

SemiMod

MEASUREMENT DATA OVERVIEW

Topic: Skywater130 PDK raw measurement data

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Wafer : MPW-5

Tapeout Date : None

Testchip Received : None

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1 Introduction

This auto-generated document summarizes the measured data that have been loaded into DMT. The structure is as follows:

- For each measured device, a section is generated.
- For each measured temperature, a subsection is generated.
- For each temperature, as many plots as possible are generated automatically.

Note that these plots are generated by a computer and e.g. it is difficult to automatically scale all axes perfectly and eliminate measurement errors.

2 Measured Devices

2.1 Geometry Overview

Measurements for devices with device type pmos, flavor pfet_01v8 and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ $b_{E,drawn}/\mu\text{m}$	0.15	0.18	0.50	8.00
0.42	x		x	x
1.00			x	
1.68	x			
3.00	x			
7.00	x	x		x

Measurements for devices with device type pmos, flavor pfet_01v8_hvt and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ $b_{E,drawn}/\mu\text{m}$	0.15	0.18	0.50	8.00
0.42	x		x	x
1.00			x	
1.68	x			
3.00	x			
7.00	x	x		x

Measurements for devices with device type pmos, flavor esd_pfet_g5v0d10v5 and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.55	0.60
14.50		x
15.50	x	
16.50	x	
17.50	x	
19.50	x	
21.50	x	
23.50	x	
26.50	x	

Measurements for devices with device type pmos, flavor pfet_g5v0d10v5 and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.30	0.35	0.40	0.45	0.50	0.80	1.00	2.00	4.00	8.00	20.00
0.42		x	x	x	x	x				x	x
0.75		x	x	x							
1.00		x	x	x	x		x	x	x		
1.50		x	x	x							
3.00		x	x	x	x						
5.00	x	x	x	x	x						
7.00		x	x	x	x					x	
20.00		x	x	x	x						

Measurements for devices with device type pmos, flavor pfet_01v8_lvt and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.35	0.50	1.00	8.00
0.42	x	x	x	x
1.00		x		
3.00			x	
7.00	x			x

Measurements for devices with device type pmos, flavor pfet_g5v0d16v0 and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.66	0.92	2.16	2.42
5.00	x	x	x	x
12.00		x		
20.00	x	x	x	x
50.00		x		
60.00		x		

Measurements for devices with device type nmos, flavor nfet_01v8 and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.15	0.18	0.25	0.50	8.00	20.00	25.00
0.36	x						
0.39	x						
0.42	x			x	x	x	x
0.65			x	x			
1.00	x			x			
1.68	x						
3.00	x						
7.00	x	x			x		
25.00	x						x

Measurements for devices with device type nmos, flavor nfet_g5v0d16v0 and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.70	0.92	0.93	2.20	2.42
5.00	x	x	x	x	x
12.00			x		
20.00	x	x	x	x	x
50.00			x		
60.00			x		

Measurements for devices with device type nmos, flavor esd_nfet_01v8 and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.17	0.18
5.40		x
20.35	x	
40.31	x	

Measurements for devices with device type nmos, flavor nfet_03v3_nvt and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.50	0.60	0.80
0.42	x		x
1.00		x	
4.00	x		
10.00	x		

Measurements for devices with device type nmos, flavor nfet_05v0_nvt and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.90	4.00	25.00
0.42	x		
0.70	x		
1.00	x	x	x
10.00	x	x	

Measurements for devices with device type nmos, flavor esd_nfet_g5v0d10v5 and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.55	0.60	1.00
5.40		x	
17.50	x		
19.50	x		
21.50	x		
23.50	x		
26.50	x		
30.25	x		x
40.31	x		
50.99	x		x

Measurements for devices with device type nmos, flavor nfet_01v8_lvt and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.15	0.18	0.25	1.00	8.00
0.30	x				
0.42	x	x		x	
0.84	x				
1.00	x				
3.00	x		x		
7.00	x	x	x		x

Measurements for devices with device type nmos, flavor nfet_g5v0d10v5 and contact configuration SGD and are available with the following geometries:

$l_{E,drawn}/\mu\text{m}$ \ / $b_{E,drawn}/\mu\text{m}$	0.30	0.35	0.40	0.45	0.50	0.80	1.00	2.00	4.00	8.00	20.00	25.00
0.42		x	x	x	x	x				x	x	x
0.75		x	x	x								
1.00		x	x	x	x		x	x	x			
1.50		x	x	x								
3.00		x	x	x	x							
5.00	x	x	x	x	x							
7.00		x	x	x	x					x		
20.00		x	x	x	x							
25.00					x					x		x

2.2 Measurement Data over Temperature and Deembedding Structures

The reference device nfet_g5v0d10v5 is of type nmos in SGD configuration and has $l_{E,drawn}$ of 0.50 μm and $b_{E,drawn}$ of 0.42 μm . All extraction steps that do not deal with special test structures (like tetrodes) or with multiple device geometries, show measured data of the reference device.

3 esd_nfet_01v8

3.1 T=300.0K

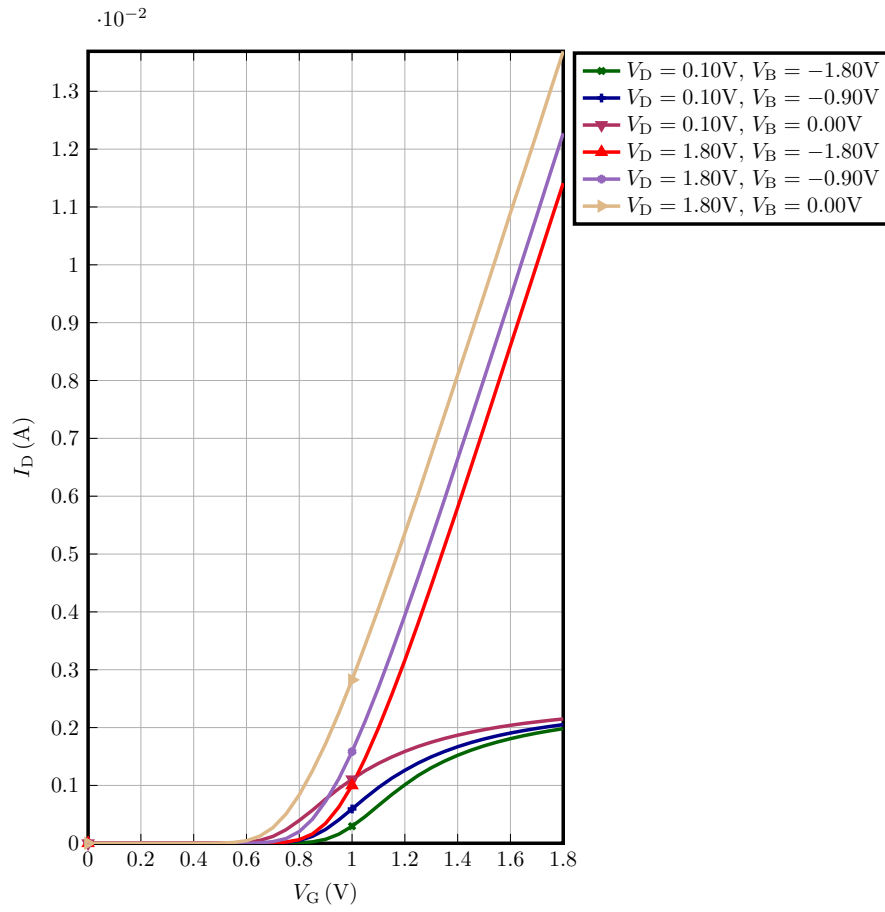


Figure 1: $I_D(V_G)@V_D$.

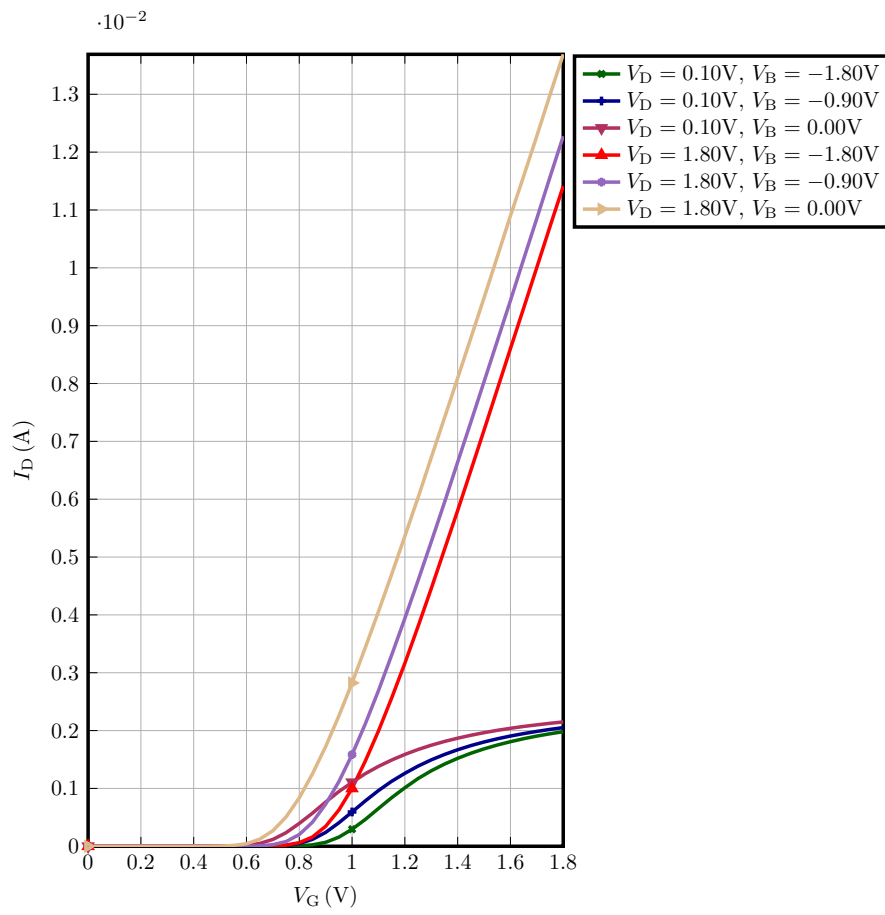


Figure 2: $I_D(V_G)@V_D$.

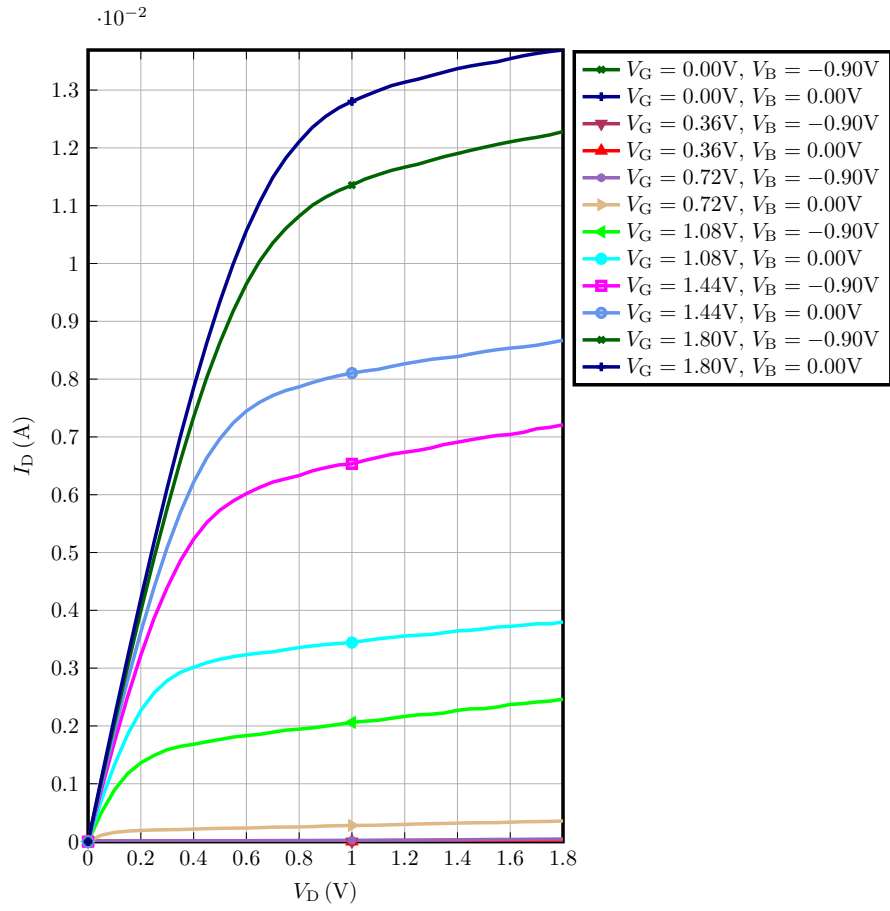


Figure 3: $I_D(V_D)@V_G$.

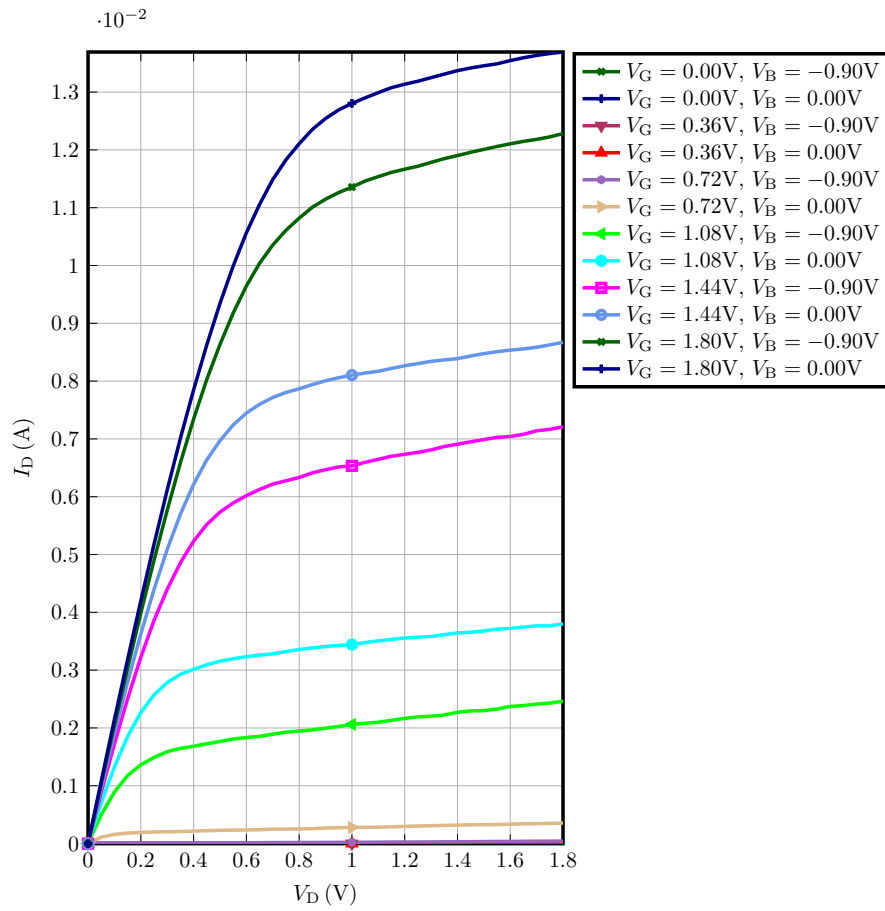


Figure 4: $I_D(V_D)@V_G$.

4 esd_nfet_01v8

4.1 T=300.0K

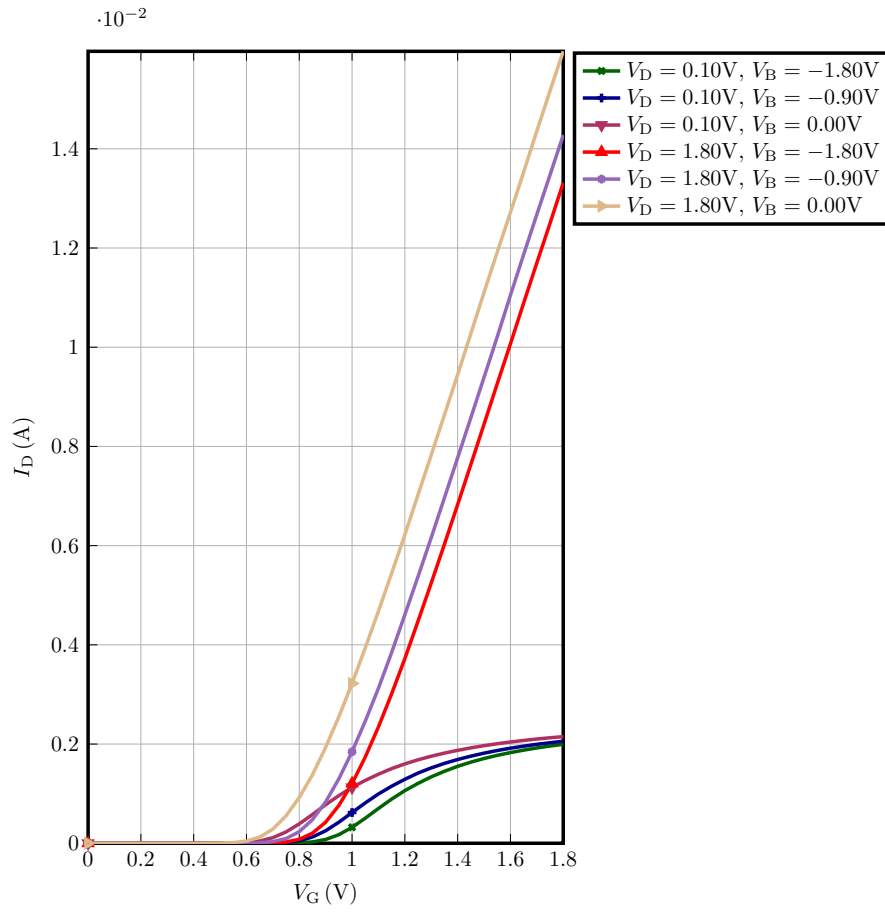


Figure 5: $I_D(V_G)@V_D$.

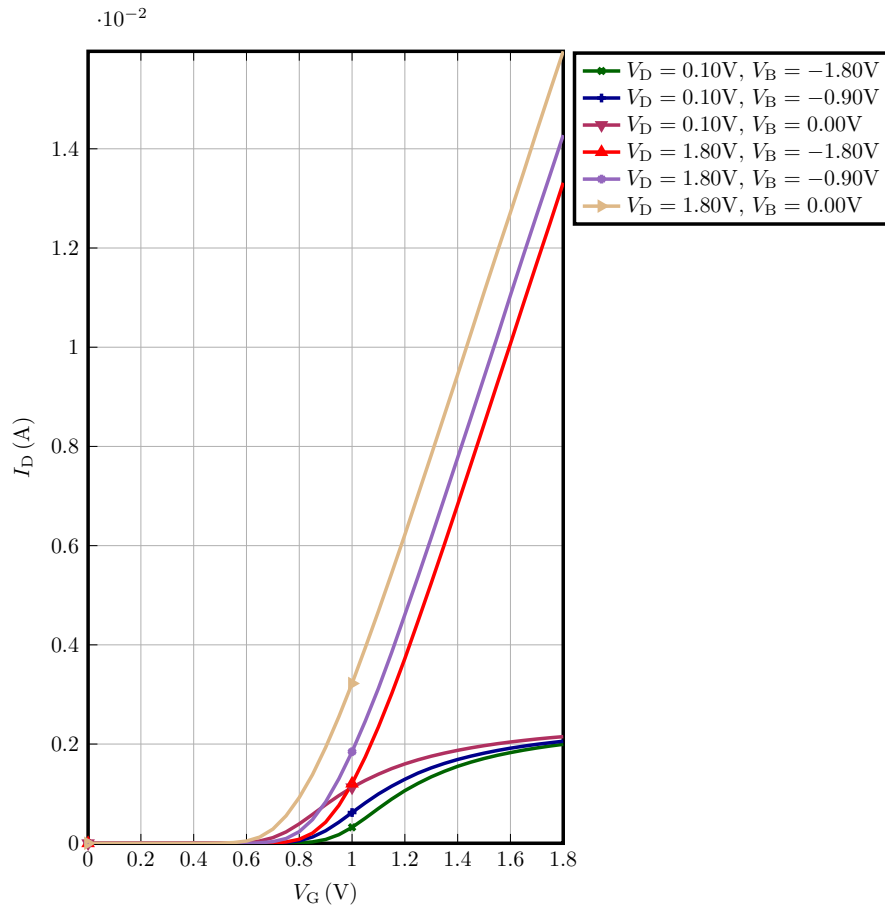


Figure 6: $I_D(V_G)@V_D$.

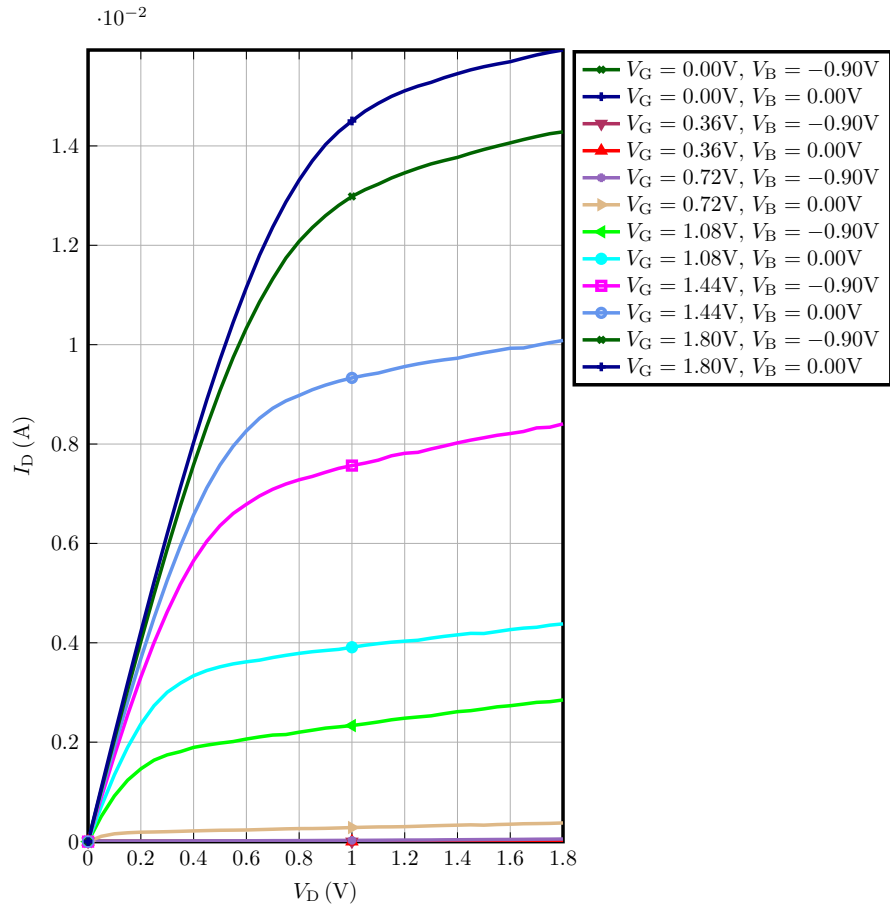


Figure 7: $I_D(V_D)@V_G$.

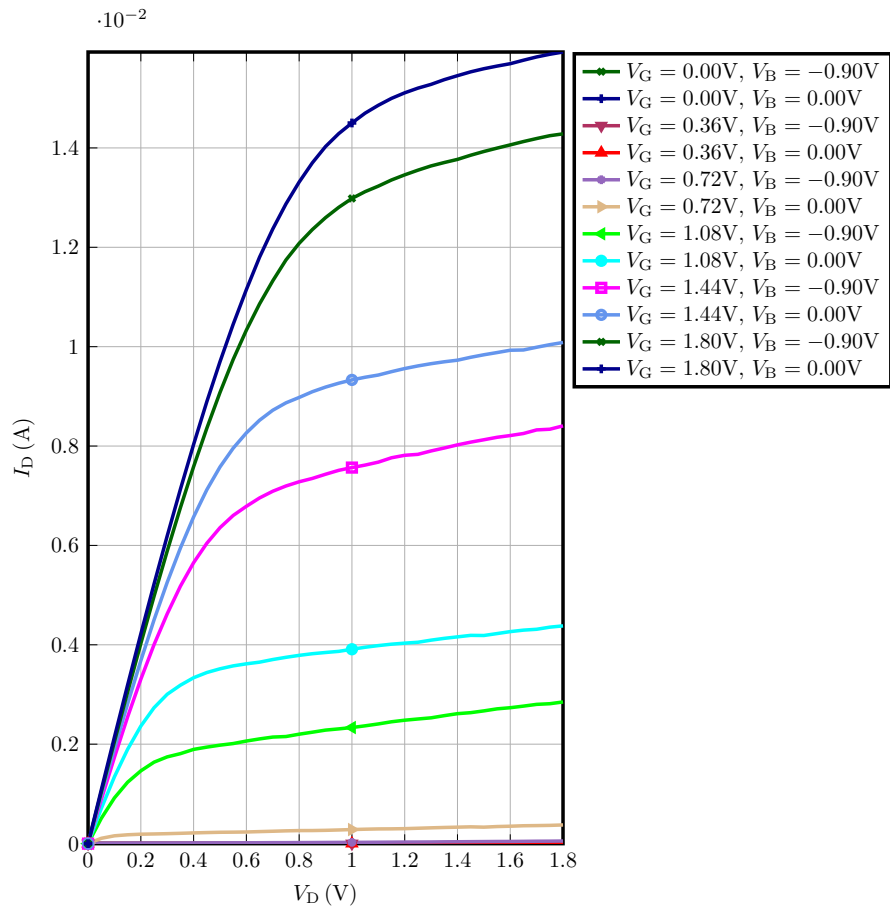


Figure 8: $I_D(V_D)@V_G$.

5 esd_nfet_01v8

5.1 T=300.0K

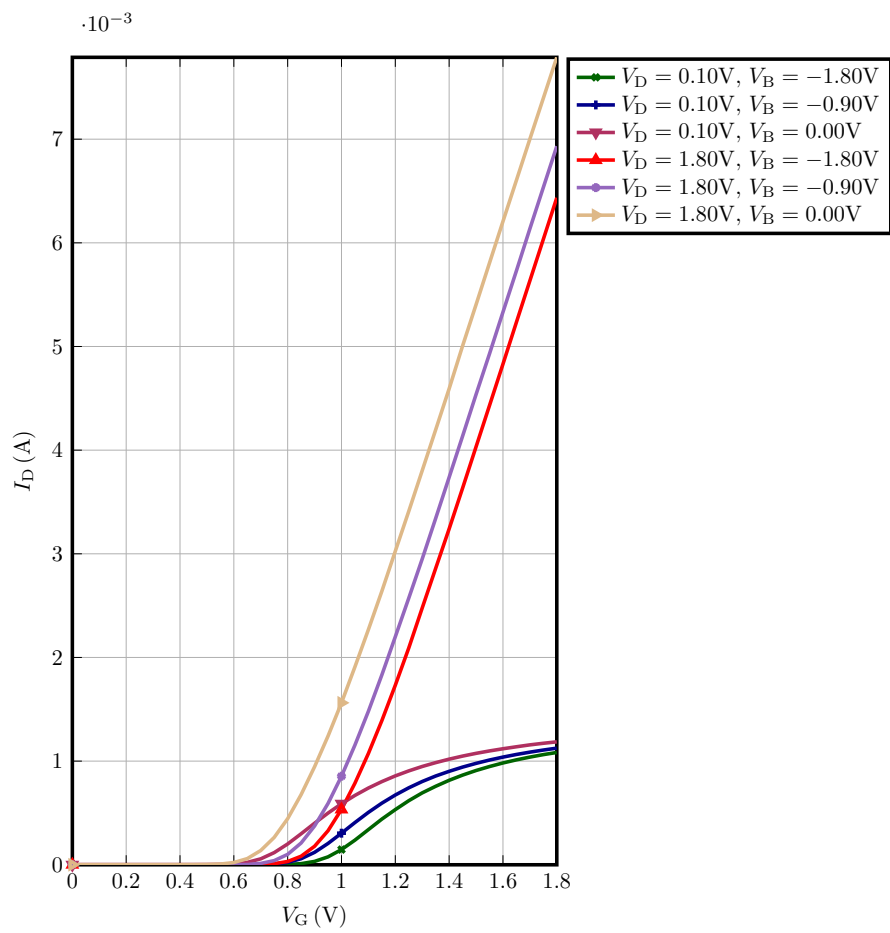


Figure 9: $I_D(V_G)@V_D$.

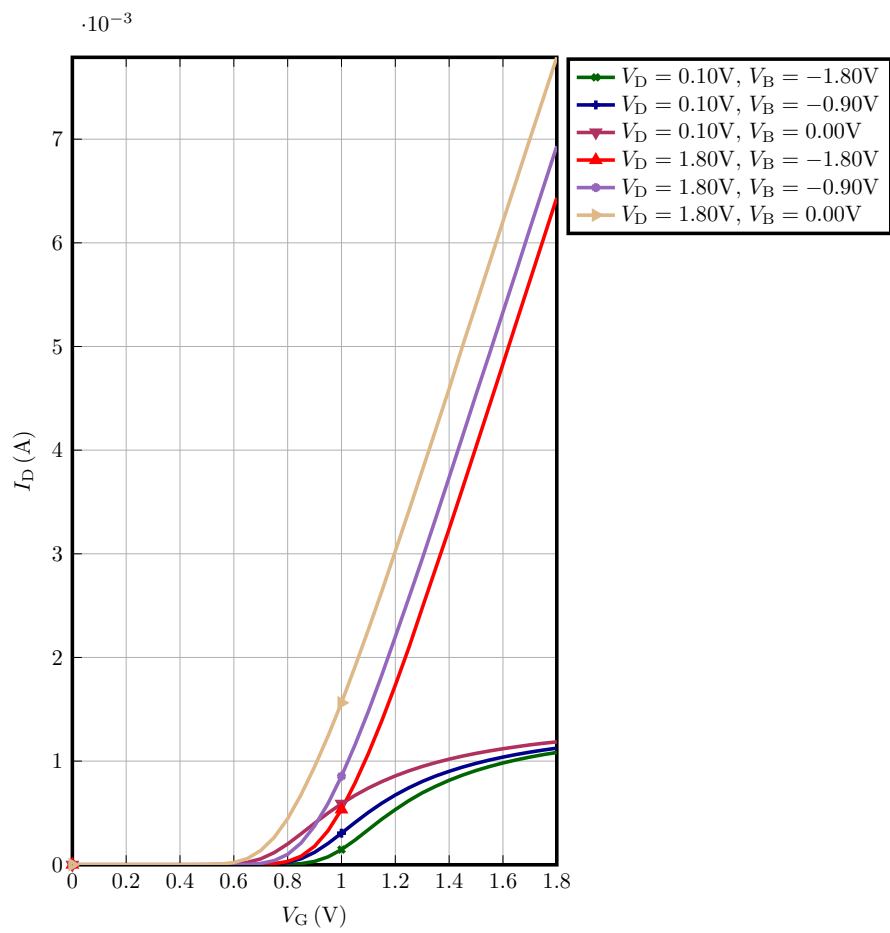


Figure 10: $I_D(V_G)@V_D$.

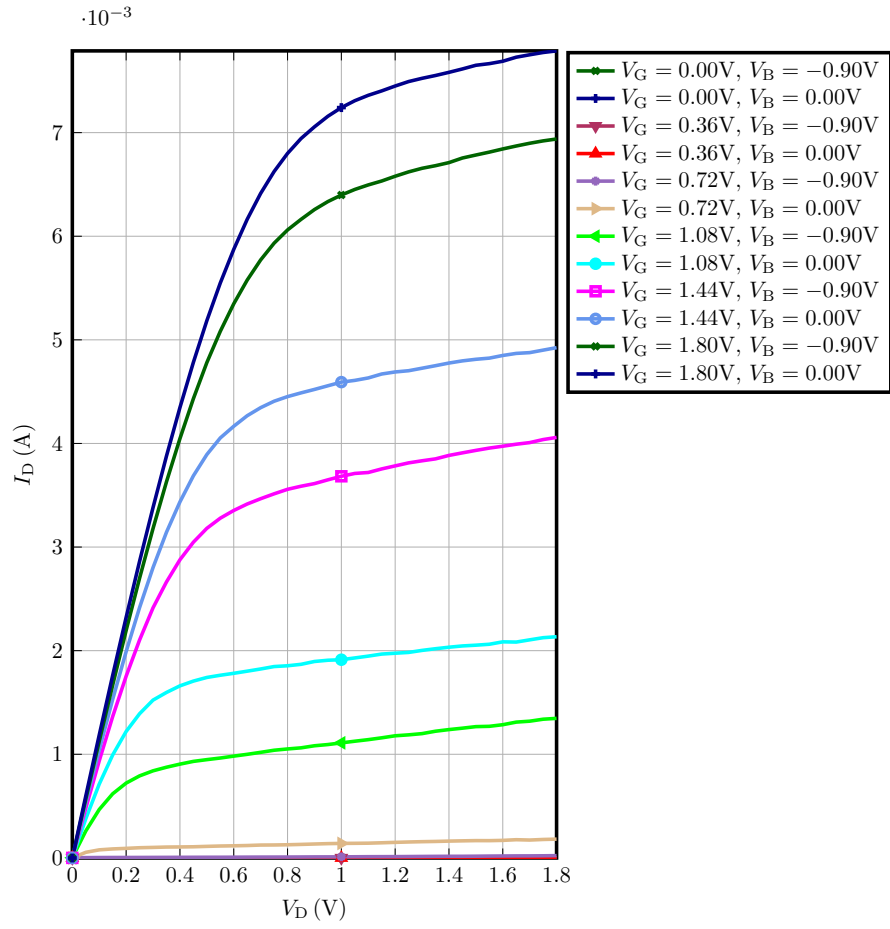


Figure 11: $I_D(V_D)@V_G$.

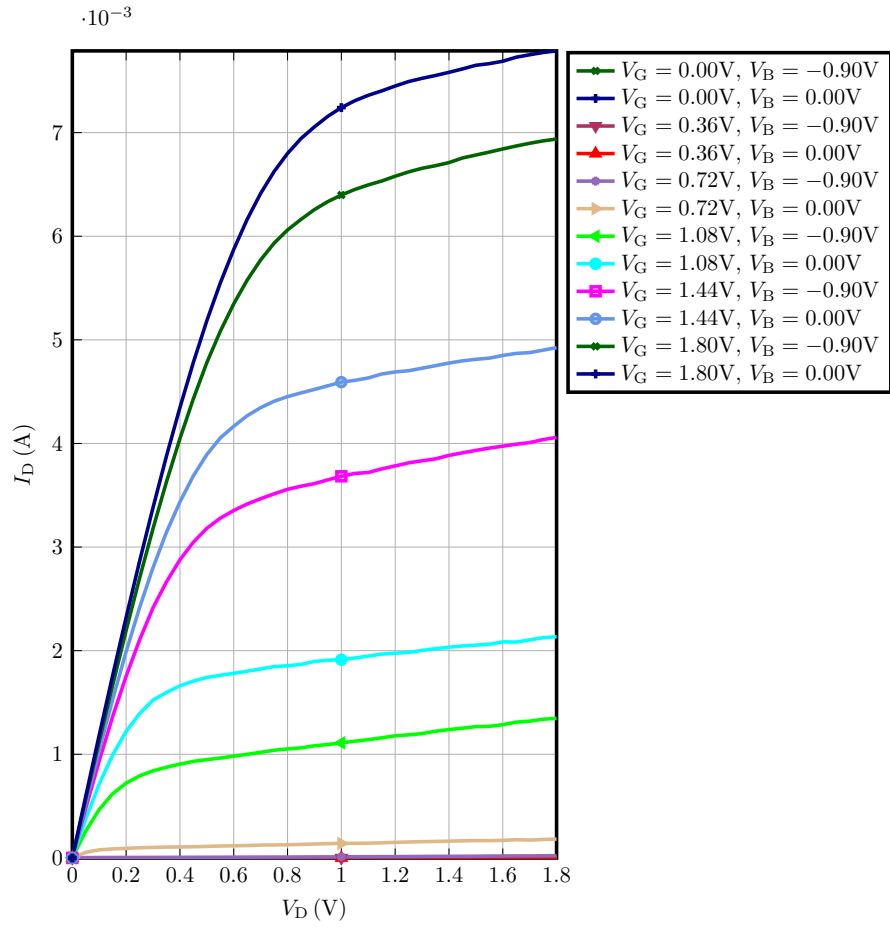


Figure 12: $I_D(V_D)@V_G$.

6 esd_nfet_01v8

6.1 T=300.0K

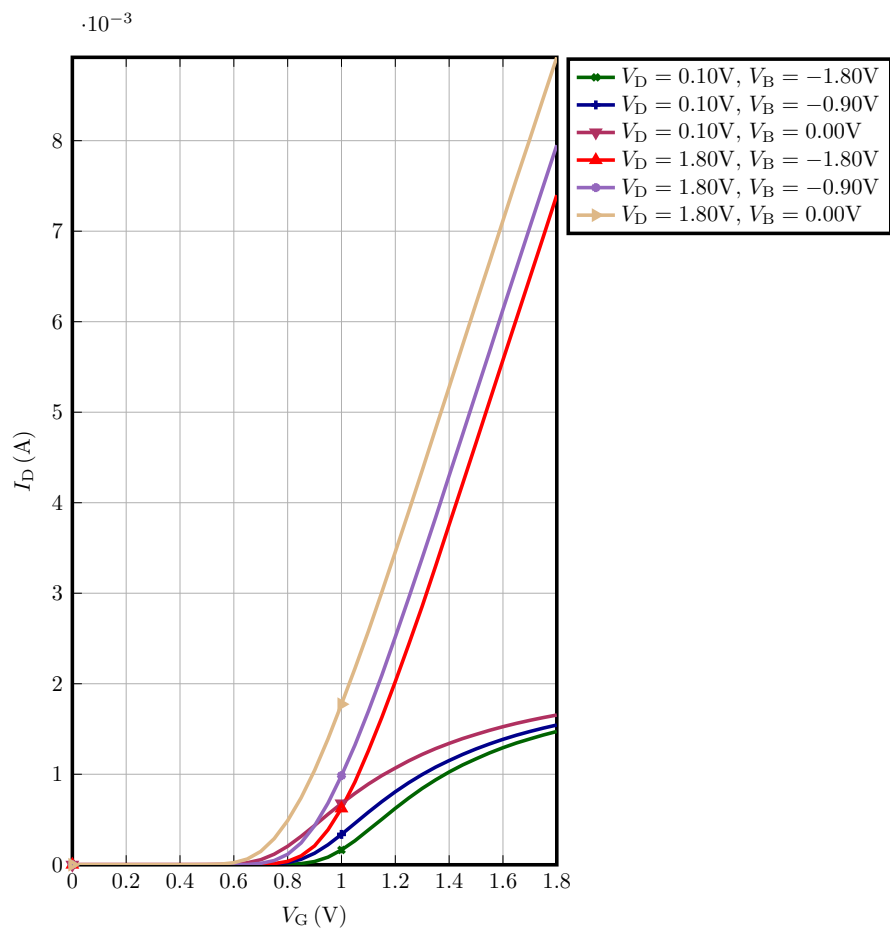


Figure 13: $I_D(V_G)@V_D$.

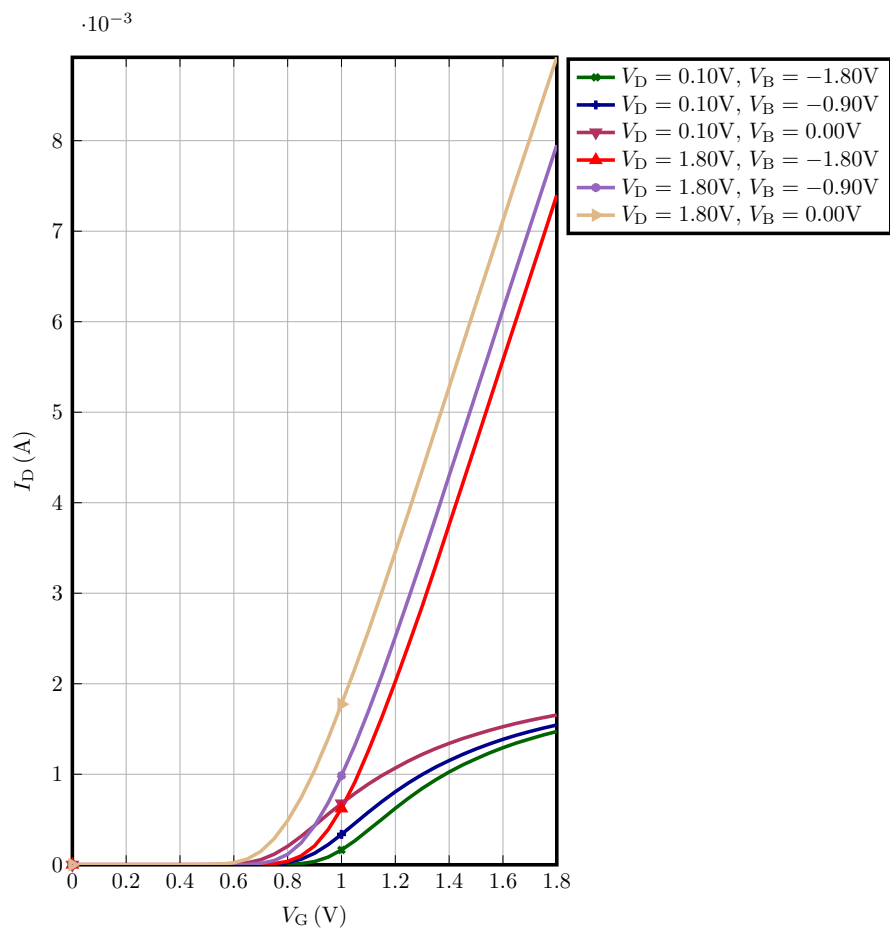


Figure 14: $I_D(V_G)@V_D$.

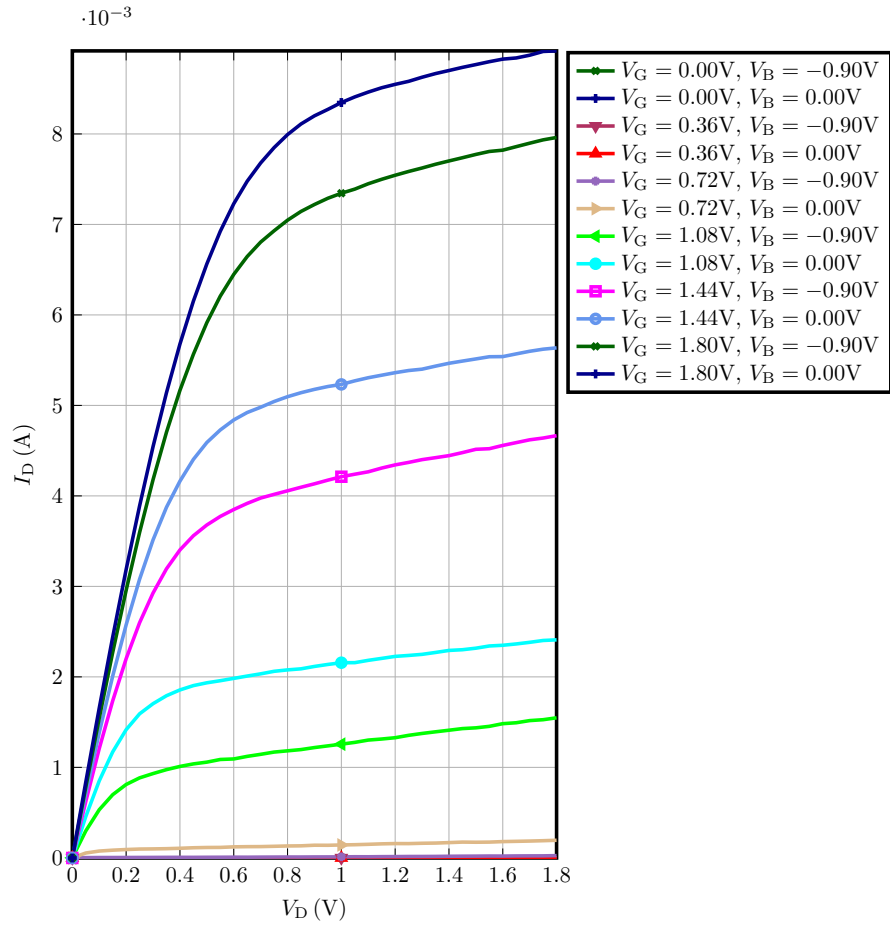


Figure 15: $I_D(V_D)@V_G$.

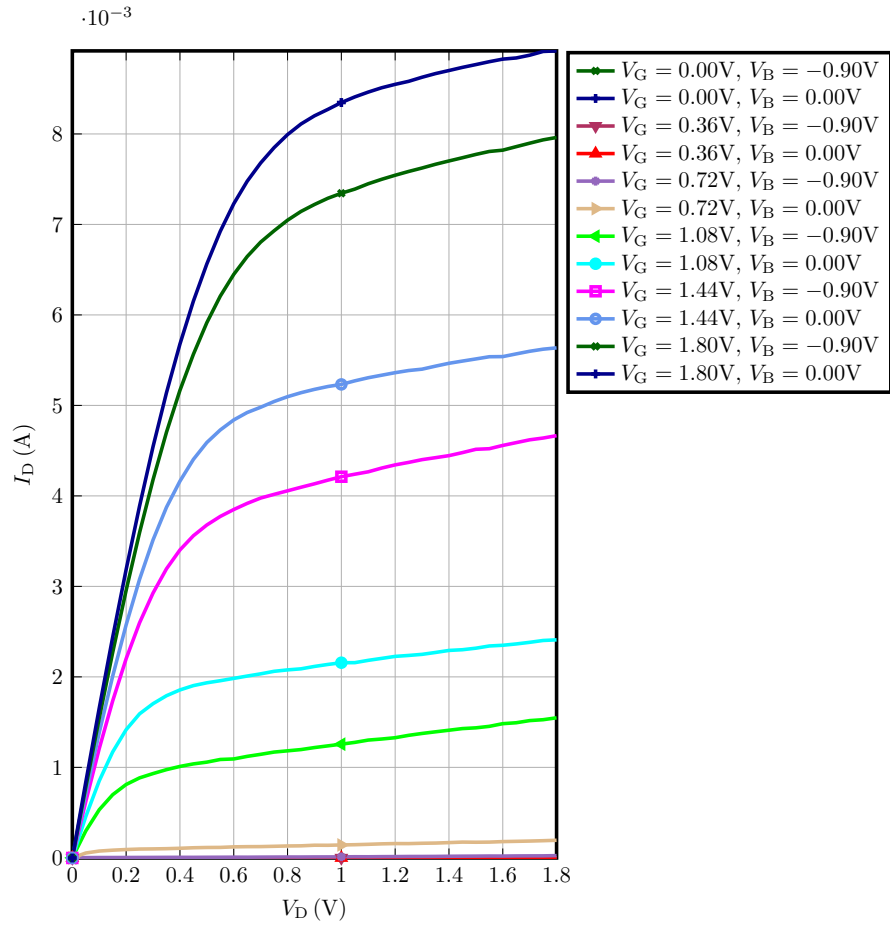


Figure 16: $I_D(V_D)@V_G$.

7 esd_nfet_01v8

7.1 T=300.0K

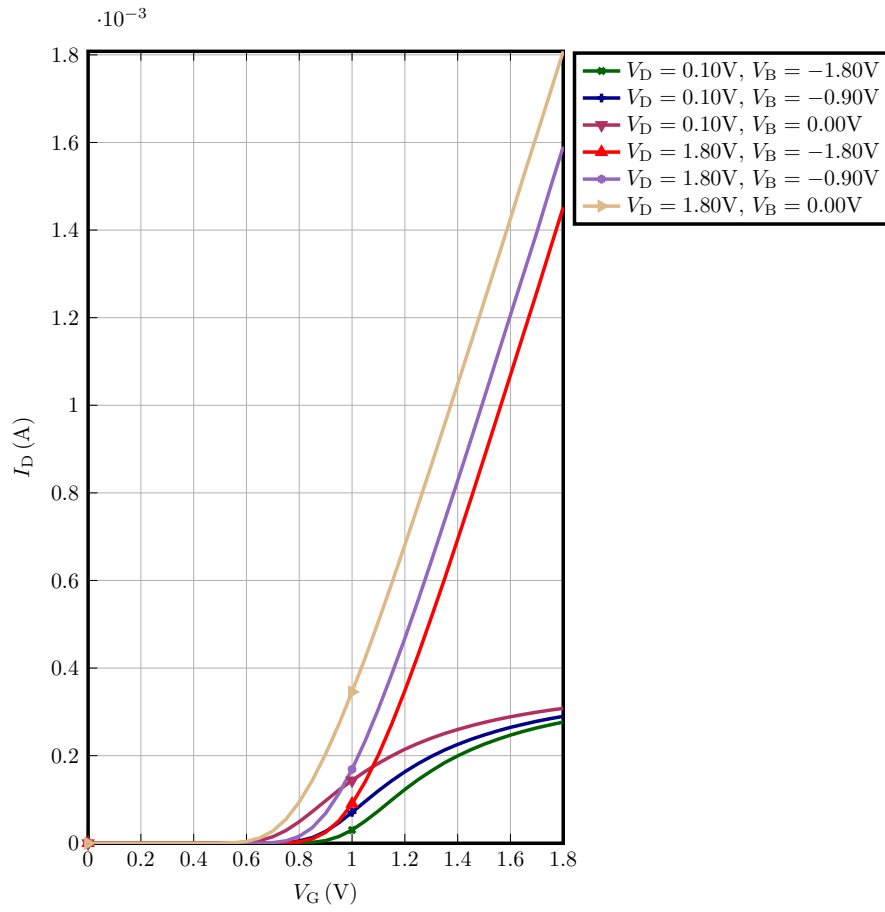


Figure 17: $I_D(V_G)@V_D$.

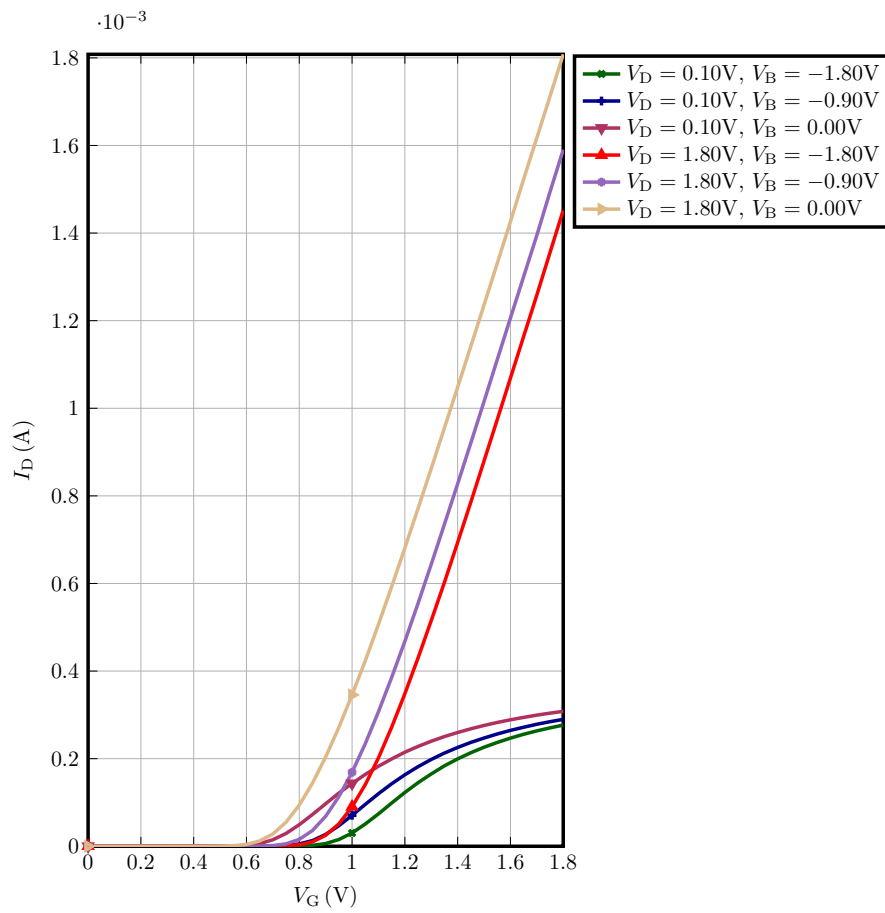


Figure 18: $I_D(V_G)@V_D$.

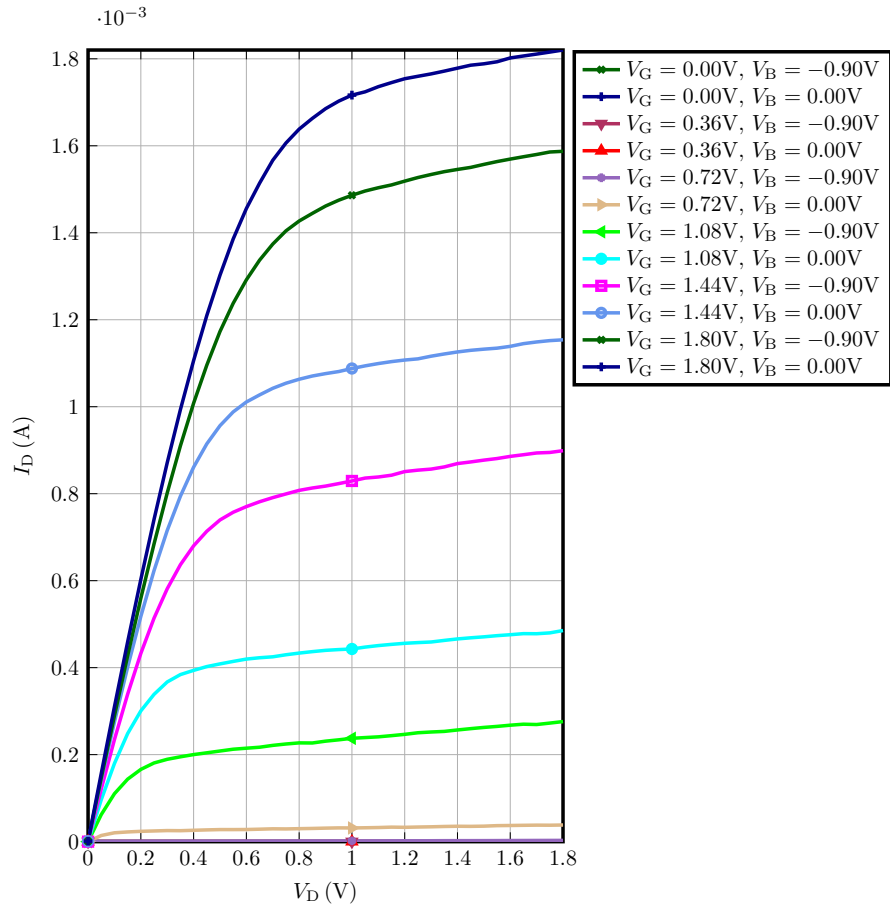


Figure 19: $I_D(V_D)@V_G$.

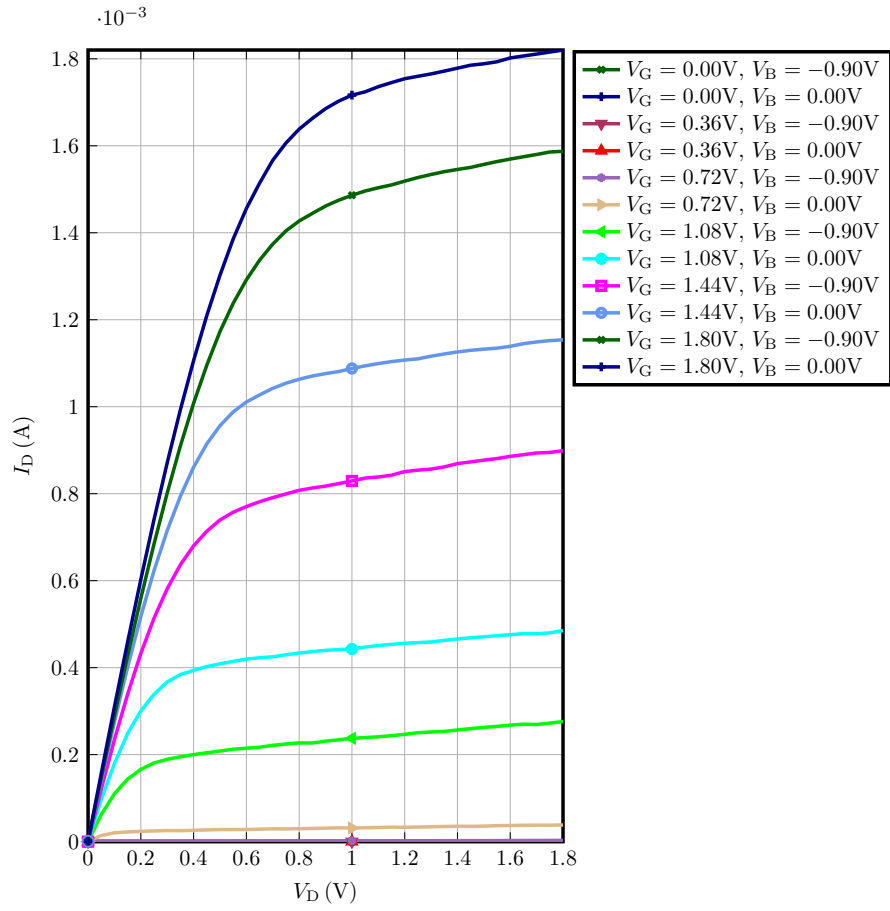


Figure 20: $I_D(V_D)@V_G$.

8 Conclusion