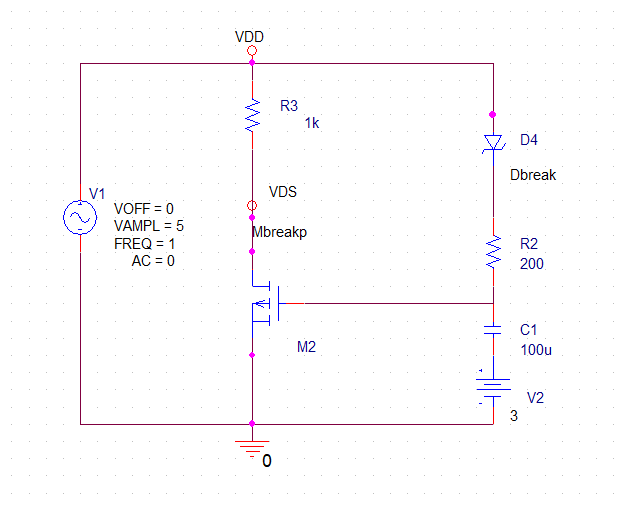
Memristor Emulator 1



Simulating the circuit in OrCad Pspice gave following results

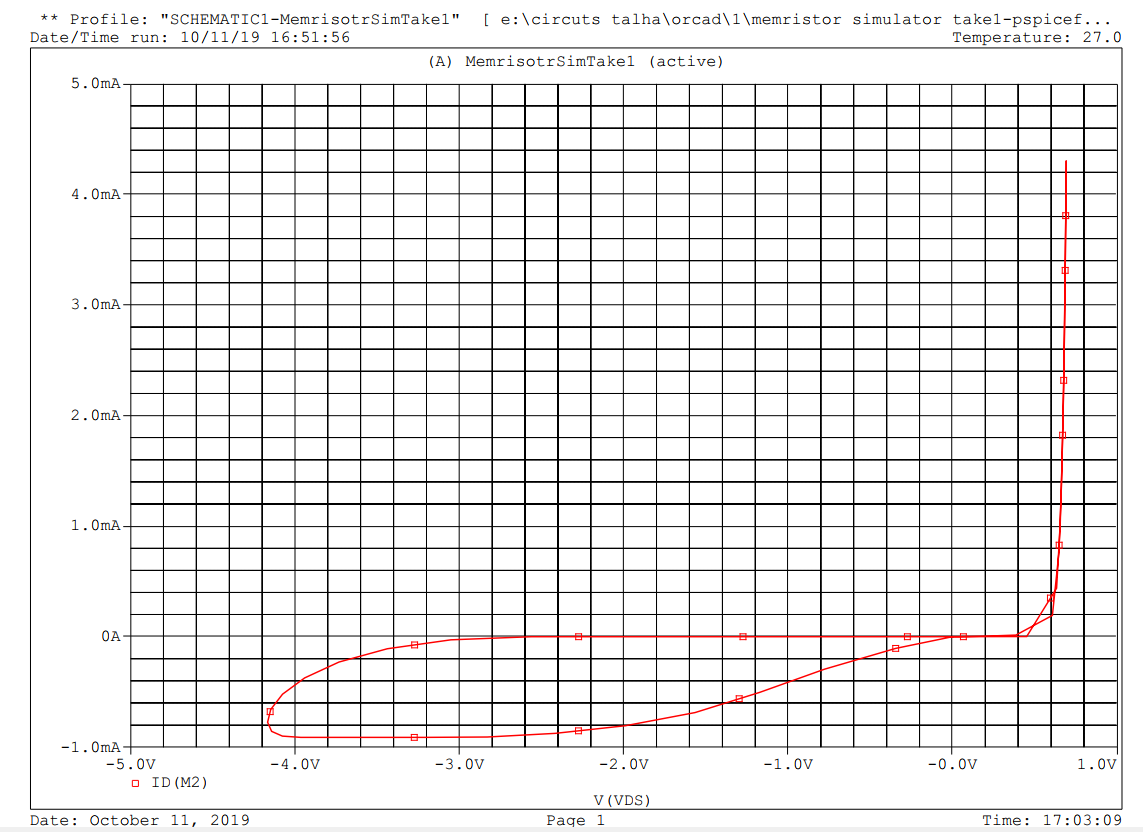


MbreakP Specified Parameters:

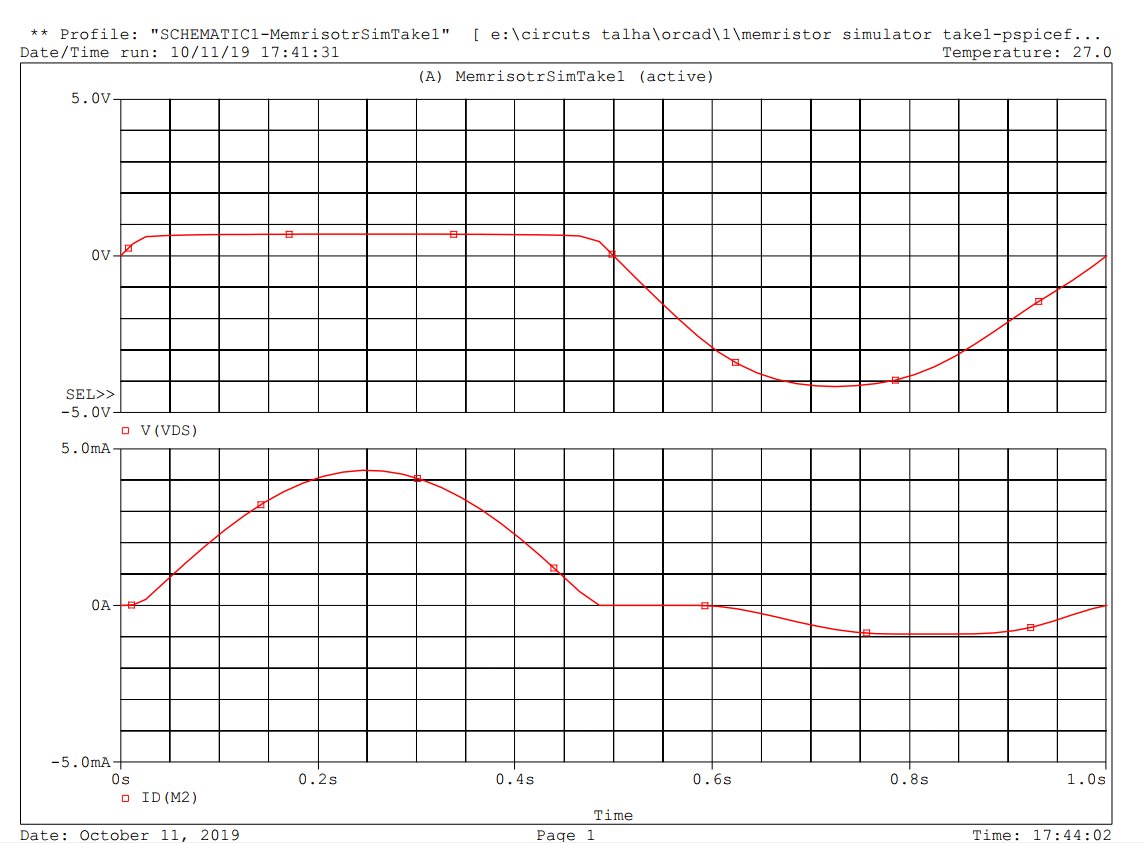
Setting these values as follows:

DbreakZ as Zener diode with following parameters:

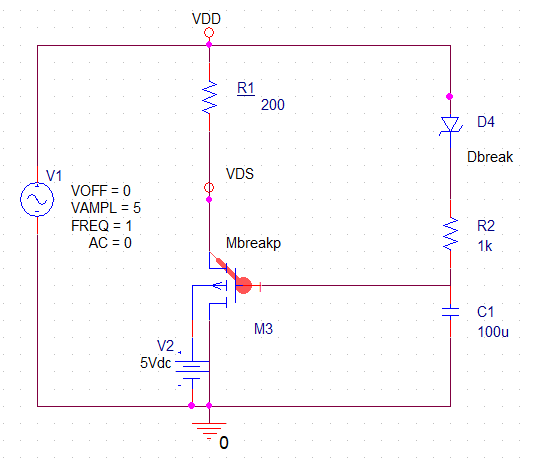
It gave the following shape of pinched hysterises loop



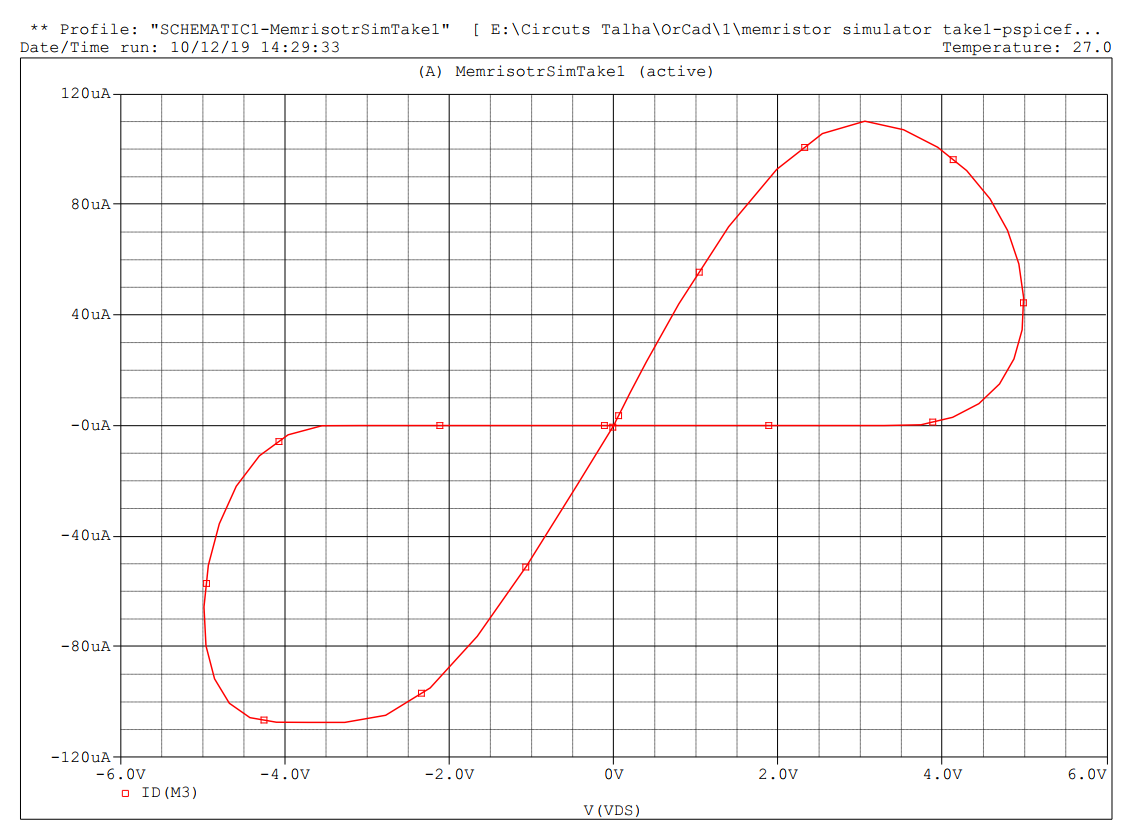
Curves of Vgs and Id are as follows;



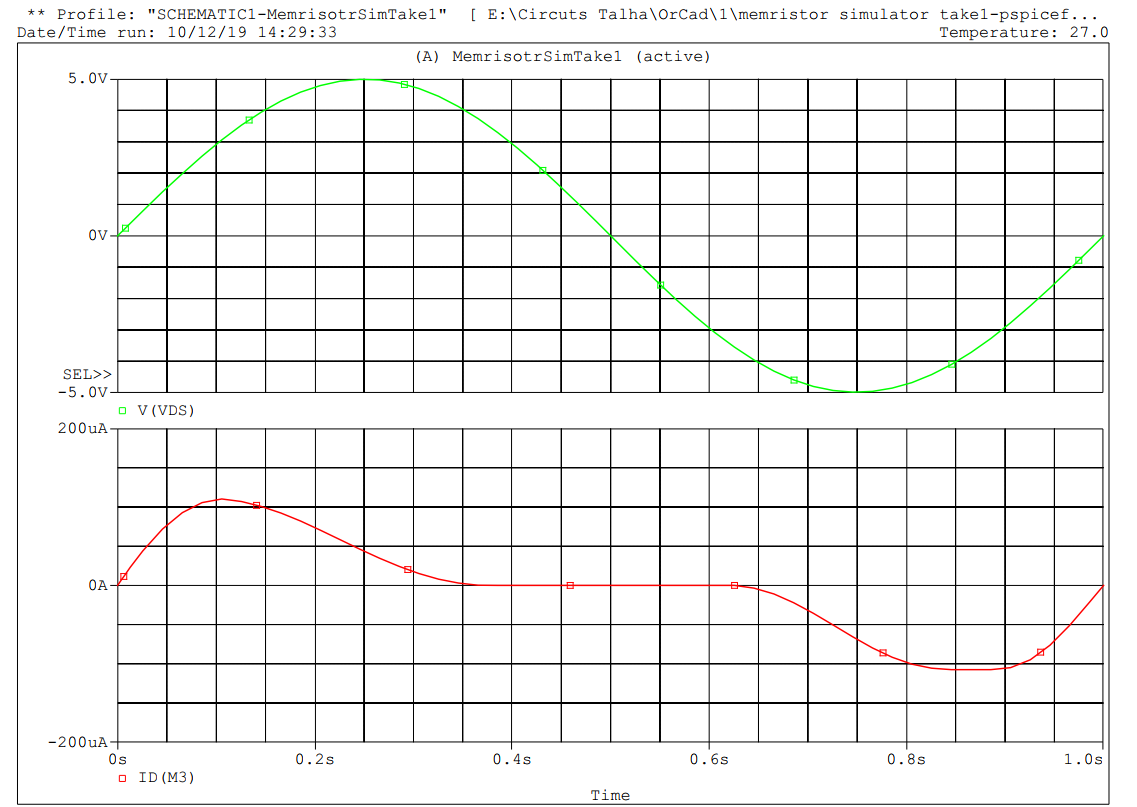
Modifying the above circuit for now as follows;



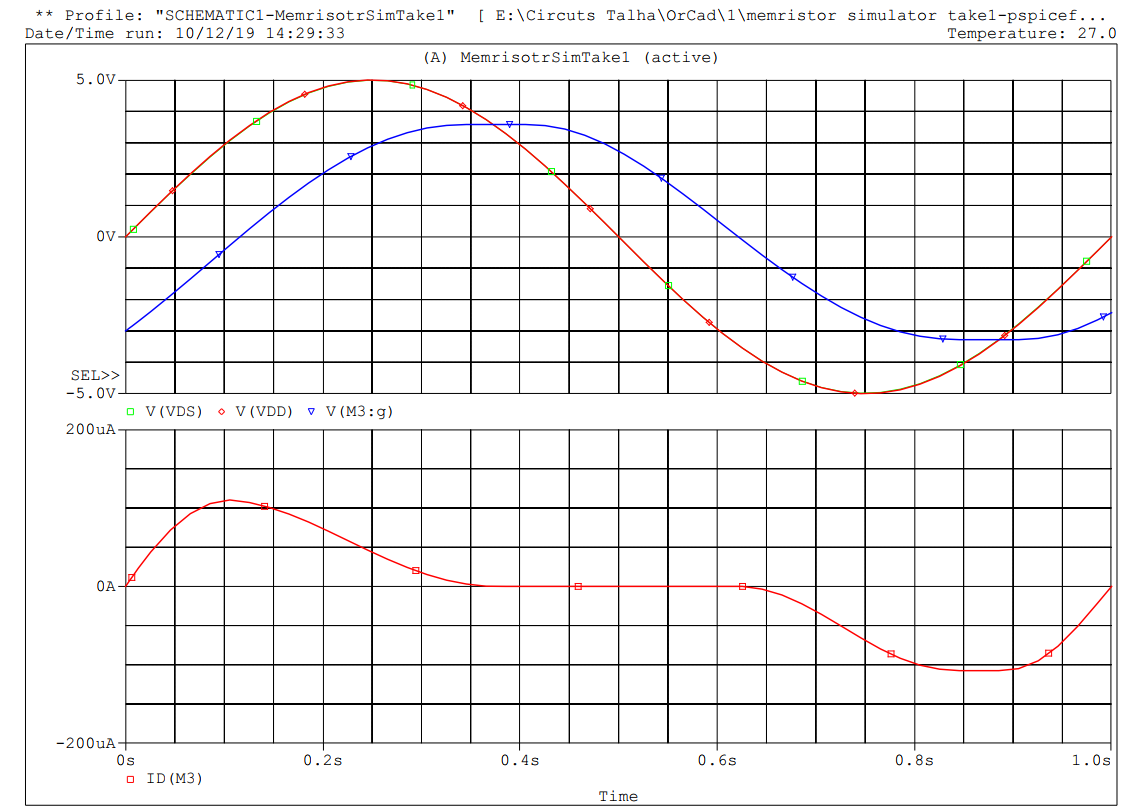
It gives the following output of pinched hysterics loop;(Capacitor Initial Voltage=-3V)



Curves of Vgs and Id are as follows;



Looking closely why the current is zero from 0.36 secnds to 0.651 seconds lets look at the Vgs and Vds voltage curves (Here Vth=-1V)

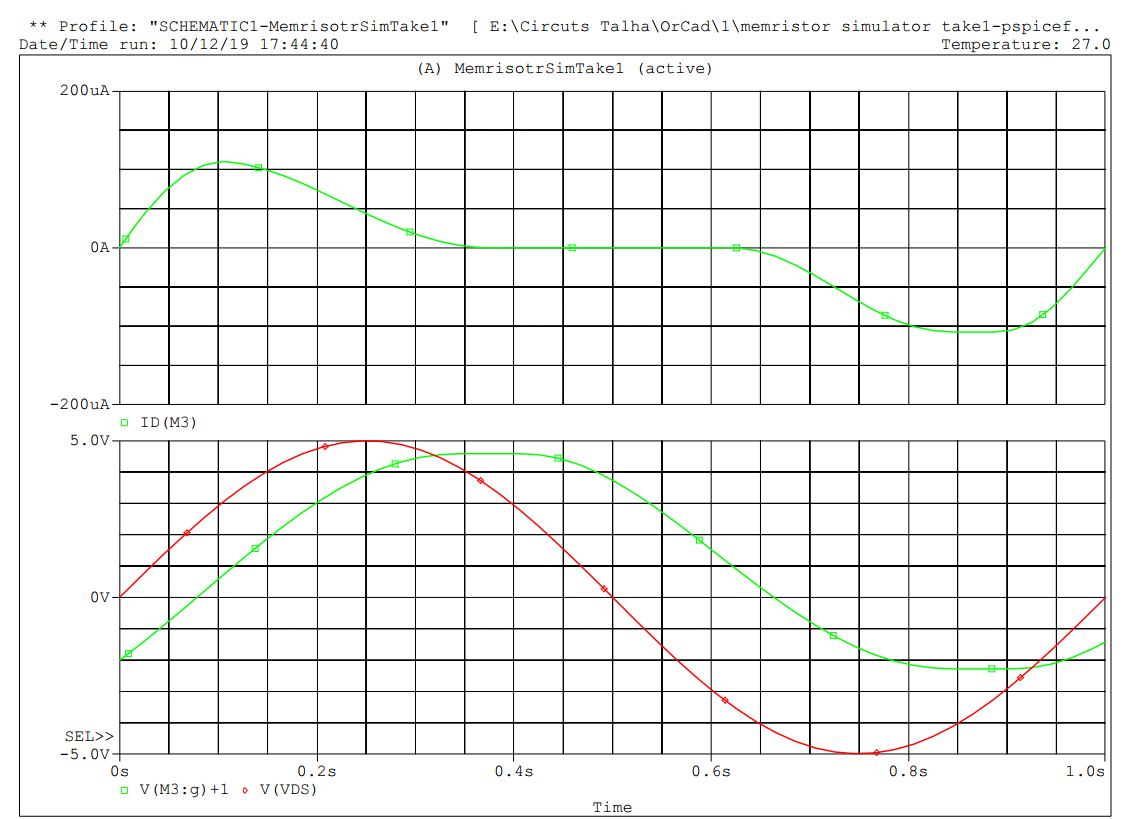


Above graph shows that form 0sec to 0.4 sec

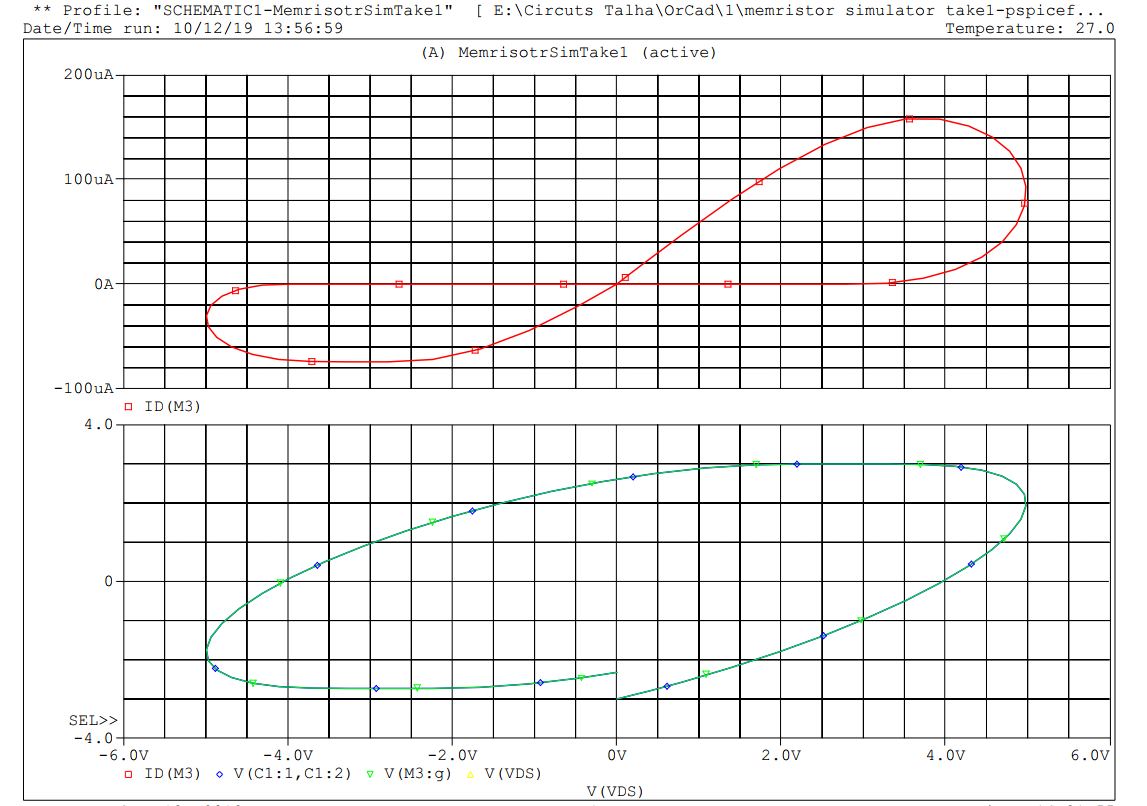
So,

Which means that the MOSFET is in Triode/Ohmic region, but after 0.4 sec as Vgs starts dropping from its peak value and falls below Vgs i.e.

Which means it goes into Cut-off region so;



Between vgs – vthh and vds and Id seperate



Vds vs Vgs and Vds vs Id