BIRZEIT UNIVERSITY

Faculty of Engineering and Technology

Electrical and Computer Systems Engineering

ENEE3102

"Prelab Exp#5"

The Field –Effect Transistor

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Eng: Amgad

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➢ *CHARACTERESTICS OF AN N-CHANNEL JFET :*

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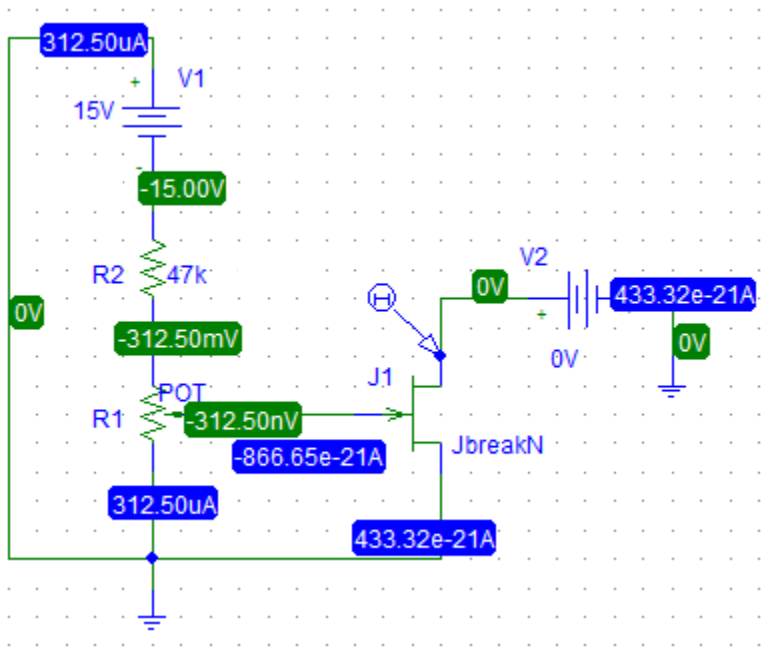
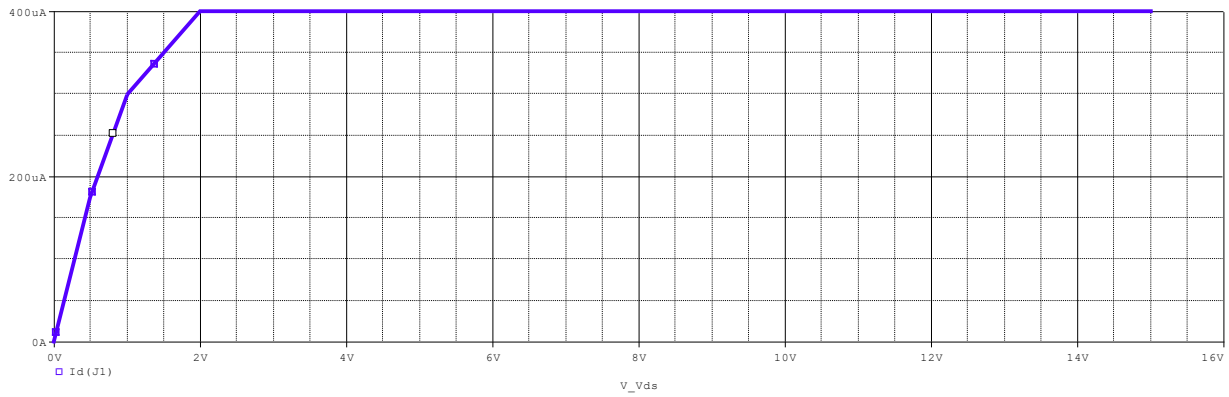
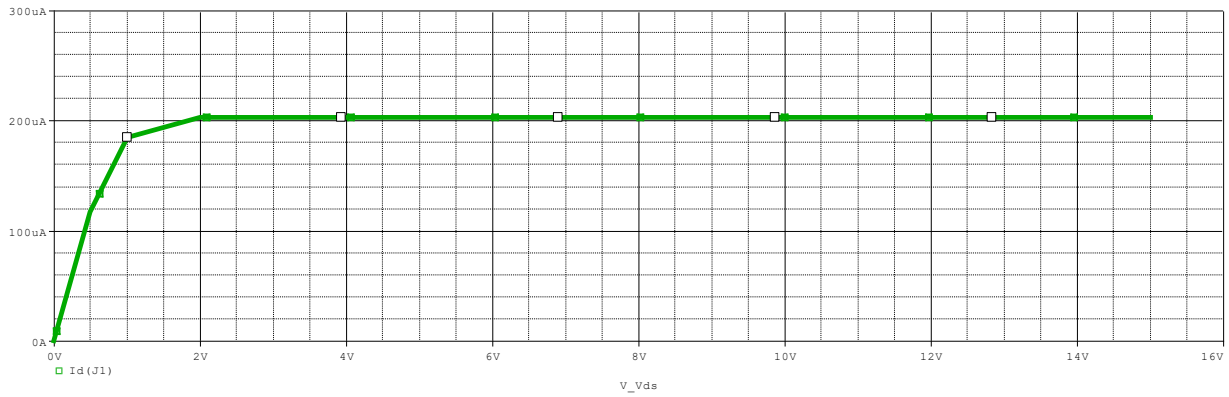


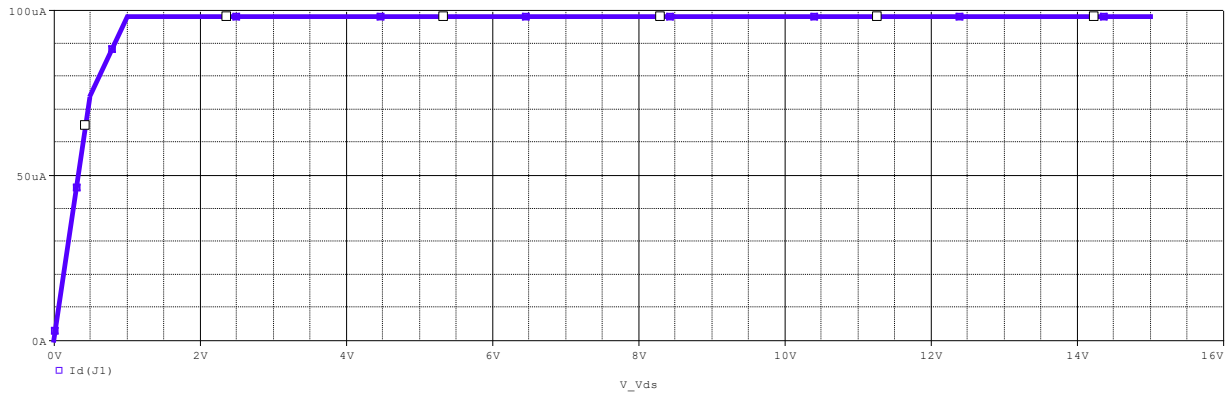
- **When V_{gs} = 0 :**



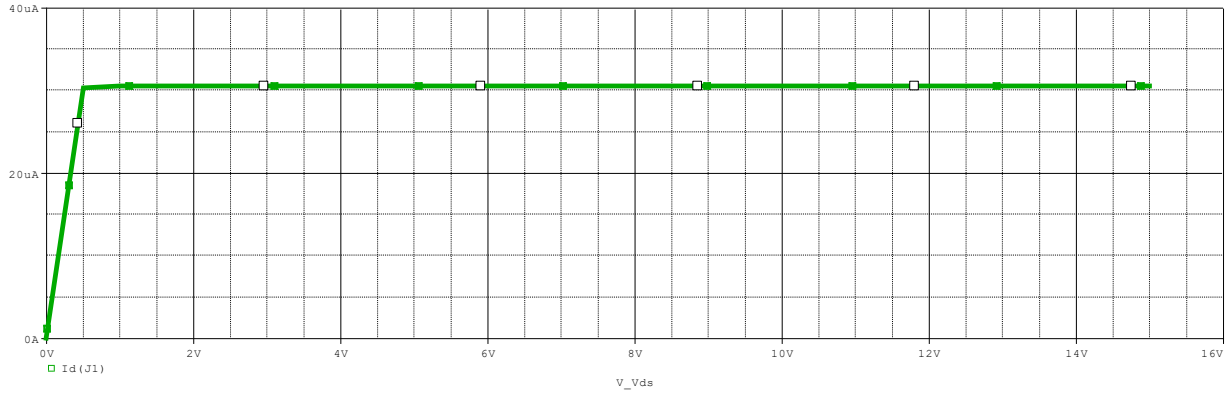
- **When V_{gs} = -0.5 V :**



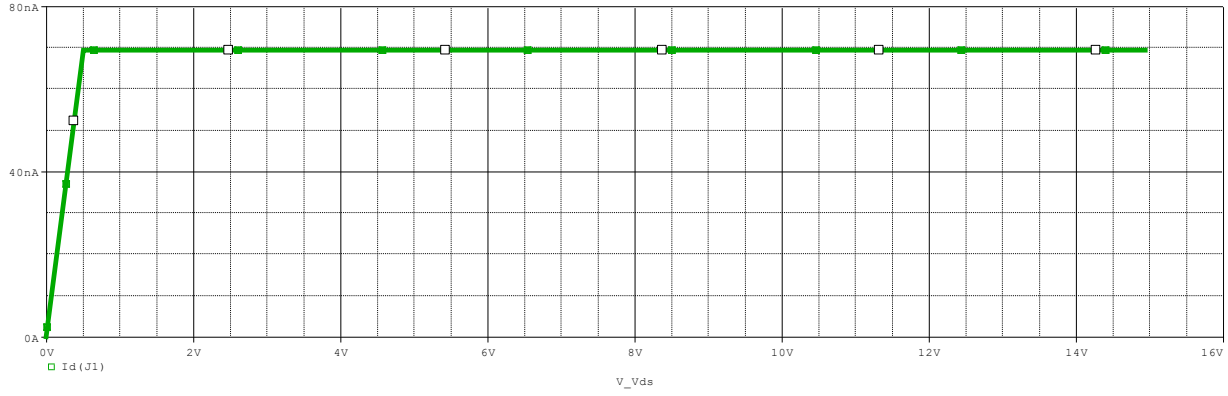
- **When V_{gs} = -1 V :**



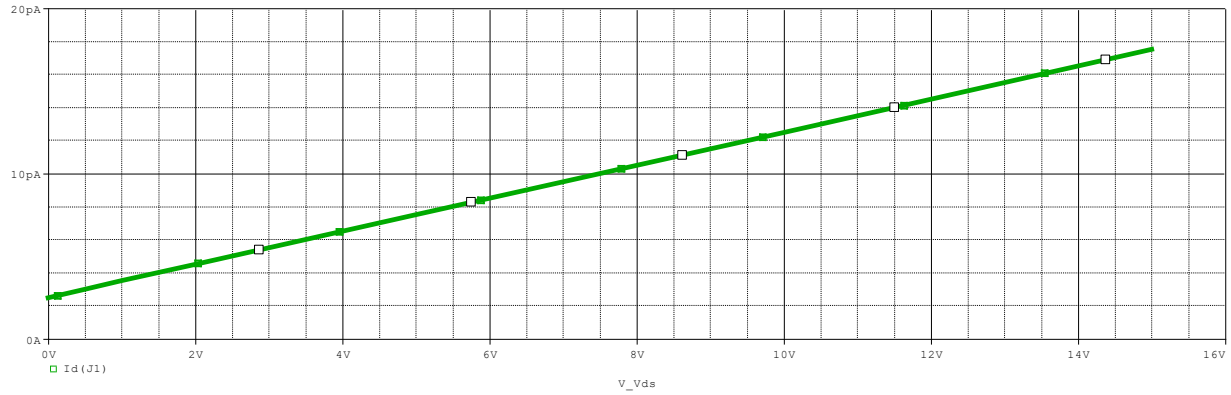
- **When V_{gs} = -1.5 V :**



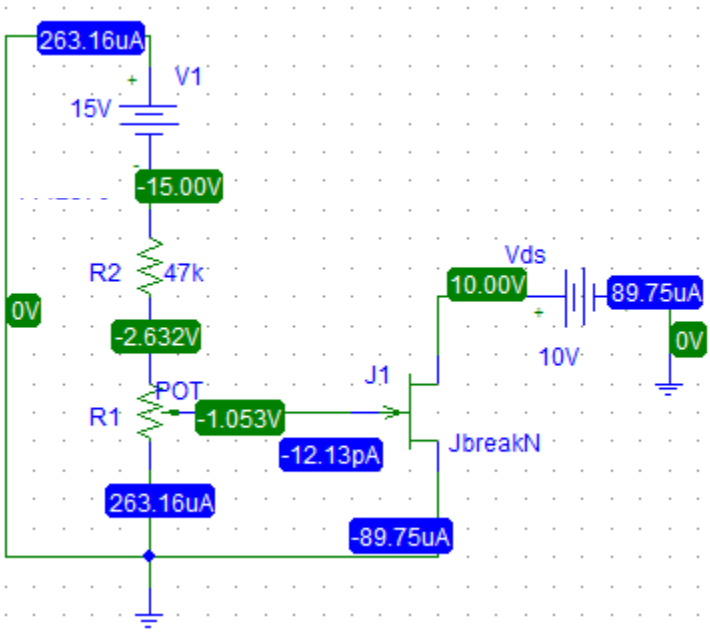
- **When V_{gs} = -2 V :**



- **When V_{gs} = -2.5 V :**



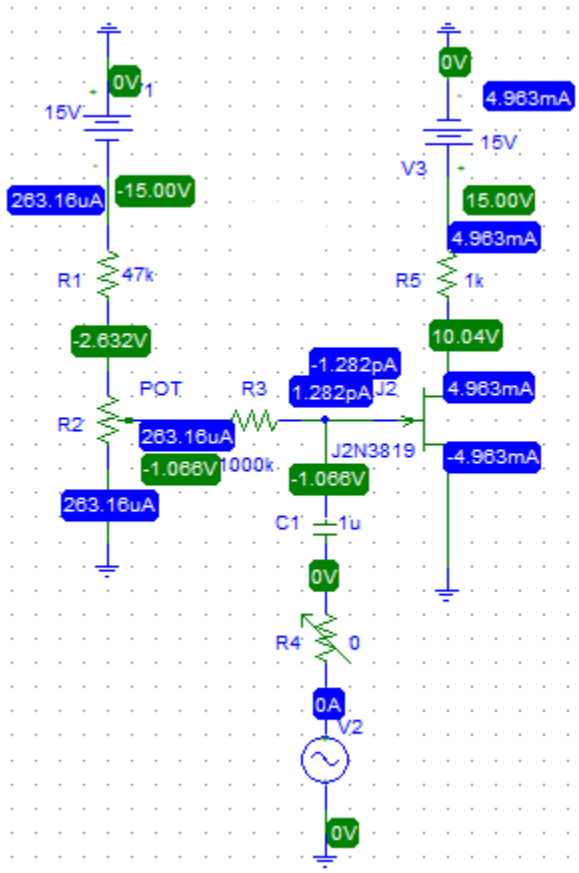
B-

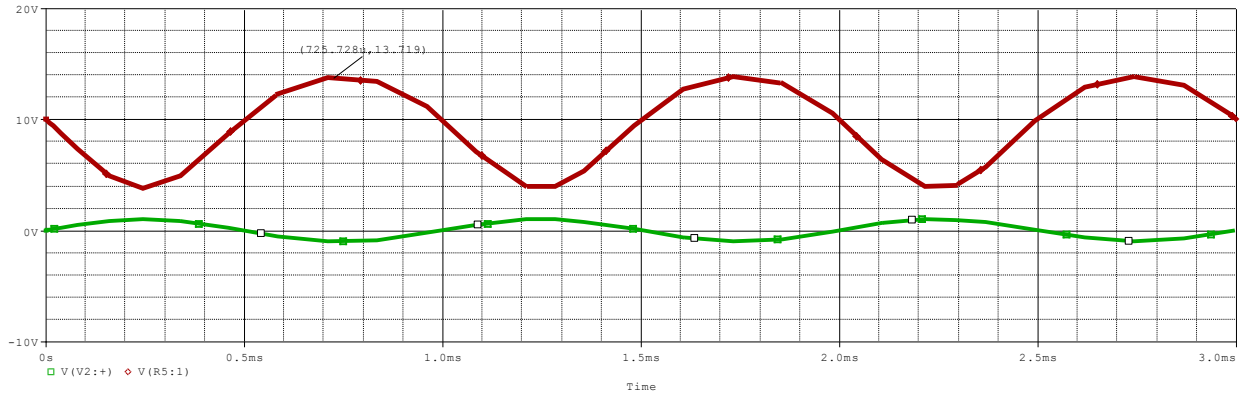


SO IG = -12.13 PA

➢ *A JFET AMPLIFIER :*

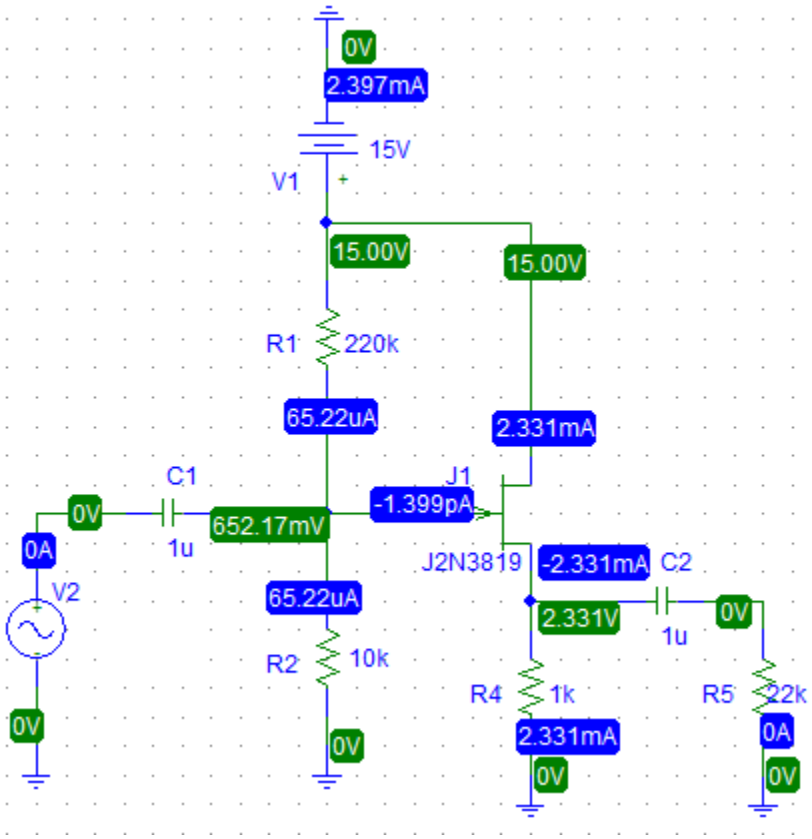
A-

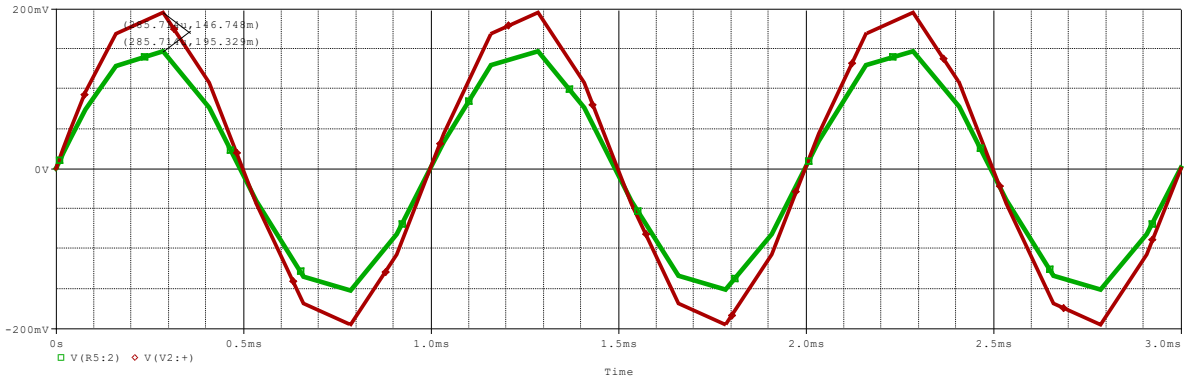




Voltage gain = 5 / 1 = 5.

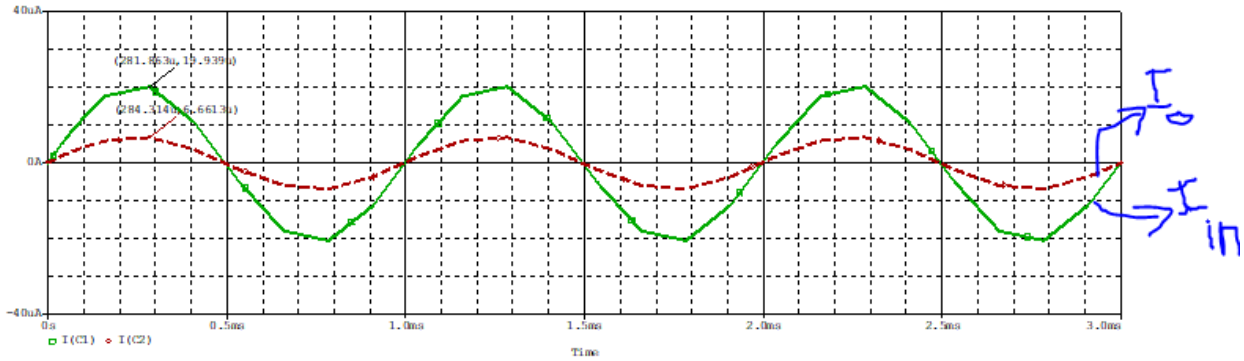
➢ *COMMON DRAIN AMPLIFIER :*





The gain voltage = 146.748/195.329 = 0.751

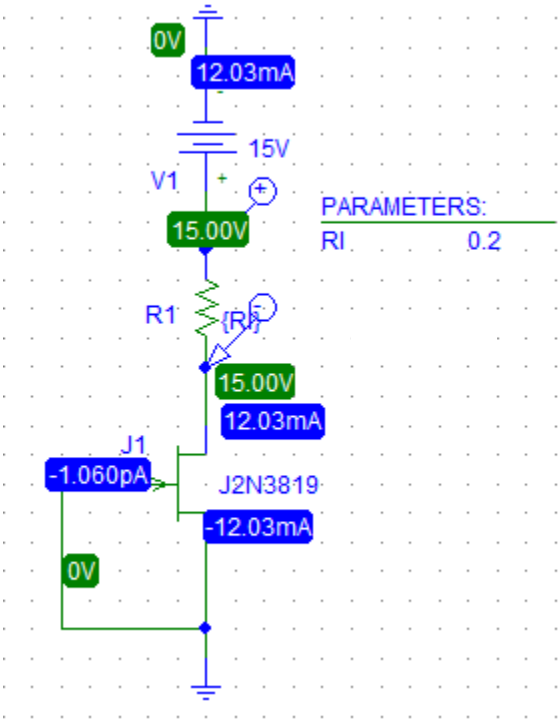
The phase shift = 0



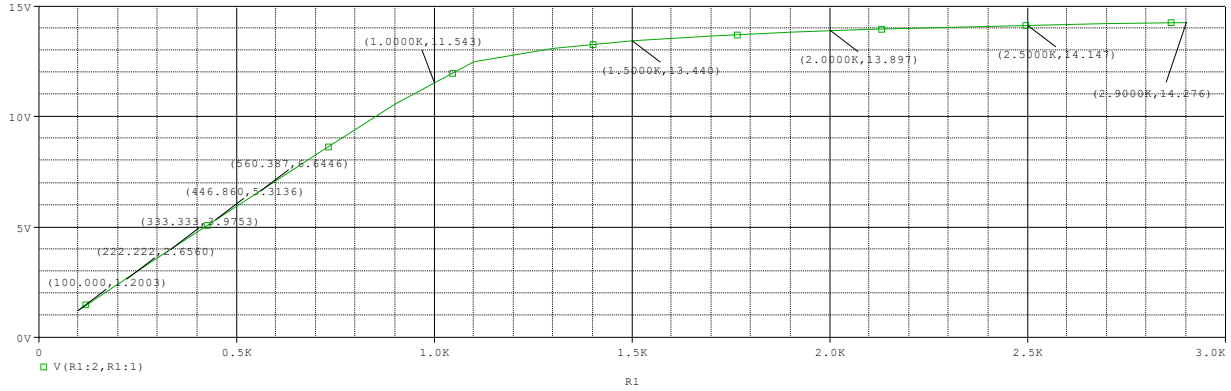
Zin = Vin / Iin = 195.329m/19.939u = 9.8k ohm.

Zo = Vo / Io = 146.748 / 6.661u = 22k ohm.

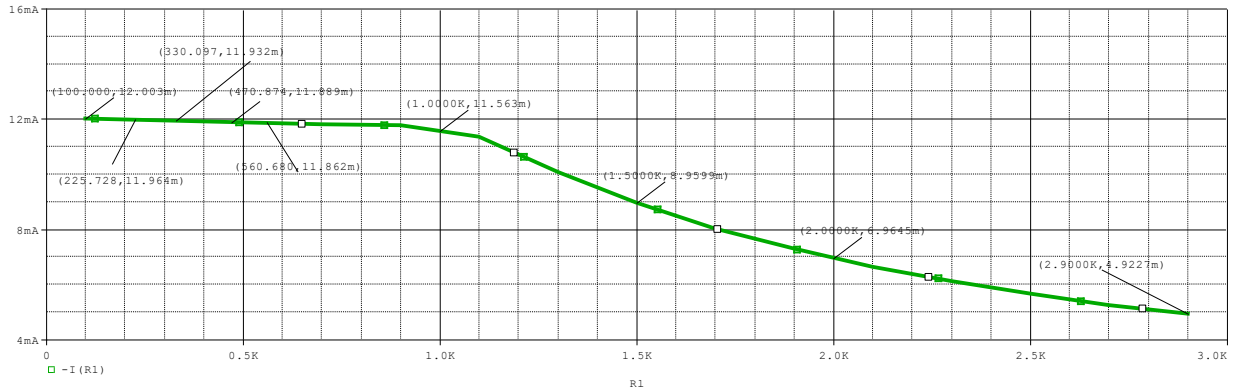
➢ . *CONSTANT CURRENT SOURCE.*



- **RL Vs VL :**



- **RL Vs IL :**



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