

# PK\_techsweep\_plots\_from\_mat

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## 1 Reviewing Gm/ID in gf180mcuD

Peter Kinget June 2025

Based on Boris Murmann's script.

```
[2]: import numpy as np
import scipy.constants as sc
import matplotlib.pyplot as plt
from pygmid import Lookup as lk
%matplotlib inline
```

```
[3]: choice = 0 #start from 0
devices = ['nfet_03v3', 'pfet_03v3']
fet = lk('./simulation/'+devices[choice]+'.mat')
```

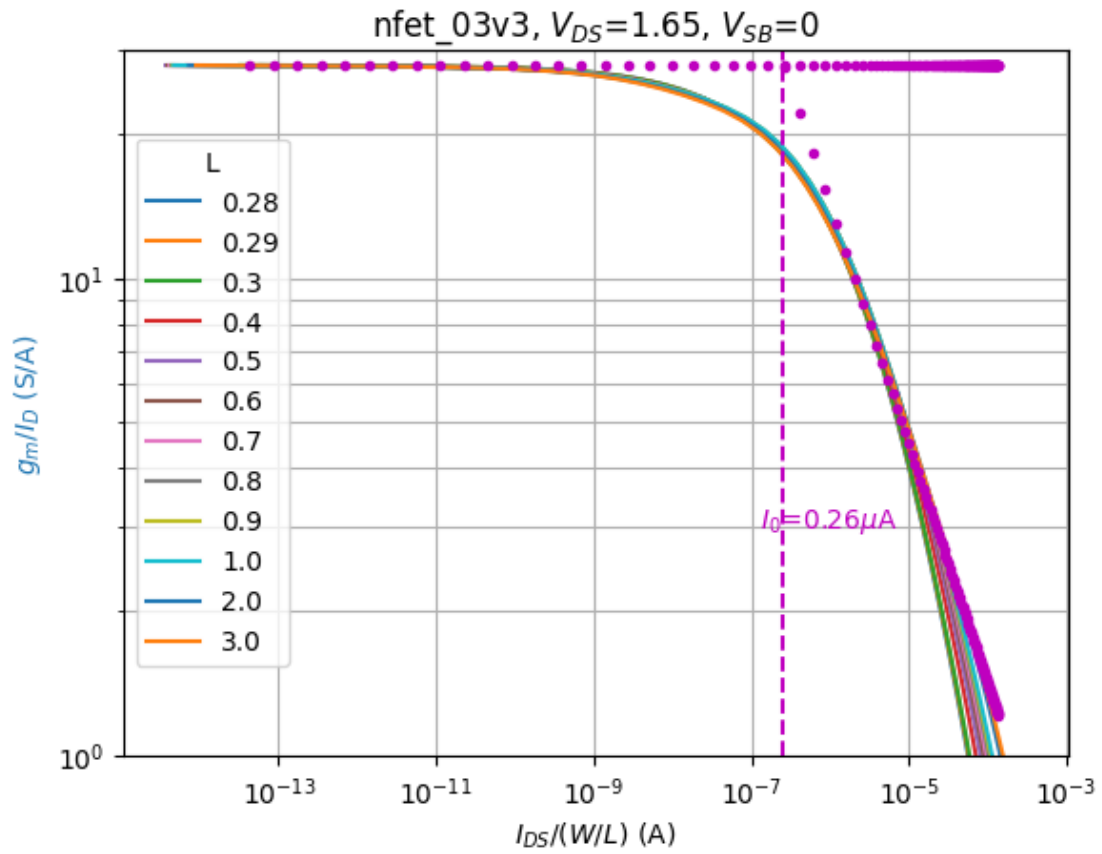
```
[4]: # sweep variable vectors
w = fet['W']
l = fet['L']
vgs = fet['VGS']
vds = fet['VDS']
vsb = fet['VSB']
```

```
[5]: print(f'Transistor Width is {w} and Lengths are {l}')
```

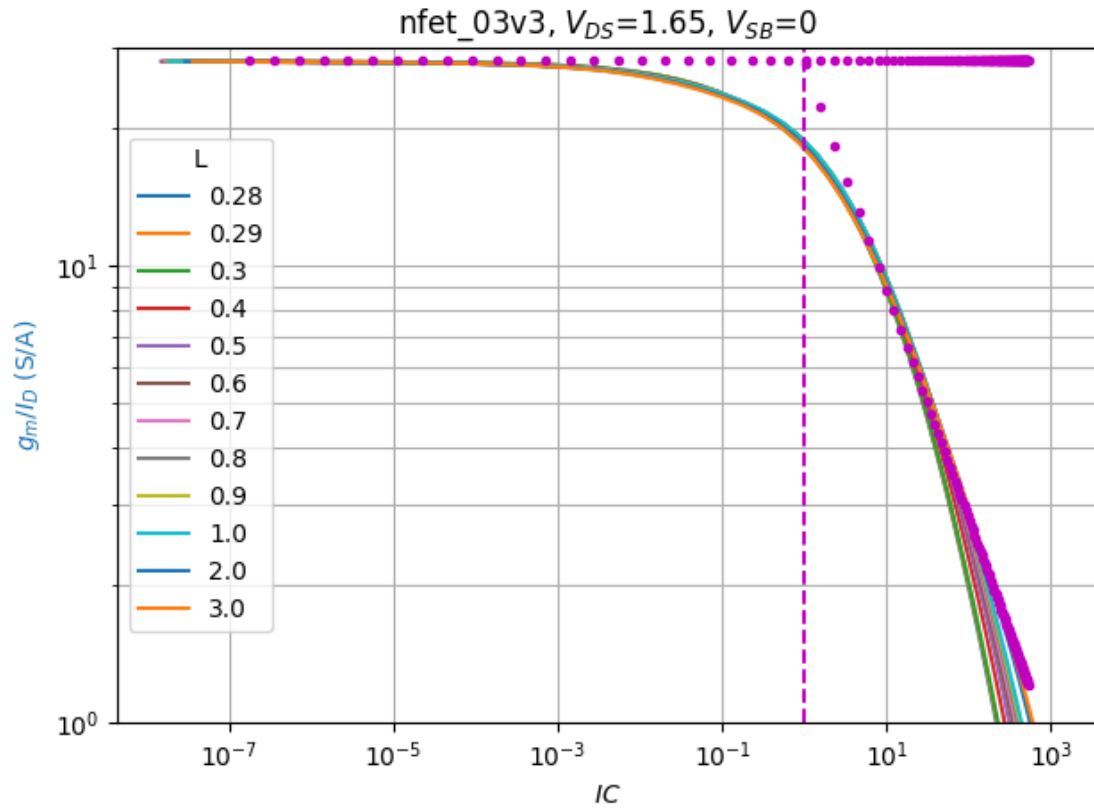
```
Transistor Width is 5.0 and Lengths are [0.28 0.29 0.3  0.4  0.5  0.6  0.7  0.8
0.9  1.   2.   3. ]
```

```
[6]: VDS1=1.65; VSB1=0
```

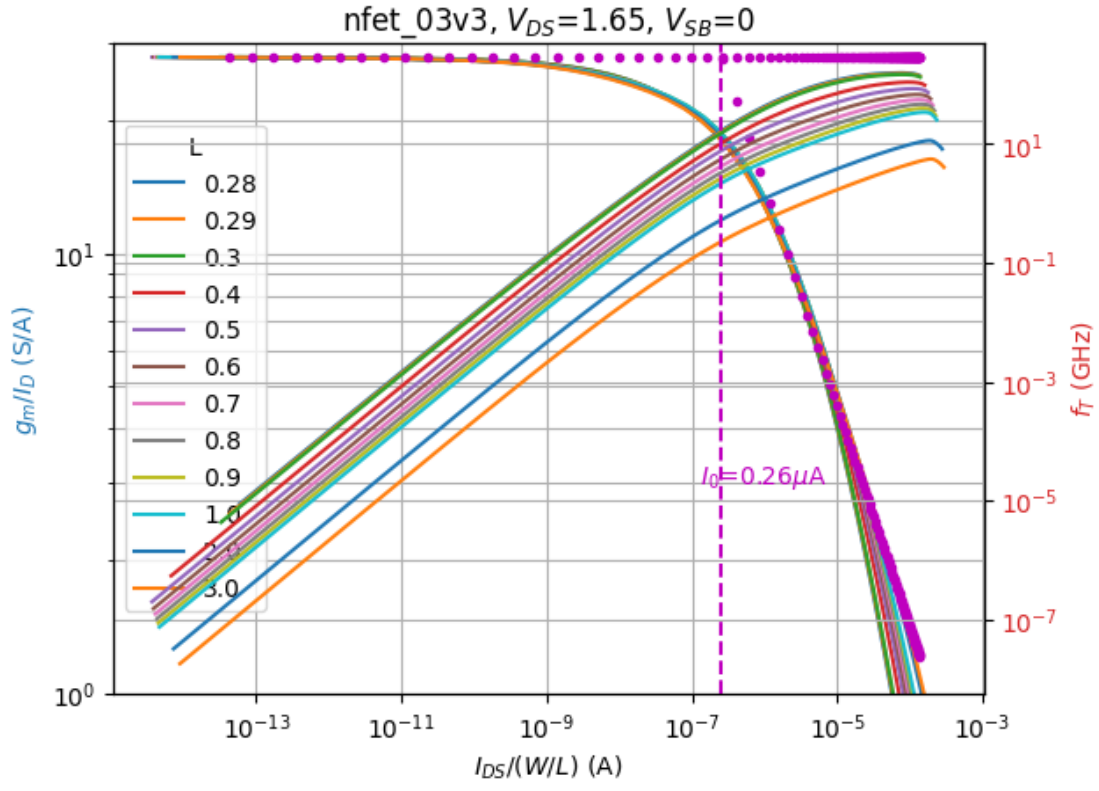
## 1.1 $G_m/I_D$ versus $I_D/(W/L)$



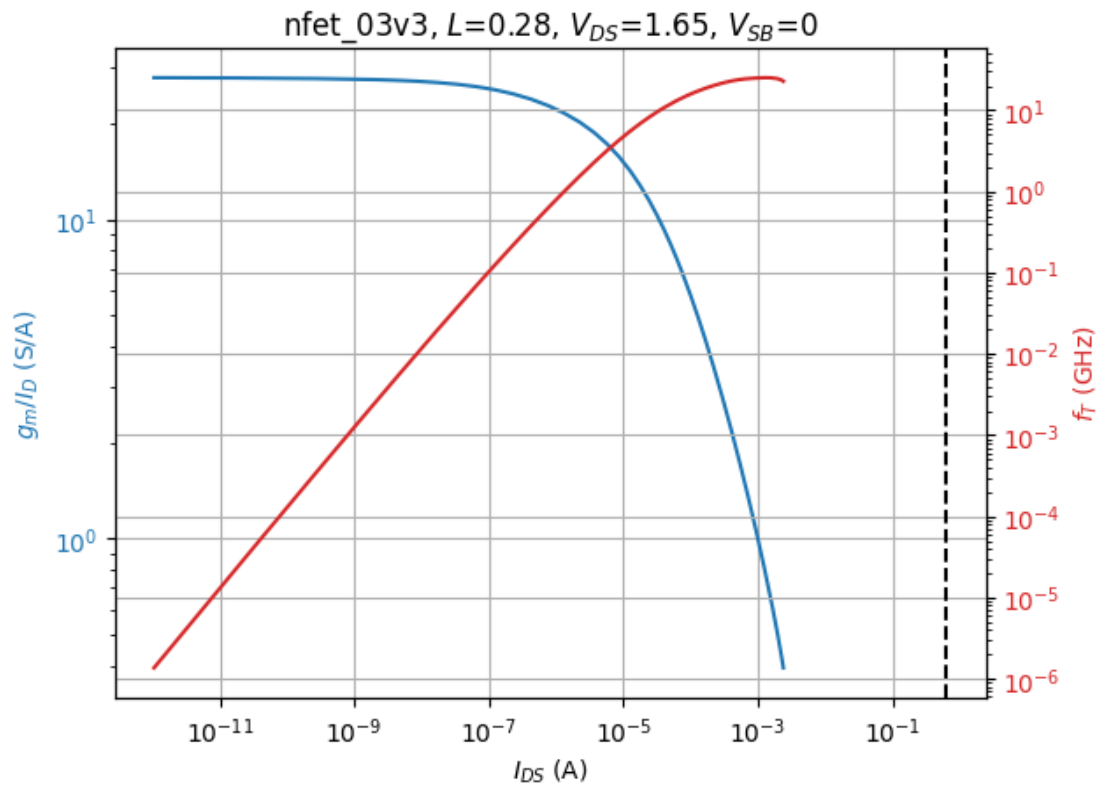
## 1.2 $g_m/I_D$ versus Current Density

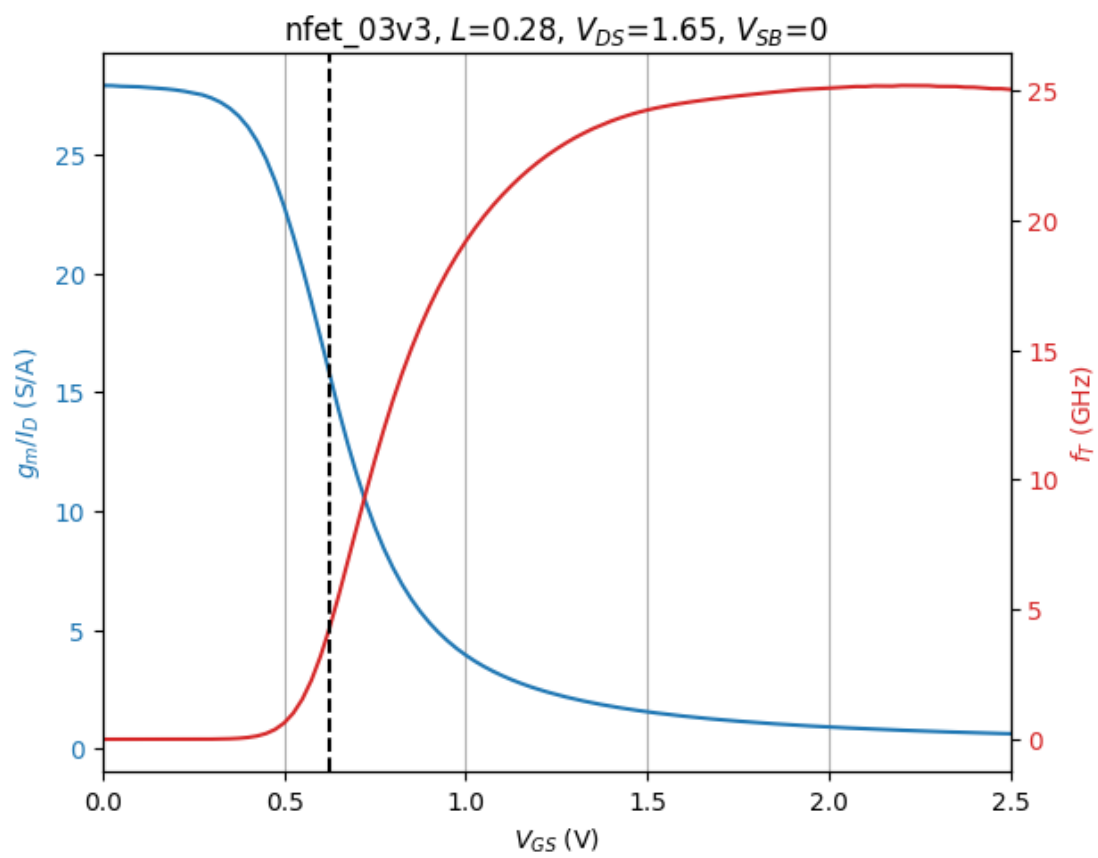


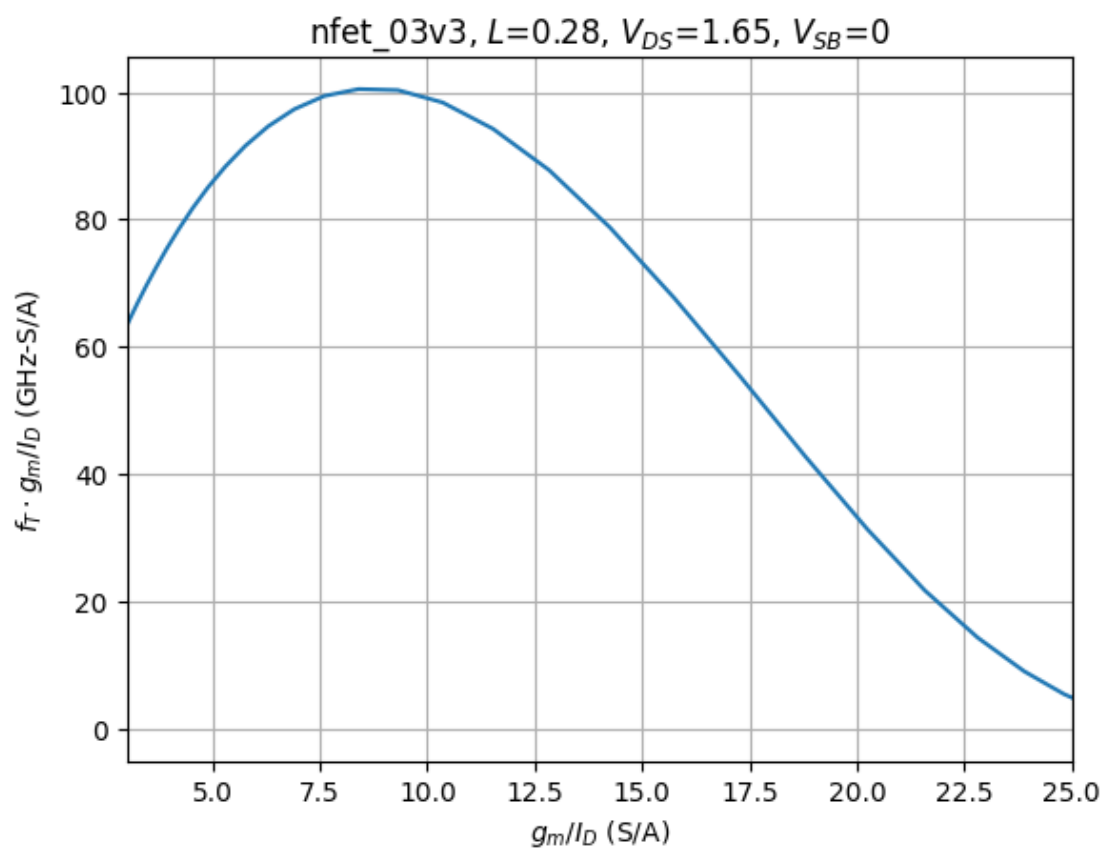
### 1.3 $G_m/I_D$ and $f_T$ versus $I_D/(W/L)$

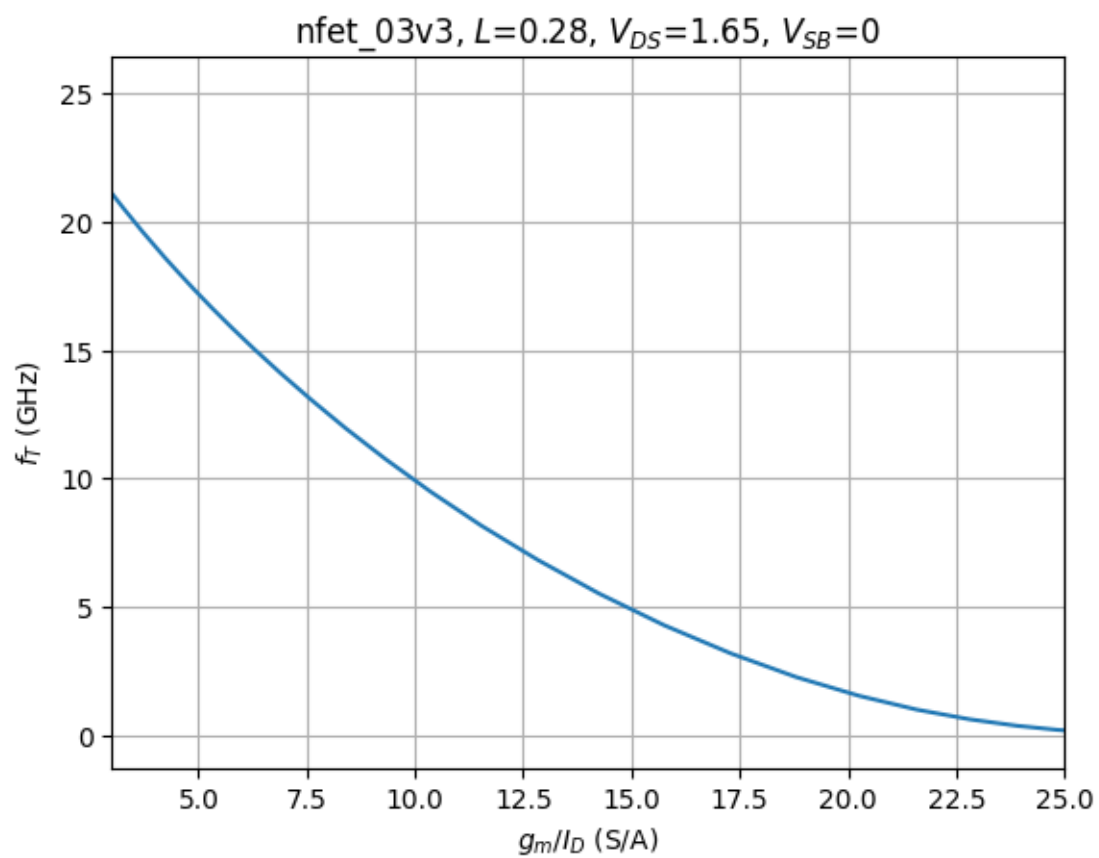


## 1.4 Other Plots

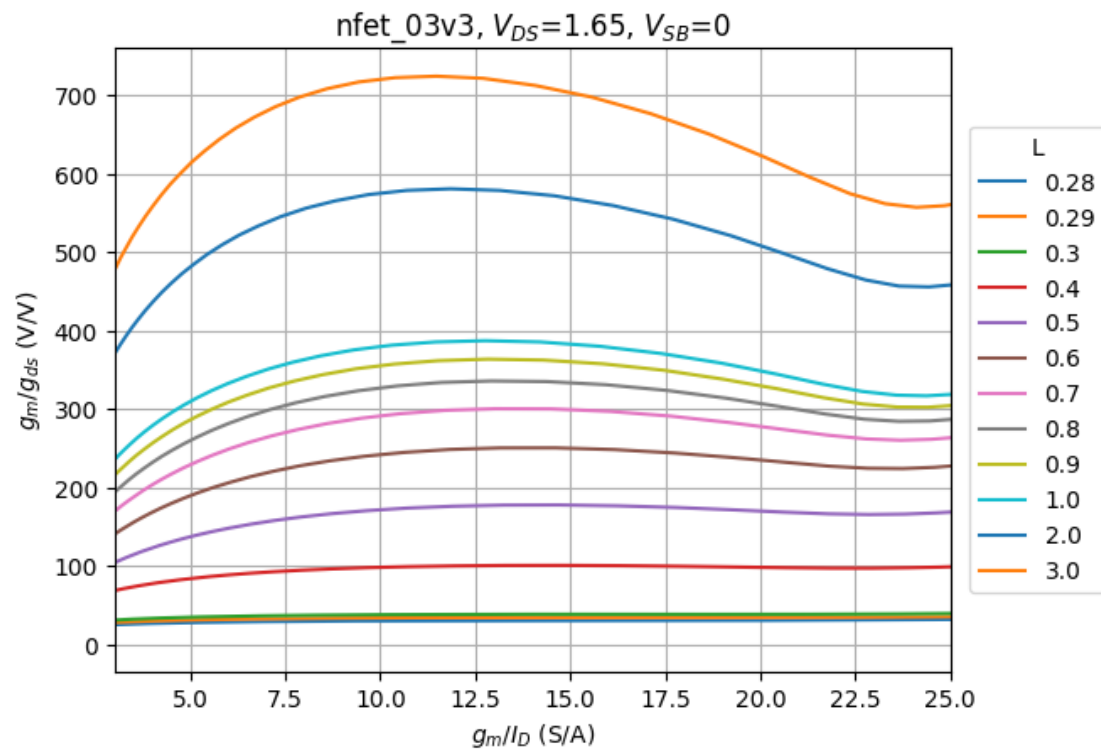
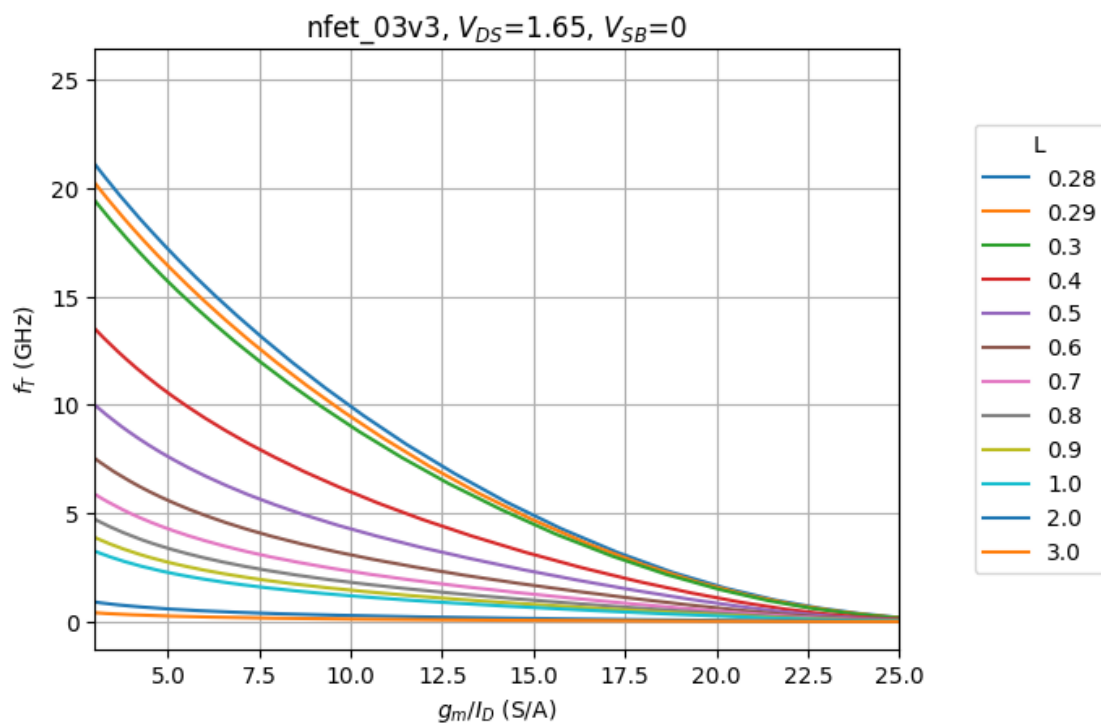


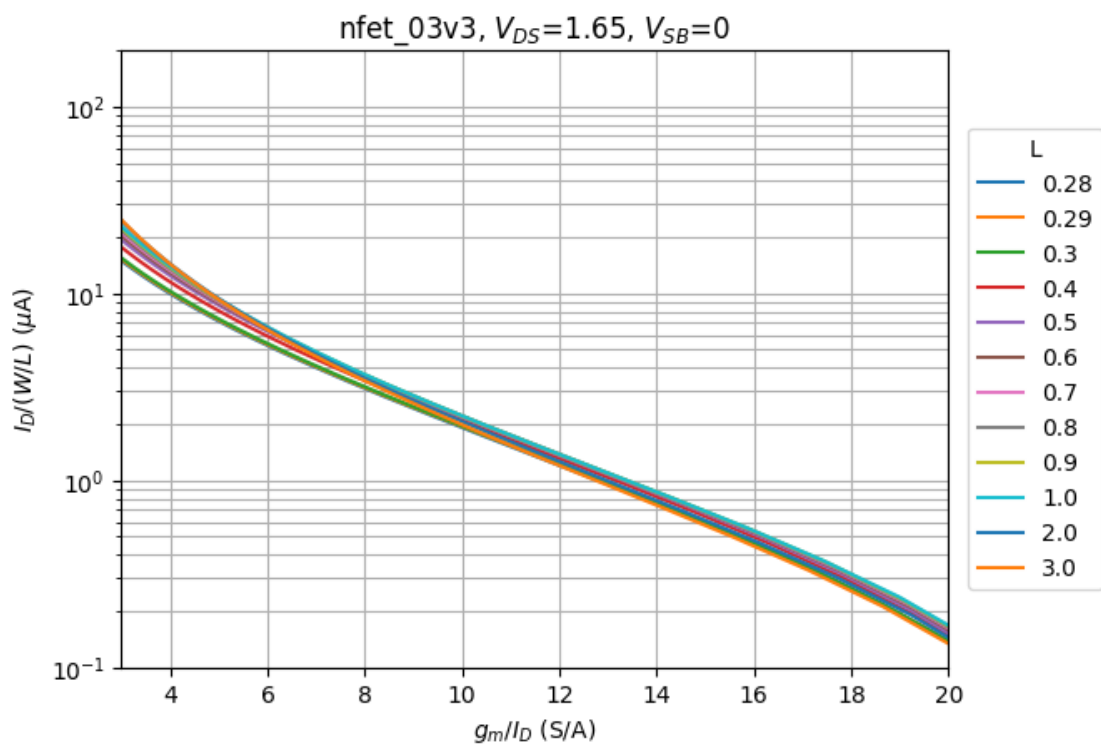
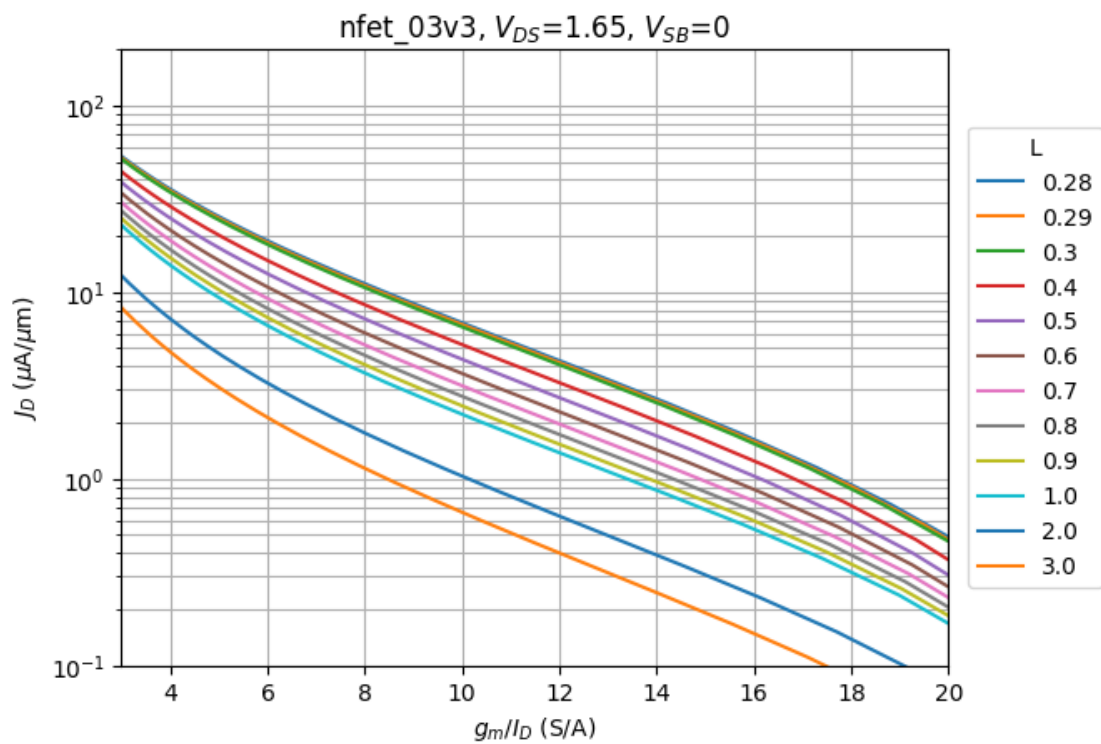


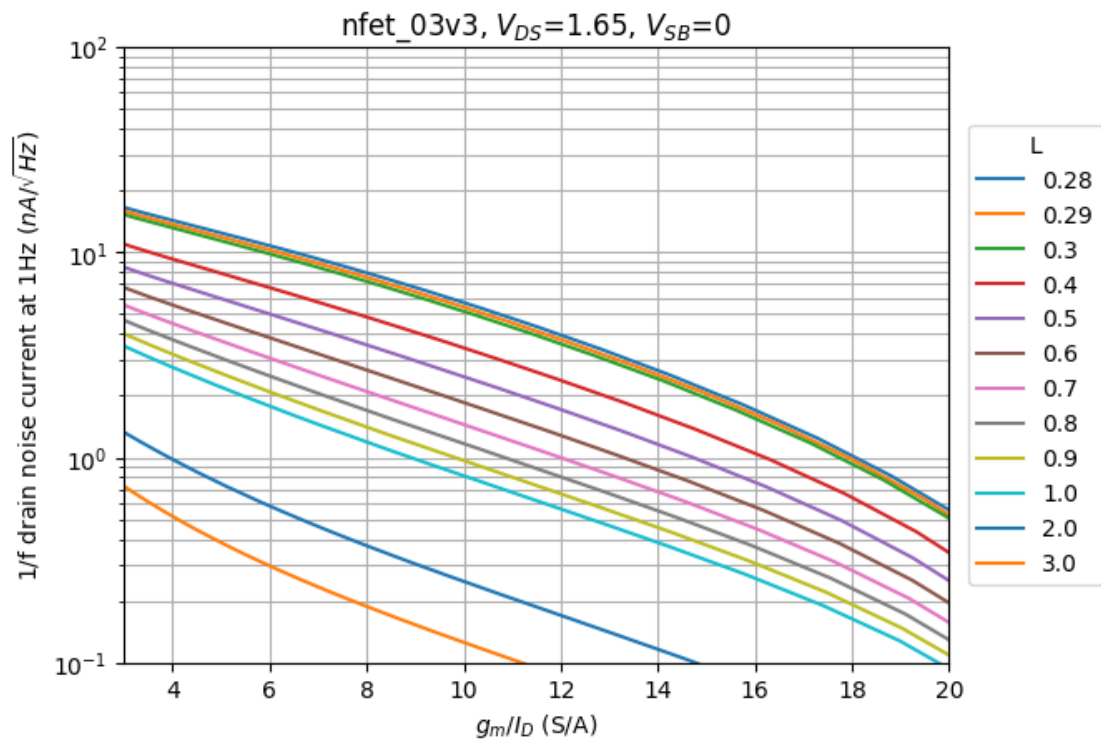
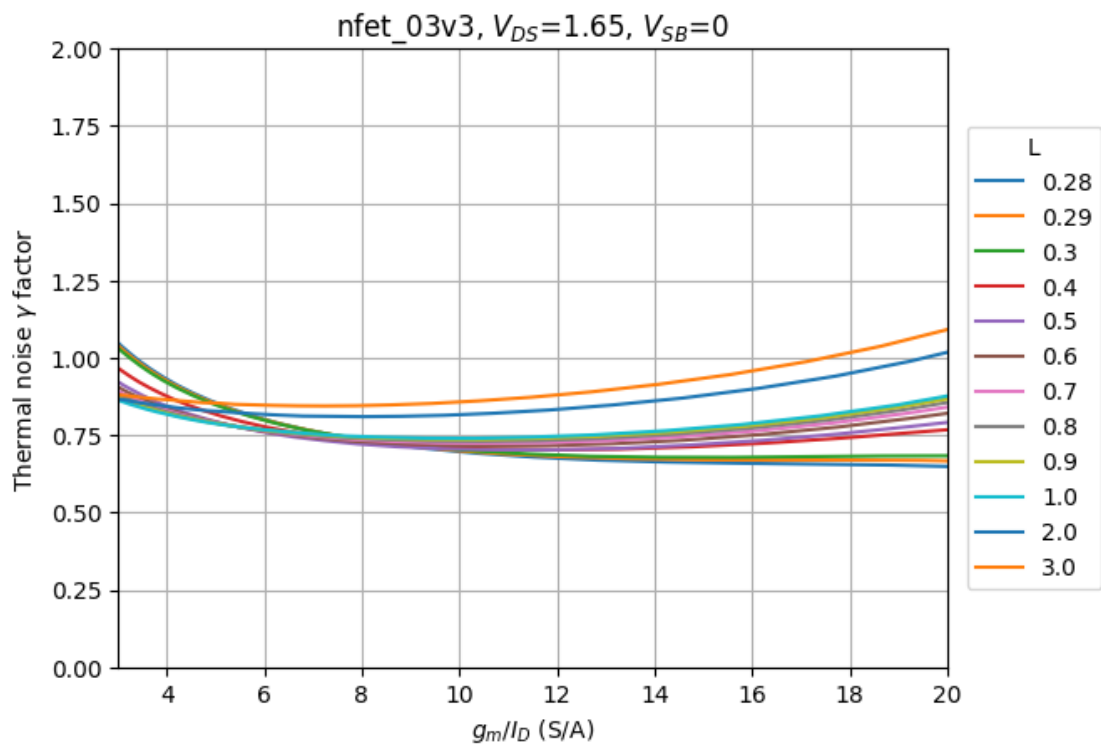


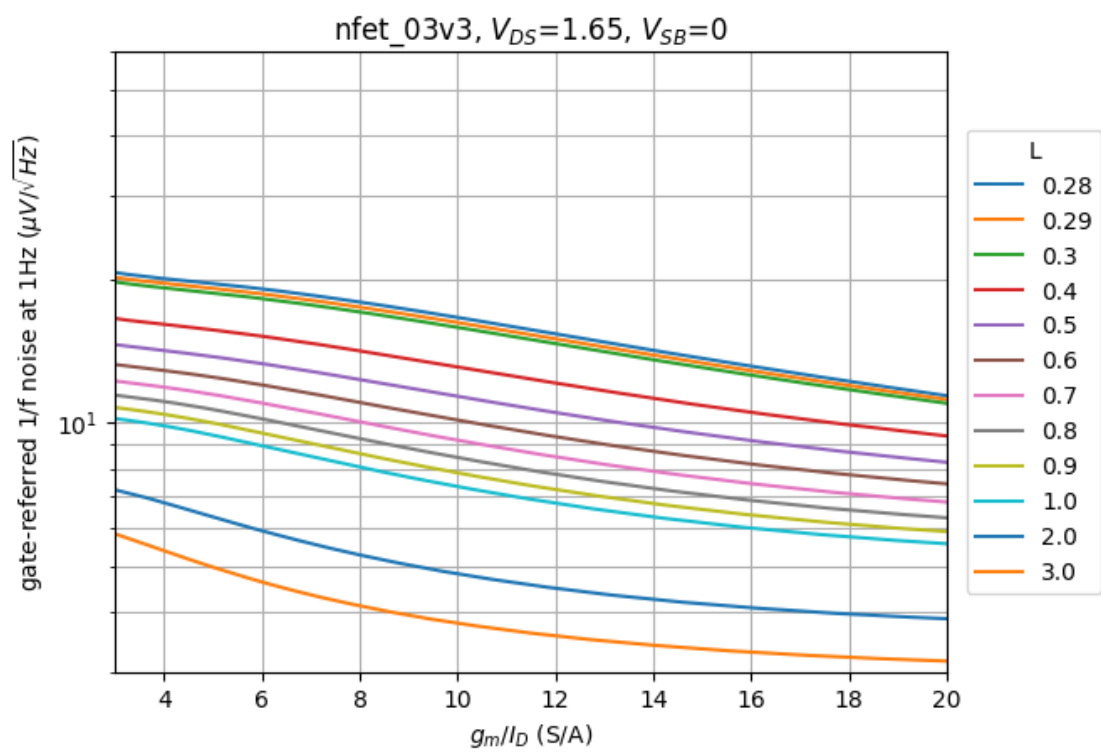












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