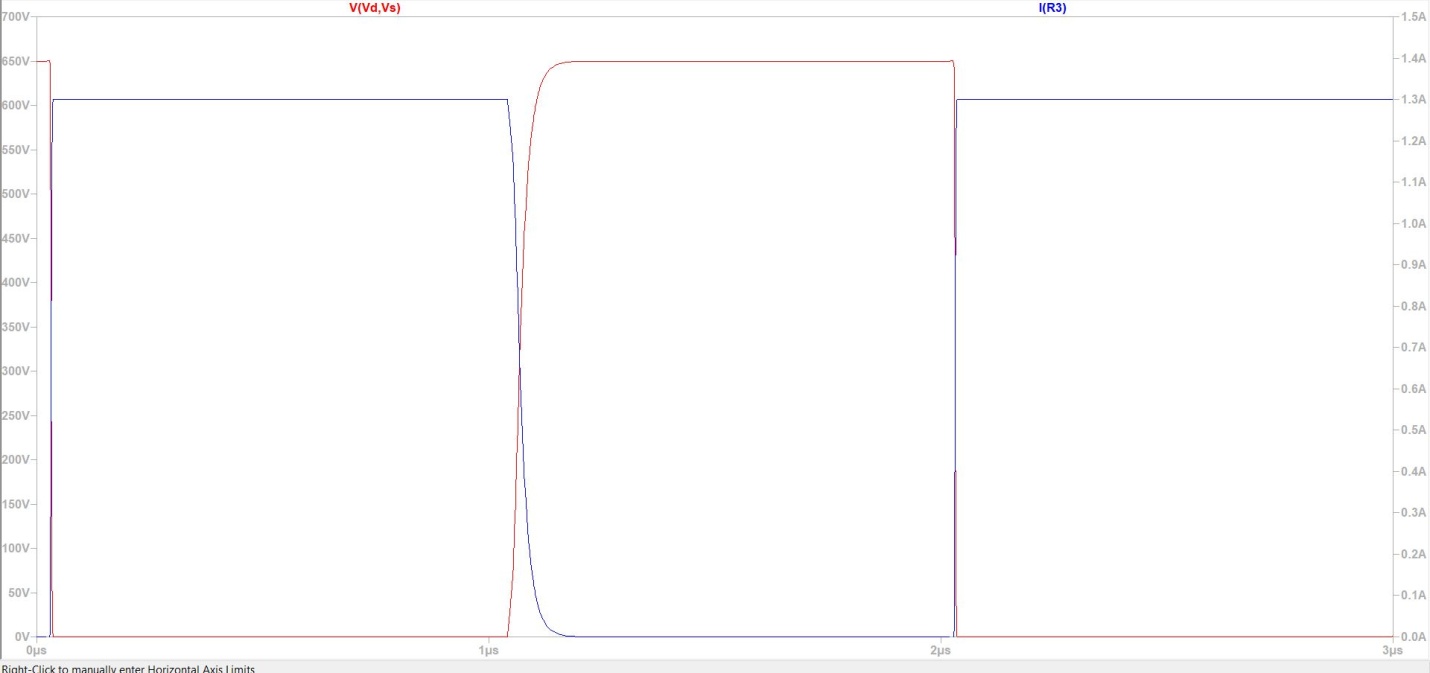
**VGS VS Time:**

****

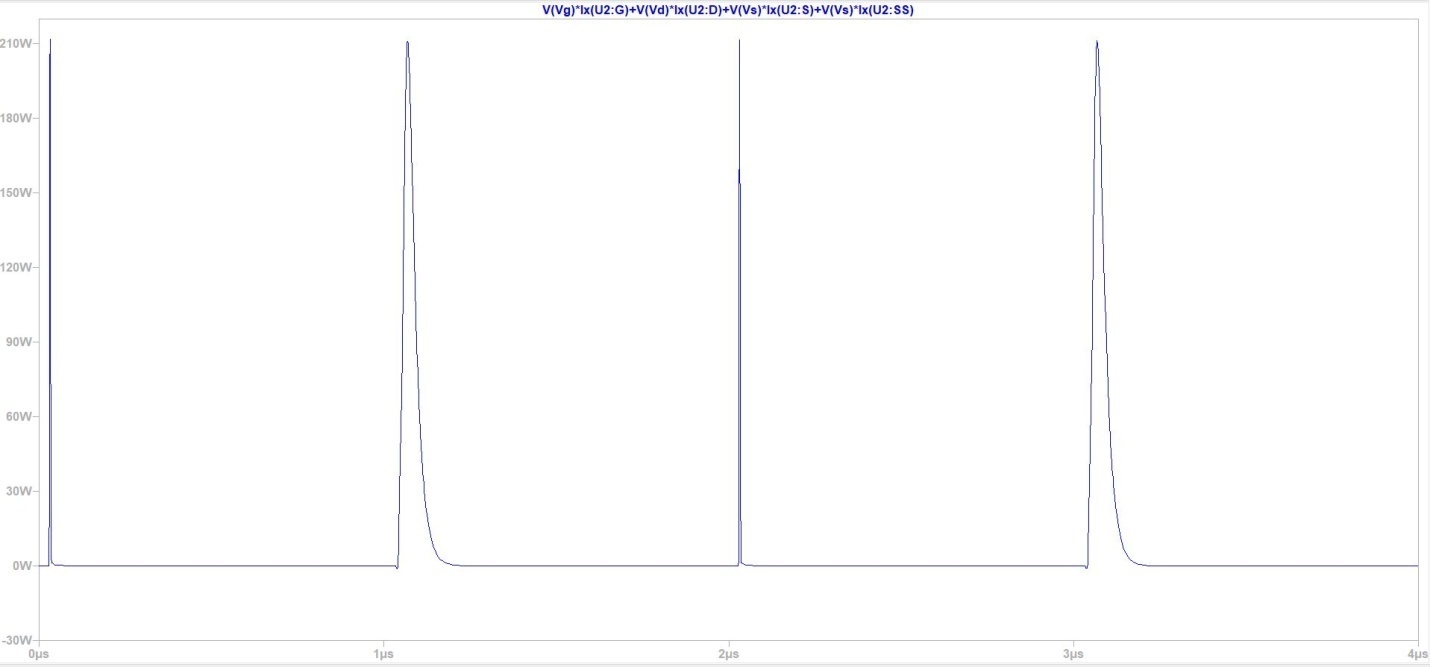
**VDS VS Time**

****

**VDS & Iload**

****

**Powerloss VS Time**

****

At Frequency = **1MHz**

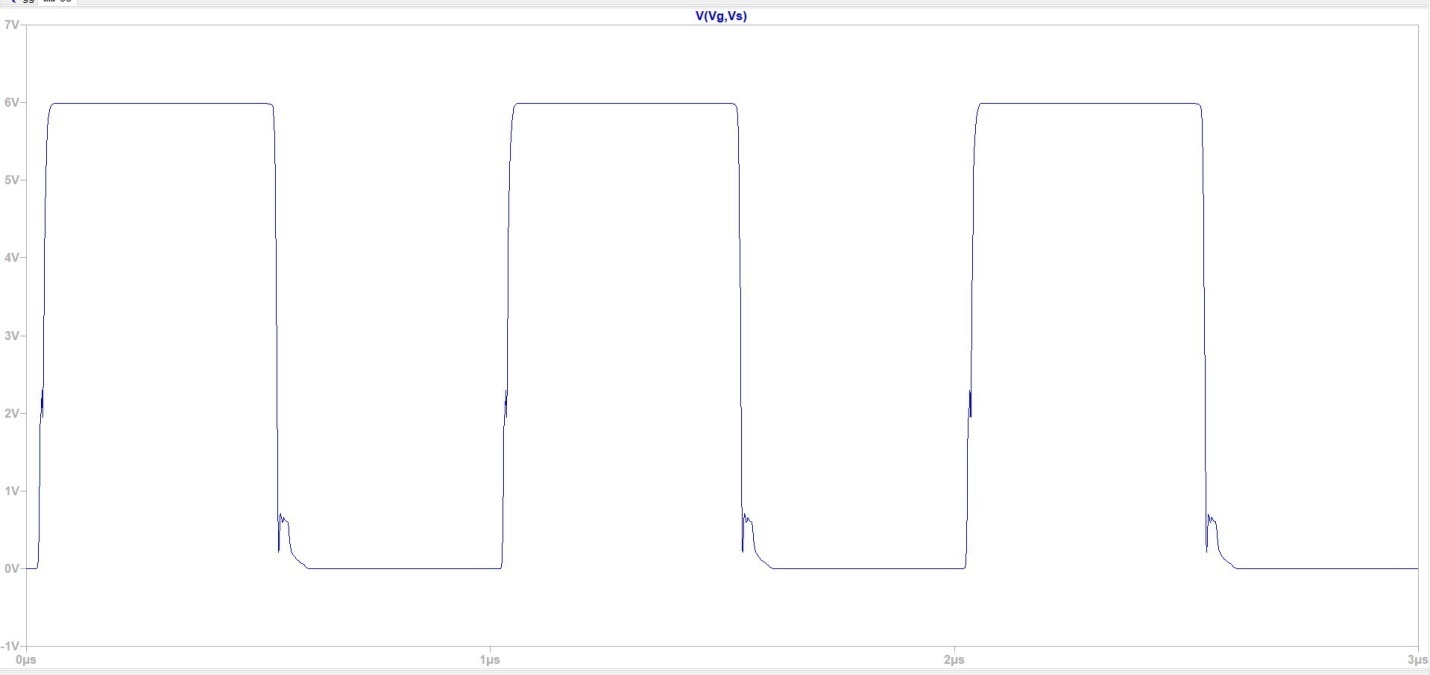
Turning ON,

Turning OFF, **V/ns (approx.)**

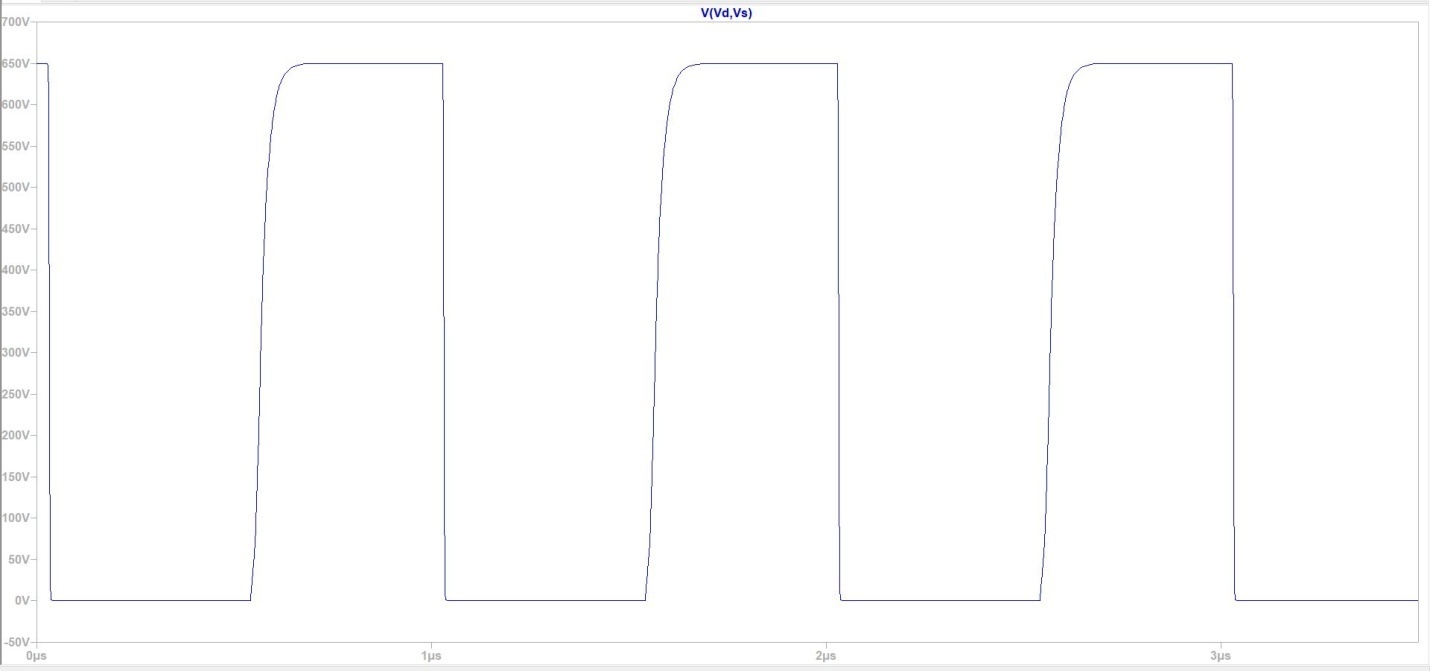
If, VGS=6 V 🡪 VDS=0V & I=1.3A

If, VGS=0V 🡪 VDS=650V & I=0A

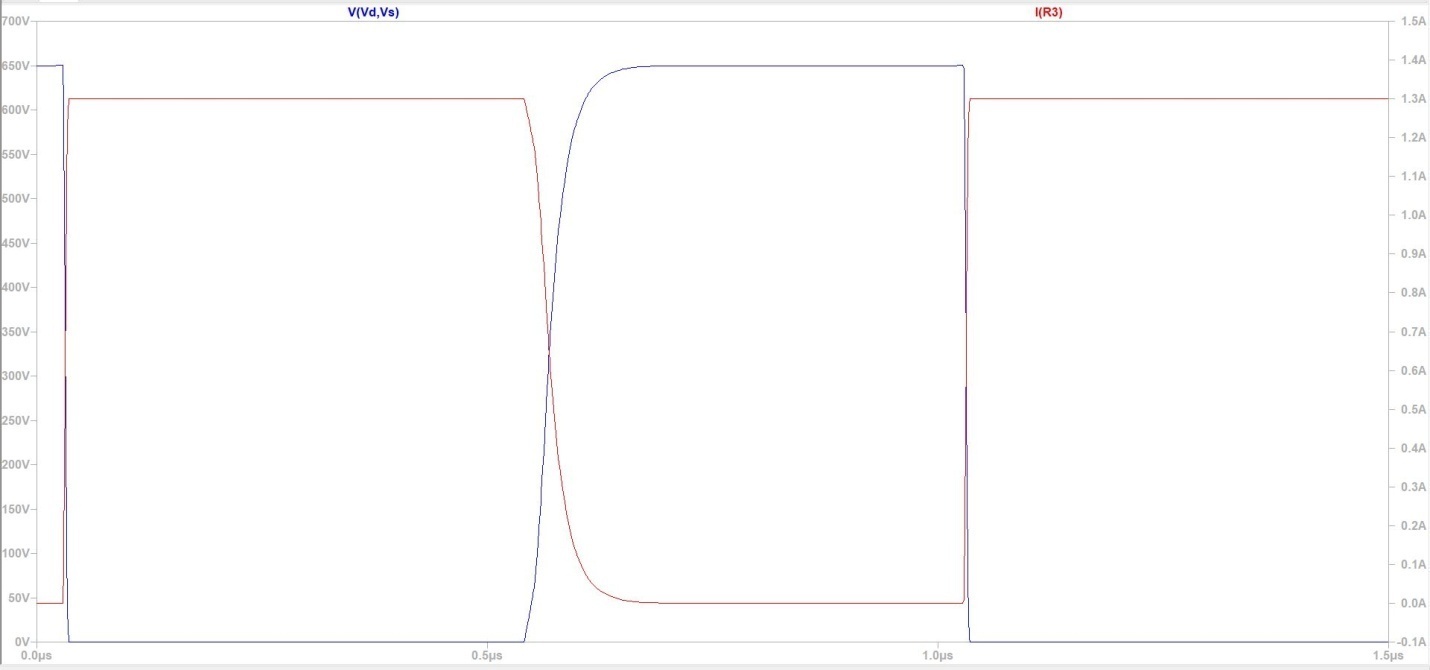
**VGS VS Time**



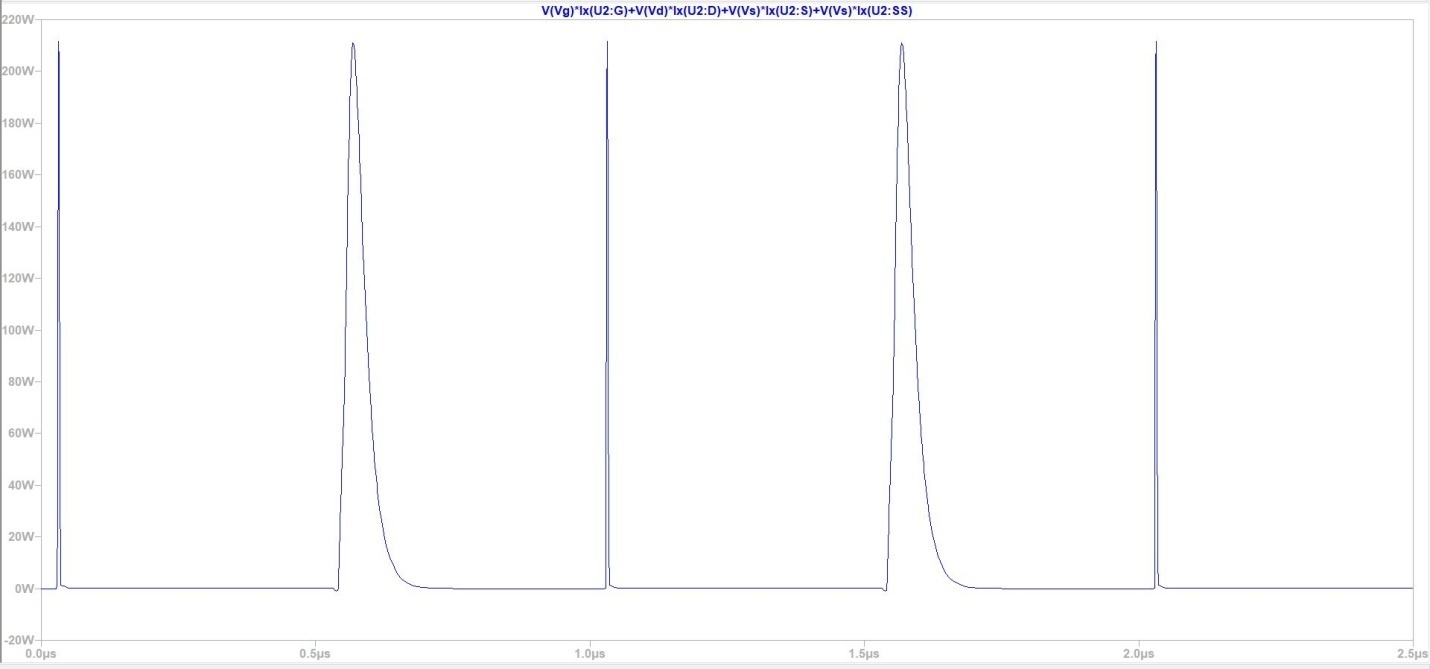
**VDS VS Time**



**VDS & ILoad**

****

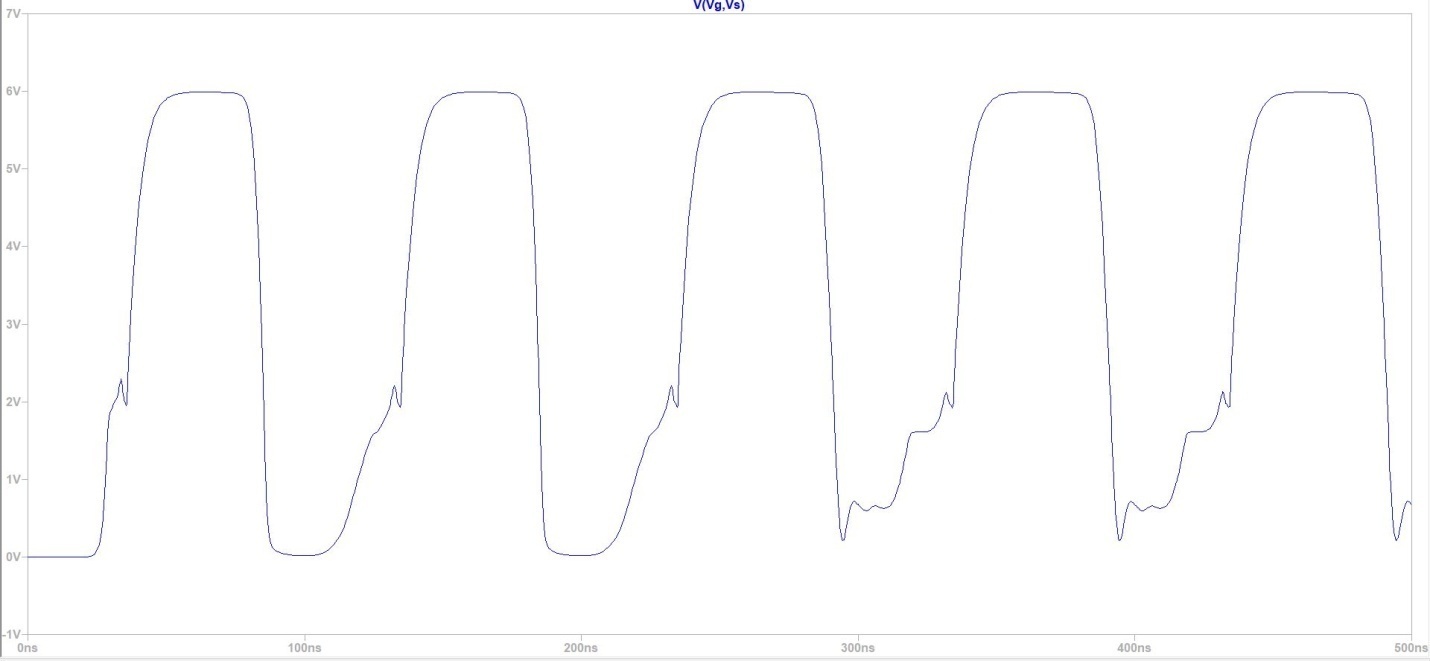
**Switching\_power\_losses VS Time**



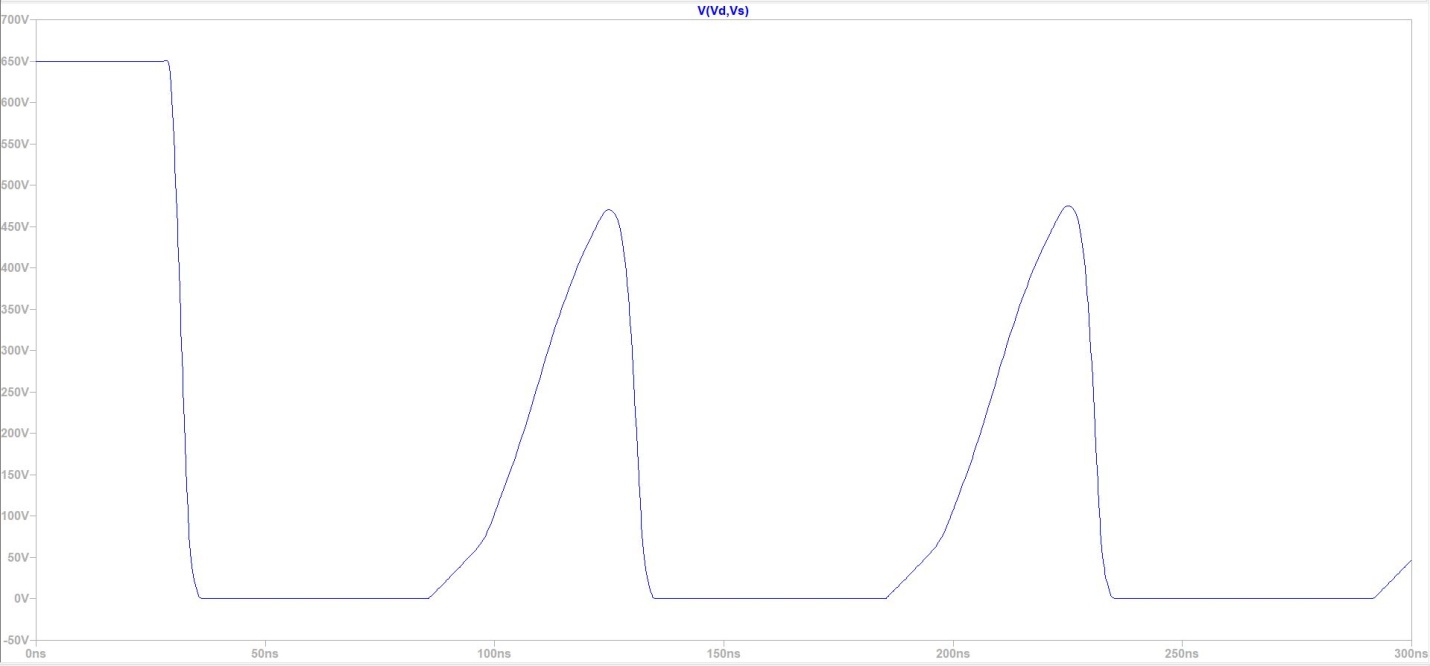
At Frequency= **10MHz**

Distorted output!!!

**VGS VS Time**

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**VDS VS Time**

****

Switching\_power\_losses VS Time

