



cmos028fdsoi Technology



RVT models

DK1.2_RF_mmW

Comparison with DK1.1_RF_mmW model(s)

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General information on RVT models

- Maximum supply voltage is - V.
- Validity domain is defined as follows:
 - ✓ Drawn gate length varies from 30nm to 10um.
 - ✓ Drawn transistor width varies from 80nm to 10um.
 - ✓ Device temperature varies from -40 °C to 125 °C.

Output parameters definitions

- Model(s): nfet_acc, pfet_acc

- ✓ Vt_lin : Threshold voltage defined as Vgs value for which drain current is $ivt * M * 1 * W / (1 * L + 0 + 1 * p_{la})$ at $Vds = 0.05V$.
- ✓ Ig_on : Gate current at $Vds = 0V$ and $Vgs = 1V$.
- ✓ Gm_c : Drain transconductance at $Vgs = Vt_{lin} + 0.2$, $Vds = Vdd/2V$, $f = 100kHz$.
- ✓ Gd_c : Drain conductance at $Vgs = Vt_{lin} + 0.2$, $Vds = Vdd/2V$, $f = 100kHz$.
- ✓ Logioff : $\log_{10}(I_{offsat})$.
- ✓ Gain_c : Voltage gain defined as Gm_c / Gd_c .
- ✓ Ilin : Drain current at $Vgs = 1V$, $Vds = 0.05V$.
- ✓ Dibl : $Vt_{lin} - Vt_{sat}$.
- ✓ Cbd_off : Bulk-to-Drain capacitance at $Vgs = 0V$, $Vds = 0V$, $f = 100kHz$.
- ✓ Cgg_inv : Total gate capacitance at $Vgs = 1V$, $Vds = 0V$, $f = 100kHz$.
- ✓ Ioff_g : Gate current at $Vgs = 0V$, $Vds = vds_{satV}$.
- ✓ Vt_sat : Threshold voltage defined as Vgs value for which drain current is $ivt * M * 1 * W / (1 * L + 0 + 1 * p_{la})$ at $Vds = vds_{satV}$.
- ✓ Ieff : Average drain current ($I_{low} + I_{high}$) / 2.
- ✓ Cggmean : Average total gate capacitance for Vgs values between 0V and 1, $Vds = 0V$, $f = 100kHz$.
- ✓ Slp_sat : Sub-threshold slope at $Vds = vds_{satV}$, extracted from drain current vs. Vgs curve between its minimum and $ivt * M * W / L$.
- ✓ Isat : Drain current at $Vgs = 1V$, $Vds = VddV$.
- ✓ Slp_lin : Sub-threshold slope at $Vds = 0.05V$, extracted from drain current vs. Vgs curve between its minimum and $ivt * M * W / L$.
- ✓ Cgd_0v : Gate-to-Drain capacitance at $Vgs = 0V$, $Vds = 0V$, $f = 100kHz$.

- ✓ $V_{tgmm\max}$: Threshold voltage at $V_{ds} = 0.05$ derived from Gm max method.

nfet_acc

Electrical characteristics per geometry

**nfet_acc @ w=1e-6, l=1e-6, swshe=0, pre_layout_local=1, p_la=0, sa=2.325e-06,
sb=2.325e-06, sd=1.140e-07, pcpastrx_top=3.2e-07, pcpastrx_bot=3.2e-07,
devtype=PT, as=2.325e-12, ad=2.325e-12, ps=6.65e-06, pd=6.65e-06, vbs=0, vdd=1,
temp=25.0**

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	SS	TT	FF	FFF
Vt_lin [mV]	521.5 0.0mV	488.1 0.0mV	478.4 0.0mV	469 0.0mV	445.7 0.0mV
Ilin [μA]	10.72 0.0%	11.83 0.0%	12.69 0.0%	13.59 0.0%	14.44 0.0%
Slp_lin [mV/dec]	66.9 0.0%	66.53 0.0%	66.18 0.0%	65.89 0.0%	65.9 0.0%
VtGmmax [mV]	550.5 0.0mV	519.2 0.0mV	510.2 0.0mV	501.7 0.0mV	479.8 0.0mV
DIBL [mV]	9.25 0.0mV	9.15 0.0mV	8.87 0.0mV	8.6 0.0mV	8.53 0.0mV
Vt_sat [mV]	512.3 0.0mV	479 0.0mV	469.5 0.0mV	460.4 0.0mV	437.2 0.0mV
Isat [μA]	50.12 0.0%	58.32 0.0%	63.98 0.0%	70.08 0.0%	77.16 0.0%
Slp_sat [mV/dec]	65.12 0.0%	64.77 0.0%	64.63 0.0%	64.57 0.0%	64.68 0.0%
LogIoff [log(A)]	-13.46 -0.0%	-13.13 -0.0%	-12.38 -0.0%	-11.53 -0.0%	-11.23 -0.0%
Ieff [μA]	24.89 0.0%	29 0.0%	31.79 0.0%	34.79 0.0%	38.38 0.0%
Ig_on [nA]	0.25 0.0%	0.4 0.0%	1.59 0.0%	11.69 0.0%	8.56 0.0%
Ioff_g [pA]	-2.72e-02 -0.0%	-5.46e-02 -0.0%	-0.4 -0.0%	-2.9 -0.0%	-5.8 -0.0%
Gm_c [μS]	81.94 0.0%	83.39 0.0%	88.08 0.0%	93.12 0.0%	94.2 0.0%
Gd_c [nS]	112.6 0.0%	107.6 0.0%	126.1 0.0%	147.7 0.0%	150.3 0.0%
Gain_c []	727.7 0.0%	775.1 0.0%	698.6 0.0%	630.5 0.0%	626.6 0.0%
CGd_0V [aF]	201.7 0.0%	207.6 0.0%	212.1 0.0%	217.1 0.0%	225.5 0.0%

Cgg_inv [fF]	17.15 0.0%	17.35 0.0%	18.41 0.0%	19.57 0.0%	19.71 0.0%
Cggmean [fF]	8.13 0.0%	8.71 0.0%	9.27 0.0%	9.87 0.0%	10.29 0.0%
Cbd_off [fF]	2.66 0.0%	2.62 0.0%	2.55 0.0%	2.49 0.0%	2.46 0.0%

nfet_acc @ w=0.21e-6, l=0.03e-6, swshe=0, pre_layout_local=1, p_la=0, sa=1.588e-06, sb=1.588e-06, sd=1.140e-07, pcpastrx_top=3.2e-07, pcpastrx_bot=3.2e-07, devtype=PT, as=3.3348e-13, ad=3.3348e-13, ps=3.596e-06, pd=3.596e-06, vbs=0, vdd=1, temp=25.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	SS	TT	FF	FFF
Vt_lin [mV]	460.4 0.0mV	436.7 0.0mV	418.6 0.0mV	401.9 0.0mV	382.6 0.0mV
Ilin [μA]	22.27 0.0%	24.79 0.0%	27.5 0.0%	30.6 0.0%	33.76 0.0%
Slp_lin [mV/dec]	87.64 0.0%	87.42 0.0%	88.47 0.0%	90.04 0.0%	90.11 0.0%
VtGmmax [mV]	411 0.0mV	392.1 0.0mV	380.9 0.0mV	371.4 0.0mV	357.2 0.0mV
DIBL [mV]	74.45 0.0mV	73.95 0.0mV	86.76 0.0mV	104 0.0mV	106.4 0.0mV
Vt_sat [mV]	386 0.0mV	362.7 0.0mV	331.8 0.0mV	297.9 0.0mV	276.1 0.0mV
Isat [μA]	149.6 0.0%	153.1 0.0%	175.6 0.0%	199.1 0.0%	206.9 0.0%
Slp_sat [mV/dec]	77.62 0.0%	77.02 0.0%	79.45 0.0%	82.87 0.0%	83.77 0.0%
LogIoff [log(A)]	-10.36 -0.0%	-10.08 -0.0%	-9.59 -0.0%	-9.06 -0.0%	-8.79 -0.0%
Ieff [μA]	72.4 0.0%	77.17 0.0%	90.06 0.0%	104.6 0.0%	112.5 0.0%
Ig_on [pA]	2.04 0.0%	2.73 0.0%	9.95 0.0%	68.32 0.0%	47.45 0.0%
Ioff_g [pA]	-4.33e-03 -0.0%	-8.84e-03 -0.0%	-6.89e-02 -0.0%	-0.54 -0.0%	-1.09 -0.0%
Gm_c [μS]	262 0.0%	263.6 0.0%	291.9 0.0%	320.9 0.0%	328.8 0.0%
Gd_c [μS]	20.69 0.0%	20.63 0.0%	26.93 0.0%	34.93 0.0%	36.32 0.0%
Gain_c []	12.66 0.0%	12.78 0.0%	10.84 0.0%	9.19 0.0%	9.05 0.0%
CGd_0V [aF]	49.58 0.0%	51.07 0.0%	53.18 0.0%	55.42 0.0%	57.43 0.0%

Cgg_inv [aF]	202.3 0.0%	200.7 0.0%	206.4 0.0%	213.6 0.0%	218.8 0.0%
Cggmean [aF]	156.8 0.0%	159.2 0.0%	165 0.0%	171.7 0.0%	177.5 0.0%
Cbd_off [aF]	381.1 0.0%	376 0.0%	366.2 0.0%	356.8 0.0%	352.4 0.0%

nfet_acc @ w=0.21e-6, l=0.03e-6, swshe=0, pre_layout_local=1, p_la=0, sa=1.588e-06, sb=1.588e-06, sd=1.140e-07, pcpastrx_top=3.2e-07, pcpastrx_bot=3.2e-07, devtype=PT, as=3.3348e-13, ad=3.3348e-13, ps=3.596e-06, pd=3.596e-06, vbs=0, vdd=1, temp=125.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	SS	TT	FF	FFF
Vt_lin [mV]	398.9 0.0mV	375.1 0.0mV	355.5 0.0mV	337.3 0.0mV	317.4 0.0mV
Ilin [μA]	19.88 0.0%	22.23 0.0%	24.73 0.0%	27.54 0.0%	30.18 0.0%
Slp_lin [mV/dec]	120 0.0%	119.3 0.0%	120.2 0.0%	121.8 0.0%	121.8 0.0%
VtGmmax [mV]	338.1 0.0mV	321.4 0.0mV	310.4 0.0mV	301.1 0.0mV	287 0.0mV
DIBL [mV]	89.5 0.0mV	88.63 0.0mV	101.9 0.0mV	120 0.0mV	122.4 0.0mV
Vt_sat [mV]	309.4 0.0mV	286.5 0.0mV	253.6 0.0mV	217.3 0.0mV	195 0.0mV
Isat [μA]	138.9 0.0%	141.3 0.0%	161.9 0.0%	183.4 0.0%	189.5 0.0%
Slp_sat [mV/dec]	103.2 0.0%	102.4 0.0%	105.7 0.0%	110.3 0.0%	111.5 0.0%
LogIoff [log(A)]	-8.46 -0.0%	-8.25 -0.0%	-7.89 -0.0%	-7.5 -0.0%	-7.3 -0.0%
Ieff [μA]	71.5 0.0%	76.19 0.0%	88.81 0.0%	102.9 0.0%	109.8 0.0%
Ig_on [pA]	4.12 0.0%	5.52 0.0%	20.04 0.0%	136.9 0.0%	94.88 0.0%
Ioff_g [pA]	-8.56e-03 -0.0%	-1.75e-02 -0.0%	-0.14 -0.0%	-1.08 -0.0%	-2.17 -0.0%
Gm_c [μS]	206.5 0.0%	209.5 0.0%	232.2 0.0%	255.6 0.0%	261.2 0.0%
Gd_c [μS]	17.1 0.0%	17.12 0.0%	22.49 0.0%	29.47 0.0%	30.65 0.0%
Gain_c []	12.08 0.0%	12.24 0.0%	10.32 0.0%	8.67 0.0%	8.52 0.0%
CGd_0V [aF]	50.03 0.0%	51.57 0.0%	53.73 0.0%	56.04 0.0%	58.1 0.0%

Cgg_inv [aF]	200.9 0.0%	199.4 0.0%	205.1 0.0%	212.3 0.0%	217.4 0.0%
Cggmean [aF]	159.8 0.0%	162.1 0.0%	167.9 0.0%	174.5 0.0%	180.2 0.0%
Cbd_off [aF]	381.1 0.0%	376 0.0%	366.2 0.0%	356.9 0.0%	352.4 0.0%

pfet_acc

Electrical characteristics per geometry

**pfet_acc @ w=1e-6, l=1e-6, swshe=0, pre_layout_local=1, p_la=0, sa=2.325e-06,
 sb=2.325e-06, sd=1.140e-07, pcpastrx_top=3.2e-07, pcpastrx_bot=3.2e-07,
 devtype=PT, as=2.325e-12, ad=2.325e-12, ps=6.65e-06, pd=6.65e-06, vbs=0, vdd=1,
 temp=25.0**

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	SS	TT	FF	FFF
Vt_lin [mV]	591.5 0.0mV	572.8 0.0mV	566.9 0.0mV	554.1 0.0mV	544.5 0.0mV
Ilin [μA]	2.38 0.0%	2.52 0.0%	2.68 0.0%	2.89 0.0%	2.95 0.0%
Slp_lin [mV/dec]	68.04 0.0%	68.06 0.0%	67.59 0.0%	67.09 0.0%	67.17 0.0%
VtGmmax [mV]	627.1 0.0mV	607.4 0.0mV	601.1 0.0mV	587.5 0.0mV	577.7 0.0mV
DIBL [mV]	9.94 0.0mV	9.8 0.0mV	9.49 0.0mV	9.15 0.0mV	9.12 0.0mV
Vt_sat [mV]	581.6 0.0mV	563 0.0mV	557.4 0.0mV	545 0.0mV	535.4 0.0mV
Isat [μA]	9.48 0.0%	10.52 0.0%	11.44 0.0%	12.89 0.0%	13.42 0.0%
Slp_sat [mV/dec]	65.25 0.0%	65.35 0.0%	65.15 0.0%	64.71 0.0%	65.17 0.0%
LogIoff [log(A)]	-12.21 -0.0%	-11.94 -0.0%	-11.07 -0.0%	-10.07 -0.0%	-9.59 -0.0%
Ieff [μA]	4.69 0.0%	5.21 0.0%	5.65 0.0%	6.35 0.0%	6.62 0.0%
Ig_on [nA]	9.46e-02 0.0%	0.12 0.0%	0.41 0.0%	2.7 0.0%	1.75 0.0%
Ioff_g [pA]	-0.44 -0.0%	-0.59 -0.0%	-1.83 -0.0%	-5.61 -0.0%	-7.56 -0.0%
Gm_c [μS]	21.02 0.0%	21.3 0.0%	22.55 0.0%	23.98 0.0%	23.94 0.0%
Gd_c [nS]	46.67 0.0%	48.26 0.0%	57.42 0.0%	68.39 0.0%	68.85 0.0%
Gain_c []	450.5 0.0%	441.3 0.0%	392.7 0.0%	350.6 0.0%	347.7 0.0%
CGd_0V [aF]	199.5 0.0%	207.6 0.0%	212.5 0.0%	218 0.0%	225.8 0.0%

Cgg_inv [fF]	16.85 0.0%	16.8 0.0%	17.59 0.0%	18.47 0.0%	18.43 0.0%
Cggmean [fF]	7.27 0.0%	7.45 0.0%	7.77 0.0%	8.19 0.0%	8.28 0.0%
Cbd_off [fF]	2.5 0.0%	2.47 0.0%	2.41 0.0%	2.35 0.0%	2.32 0.0%

pfet_acc @ w=0.3e-6, l=0.03e-6, swshe=0, pre_layout_local=1, p_la=0, sa=1.588e-06, sb=1.588e-06, sd=1.140e-07, pcpastrx_top=3.2e-07, pcpastrx_bot=3.2e-07, devtype=PT, as=4.764e-13, ad=4.764e-13, ps=3.776e-06, pd=3.776e-06, vbs=0, vdd=1, temp=25.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	SS	TT	FF	FFF
Vt_lin [mV]	519 0.0mV	502.9 0.0mV	482.7 0.0mV	453.3 0.0mV	444.4 0.0mV
Ilin [μA]	10.55 0.0%	12.13 0.0%	13.34 0.0%	14.8 0.0%	16.28 0.0%
Slp_lin [mV/dec]	105.5 0.0%	107.4 0.0%	110.9 0.0%	117.5 0.0%	118.3 0.0%
VtGmmax [mV]	501.6 0.0mV	495.2 0.0mV	480.5 0.0mV	457.9 0.0mV	457.1 0.0mV
DIBL [mV]	99.72 0.0mV	105.3 0.0mV	119 0.0mV	141.8 0.0mV	143.8 0.0mV
Vt_sat [mV]	419.2 0.0mV	397.6 0.0mV	363.7 0.0mV	311.5 0.0mV	300.6 0.0mV
Isat [μA]	79.75 0.0%	82.56 0.0%	97.46 0.0%	115.8 0.0%	116.2 0.0%
Slp_sat [mV/dec]	80.49 0.0%	82 0.0%	84.94 0.0%	90.32 0.0%	92.14 0.0%
LogIoff [log(A)]	-10.9 -0.0%	-10.57 -0.0%	-10.07 -0.0%	-9.34 -0.0%	-9.18 -0.0%
Ieff [μA]	33.18 0.0%	35.38 0.0%	41.57 0.0%	50.02 0.0%	51.41 0.0%
Ig_on [pA]	1.11 0.0%	1.32 0.0%	4.38 0.0%	27.11 0.0%	17.8 0.0%
Ioff_g [pA]	-0.13 -0.0%	-0.17 -0.0%	-0.55 -0.0%	-1.72 -0.0%	-2.29 -0.0%
Gm_c [μS]	128.5 0.0%	130.5 0.0%	145.1 0.0%	159.7 0.0%	158 0.0%
Gd_c [μS]	13.91 0.0%	14.77 0.0%	18.89 0.0%	24.77 0.0%	24.71 0.0%
Gain_c []	9.24 0.0%	8.83 0.0%	7.68 0.0%	6.45 0.0%	6.39 0.0%
CGd_0V [aF]	67.7 0.0%	69.58 0.0%	71.86 0.0%	74.38 0.0%	76.33 0.0%

Cgg_inv [aF]	266.2 0.0%	266.4 0.0%	269.7 0.0%	271.1 0.0%	274.7 0.0%
Cggmean [aF]	202.9 0.0%	205.9 0.0%	211 0.0%	216.1 0.0%	220.7 0.0%
Cbd_off [aF]	513 0.0%	506.5 0.0%	494 0.0%	482.1 0.0%	476.4 0.0%

pfet_acc @ w=0.3e-6, l=0.03e-6, swshe=0, pre_layout_local=1, p_la=0, sa=1.588e-06, sb=1.588e-06, sd=1.140e-07, pcpastrx_top=3.2e-07, pcpastrx_bot=3.2e-07, devtype=PT, as=4.764e-13, ad=4.764e-13, ps=3.776e-06, pd=3.776e-06, vbs=0, vdd=1, temp=125.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	SS	TT	FF	FFF
Vt_lin [mV]	426.4 0.0mV	410.4 0.0mV	388.5 0.0mV	356.8 0.0mV	349.2 0.0mV
Ilin [μA]	9.9 0.0%	11.51 0.0%	12.61 0.0%	13.95 0.0%	15.65 0.0%
Slp_lin [mV/dec]	137.3 0.0%	140.2 0.0%	145.1 0.0%	154.4 0.0%	155.9 0.0%
VtGmmax [mV]	404.2 0.0mV	400.5 0.0mV	386.3 0.0mV	364.4 0.0mV	368.7 0.0mV
DIBL [mV]	110.2 0.0mV	116 0.0mV	129.7 0.0mV	152.3 0.0mV	154.5 0.0mV
Vt_sat [mV]	316.1 0.0mV	294.4 0.0mV	258.9 0.0mV	204.4 0.0mV	194.8 0.0mV
Isat [μA]	80.73 0.0%	85.27 0.0%	99.2 0.0%	116.1 0.0%	119.4 0.0%
Slp_sat [mV/dec]	106.3 0.0%	108.6 0.0%	113.2 0.0%	121.8 0.0%	125.4 0.0%
LogIoff [log(A)]	-8.83 -0.0%	-8.59 -0.0%	-8.23 -0.0%	-7.7 -0.0%	-7.61 -0.0%
Ieff [μA]	35.95 0.0%	39.05 0.0%	45.39 0.0%	53.86 0.0%	56.33 0.0%
Ig_on [pA]	2.83 0.0%	3.35 0.0%	10.96 0.0%	66.91 0.0%	43.98 0.0%
Ioff_g [pA]	-0.34 -0.0%	-0.45 -0.0%	-1.43 -0.0%	-4.48 -0.0%	-5.97 -0.0%
Gm_c [μS]	99.88 0.0%	102.5 0.0%	112.5 0.0%	122.1 0.0%	122.5 0.0%
Gd_c [μS]	10.17 0.0%	10.98 0.0%	13.81 0.0%	17.85 0.0%	18.12 0.0%
Gain_c []	9.82 0.0%	9.34 0.0%	8.15 0.0%	6.84 0.0%	6.76 0.0%
CGd_0V [aF]	67.96 0.0%	69.82 0.0%	72.11 0.0%	74.63 0.0%	76.59 0.0%

Cgg_inv [aF]	264.9 0.0%	265.1 0.0%	268.4 0.0%	269.7 0.0%	273.3 0.0%
Cggmean [aF]	206.9 0.0%	209.7 0.0%	214.5 0.0%	219.1 0.0%	223.7 0.0%
Cbd_off [aF]	513 0.0%	506.6 0.0%	494.1 0.0%	482.2 0.0%	476.4 0.0%

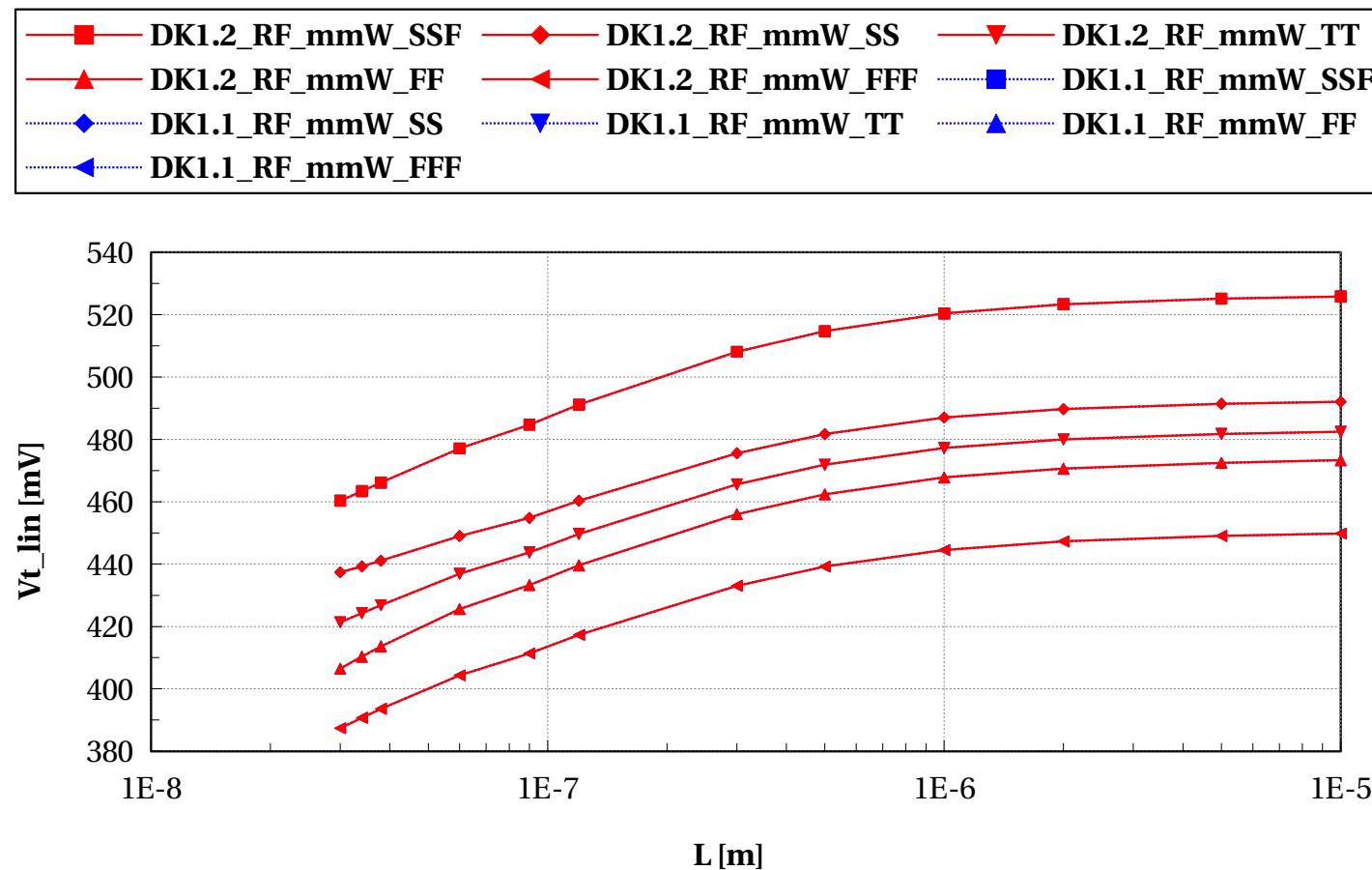
nfet_acc

Electrical characteristics scaling

Scaling versus Length ($W=1\text{ }\mu\text{m}$)

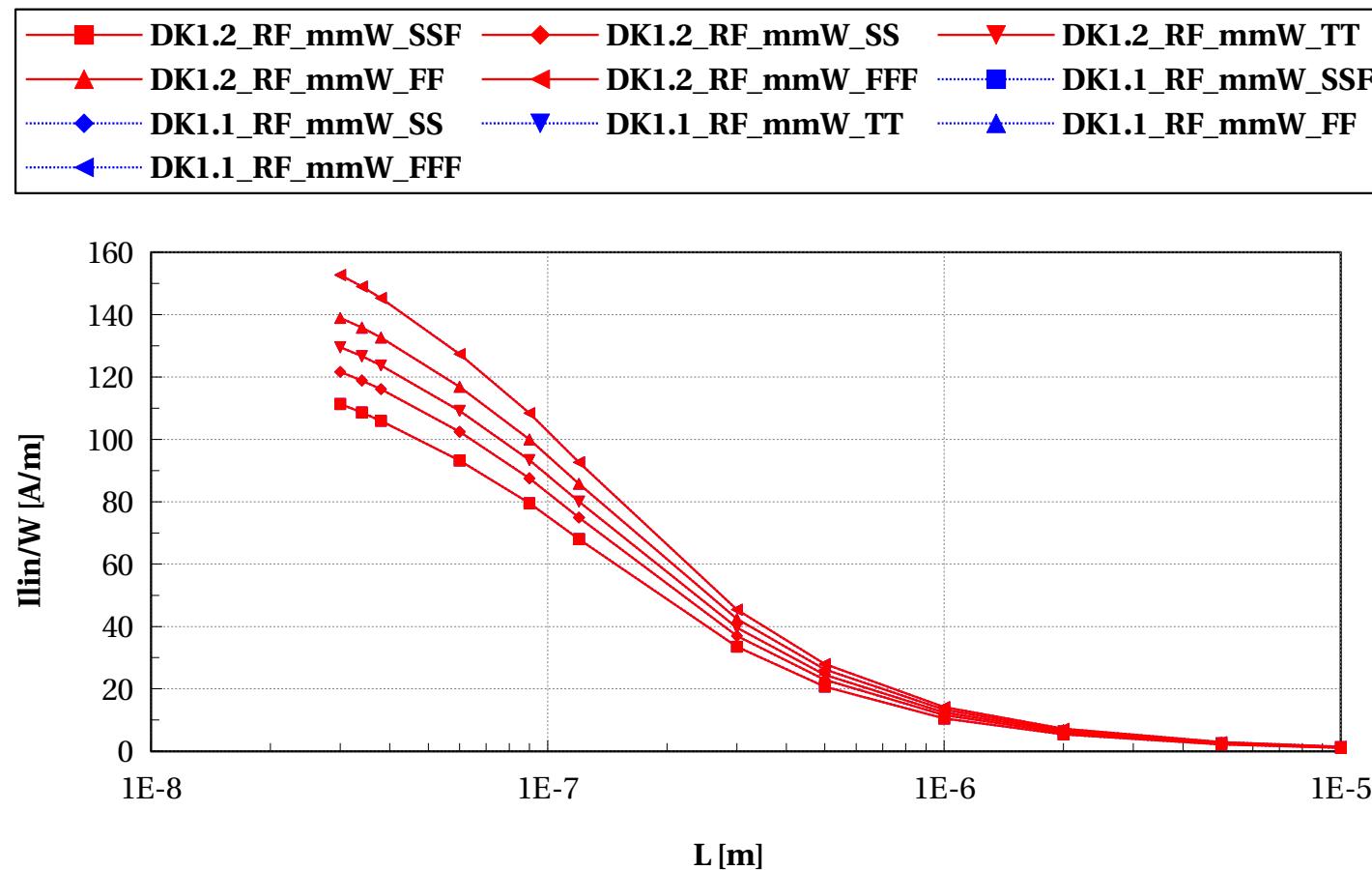
nfet_acc, Vt_lin [mV] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



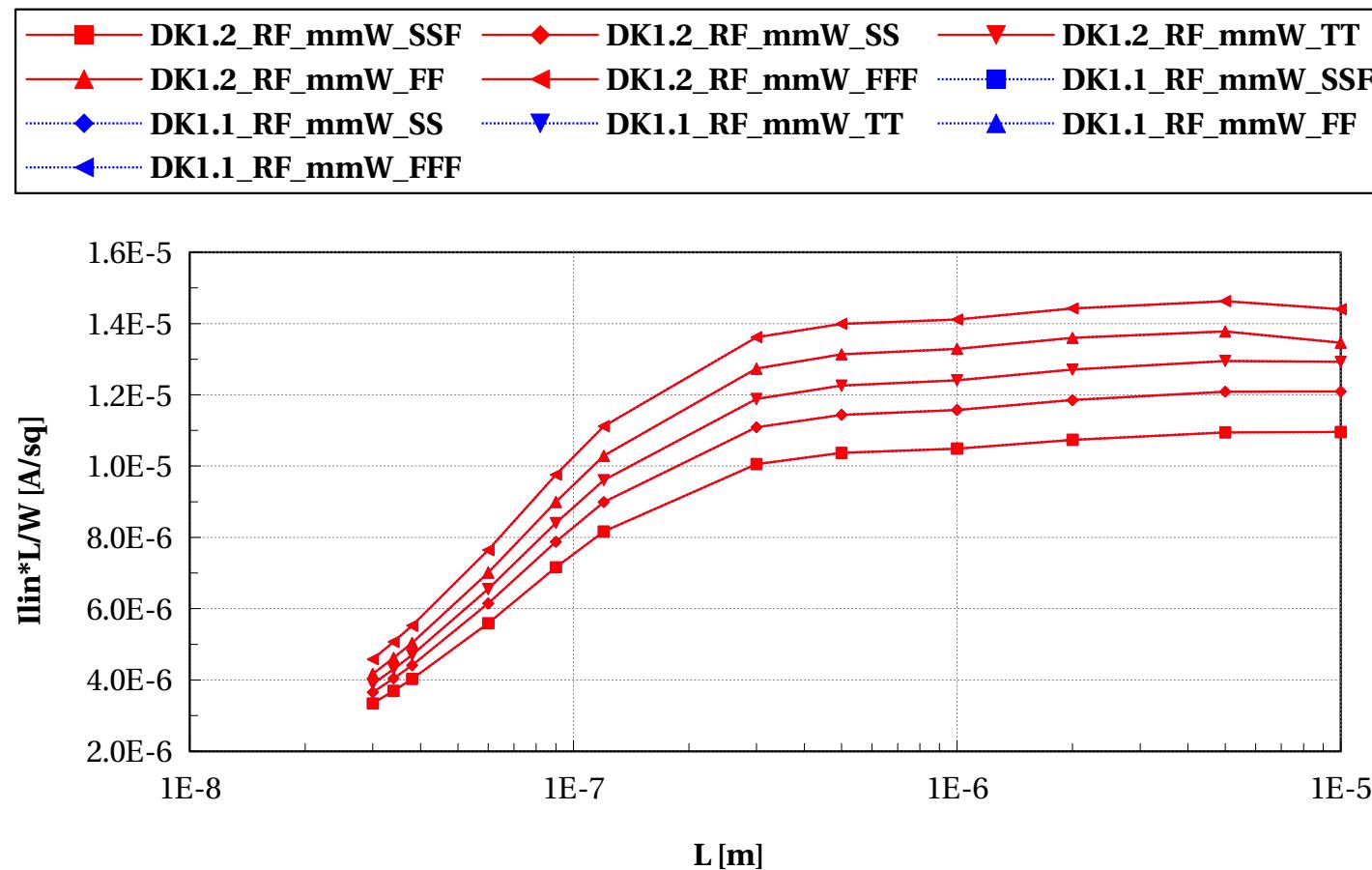
nfet_acc, I_{lin}/W [A/m] vs L [m]

$w=1e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_{la}=0$ and $devType=="PCELLwoWPE"$



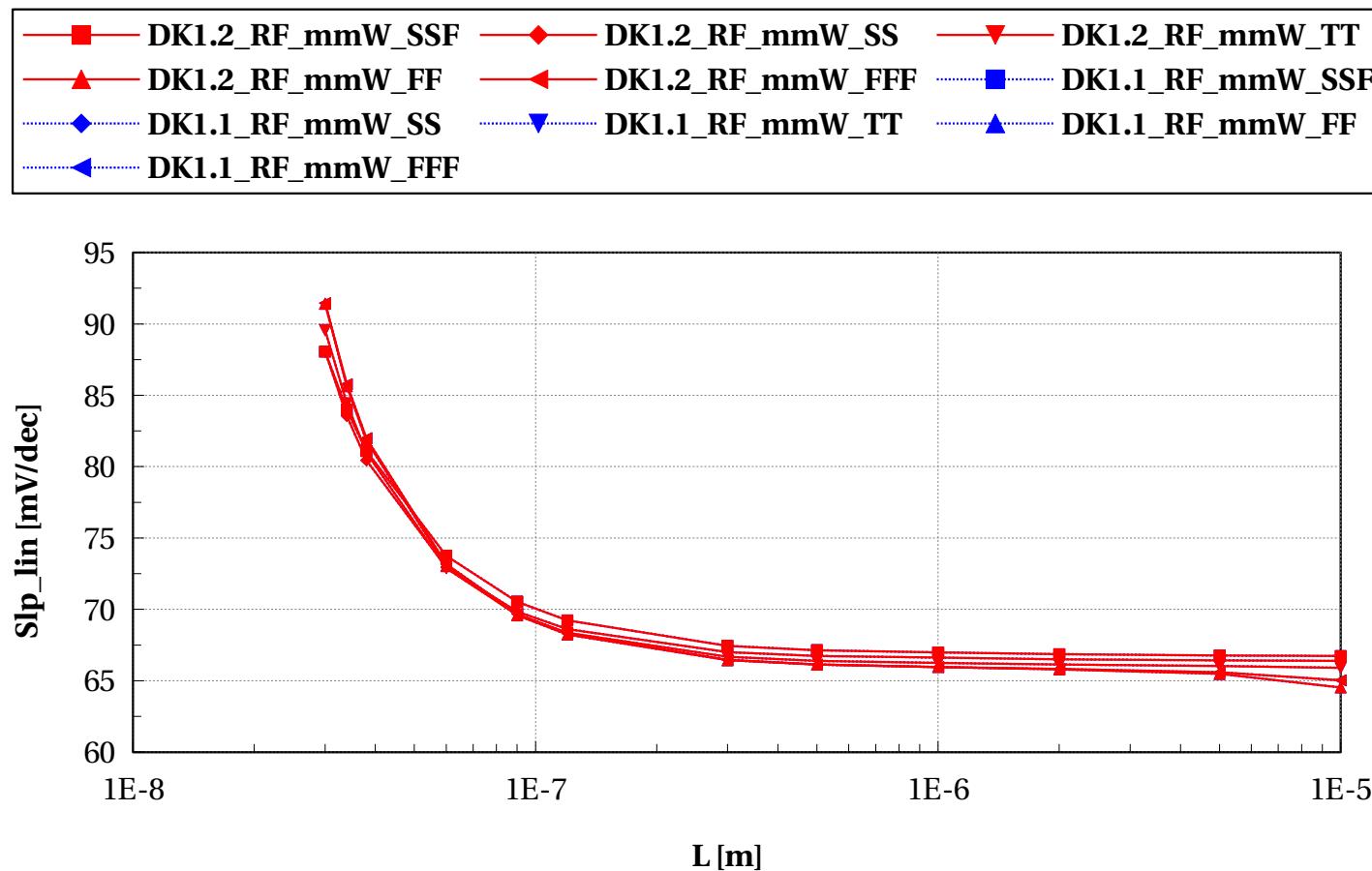
nfet_acc, $I_{lin} \cdot L/W$ [A/sq] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



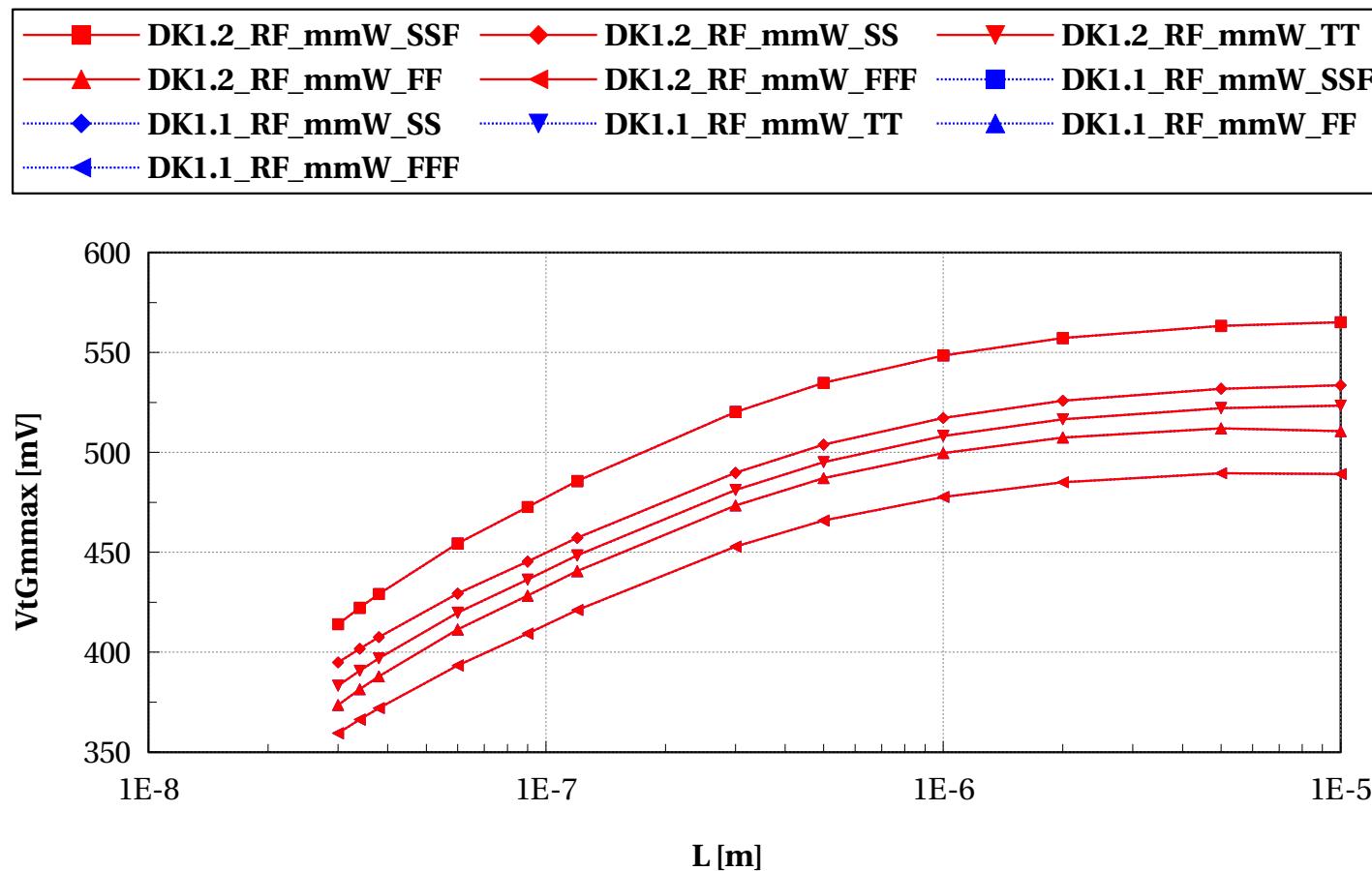
nfet_acc, Slp_lin [mV/dec] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



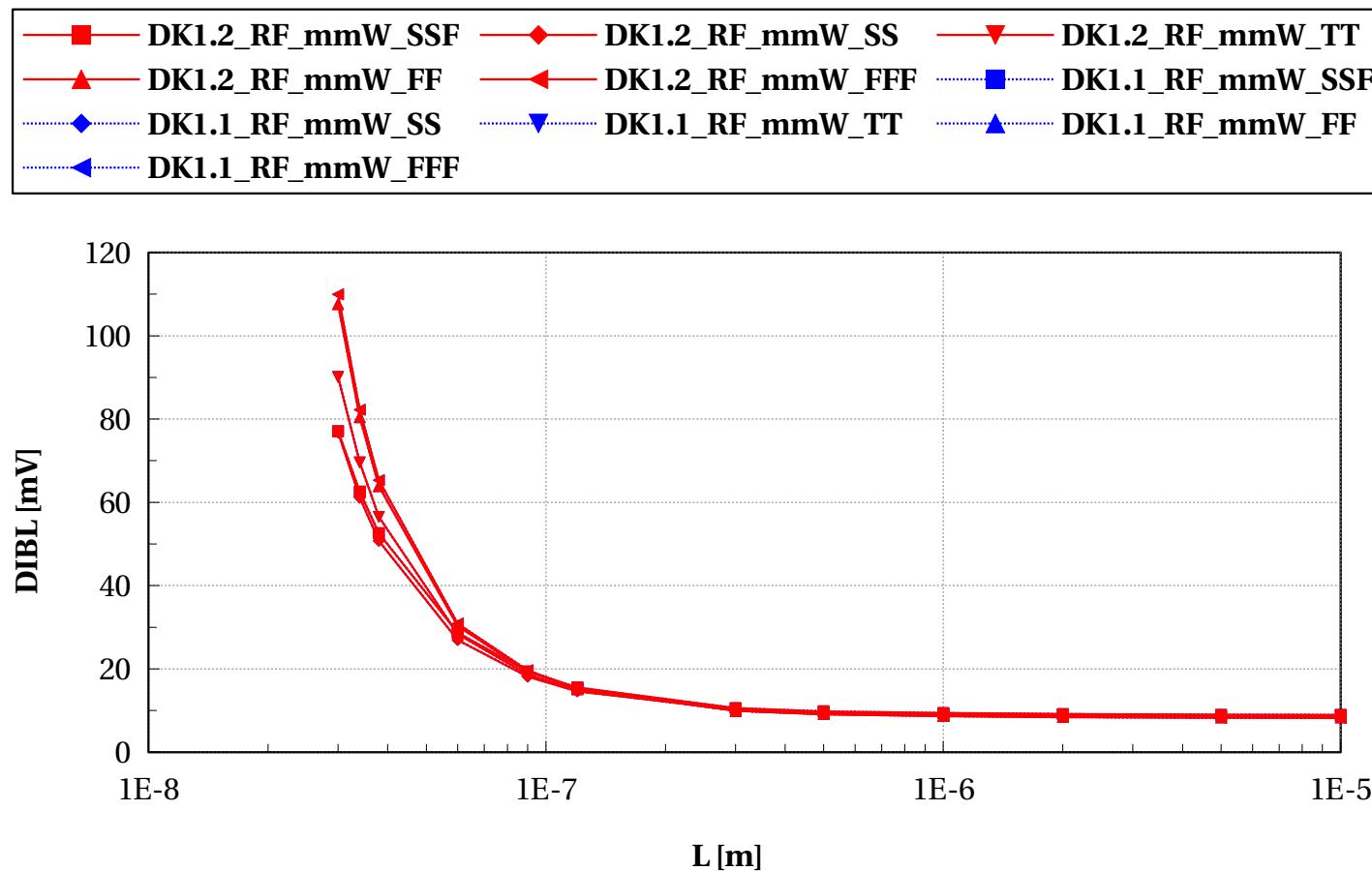
nfet_acc, VtGmmax [mV] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



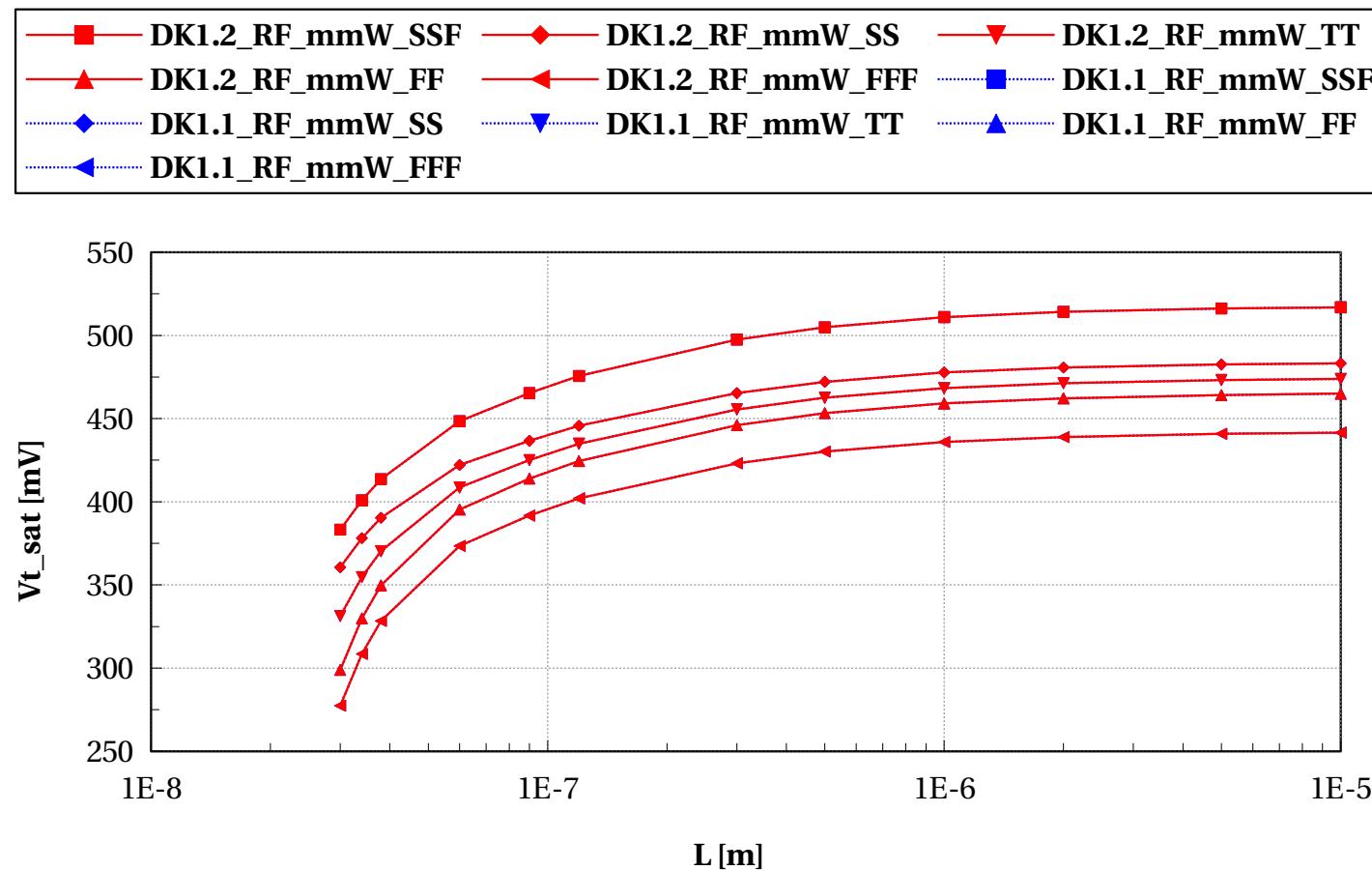
nfet_acc, DIBL [mV] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



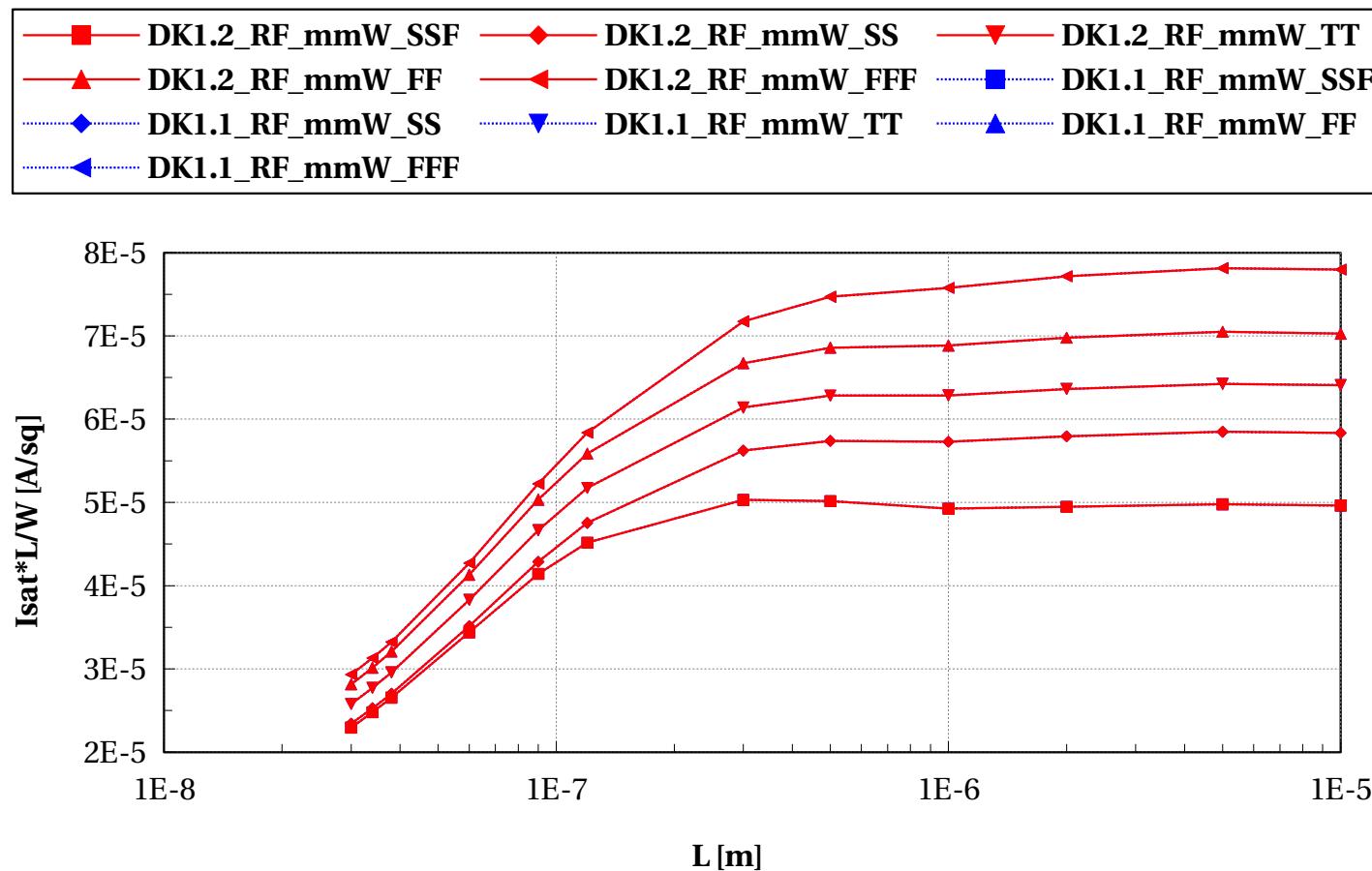
nfet_acc, Vt_sat [mV] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



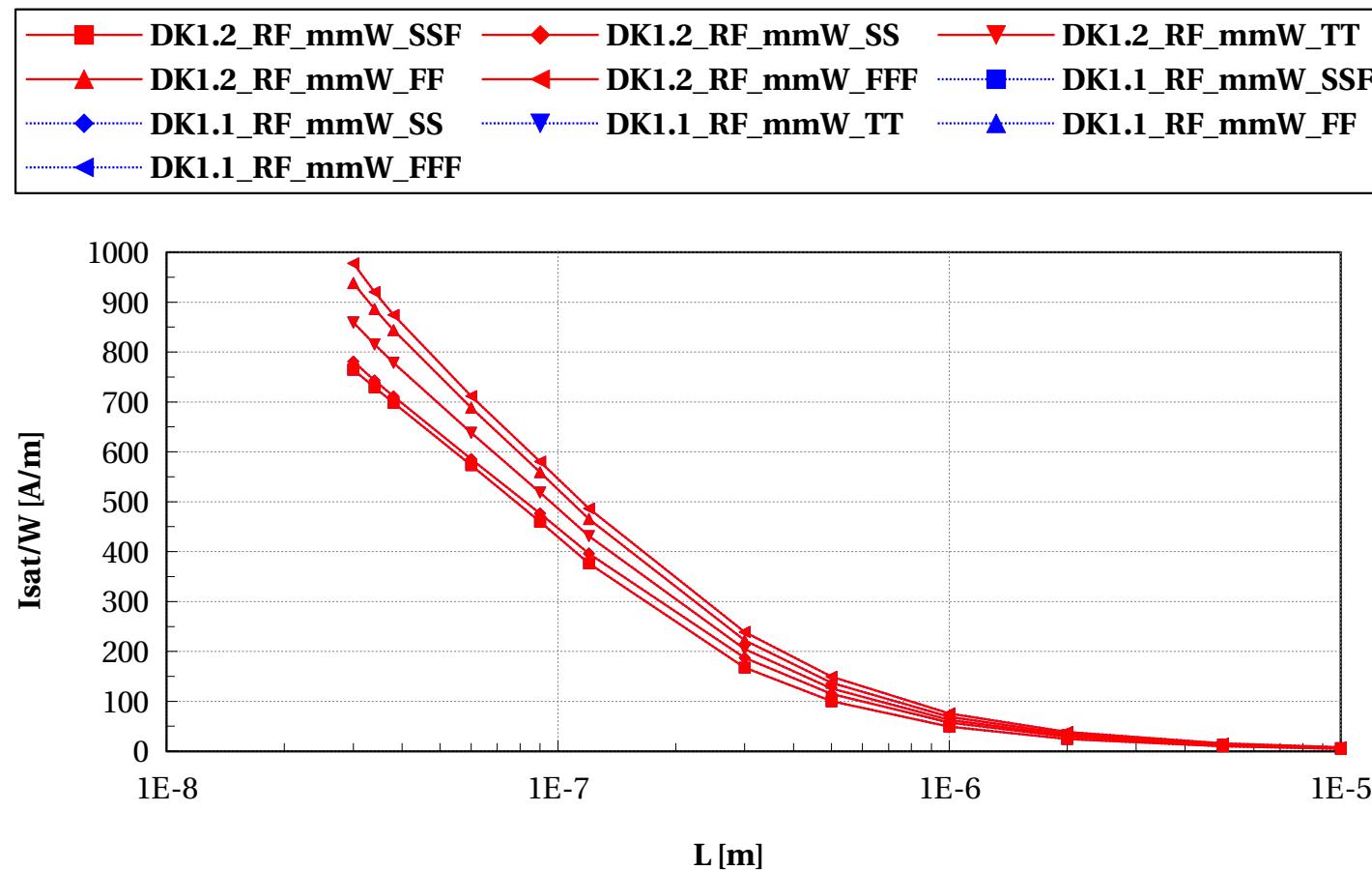
nfet_acc, $I_{sat} \cdot L/W$ [A/sq] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



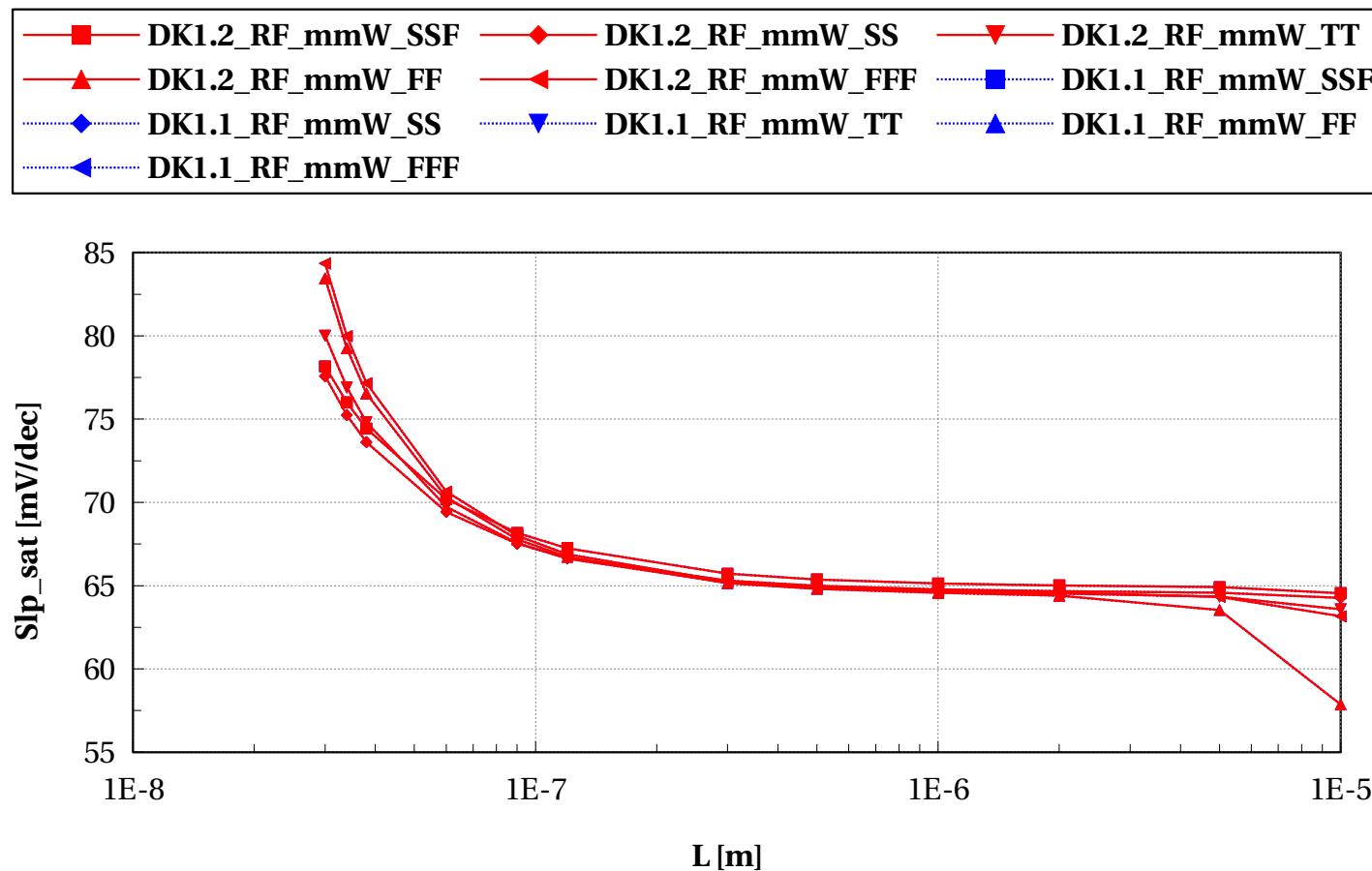
nfet_acc, Isat/W [A/m] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



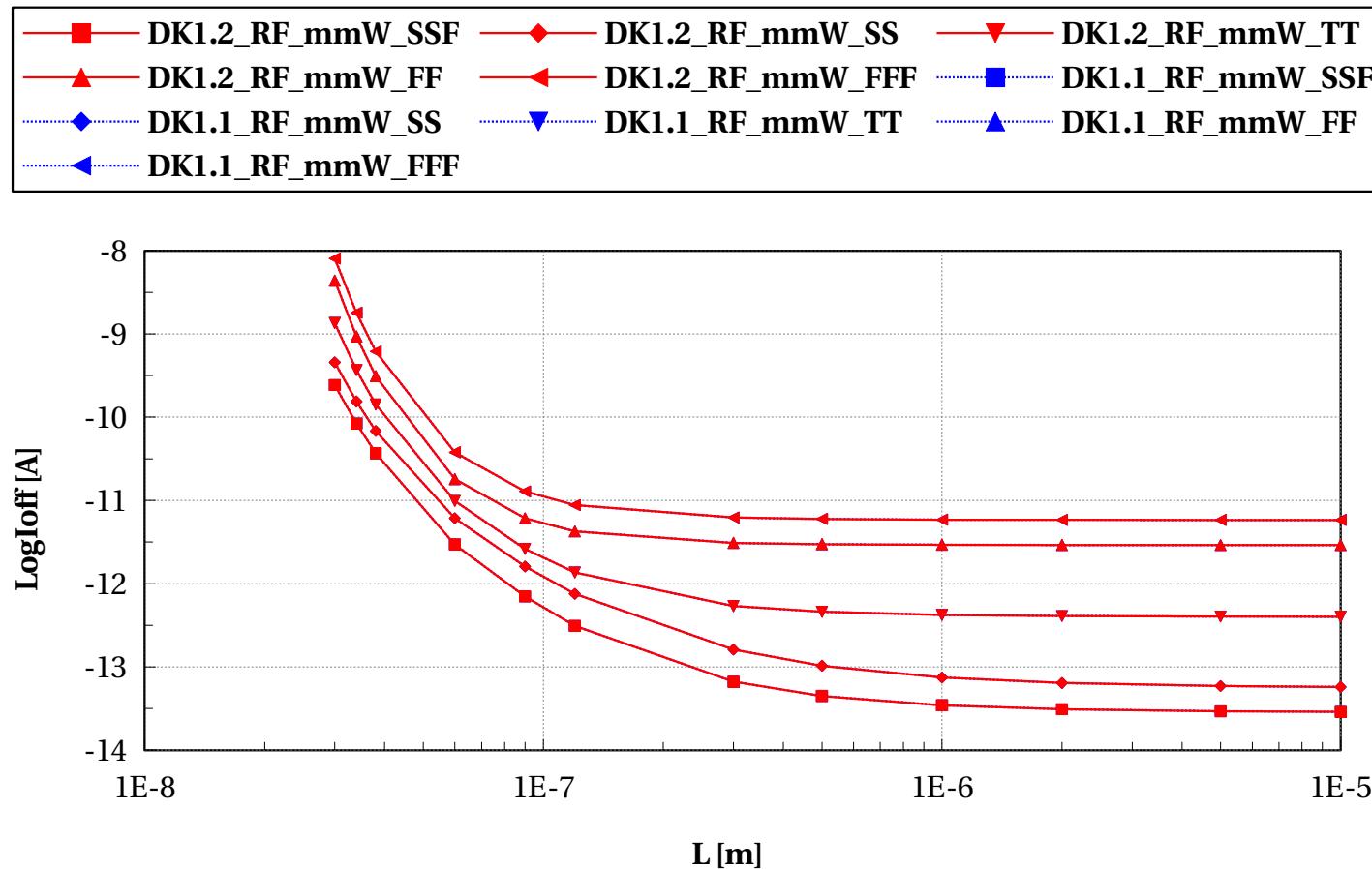
nfet_acc, Slp_sat [mV/dec] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



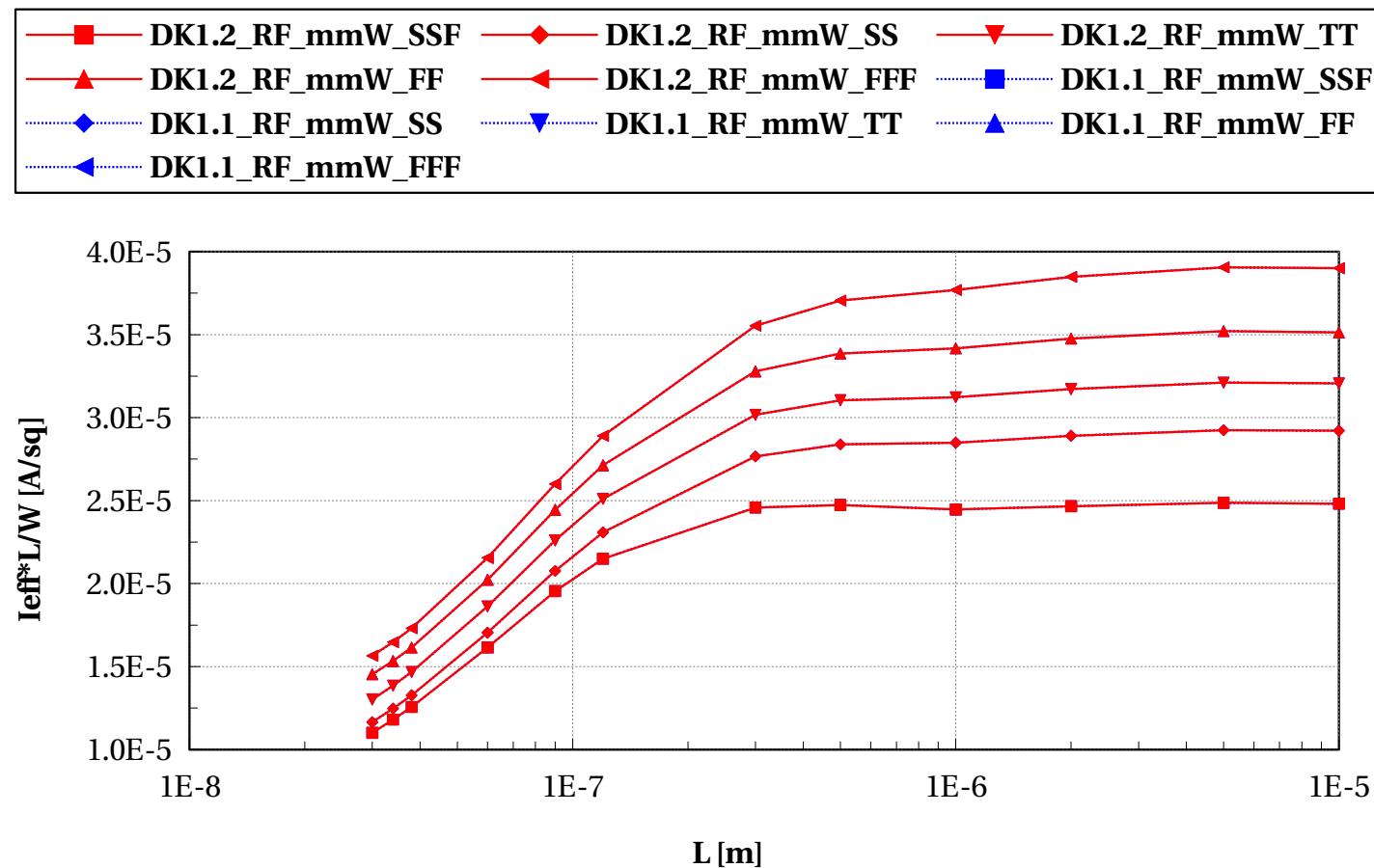
nfet_acc, LogIoff [A] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



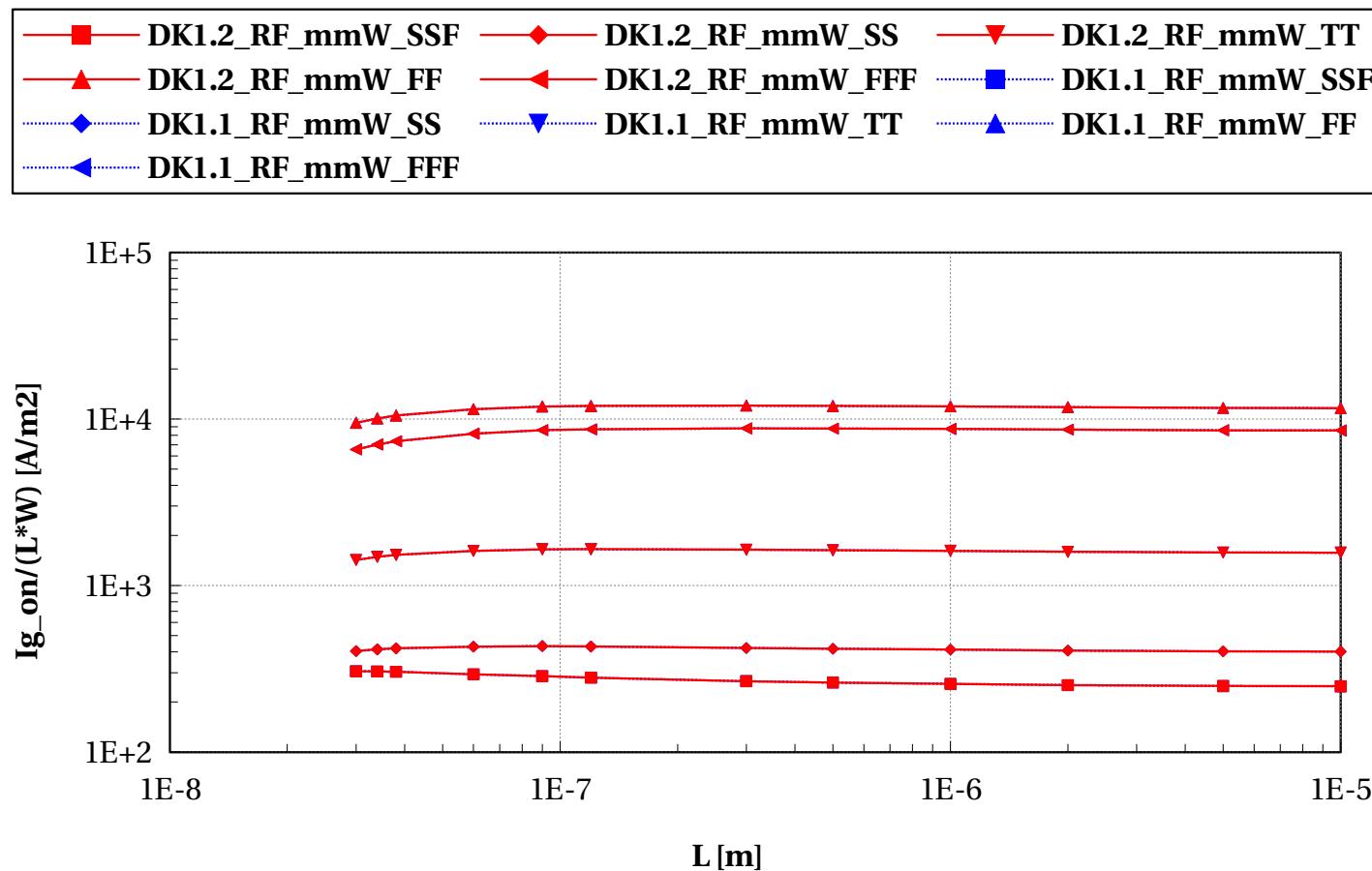
nfet_acc, Ieff*L/W [A/sq] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



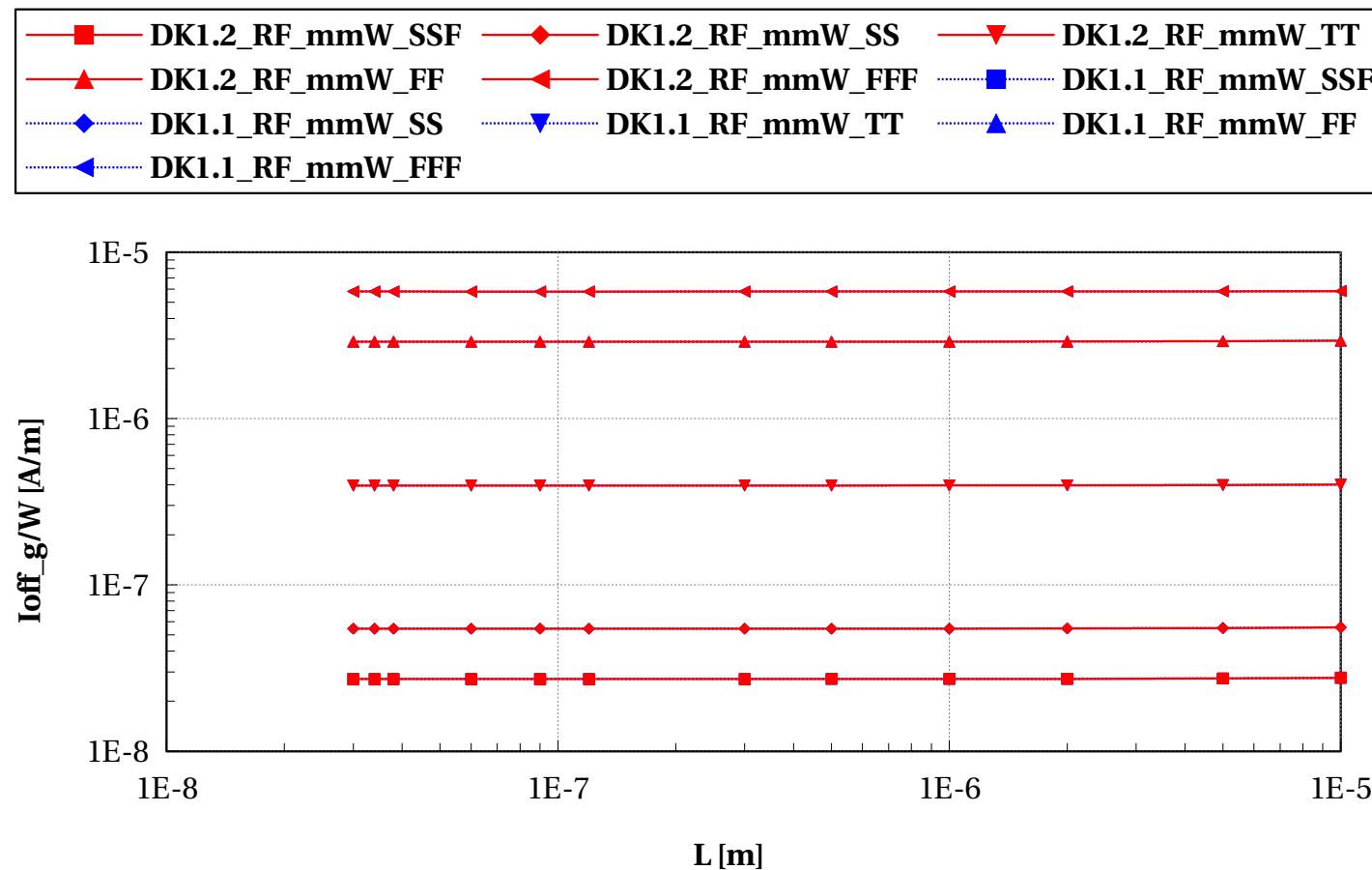
nfet_acc, Ig_on/(L*W) [A/m²] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



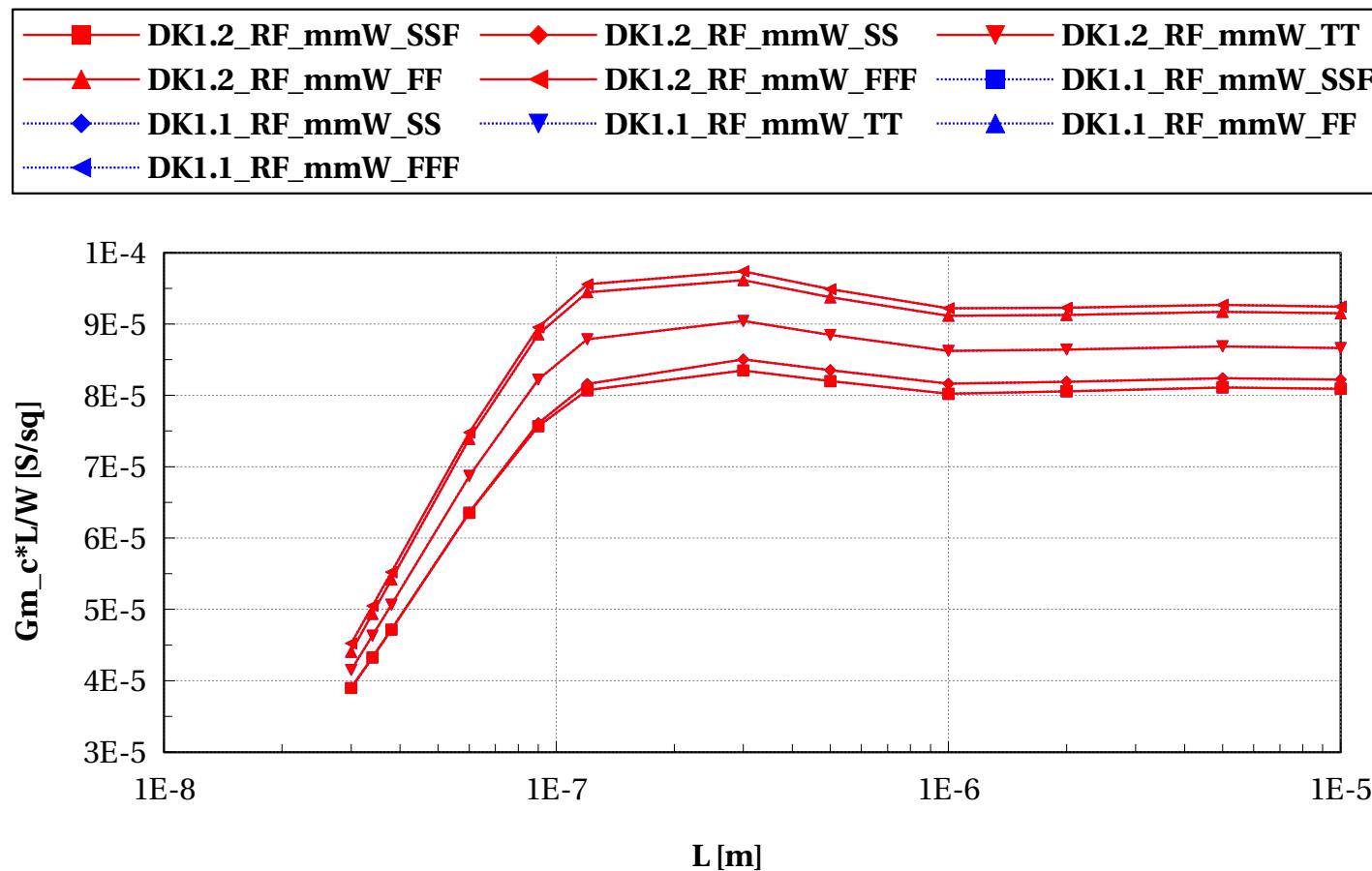
nfet_acc, Ioff_g/W [A/m] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



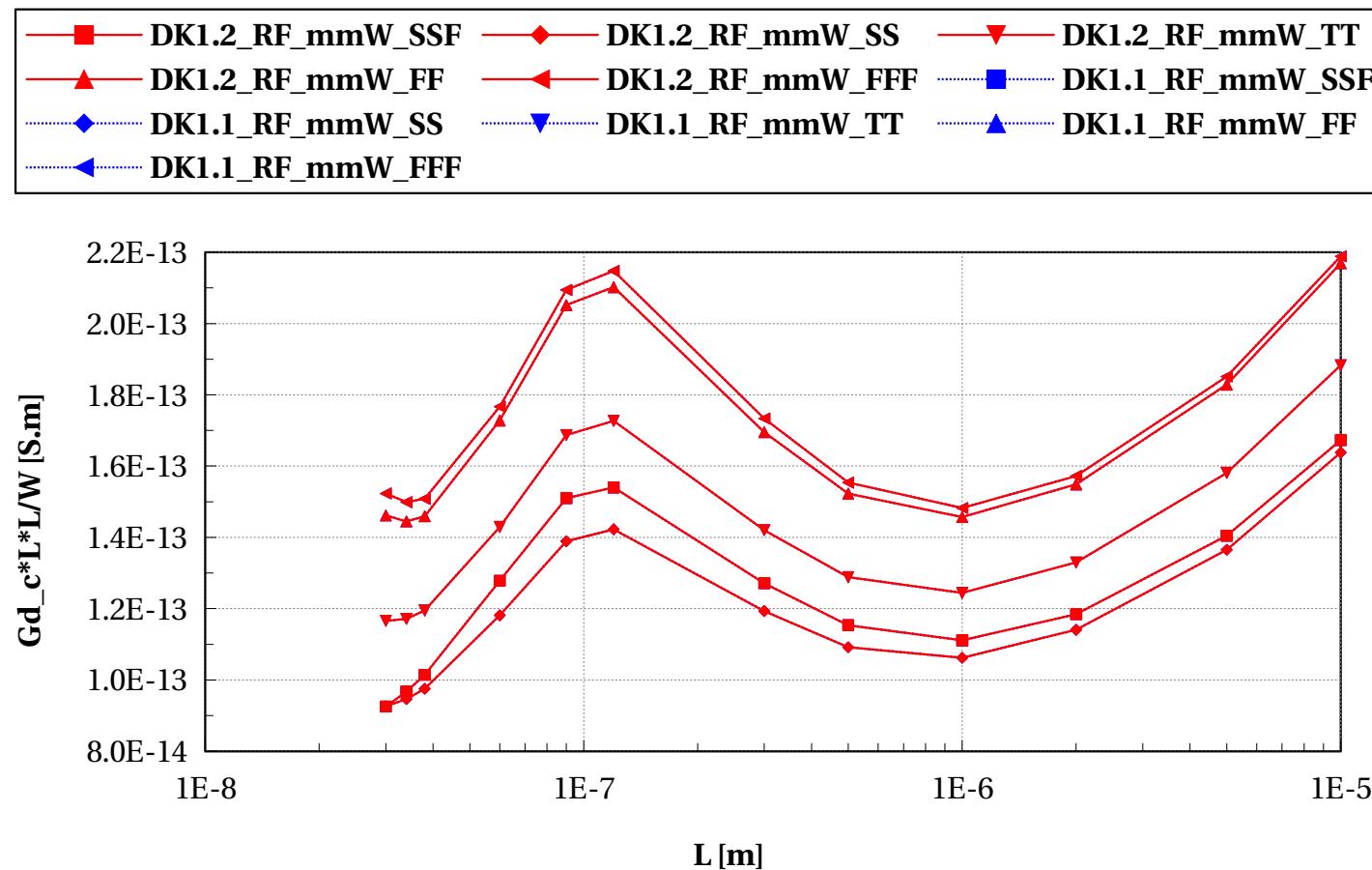
nfet_acc, Gm_c*L/W [S/sq] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



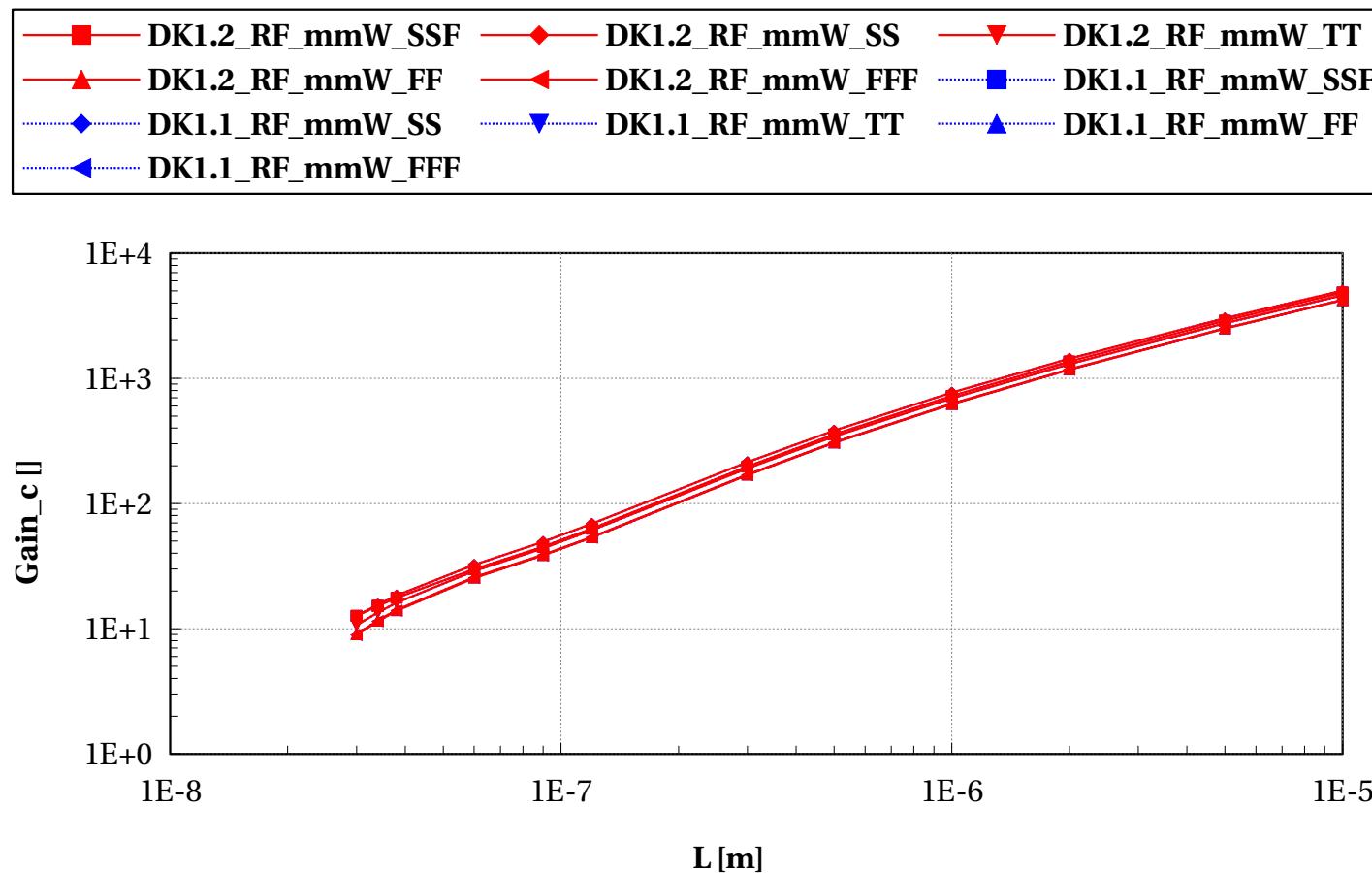
nfet_acc, $G_d \cdot c^* L^* L/W$ [S.m] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



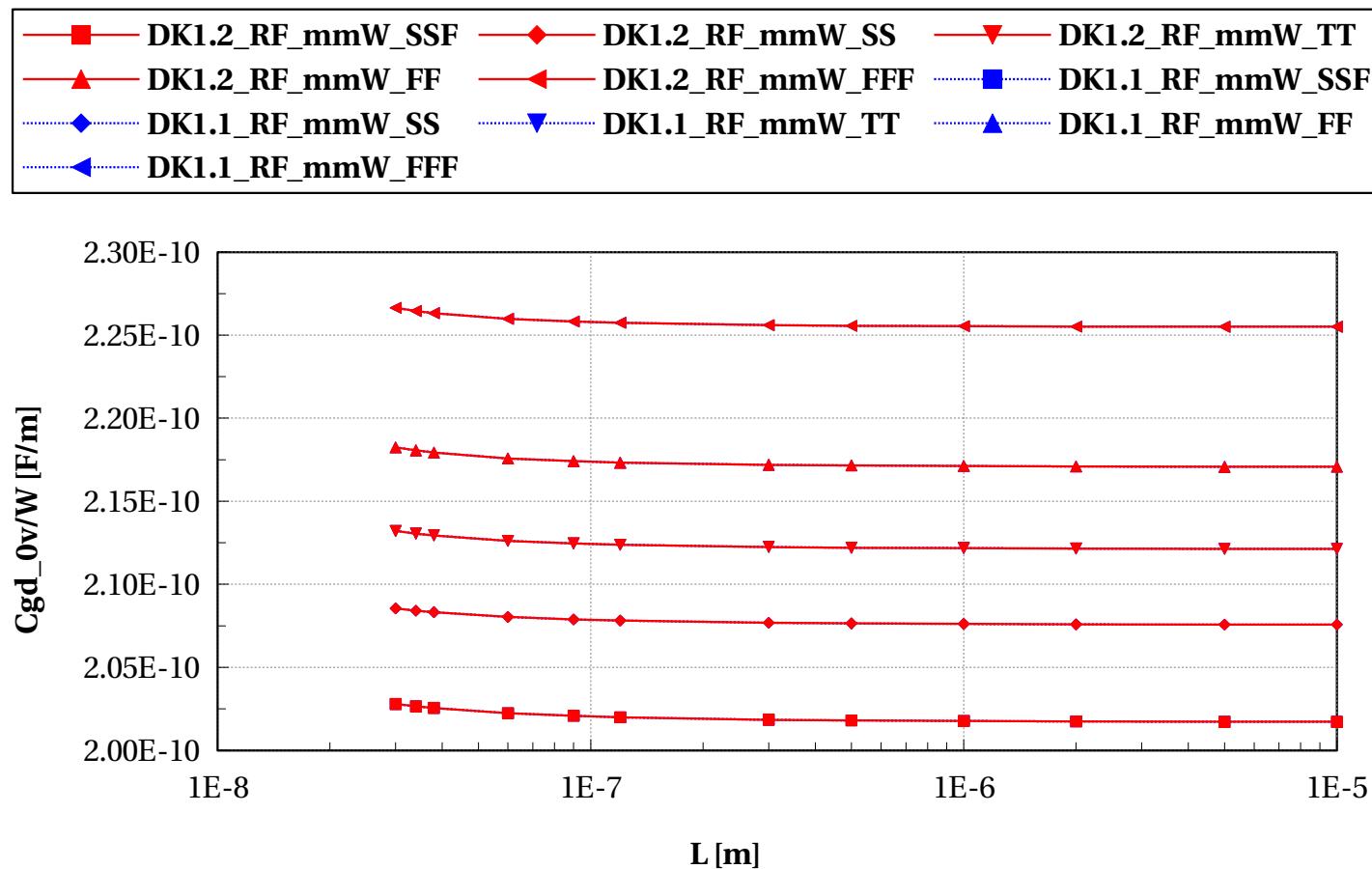
nfet_acc, Gain_c [] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



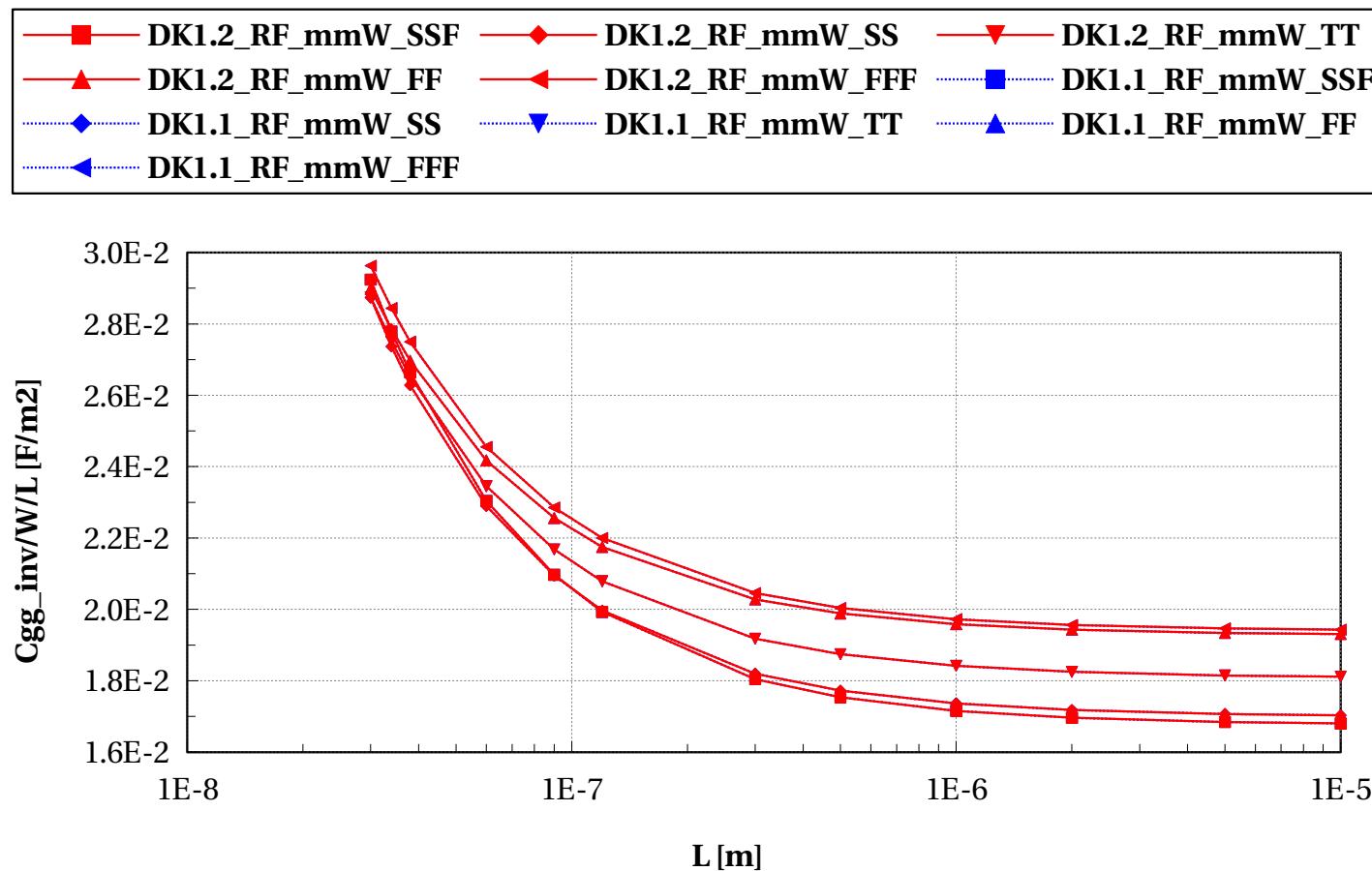
nfet_acc, Cgd_0v/W [F/m] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



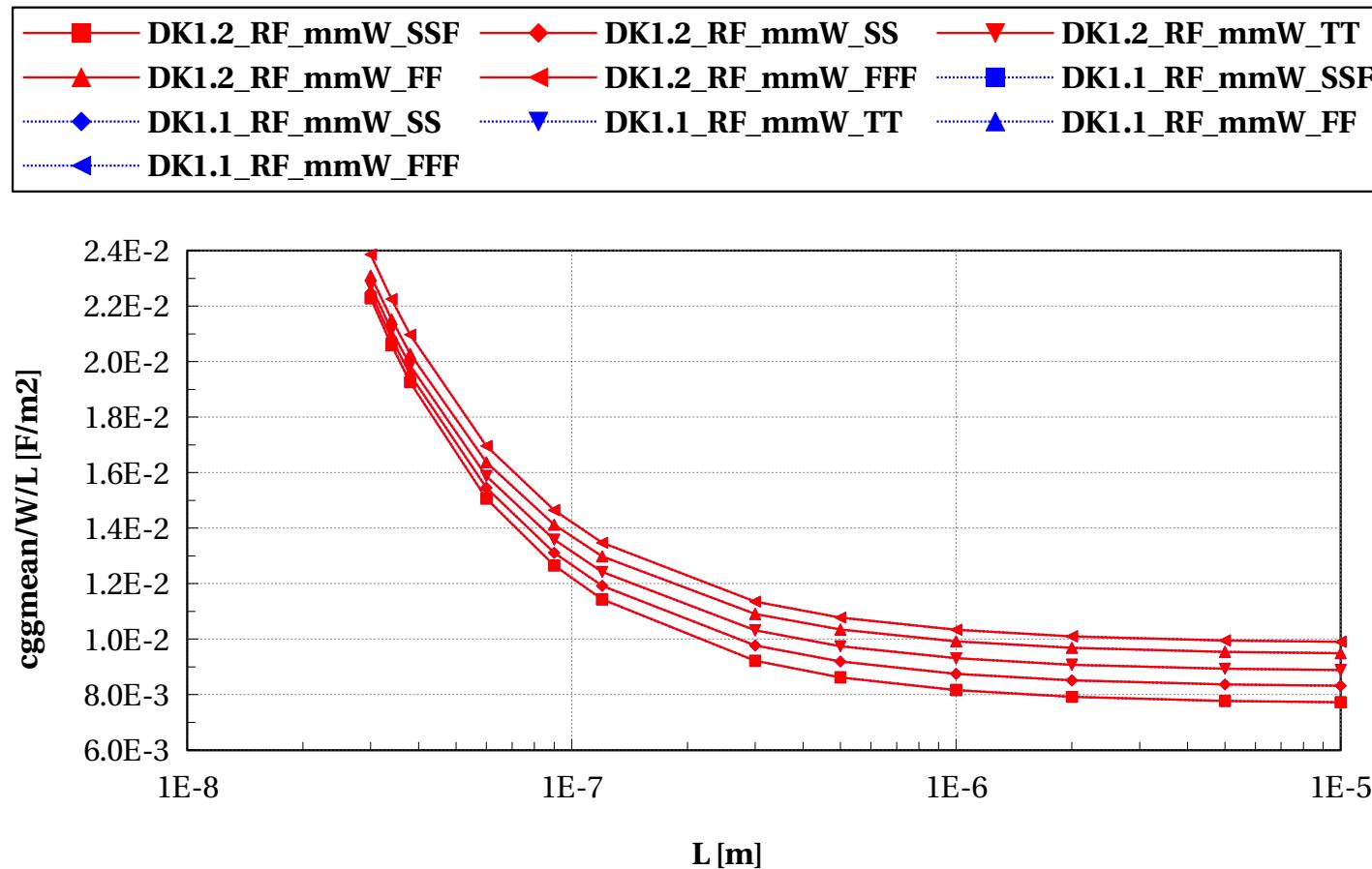
nfet_acc, Cgg_inv/W/L [F/m2] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



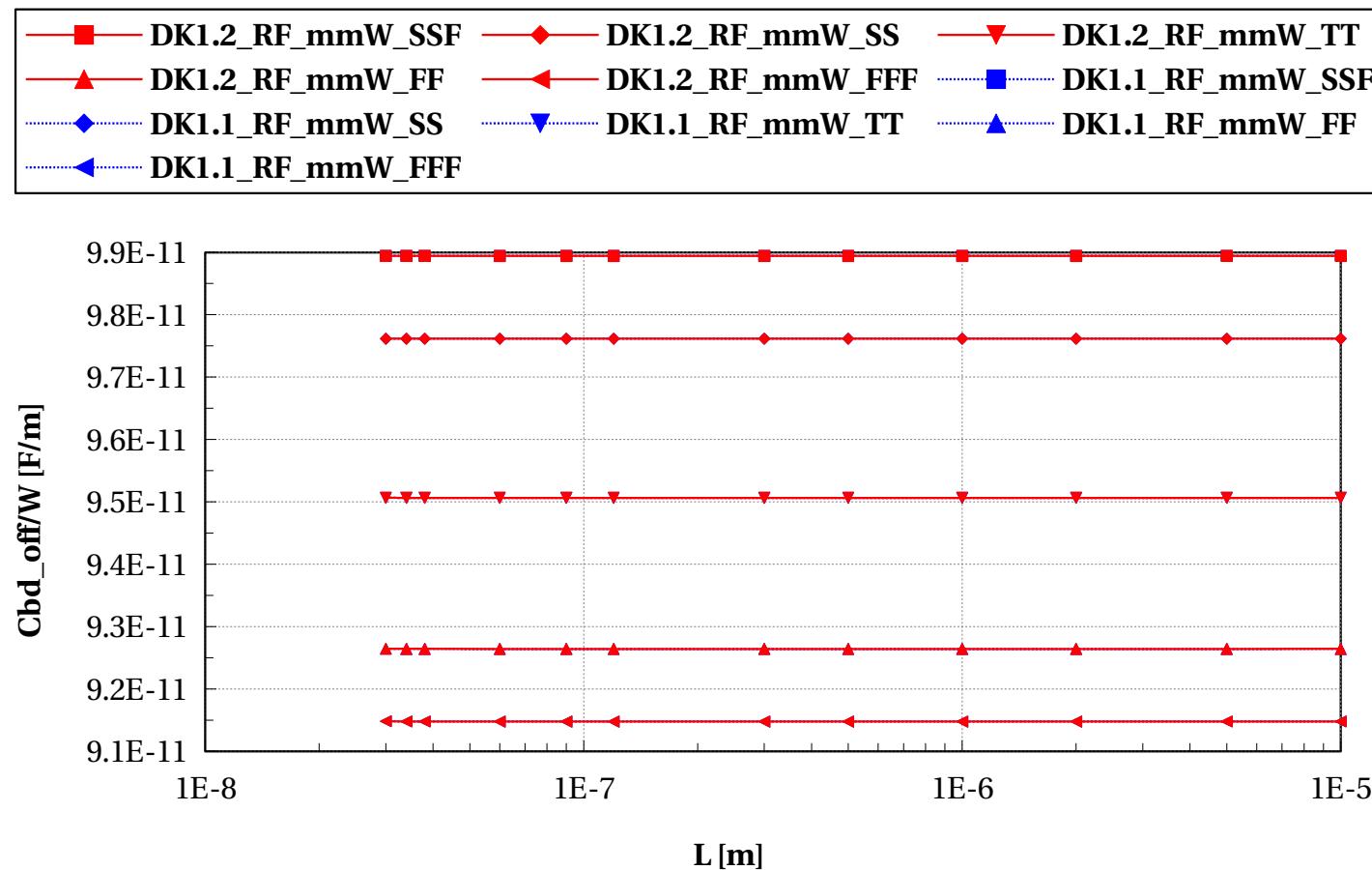
nfet_acc, cggmean/W/L [F/m²] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



nfet_acc, C_{bd}_off/W [F/m] vs L [m]

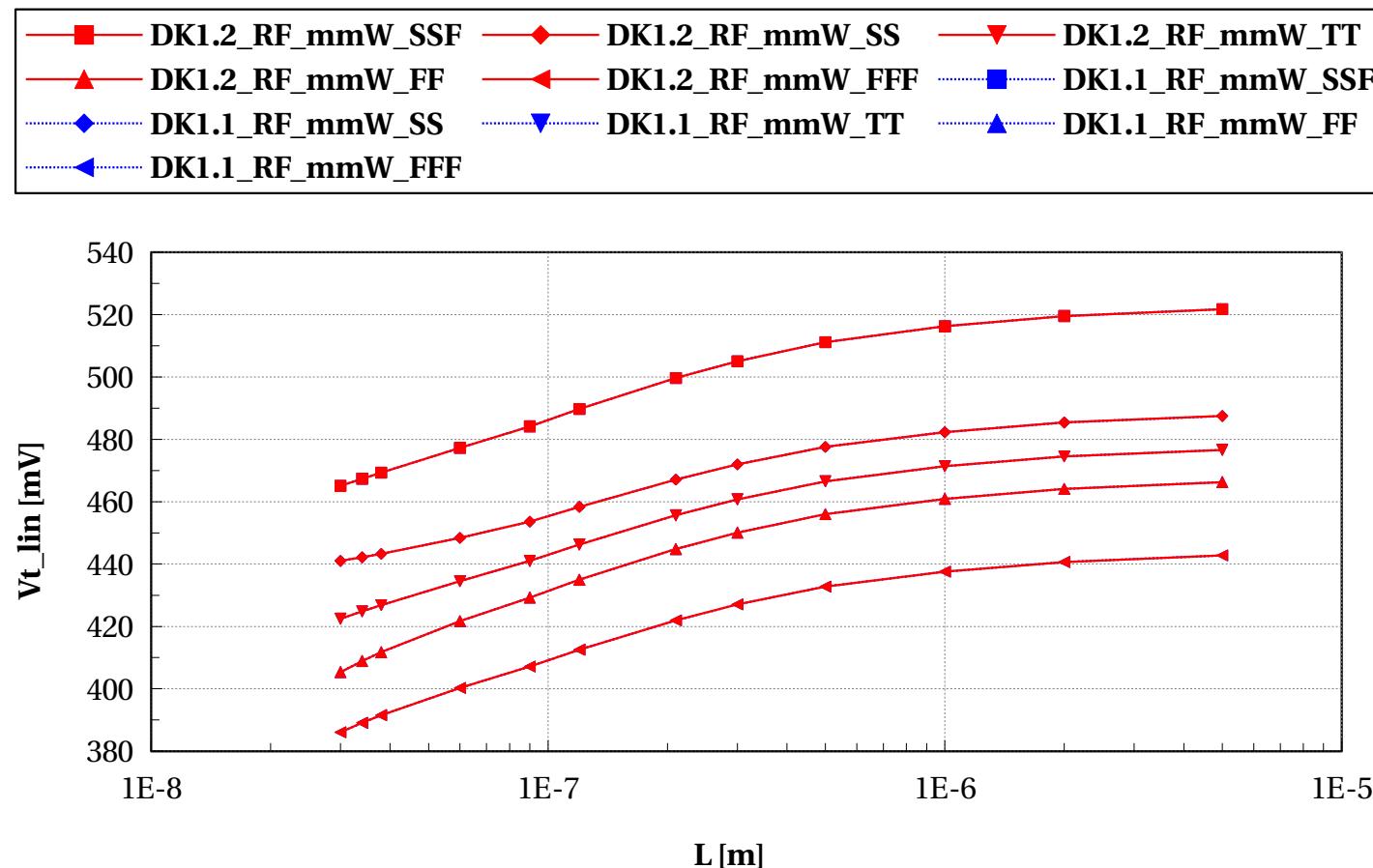
w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Scaling versus Length (W=210nm)

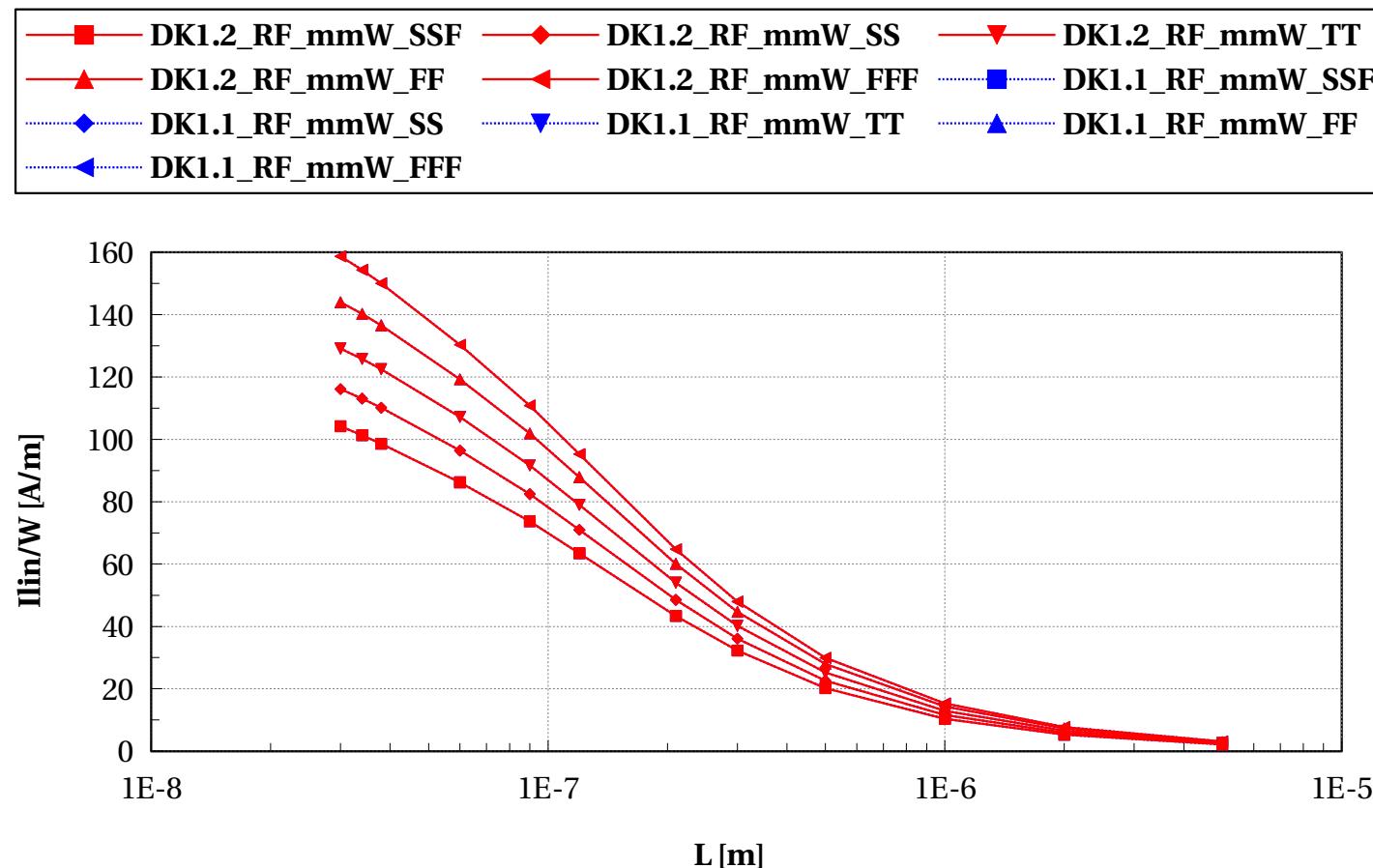
nfet_acc, Vt_lin [mV] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



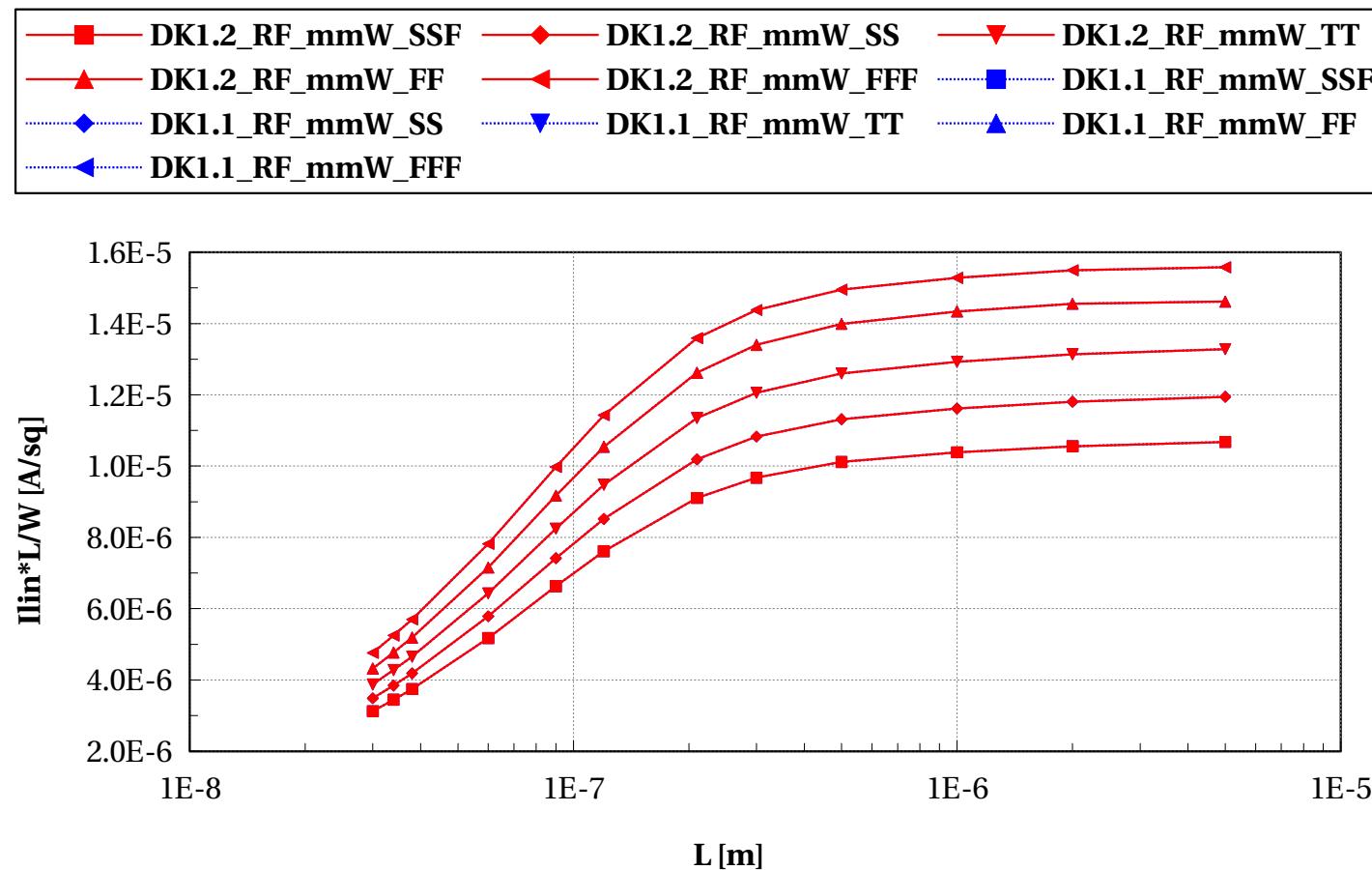
nfet_acc, I_{lin}/W [A/m] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



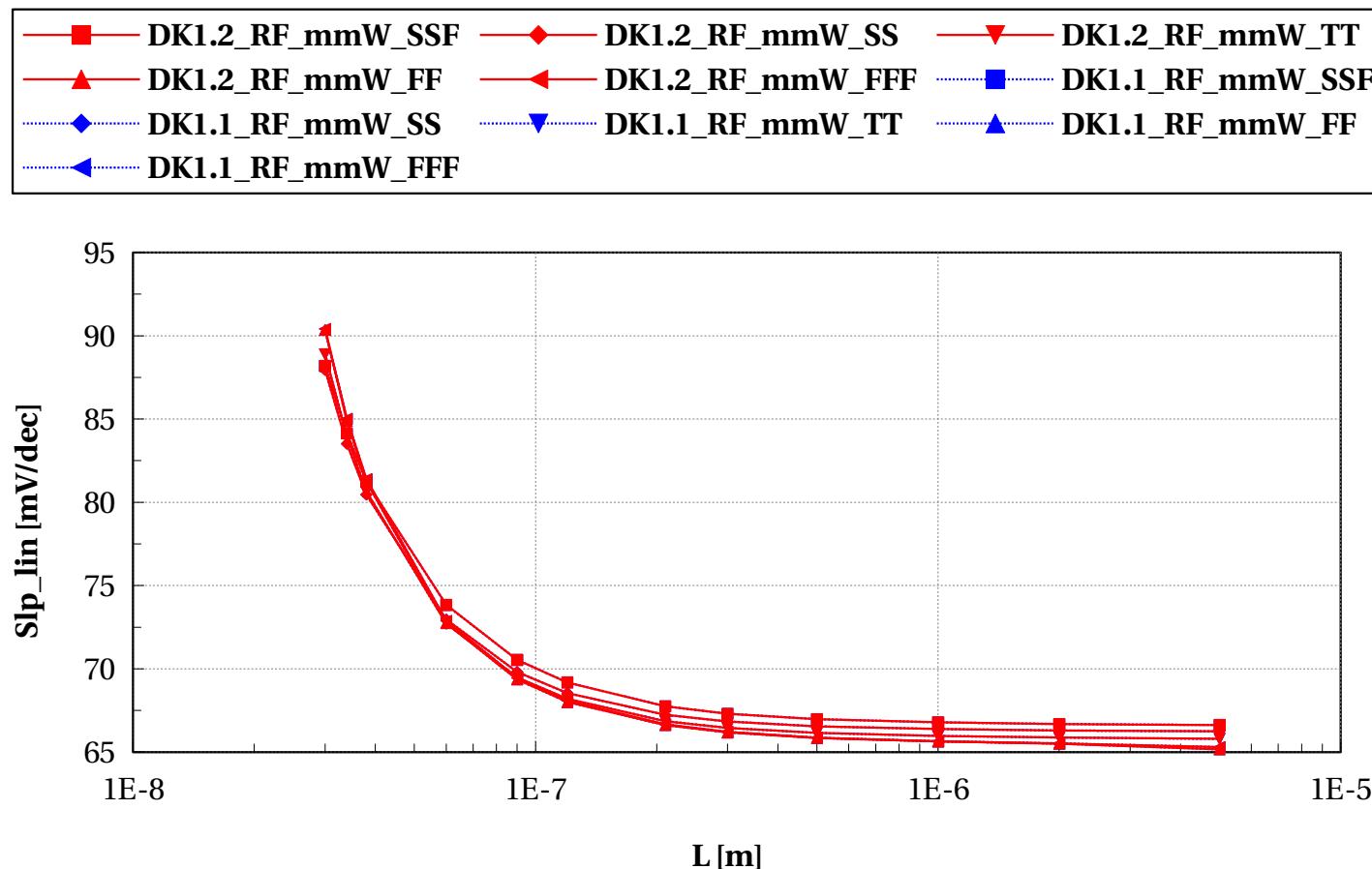
nfet_acc, $I_{lin} \cdot L/W$ [A/sq] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



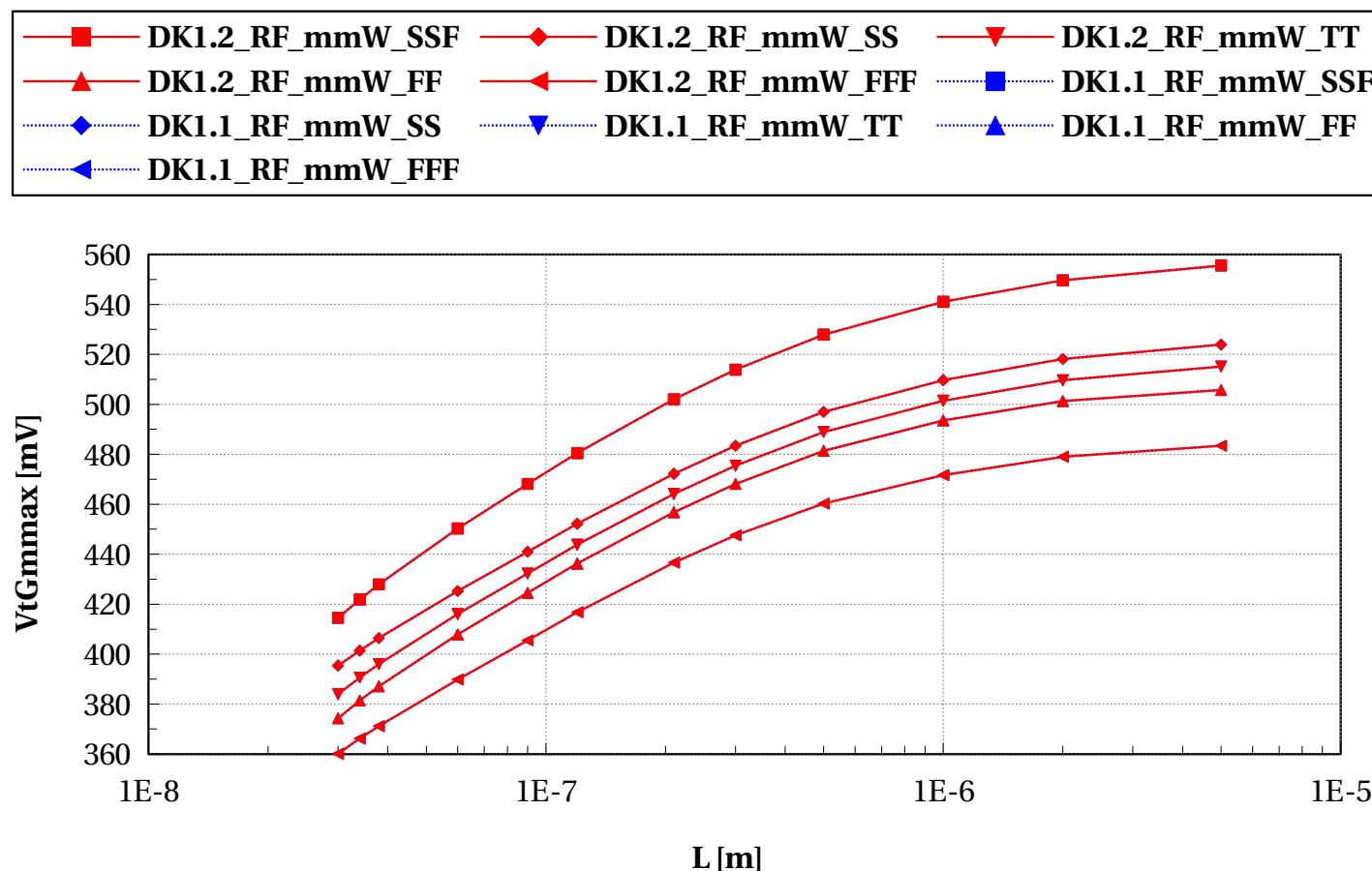
nfet_acc, Slp_lin [mV/dec] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



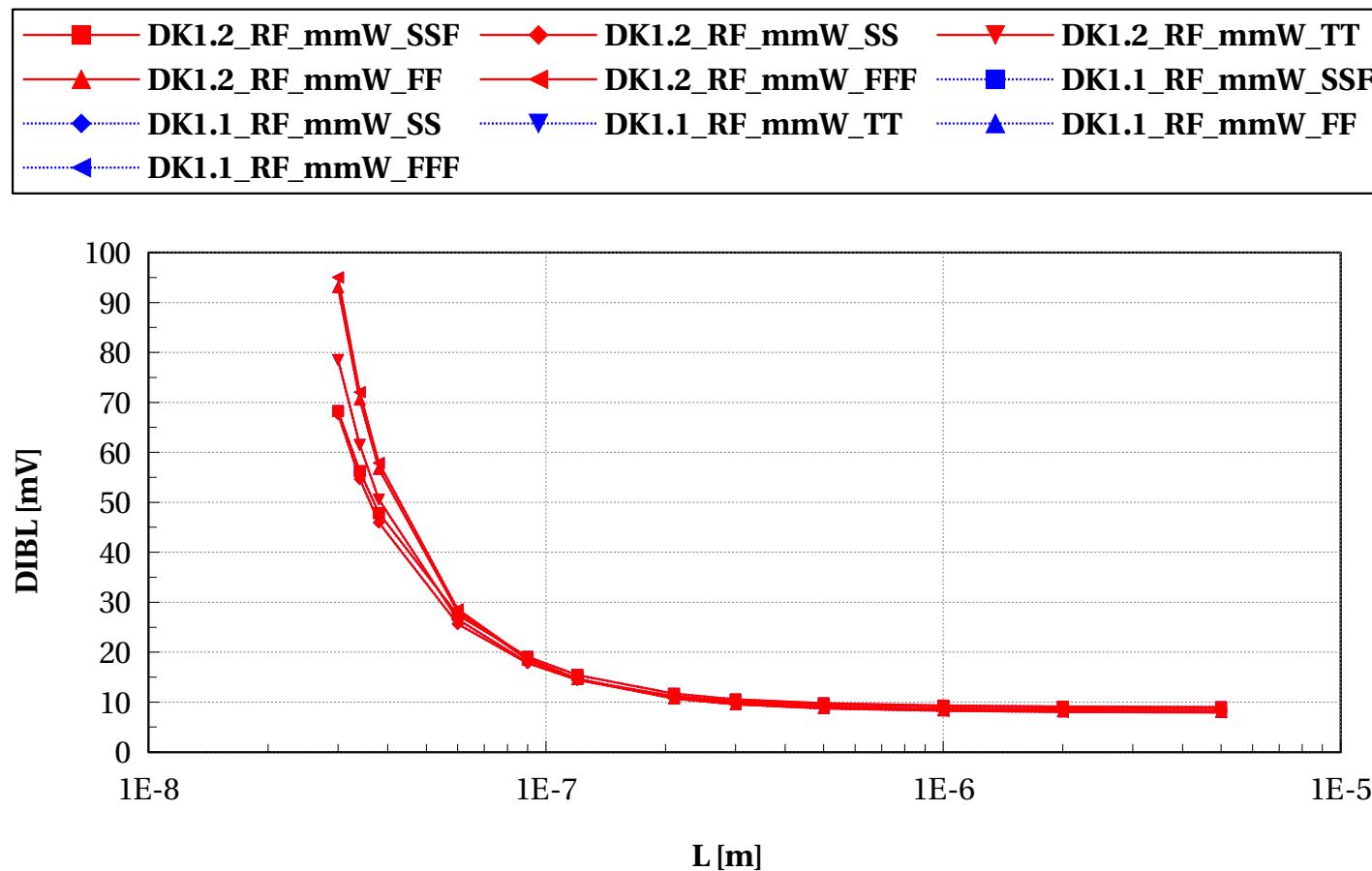
nfet_acc, VtGmmax [mV] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



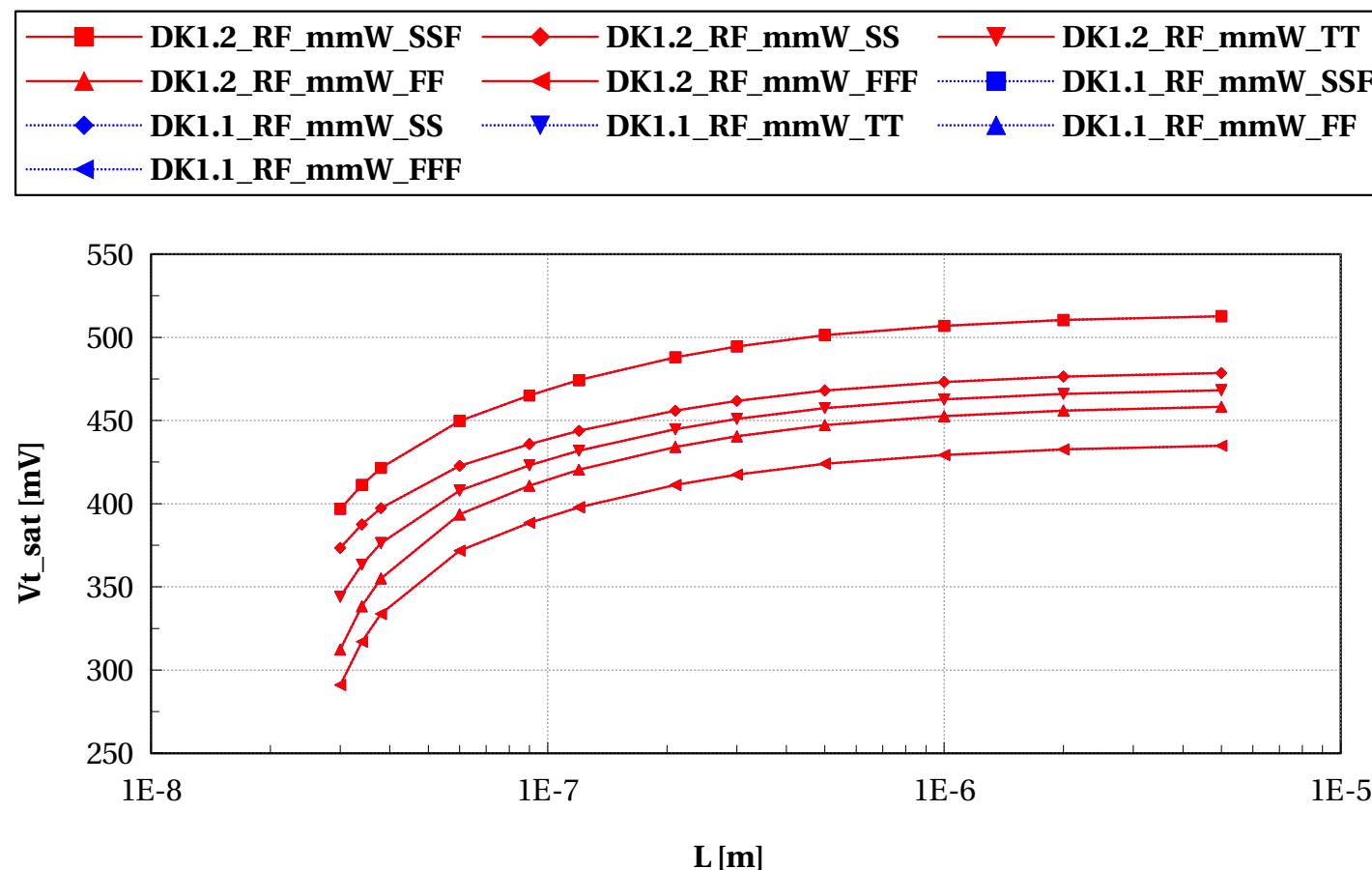
nfet_acc, DIBL [mV] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



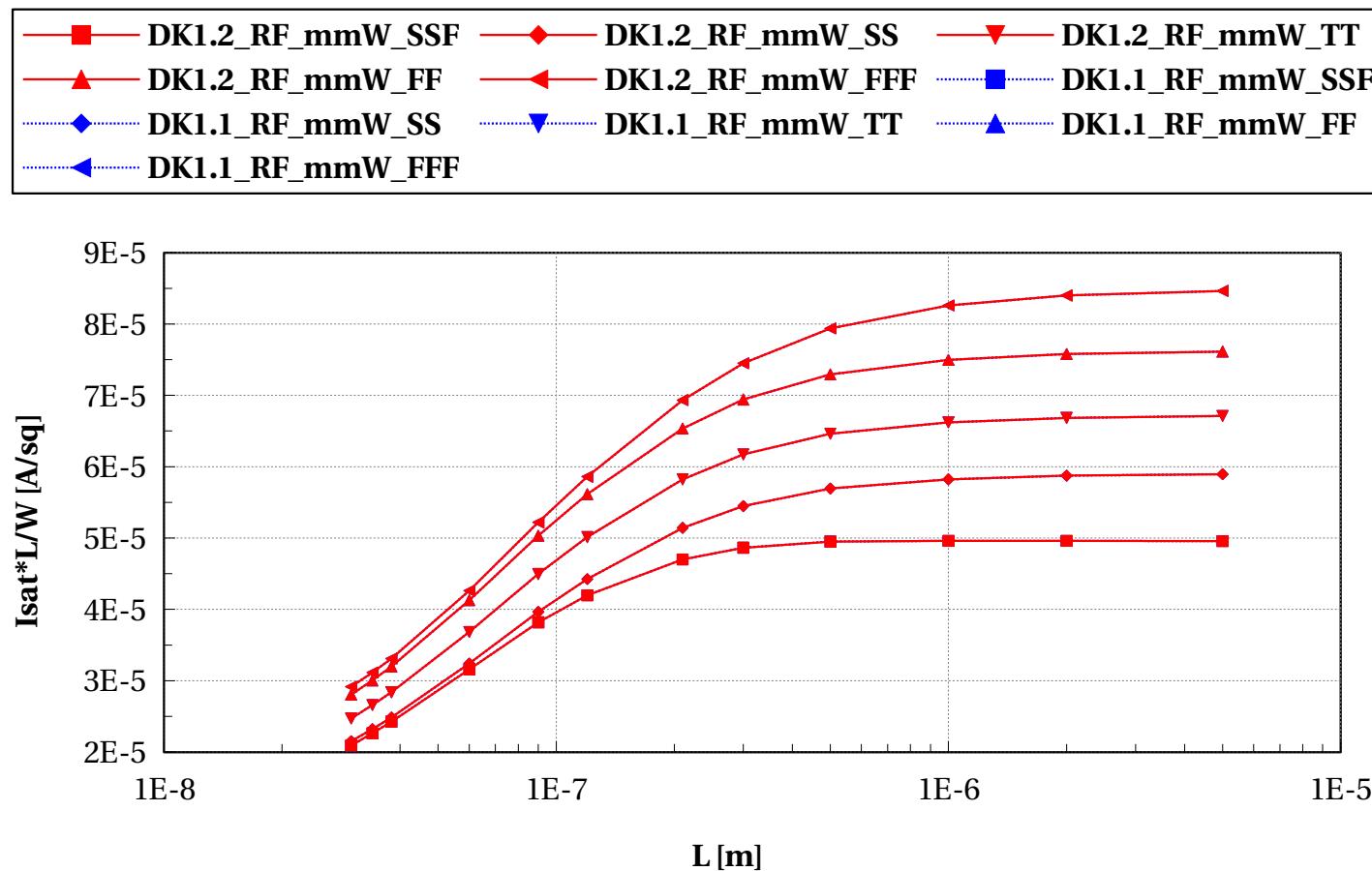
nfet_acc, Vt_sat [mV] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



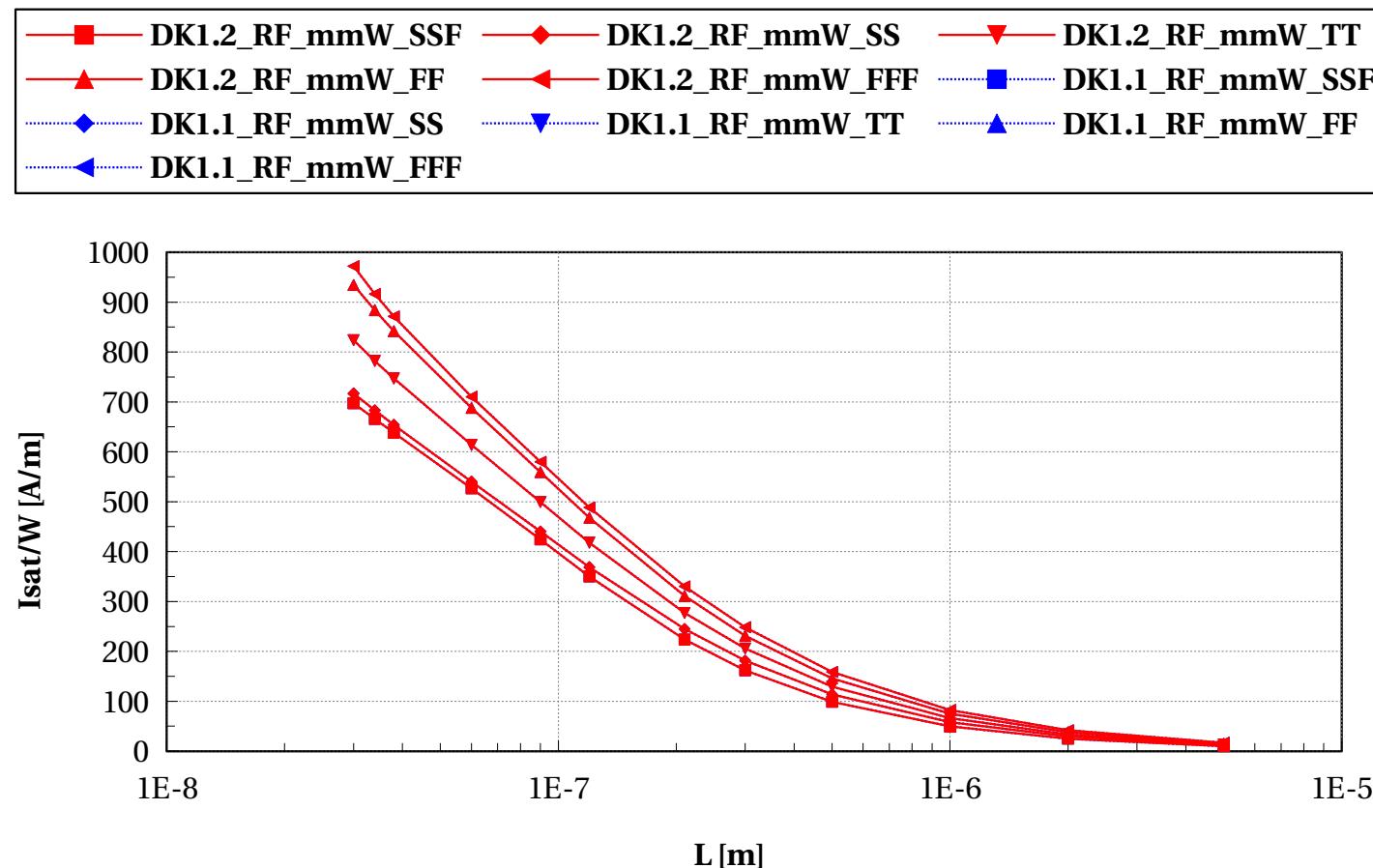
nfet_acc, $I_{sat} \cdot L/W$ [A/sq] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



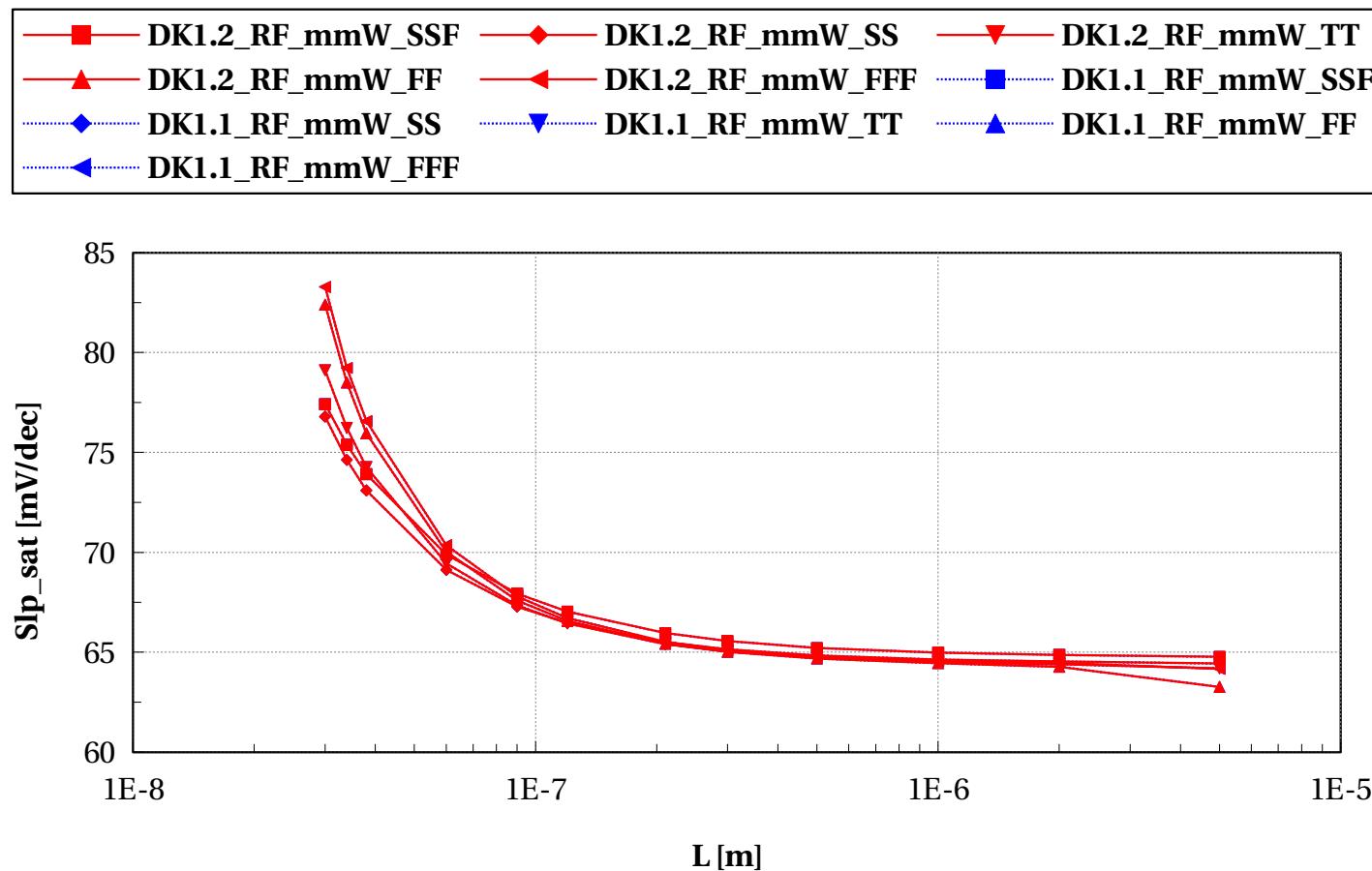
nfet_acc, Isat/W [A/m] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



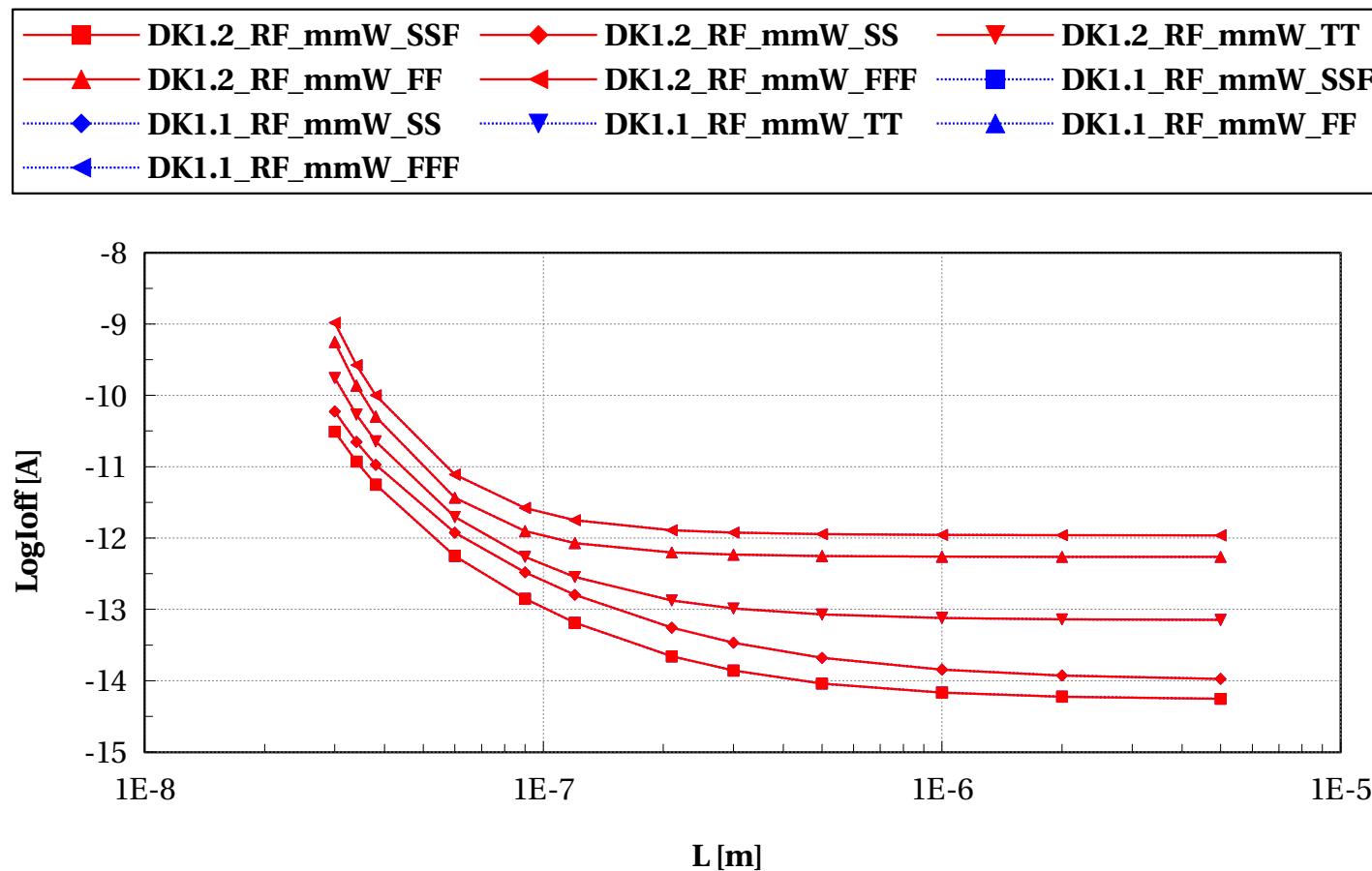
nfet_acc, Slp_sat [mV/dec] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



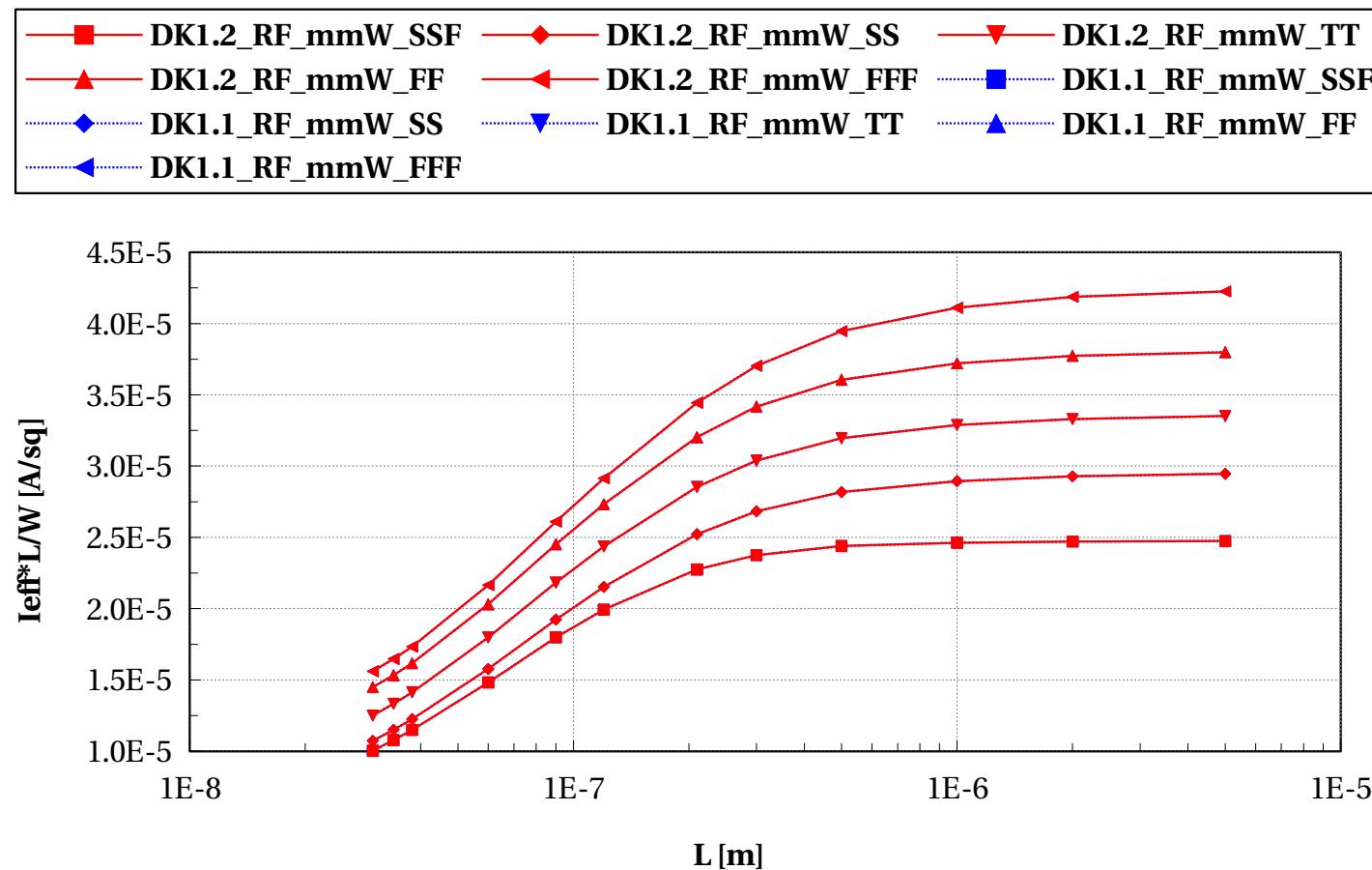
nfet_acc, LogIoff [A] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



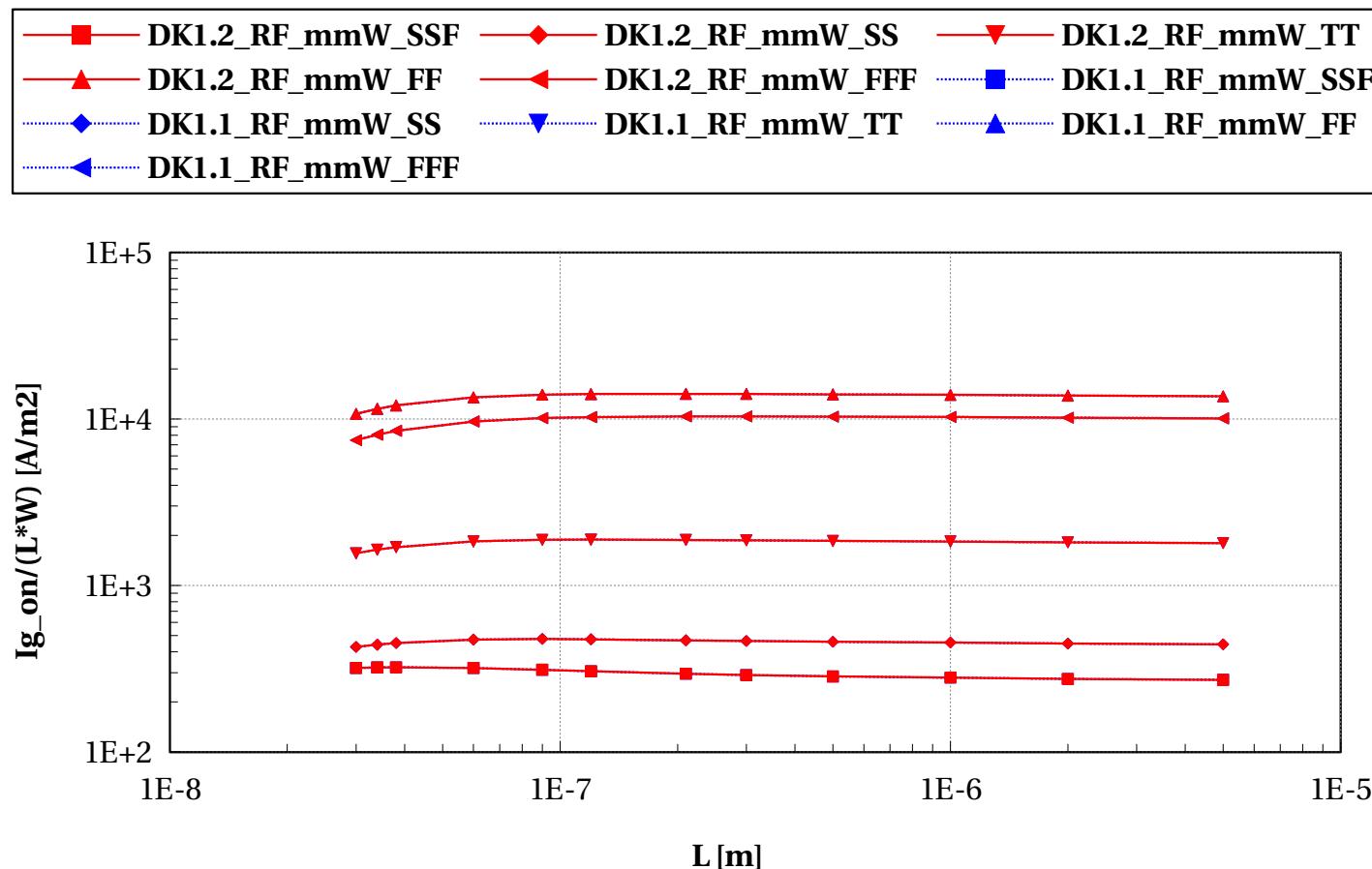
nfet_acc, Ieff*L/W [A/sq] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



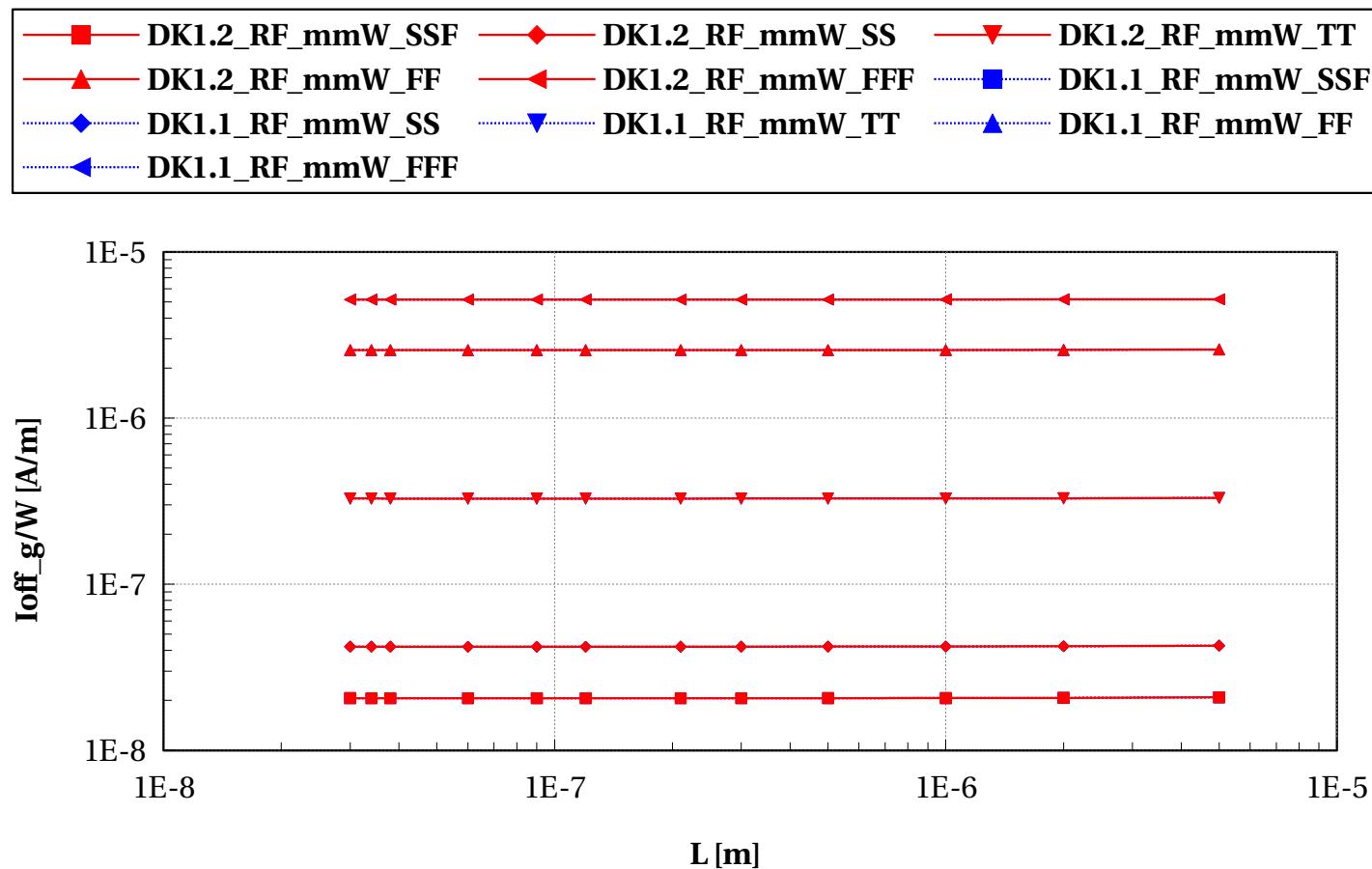
nfet_acc, Ig_on/(L*W) [A/m²] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



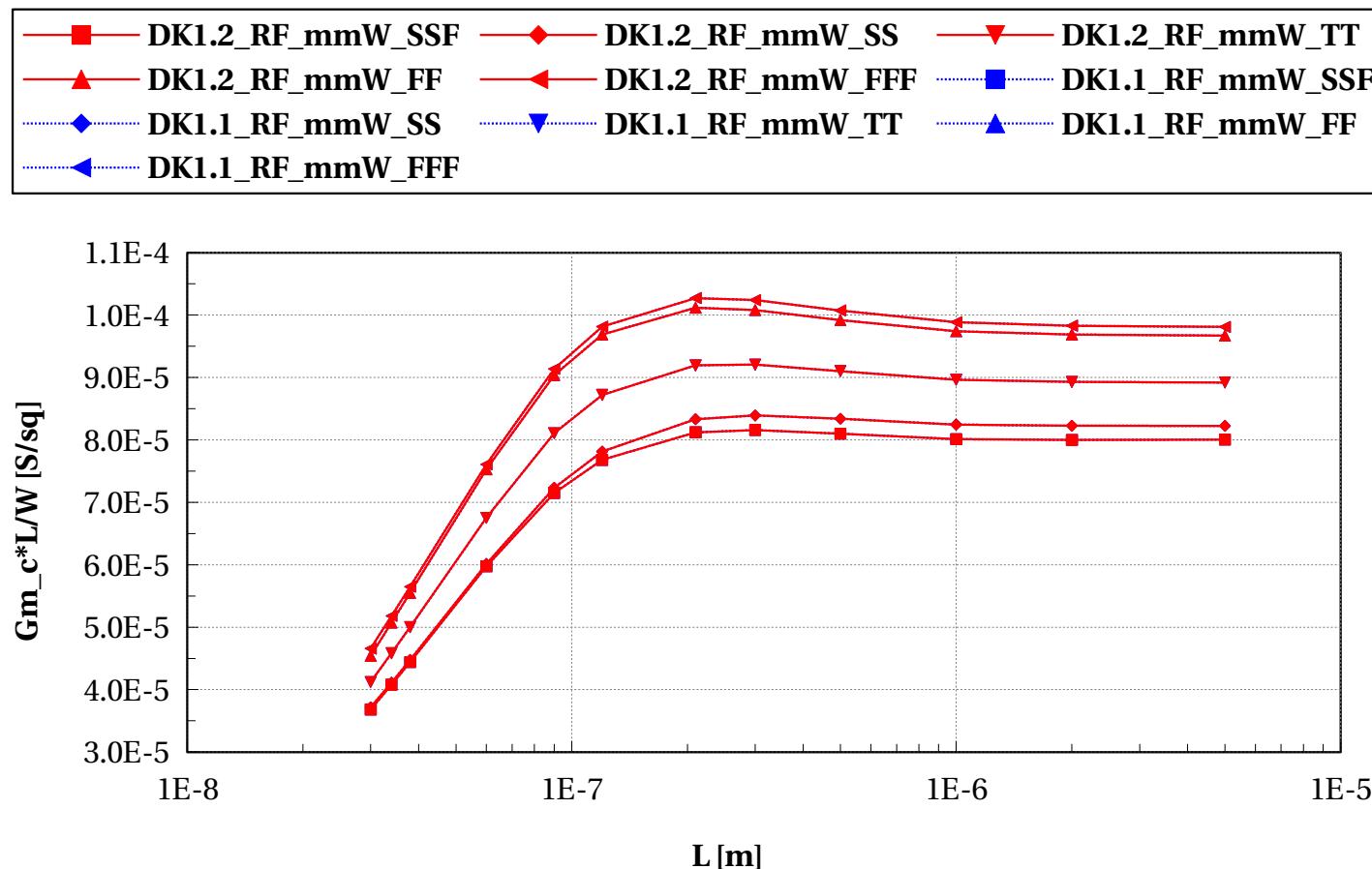
nfet_acc, Ioff_g/W [A/m] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



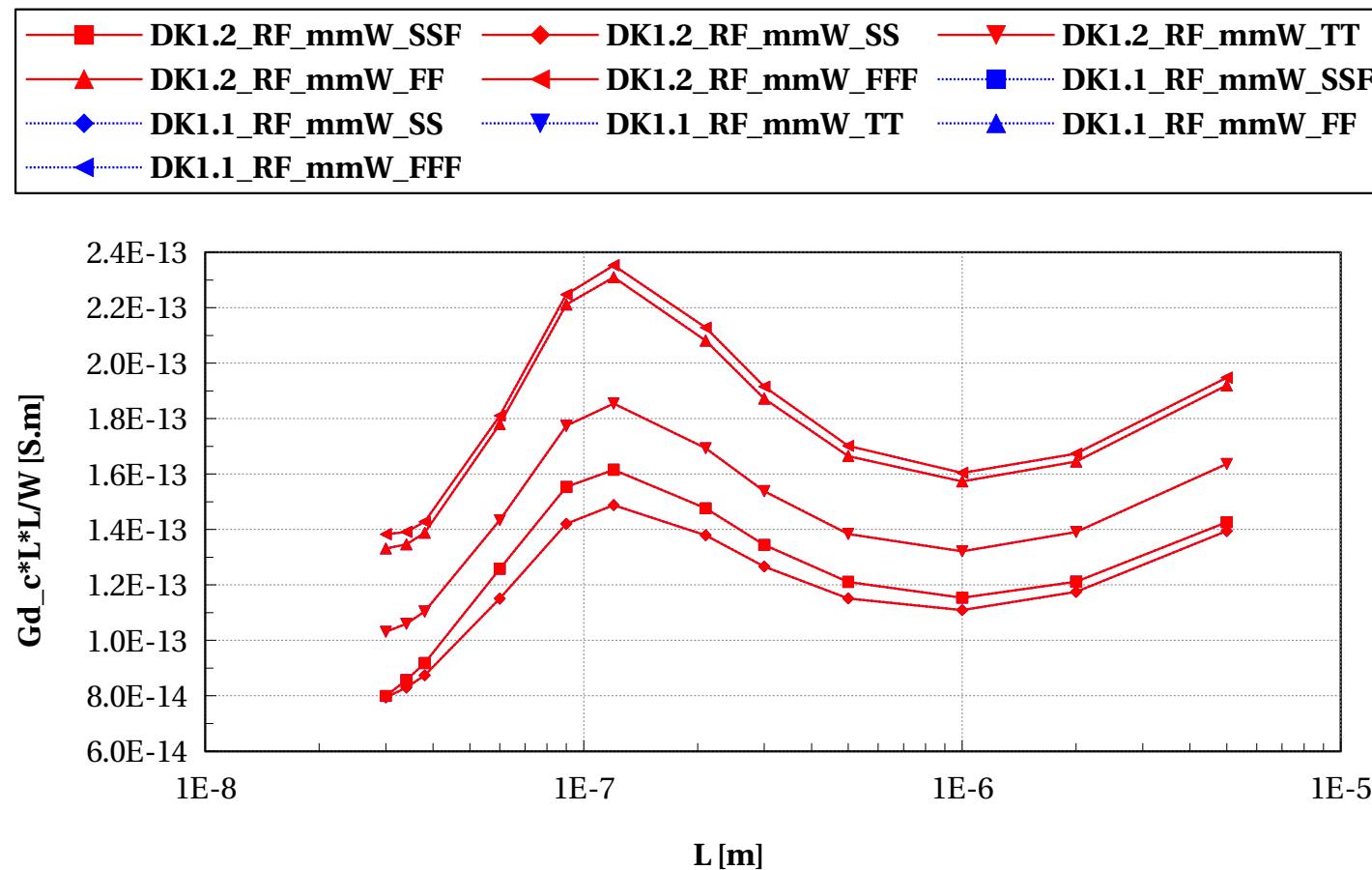
nfet_acc, Gm_c*L/W [S/sq] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



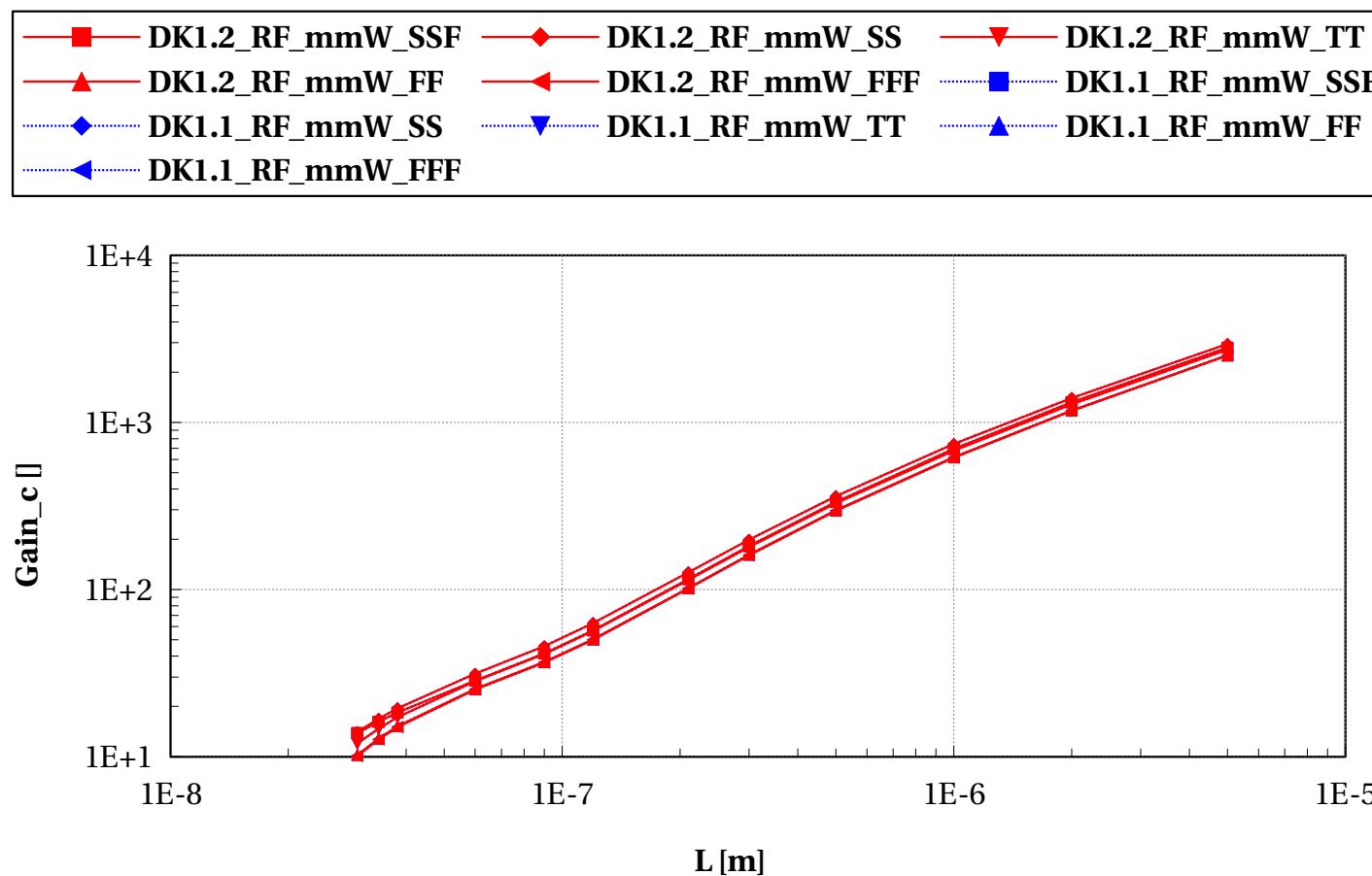
nfet_acc, $G_d \cdot c^* L^* W$ [S.m] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



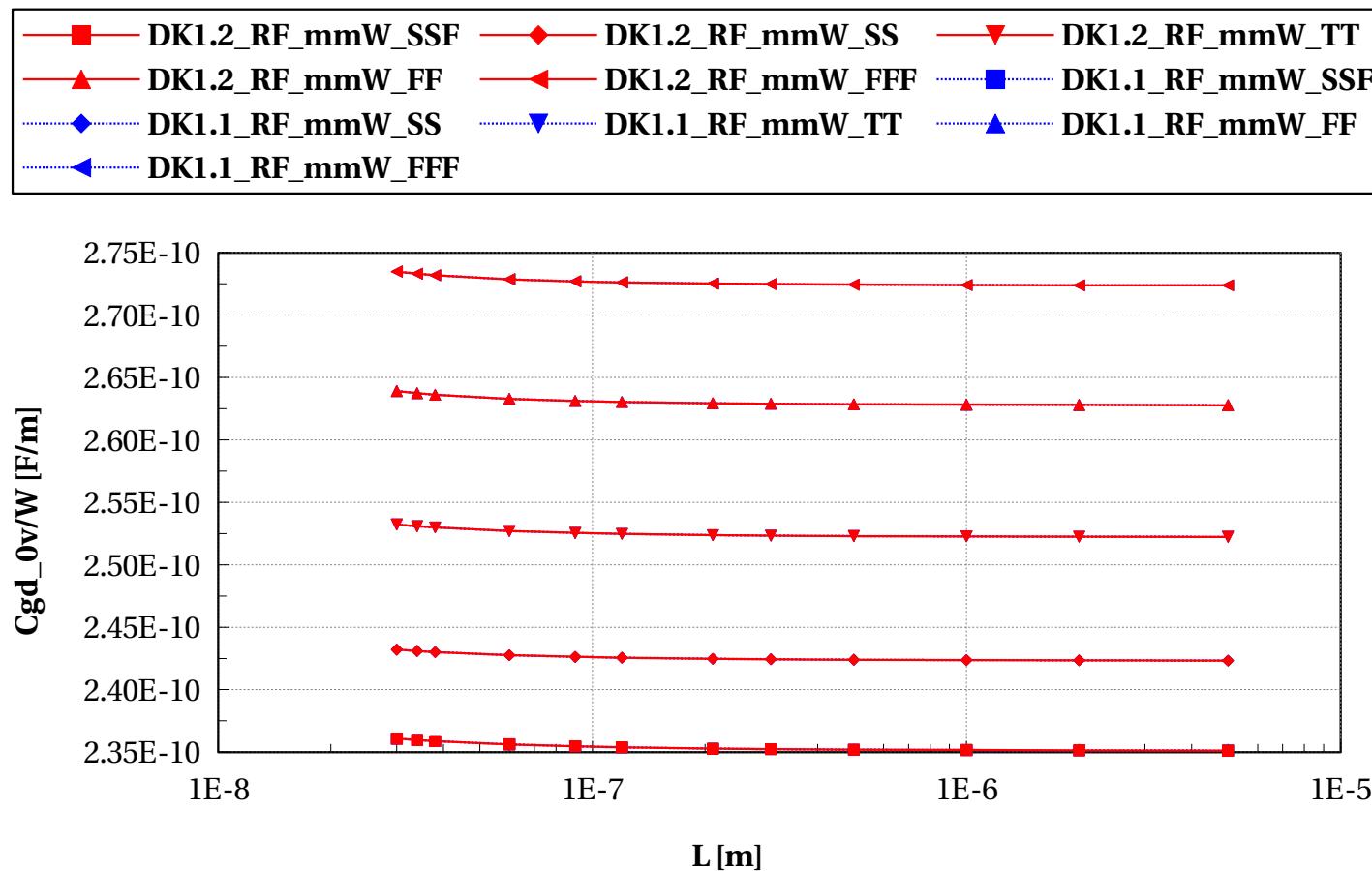
nfet_acc, Gain_c [] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



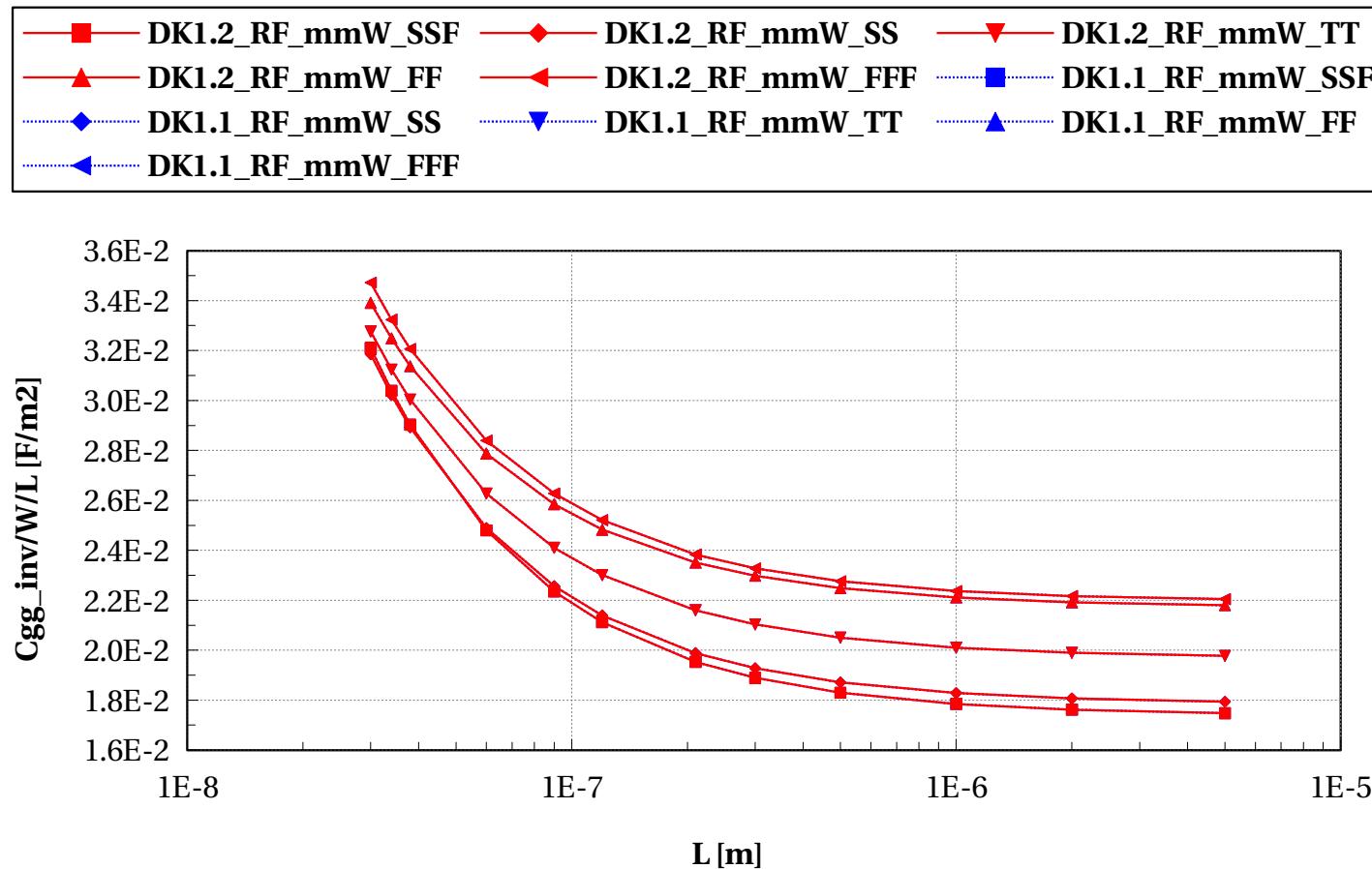
nfet_acc, Cgd_0v/W [F/m] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



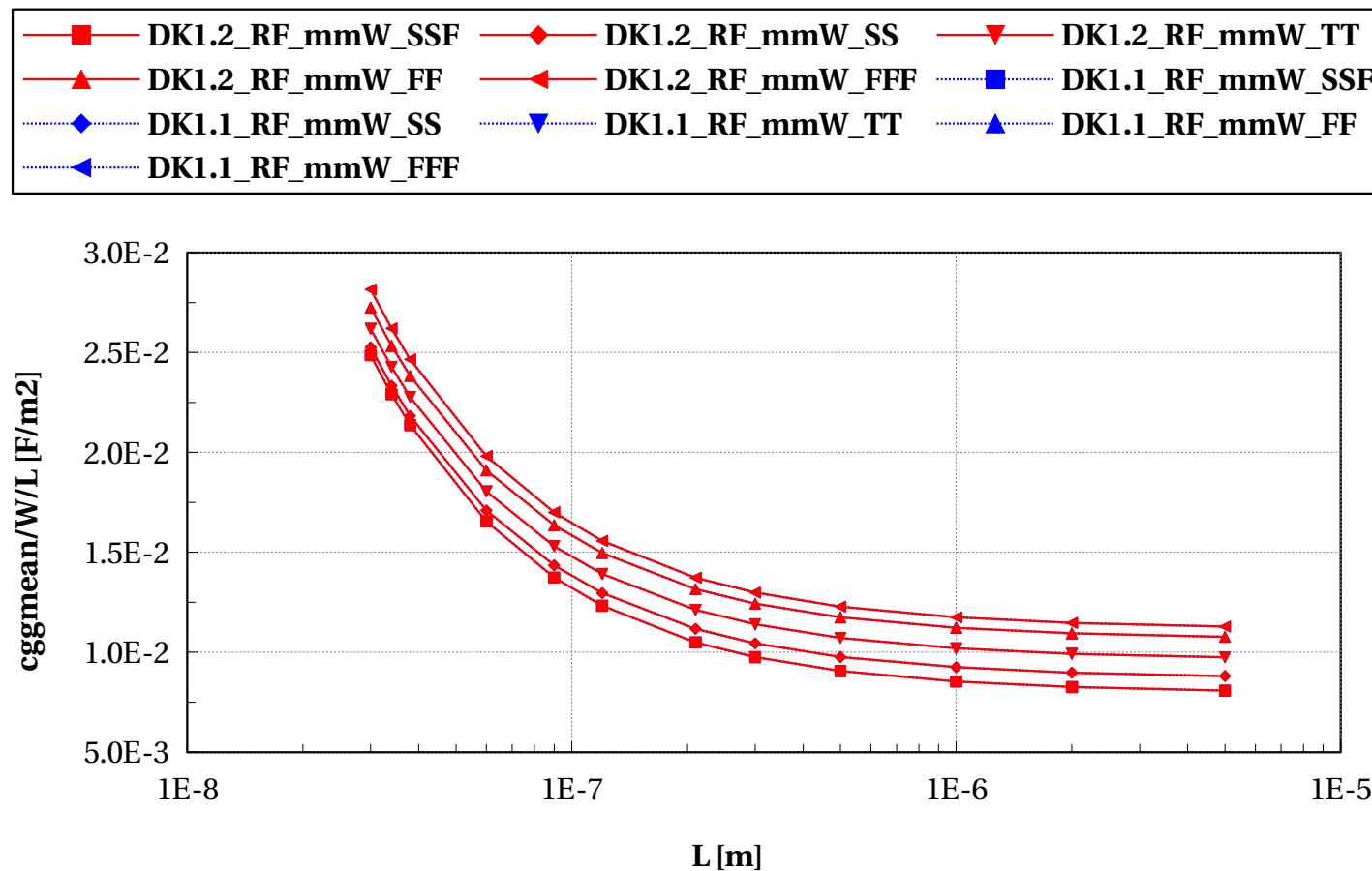
nfet_acc, Cgg_inv/W/L [F/m2] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



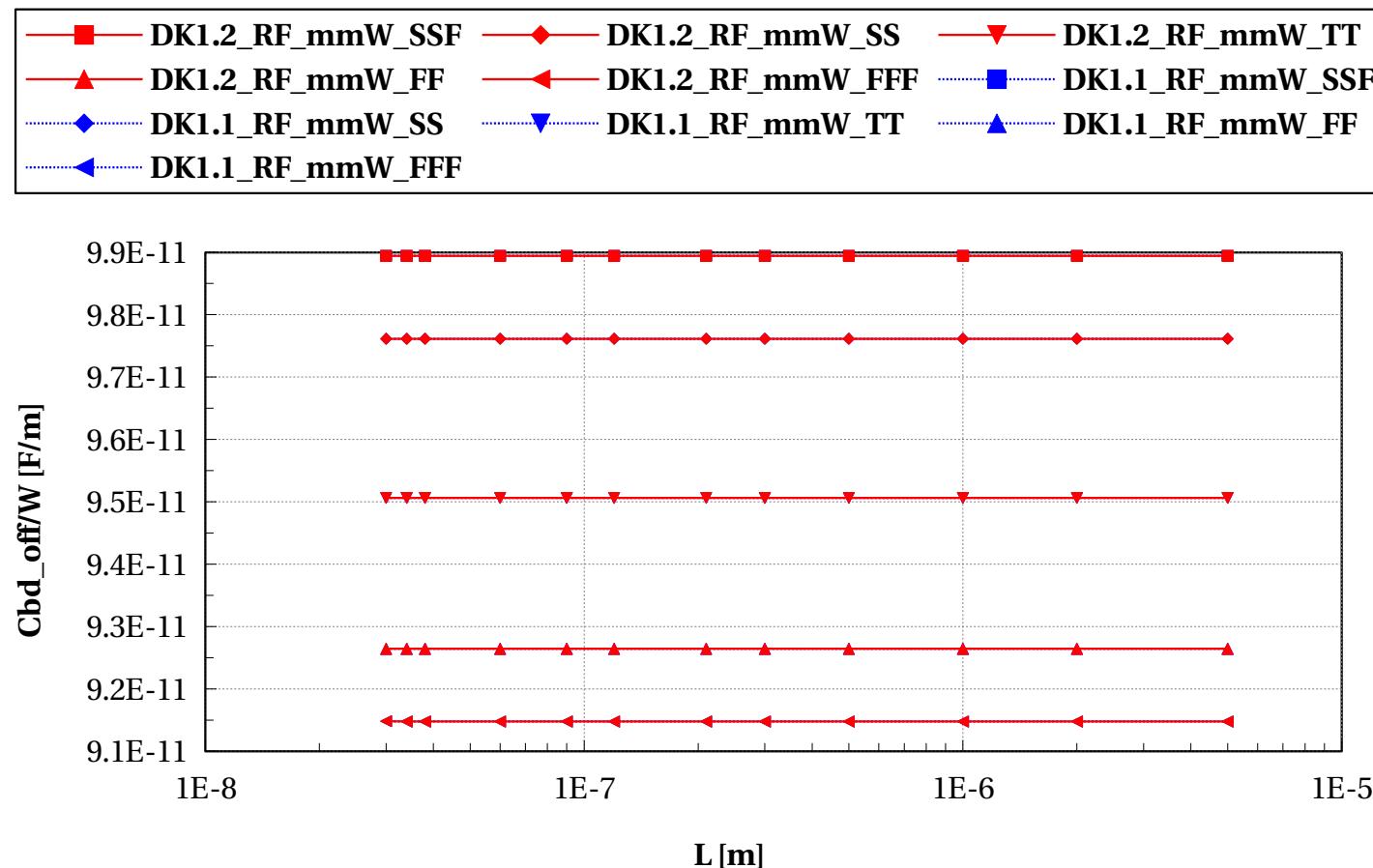
nfet_acc, cgmean/W/L [F/m²] vs L [m]

w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



nfet_acc, C_{bd}_off/W [F/m] vs L [m]

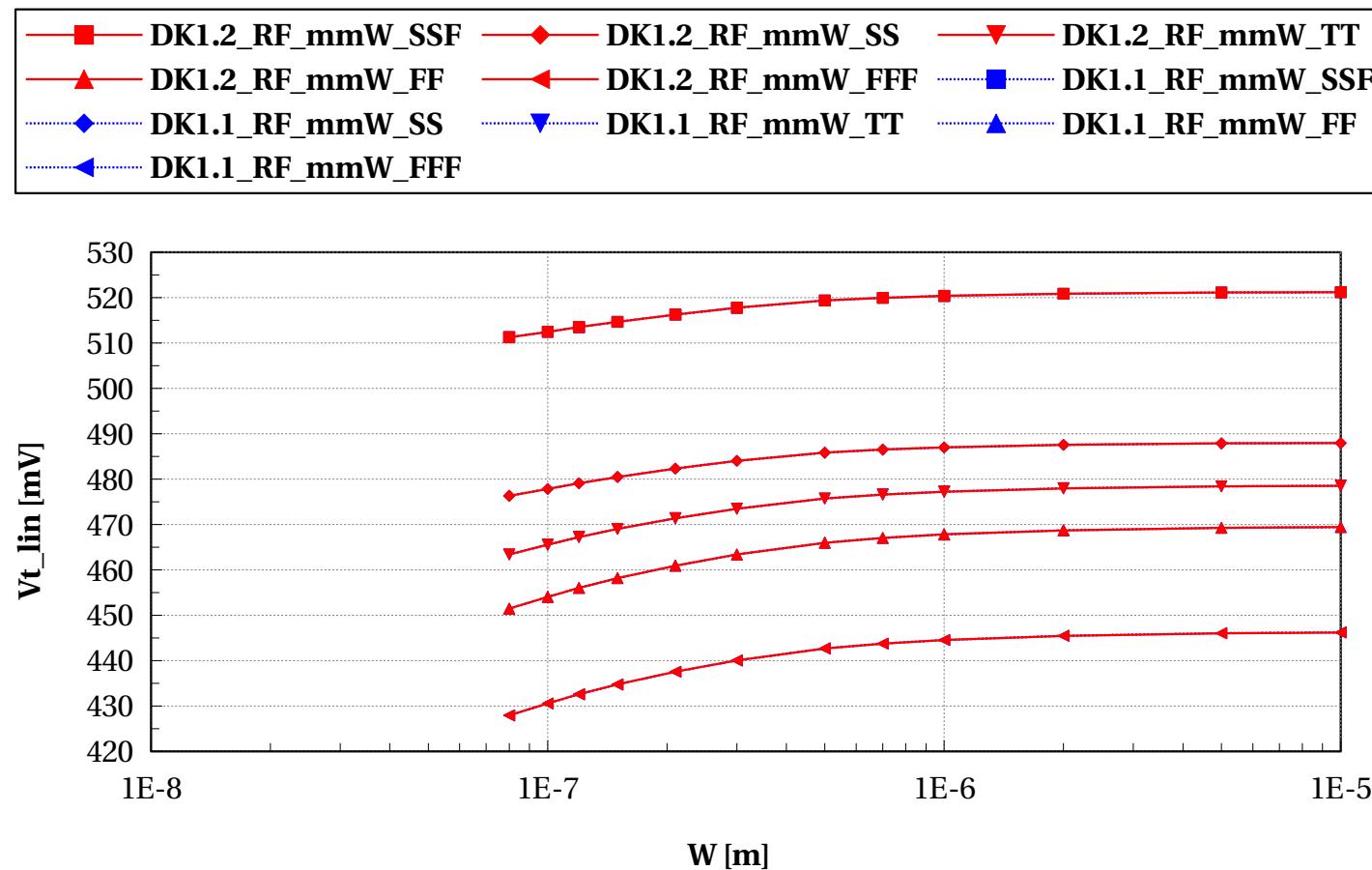
w==0.21e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Scaling versus Width (L=1um)

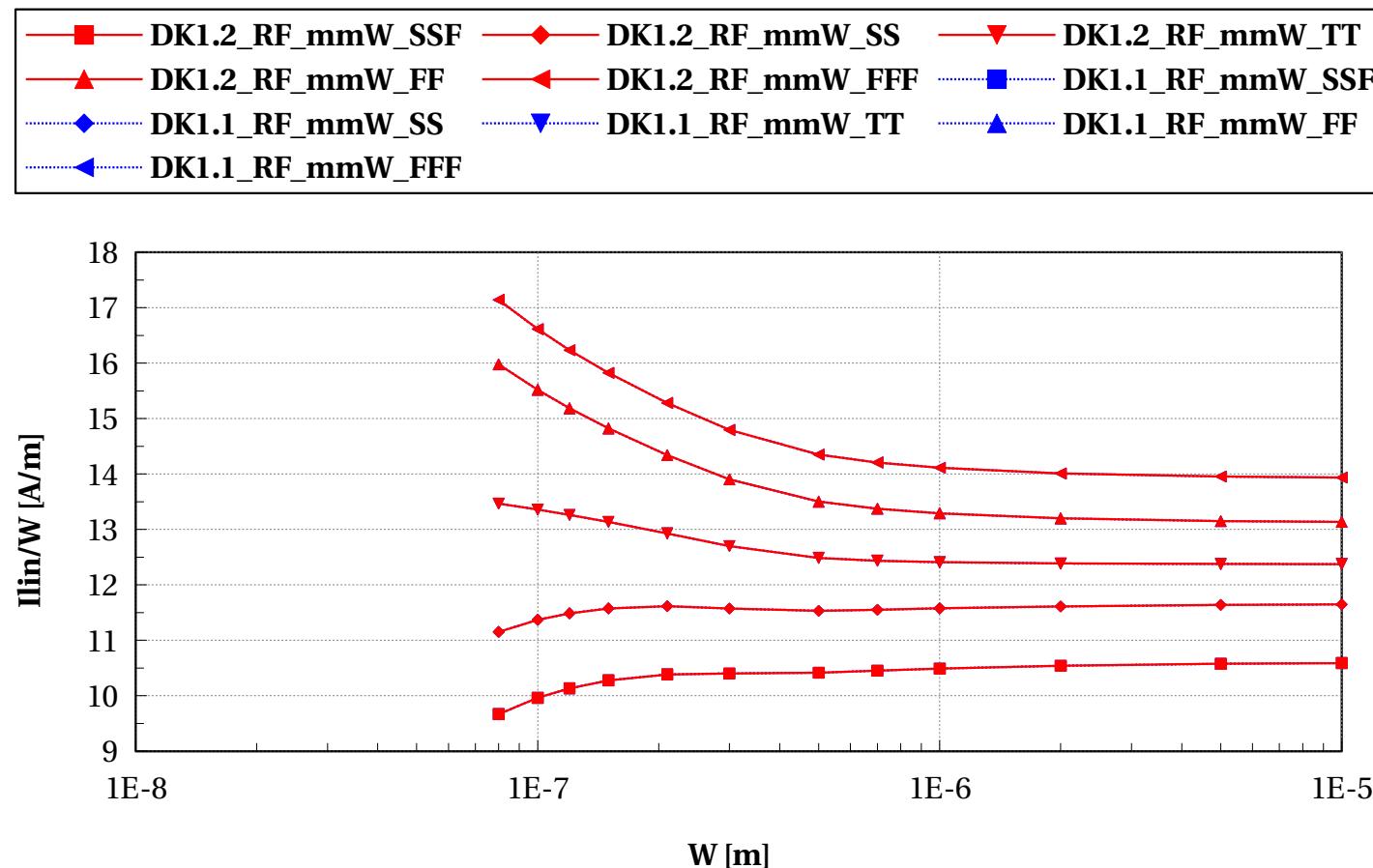
nfet_acc, Vt_lin [mV] vs W [m]

I==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



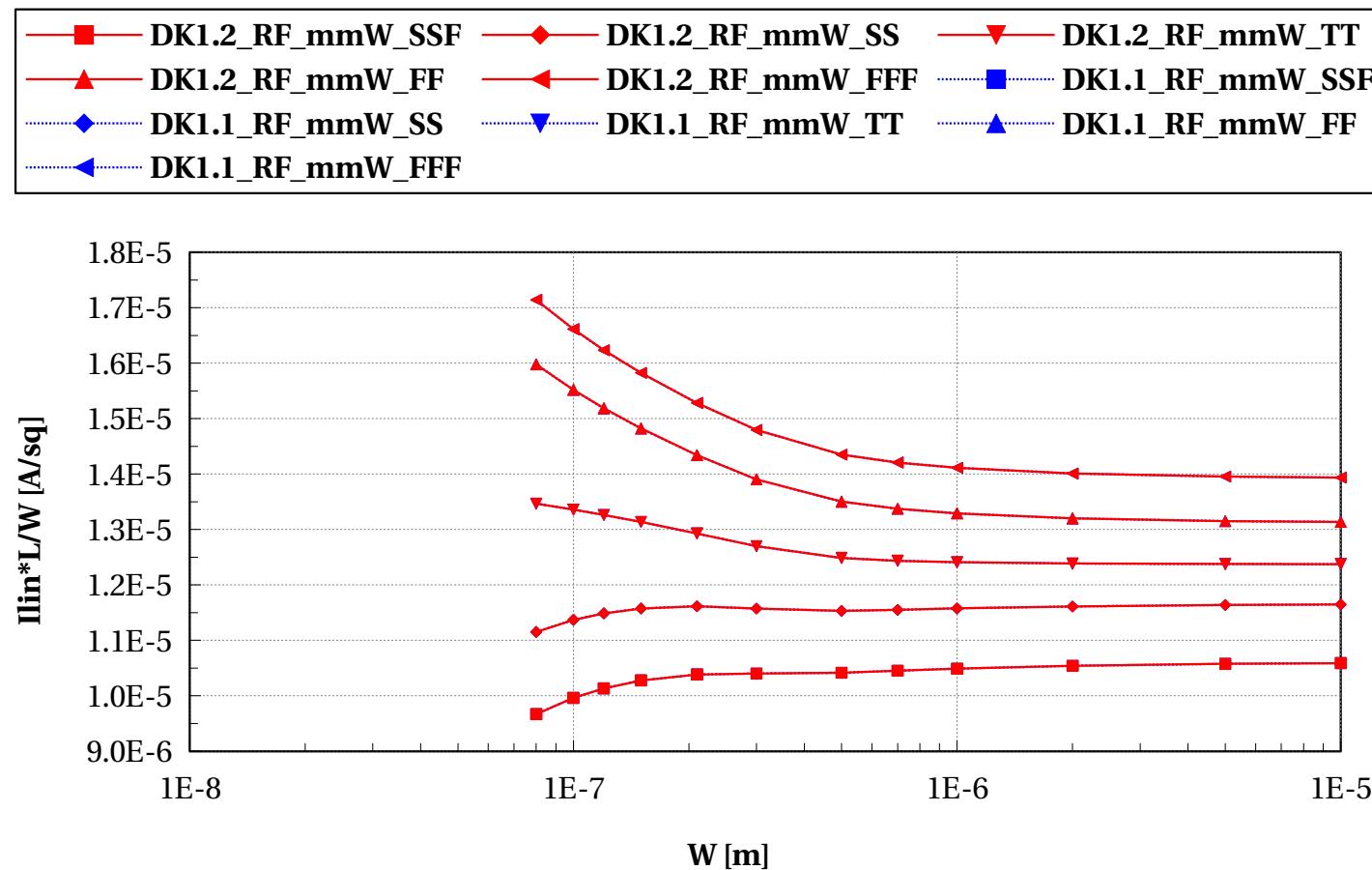
nfet_acc, I_{lin}/W [A/m] vs W [m]

$I=1e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_{la}=0$ and $devType="PCELLwoWPE"$



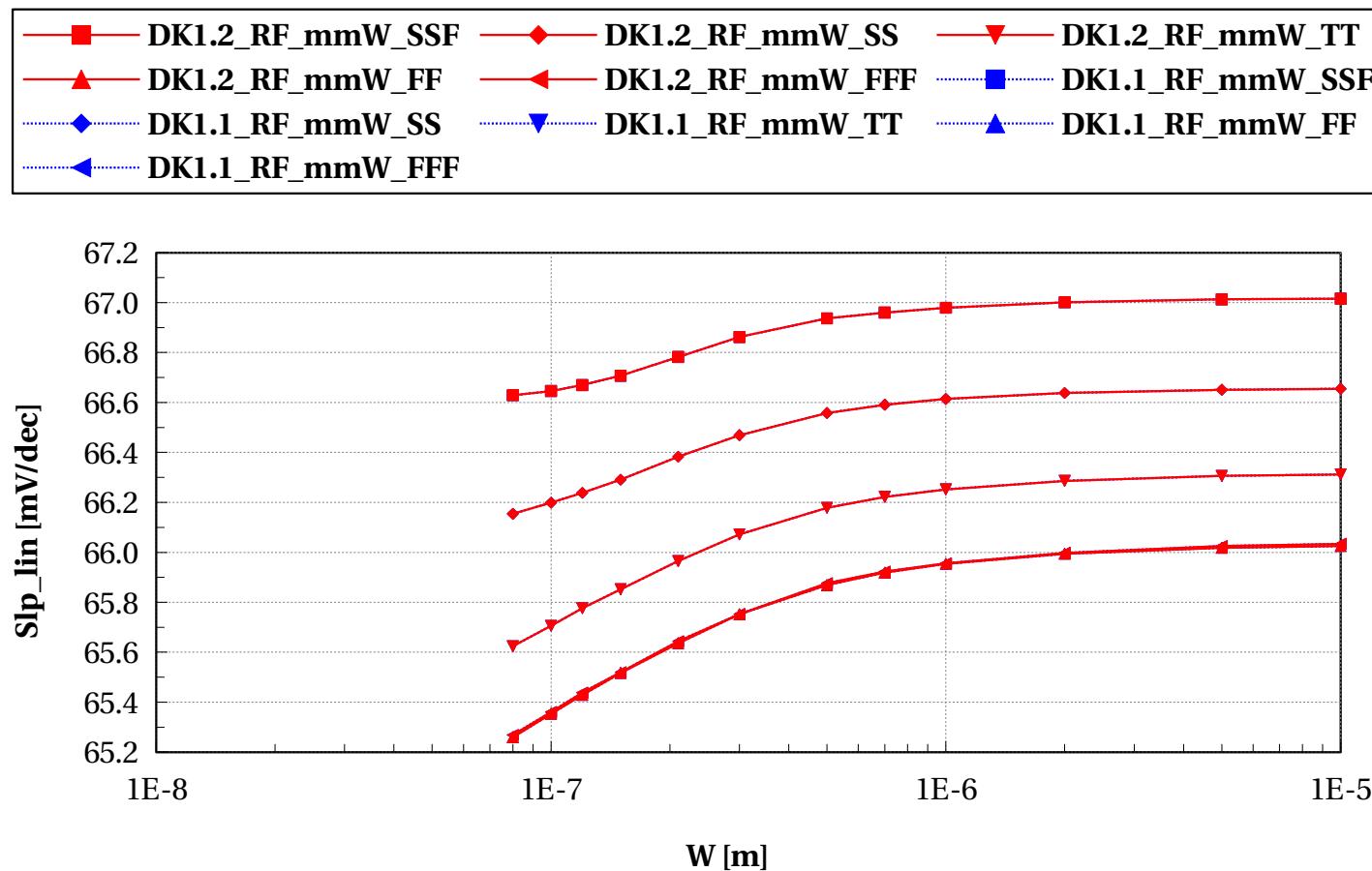
nfet_acc, $I_{lin} \cdot L/W$ [A/sq] vs W [m]

$I=1e-6$ and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



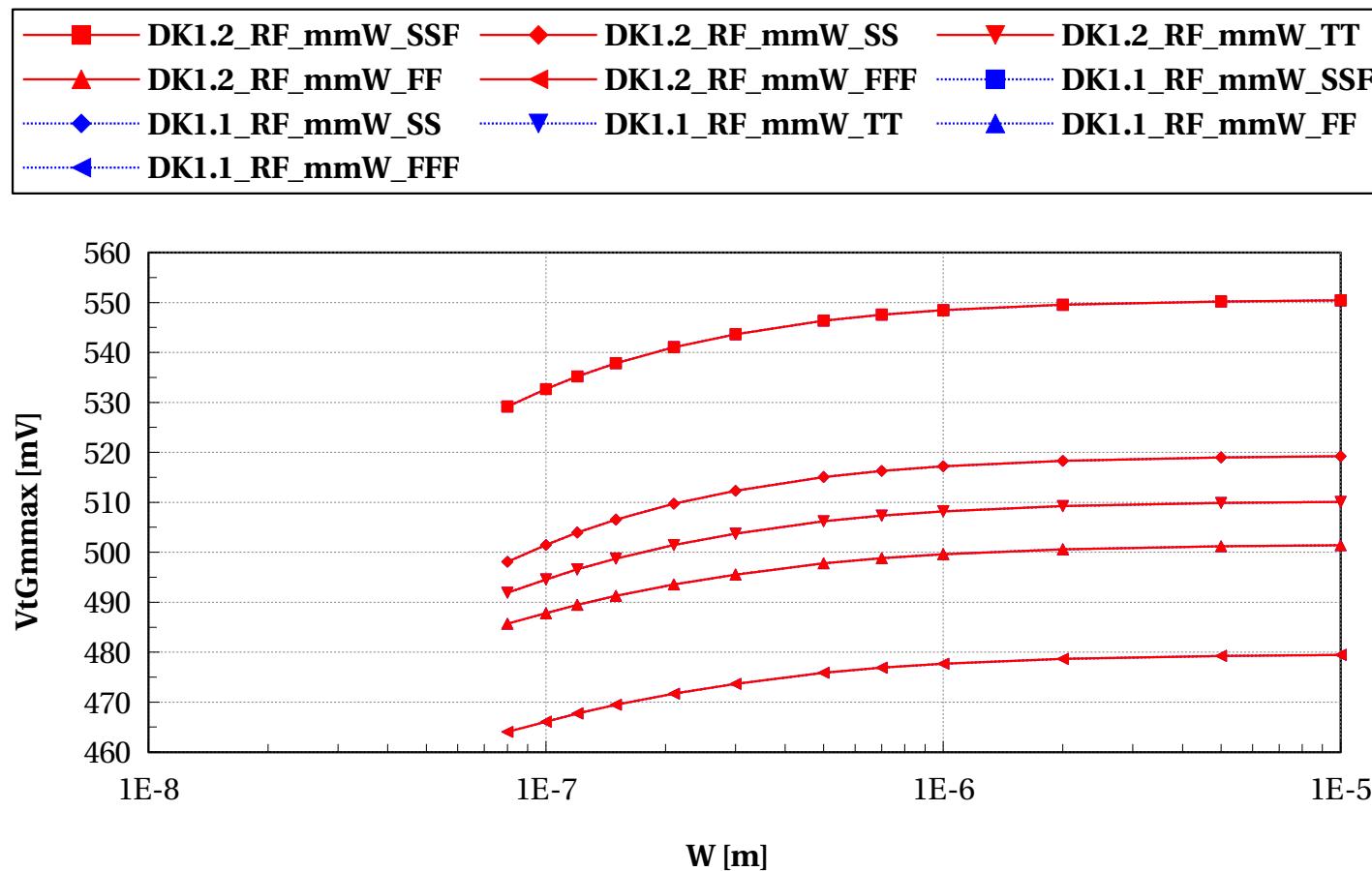
nfet_acc, Slp_lin [mV/dec] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



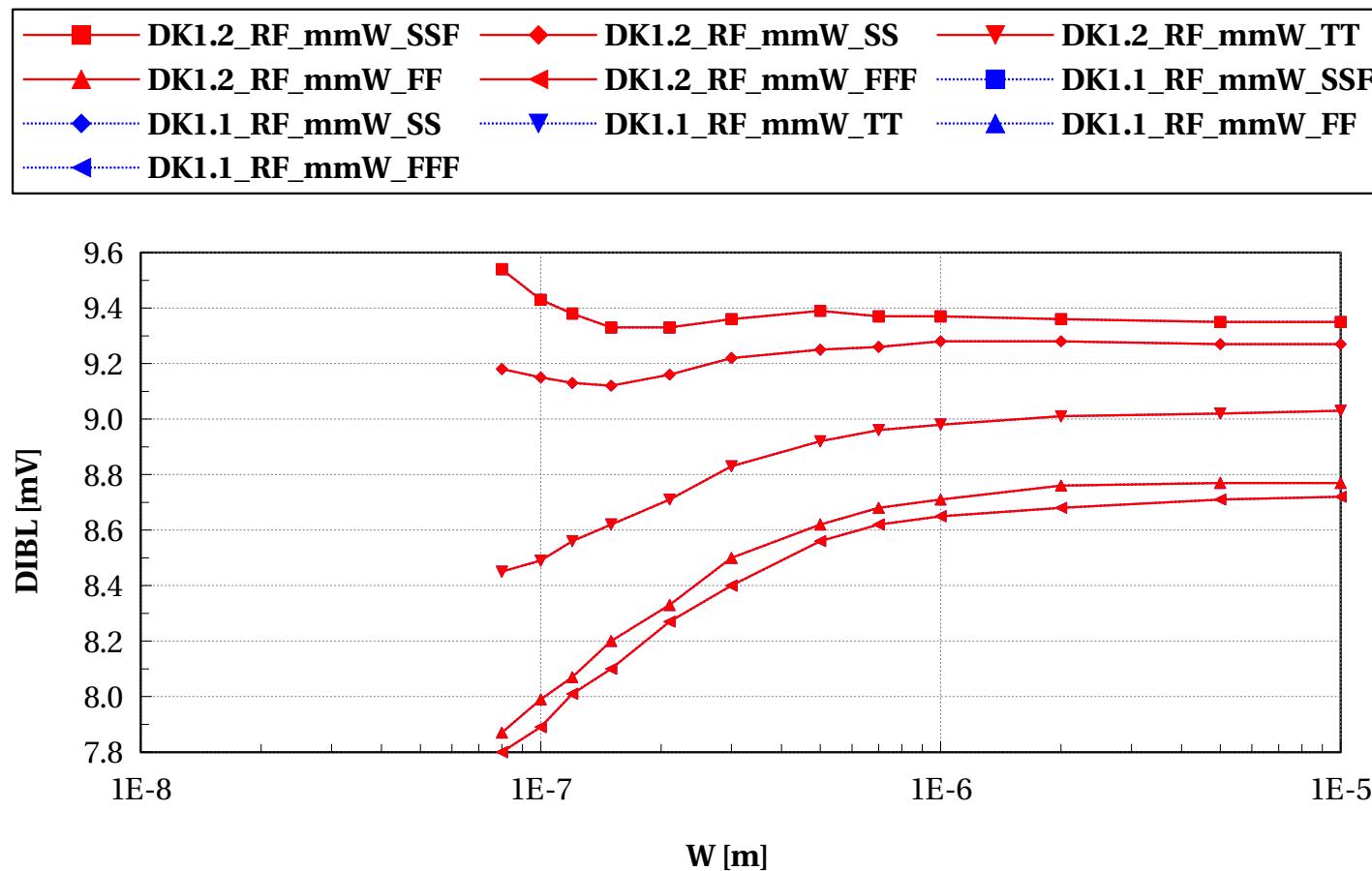
nfet_acc, VtGmmax [mV] vs W [m]

I==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



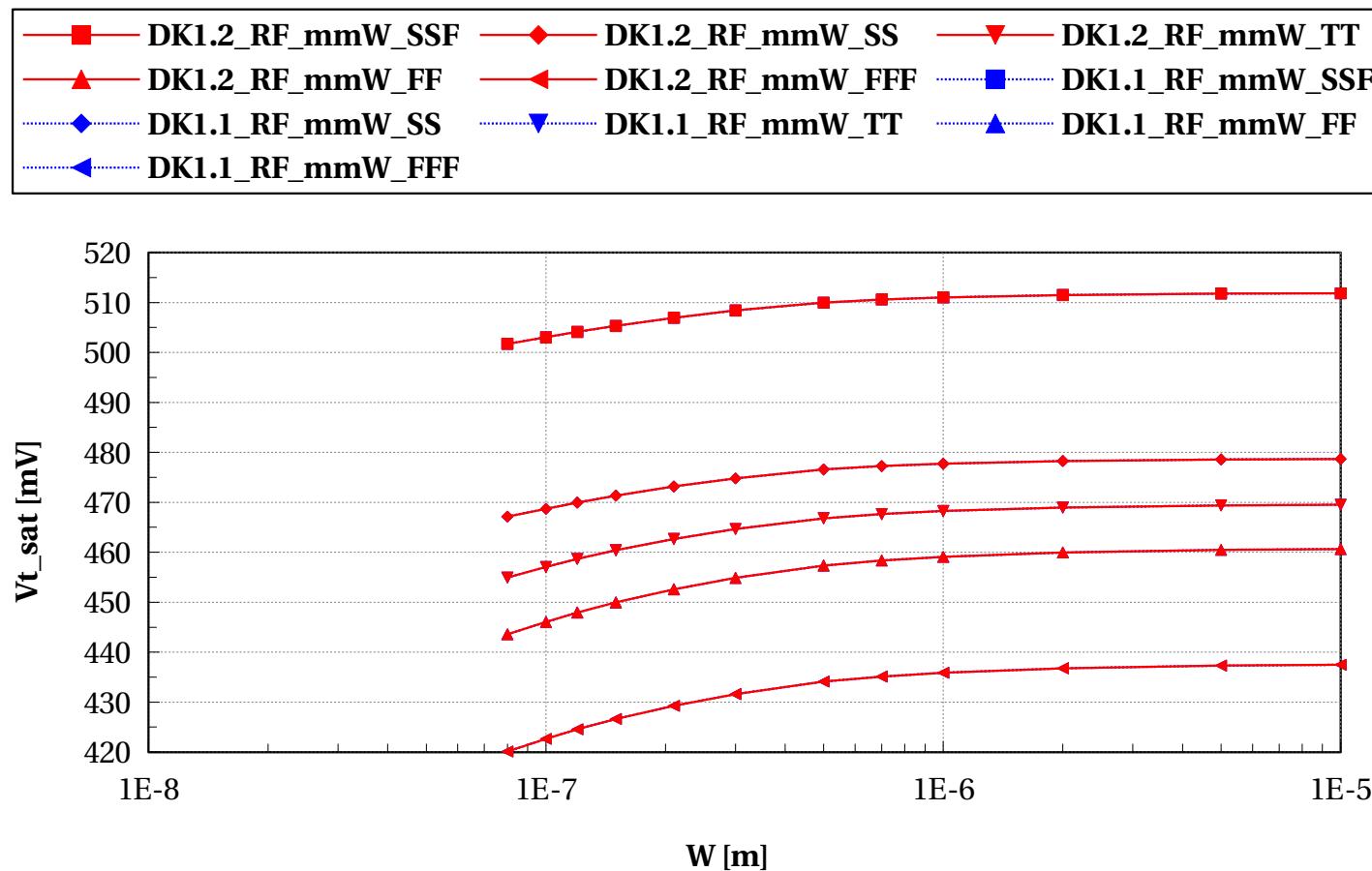
nfet_acc, DIBL [mV] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



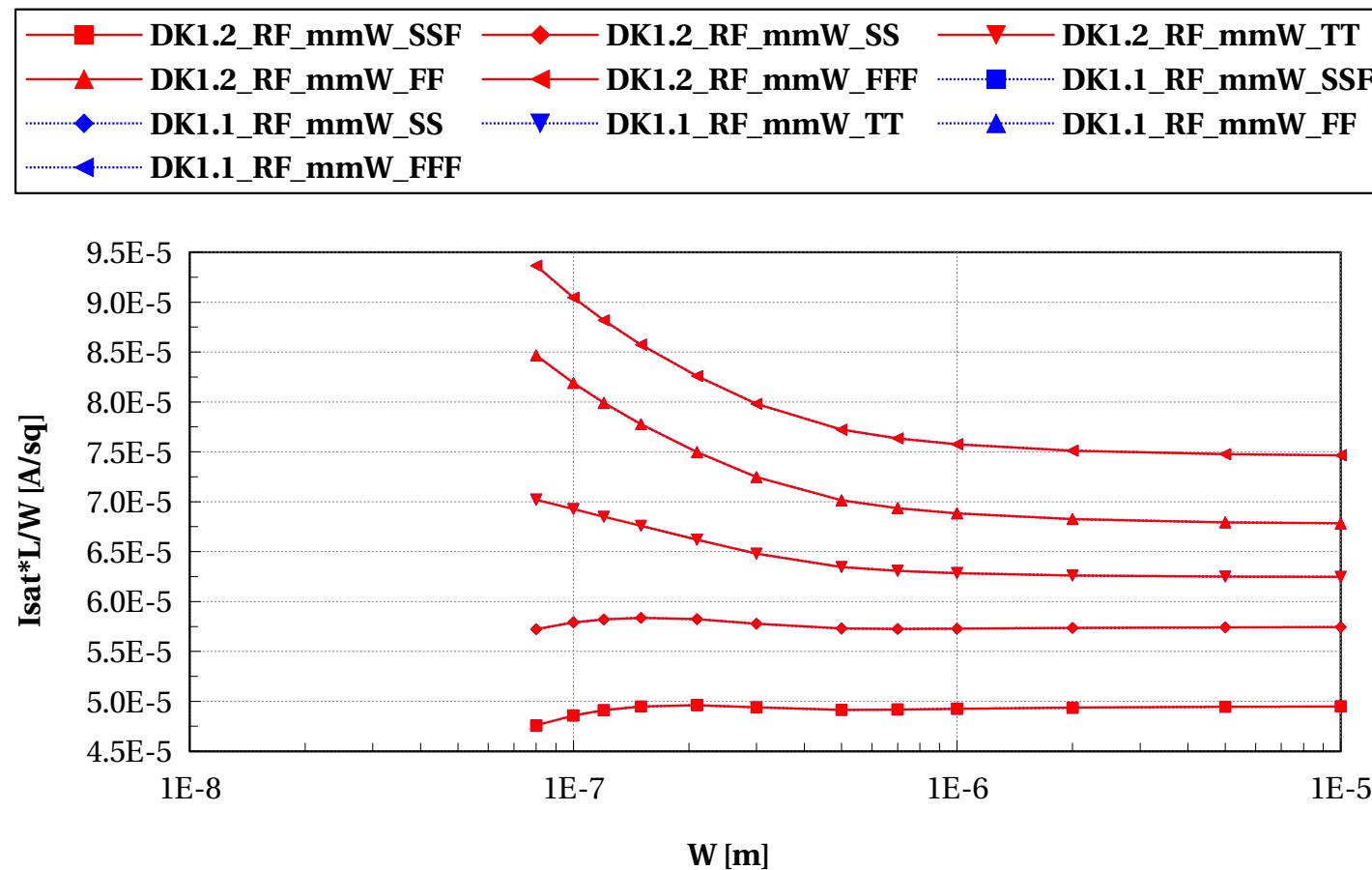
nfet_acc, Vt_sat [mV] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



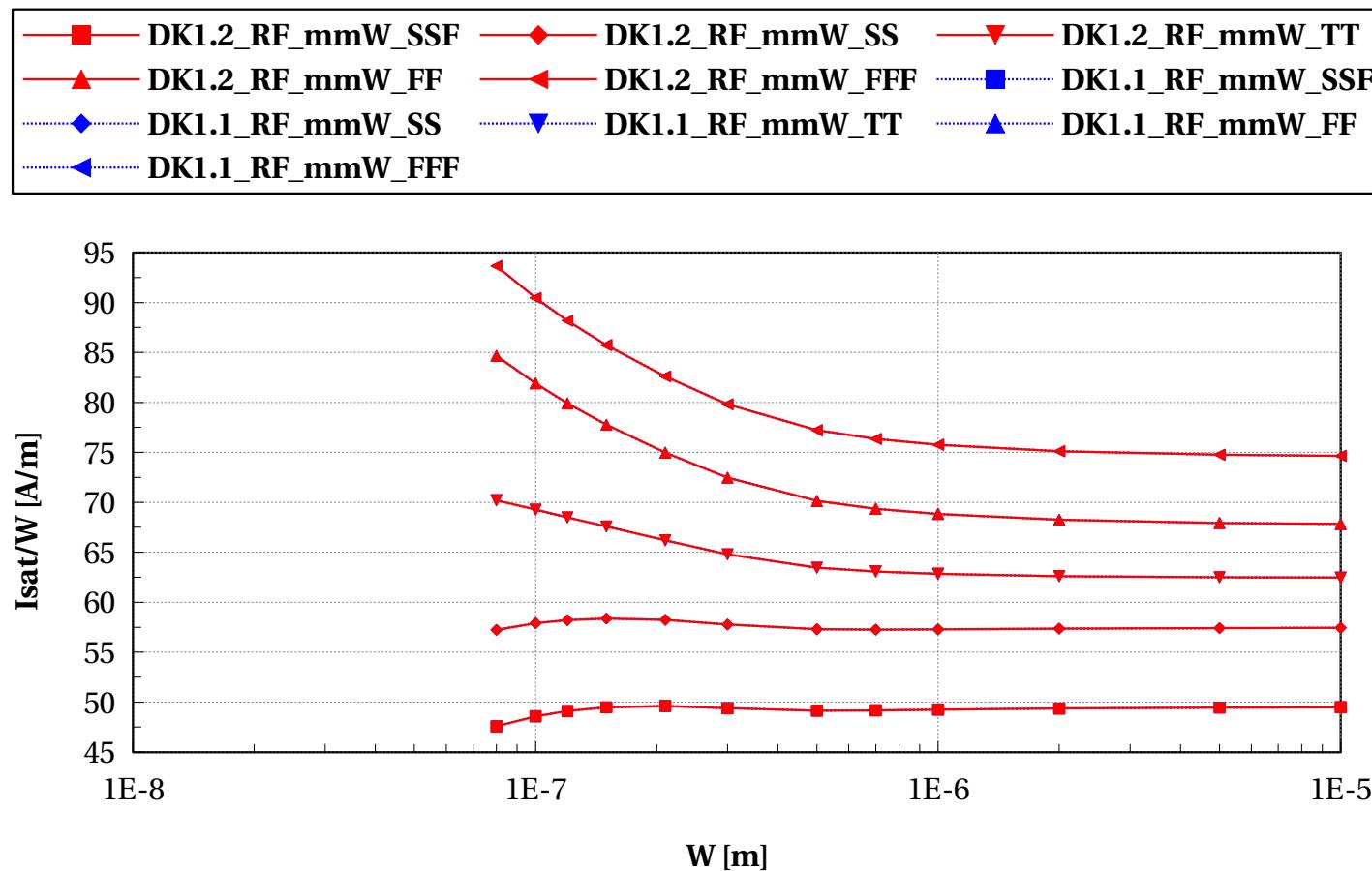
nfet_acc, $I_{sat} \cdot L/W$ [A/sq] vs W [m]

$I=1e-6$ and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



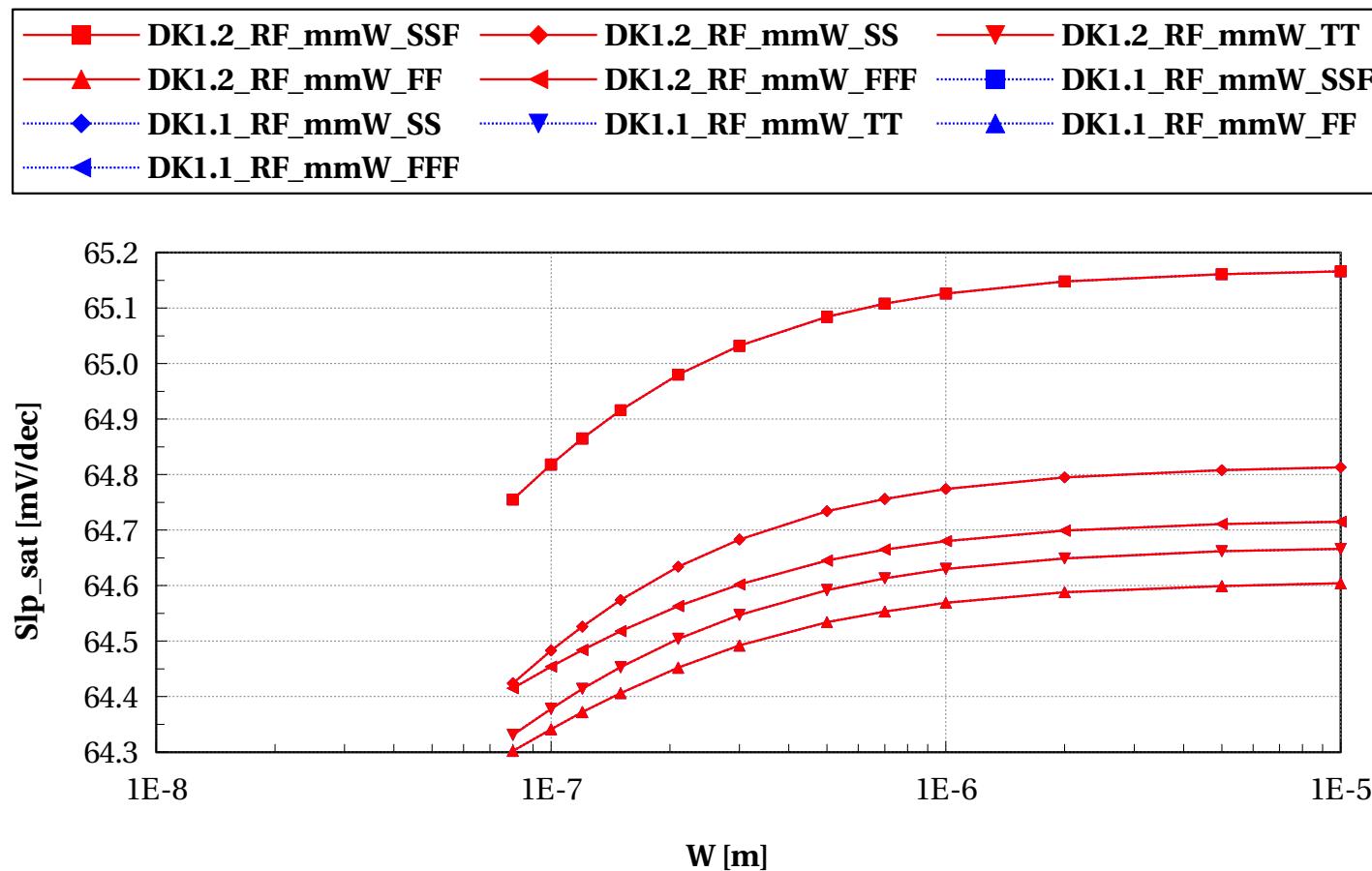
nfet_acc, Isat/W [A/m] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



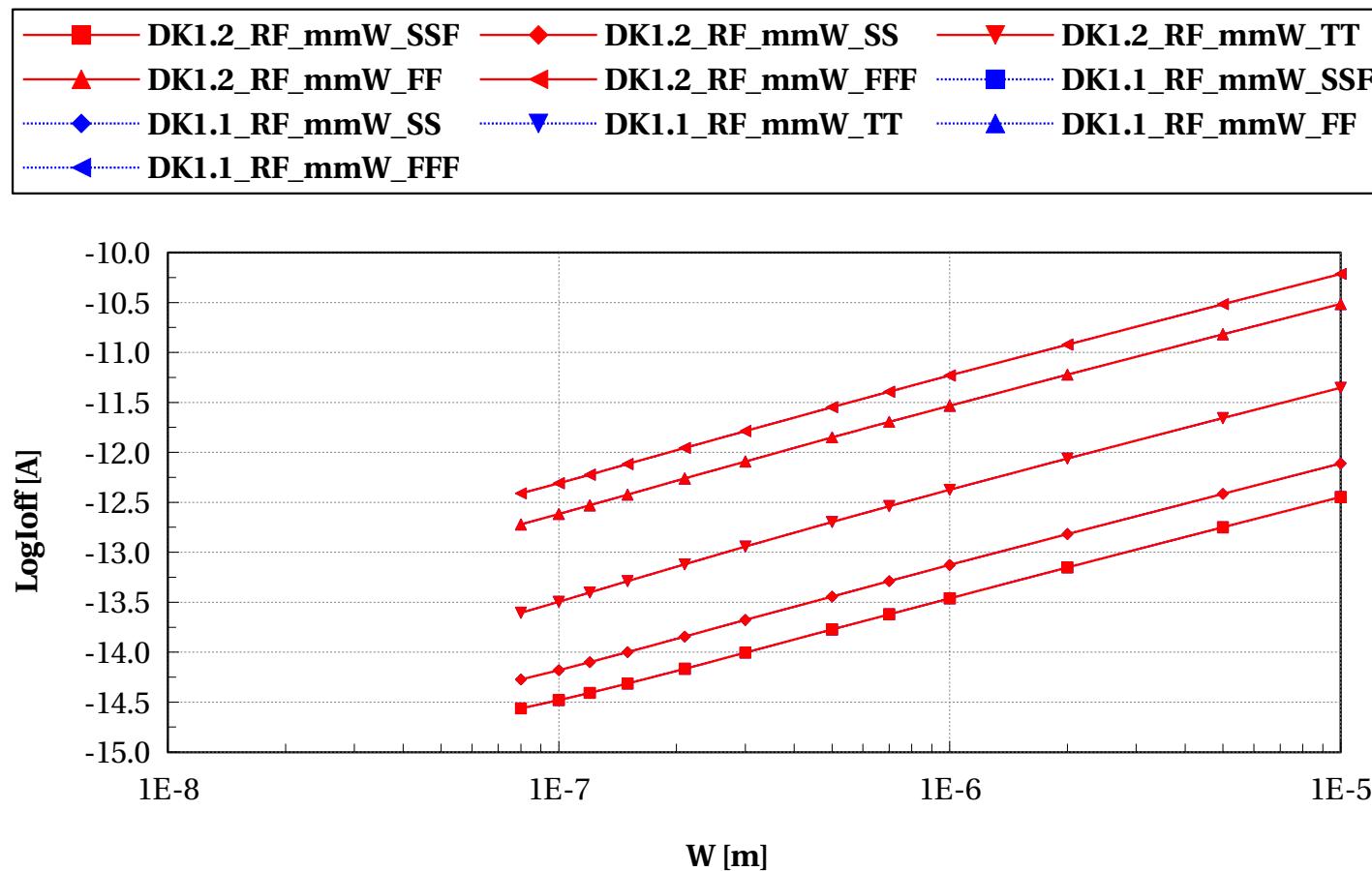
nfet_acc, Slp_sat [mV/dec] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



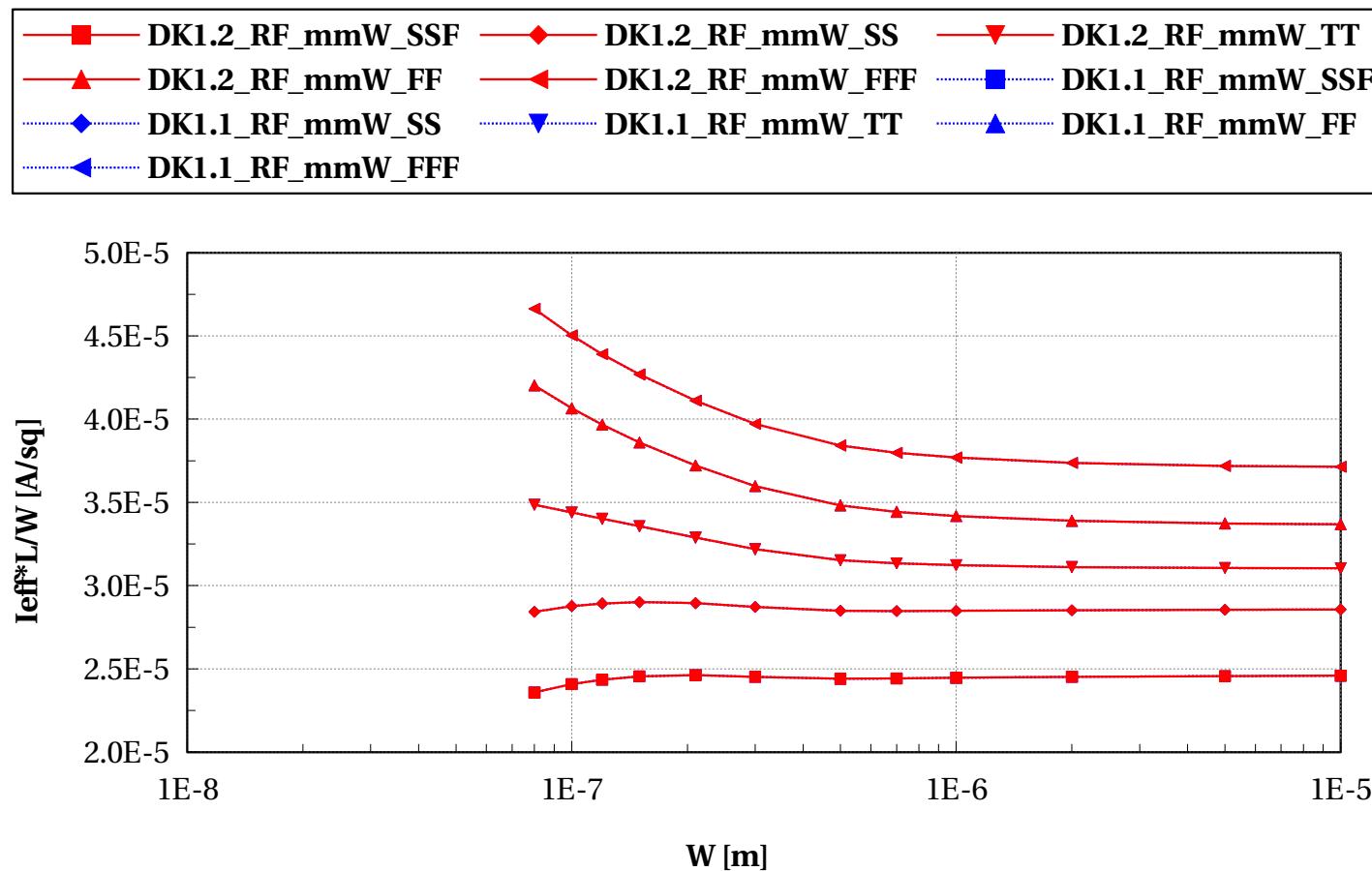
nfet_acc, LogIoff [A] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



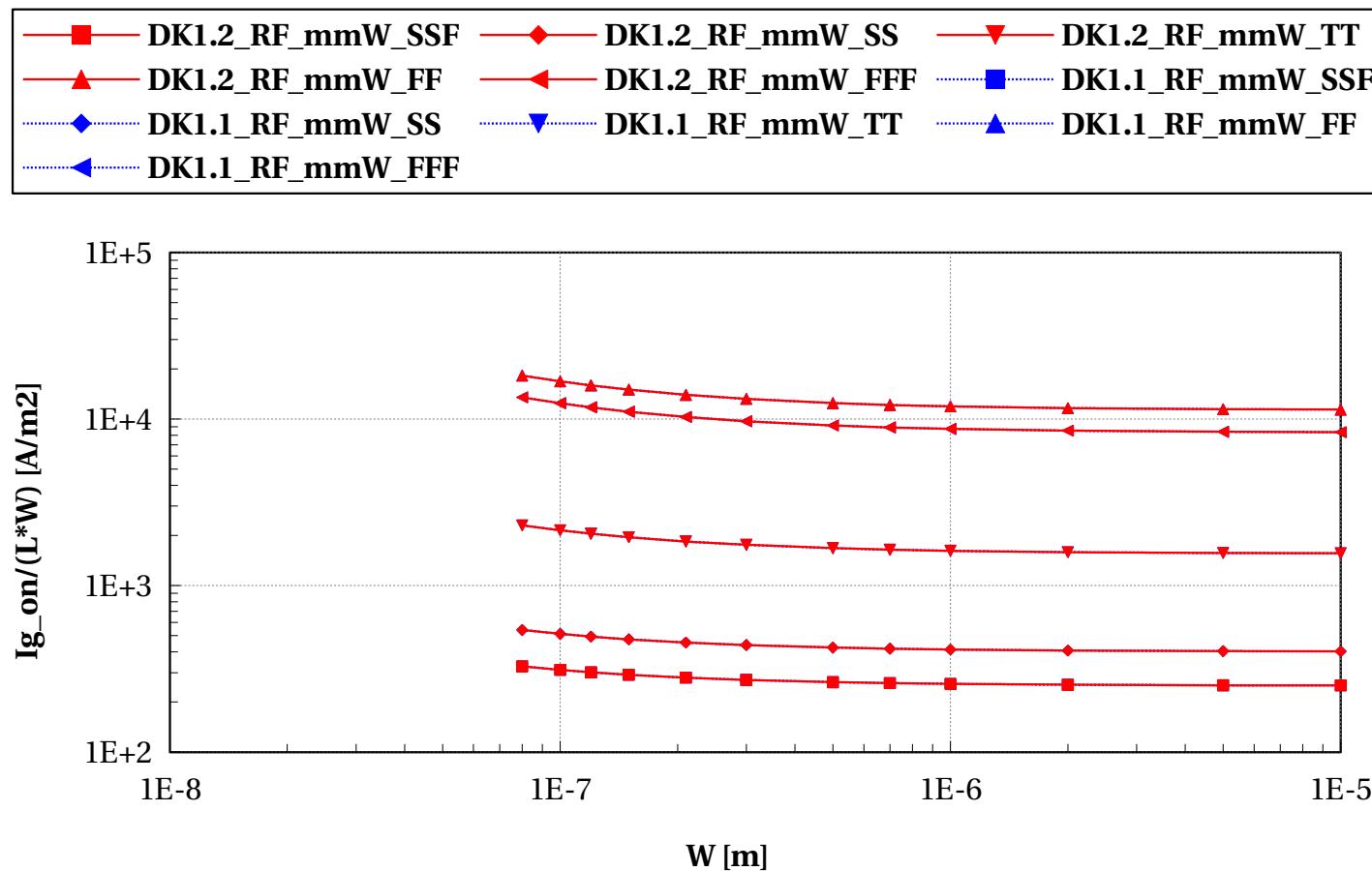
nfet_acc, $I_{eff} \cdot L/W$ [A/sq] vs W [m]

$I=1e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_la=0$ and $devType="PCELLwoWPE"$



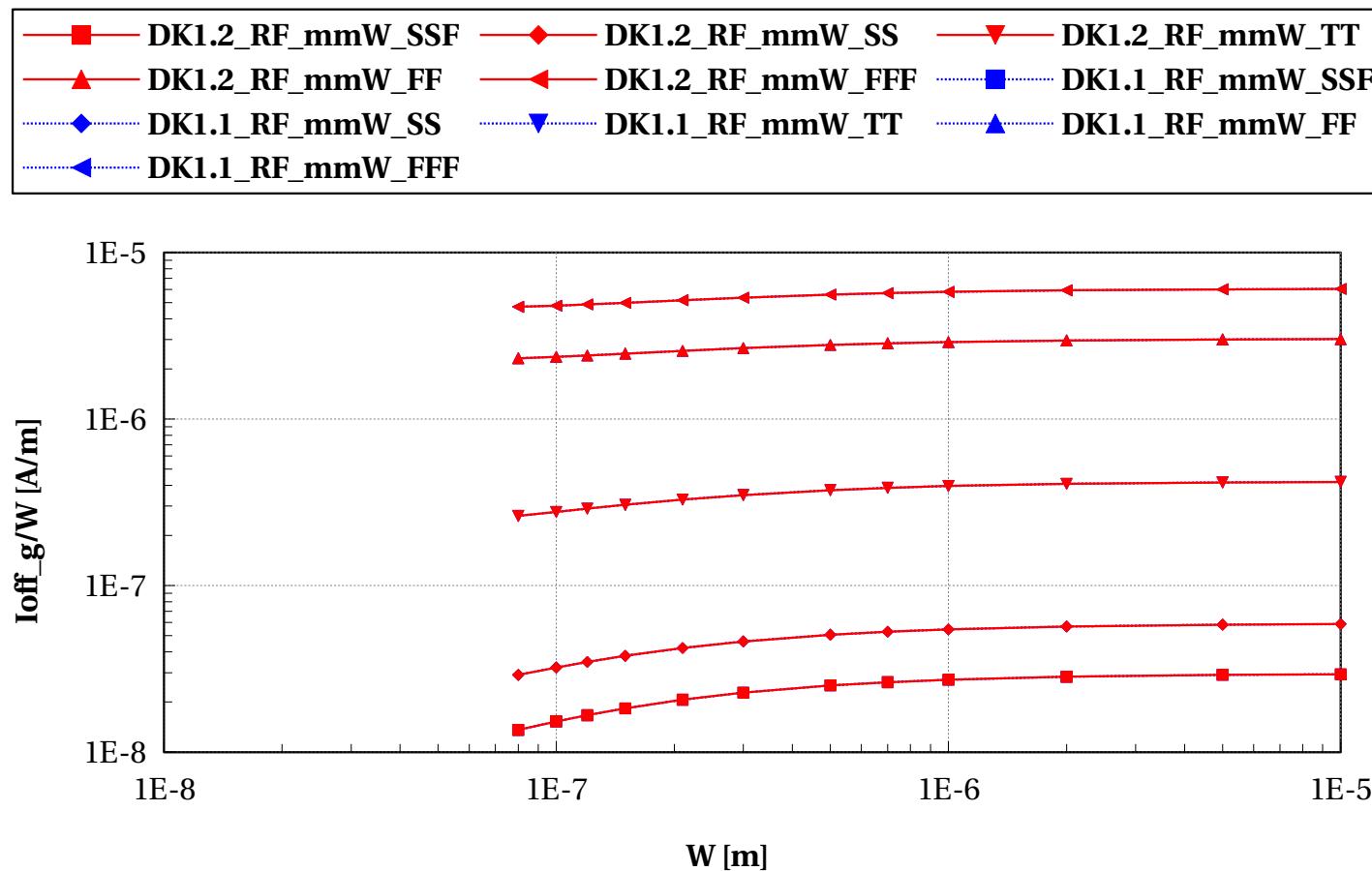
nfet_acc, Ig_on/(L*W) [A/m2] vs W [m]

I==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



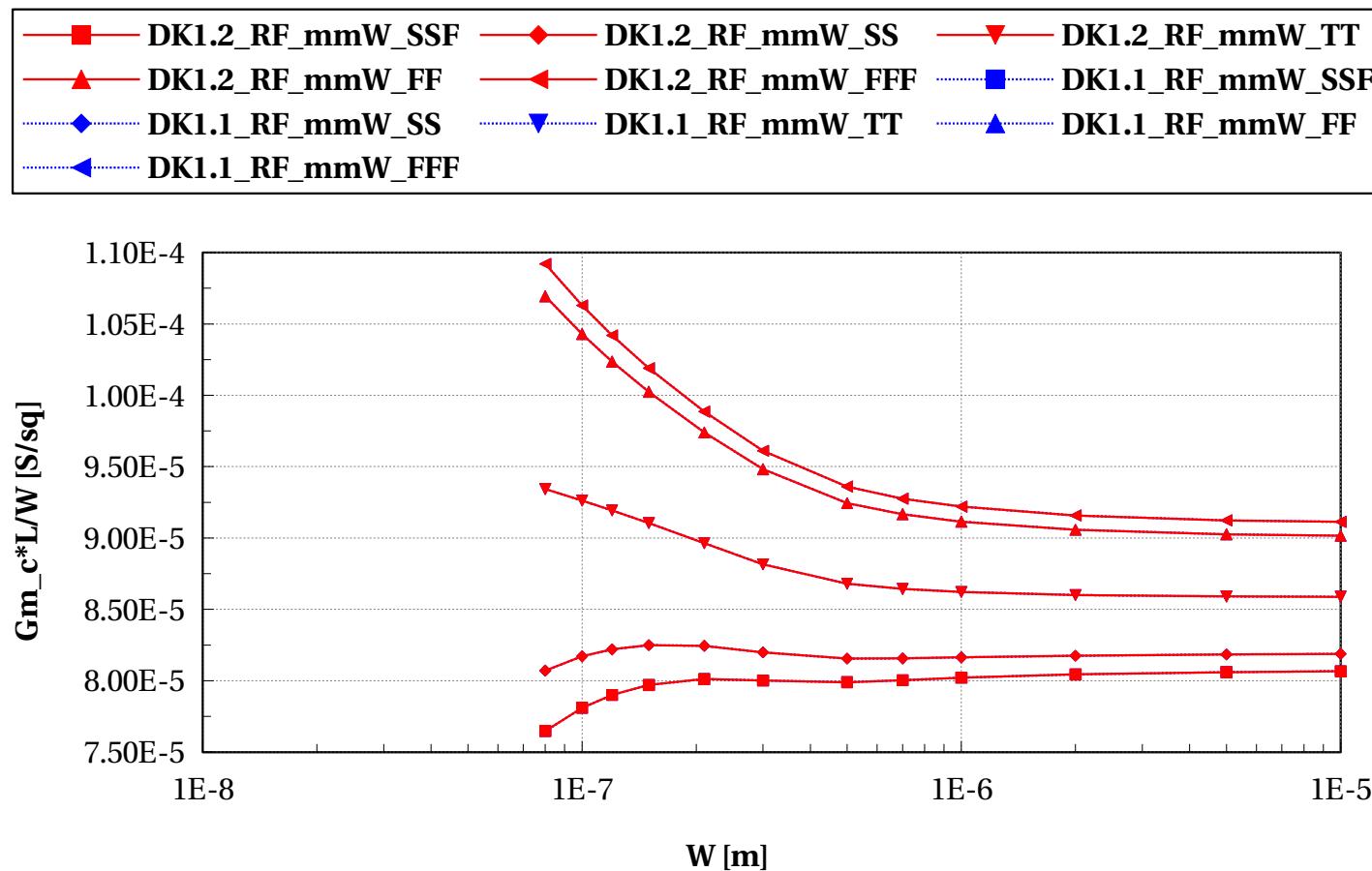
nfet_acc, Ioff_g/W [A/m] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{bs} = 0$ and $p_{la} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



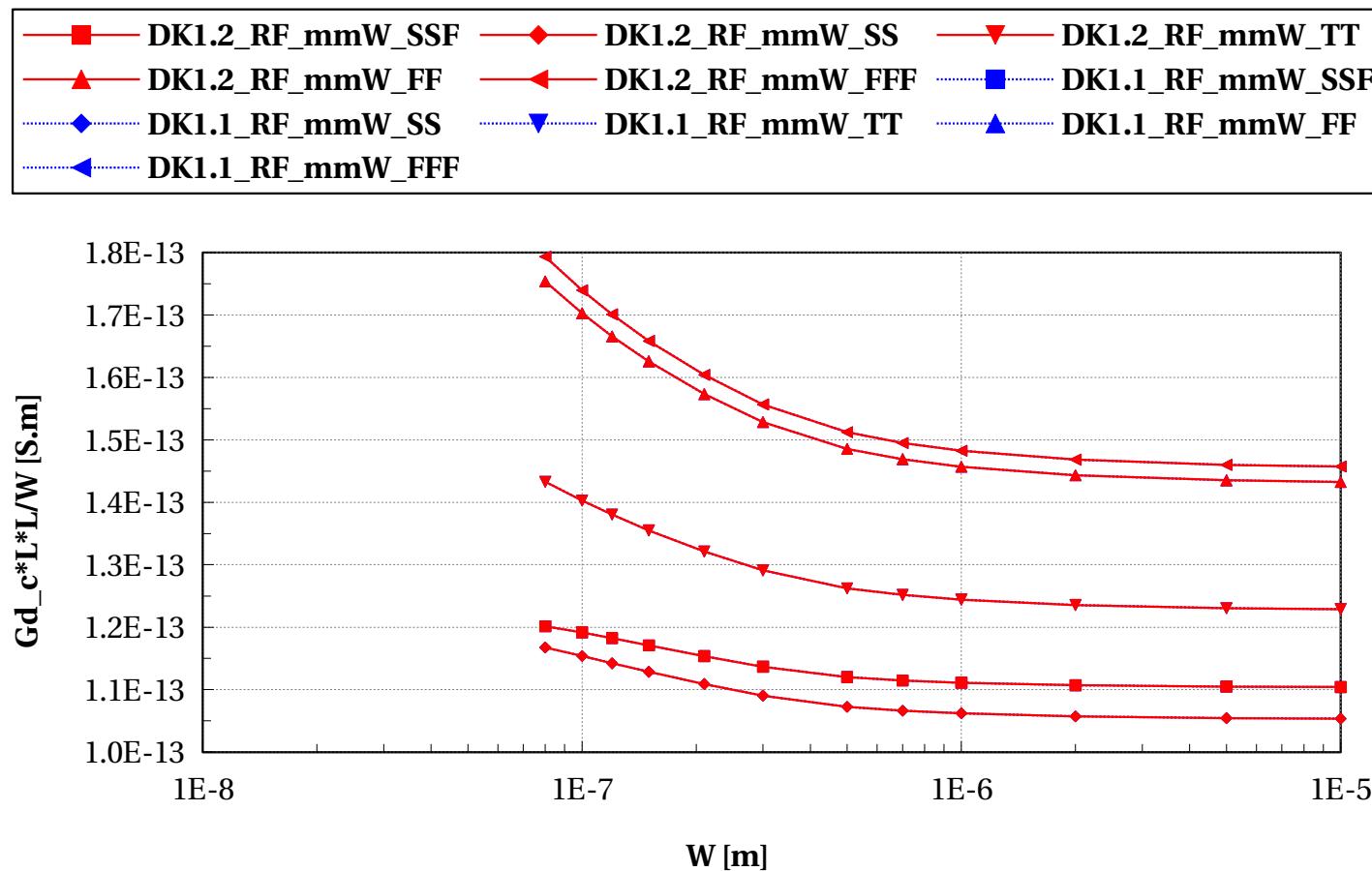
nfet_acc, Gm_c*L/W [S/sq] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



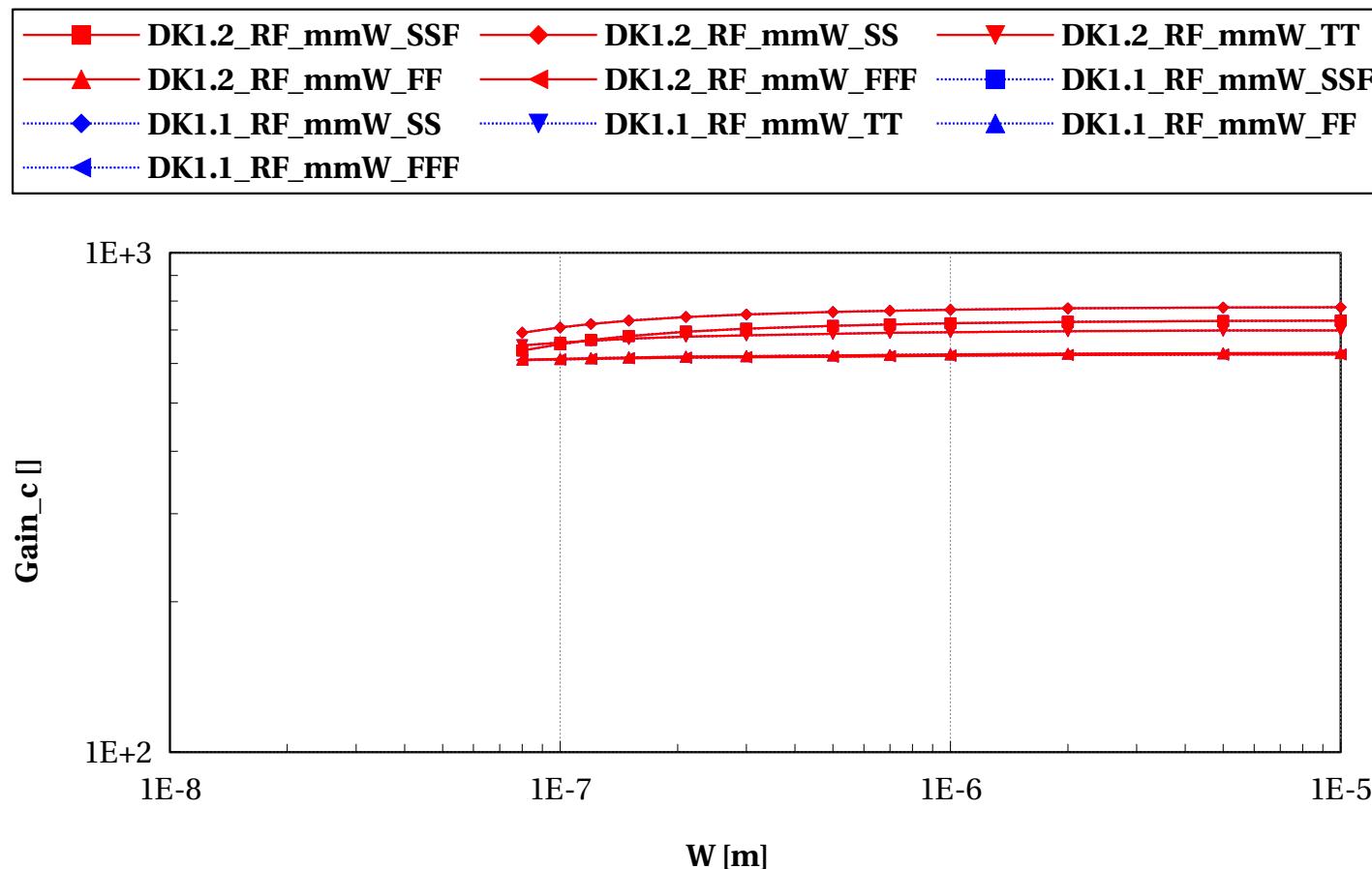
nfet_acc, Gd_c*L*L/W [S.m] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



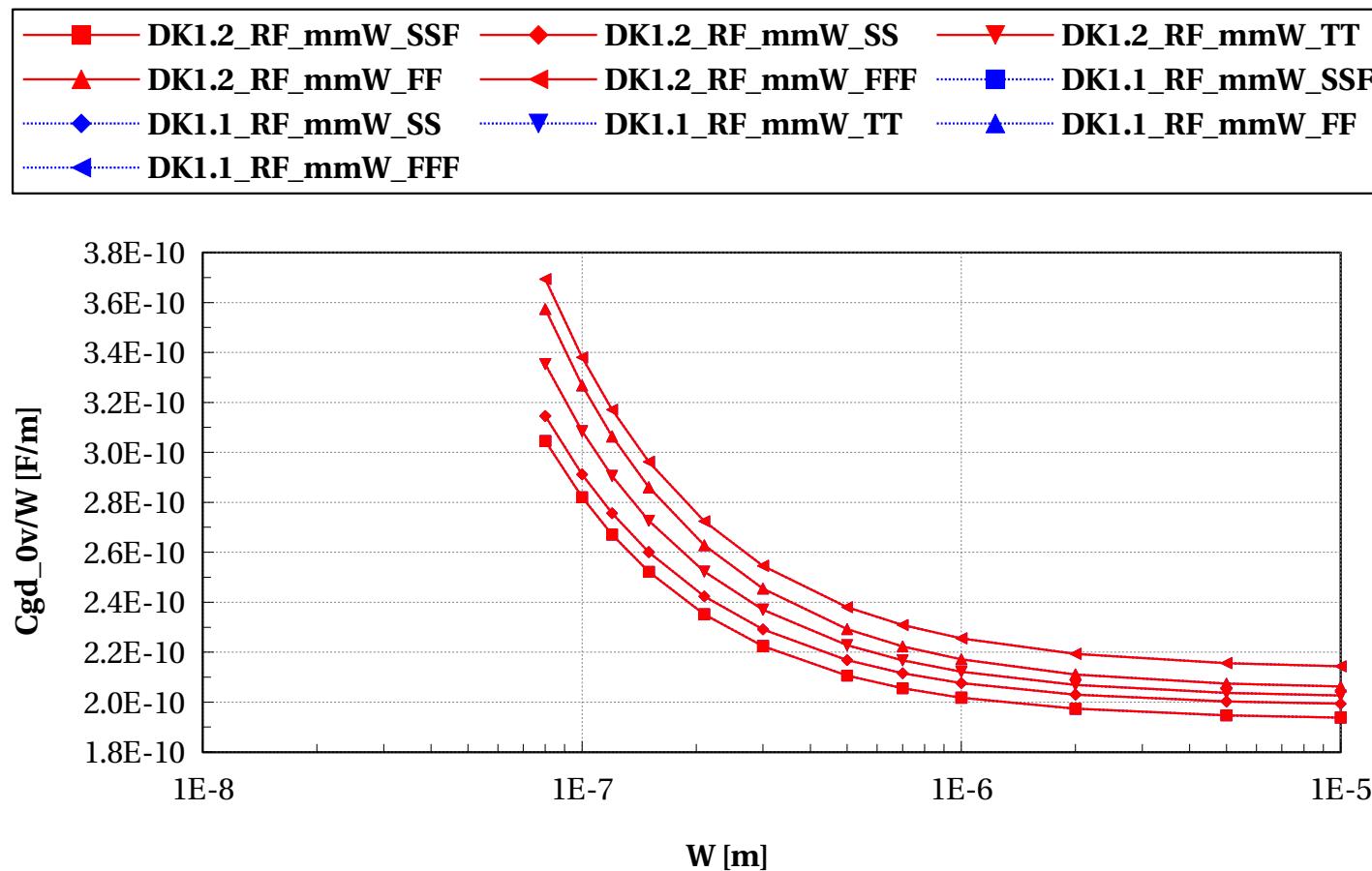
nfet_acc, Gain_c [] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



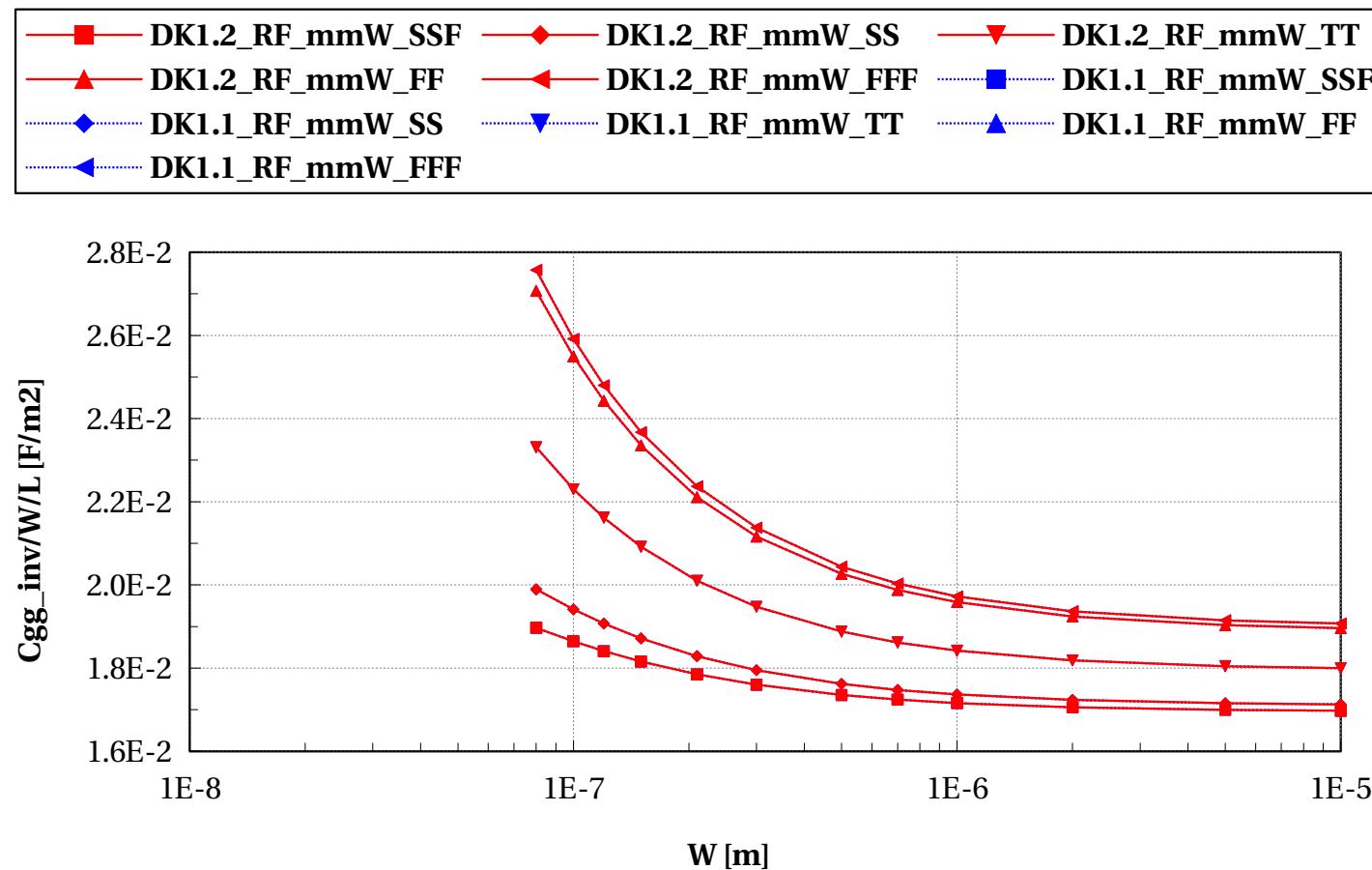
nfet_acc, Cgd_0v/W [F/m] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



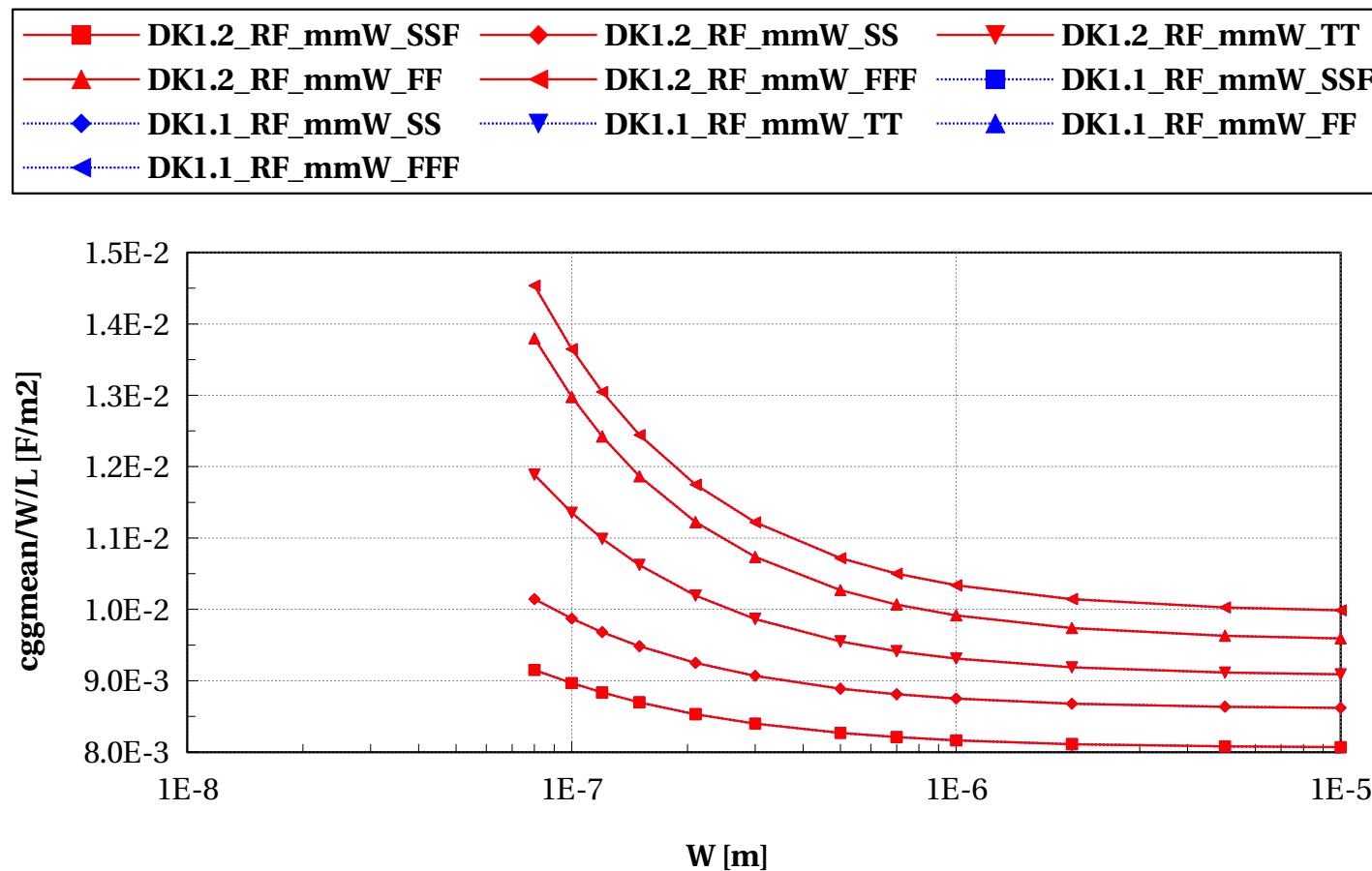
nfet_acc, Cgg_inv/W/L [F/m²] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



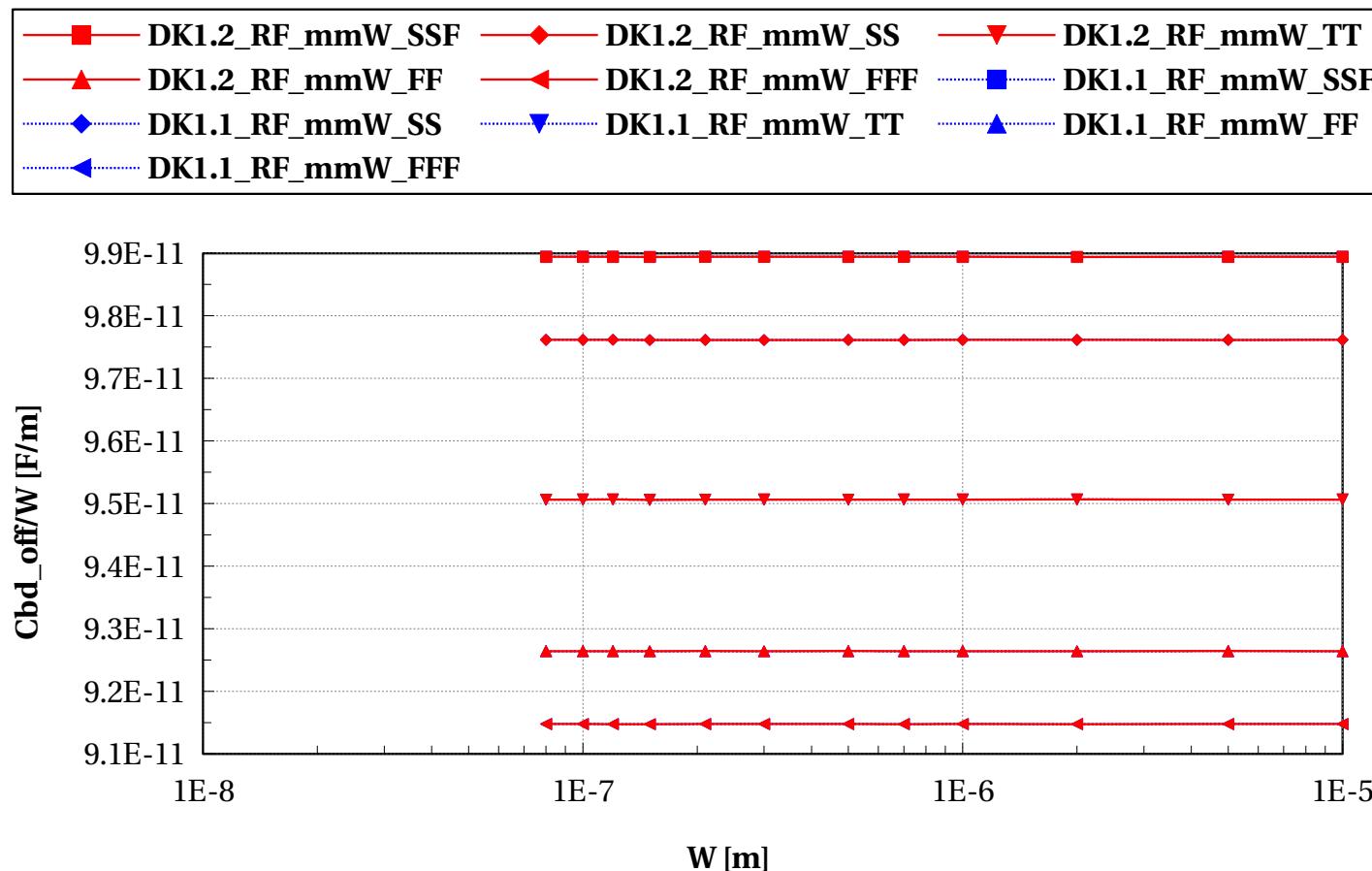
nfet_acc, cggmean/W/L [F/m²] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



nfet_acc, Cbd_off/W [F/m] vs W [m]

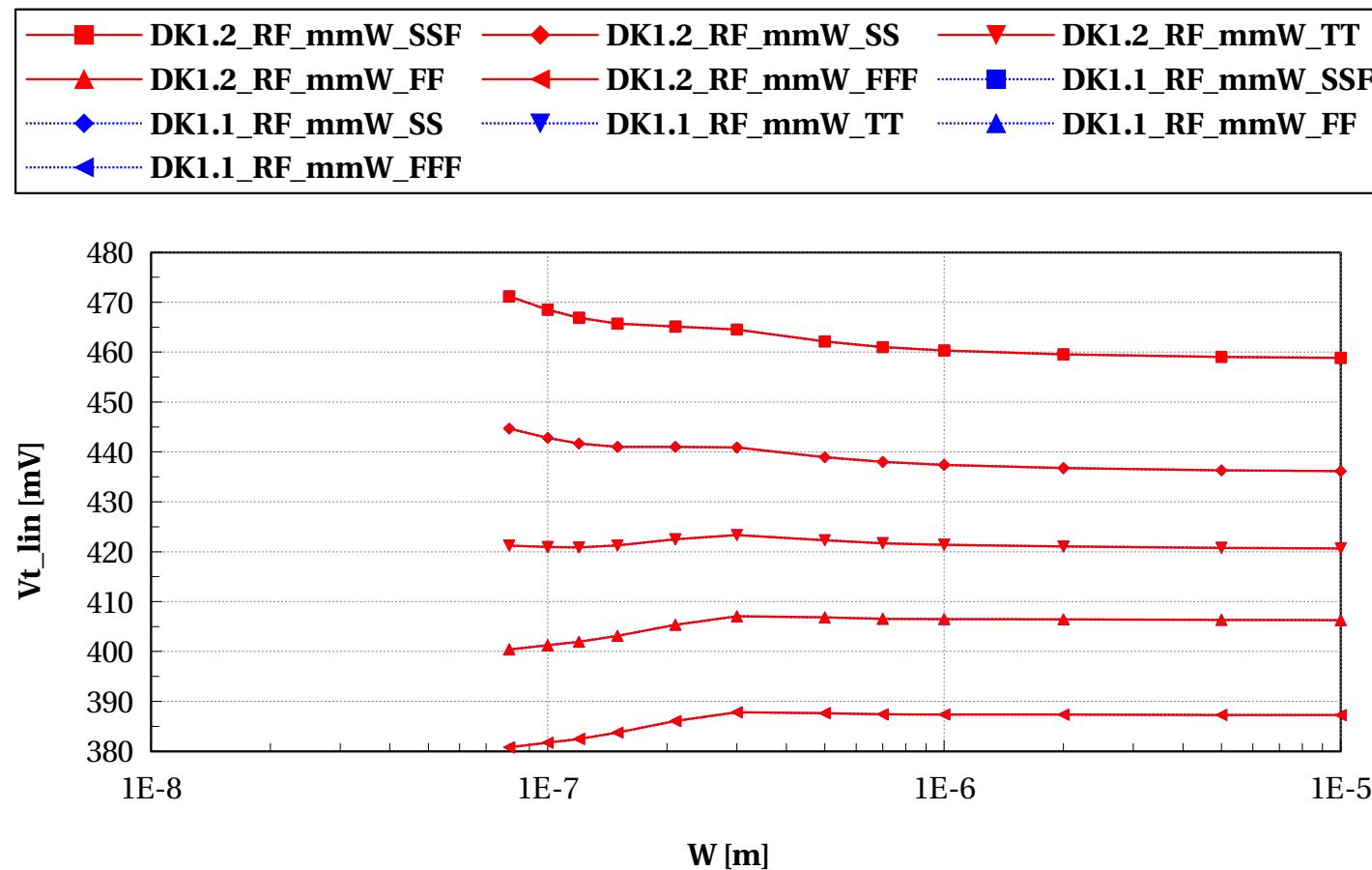
$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



Scaling versus Width (L=30nm)

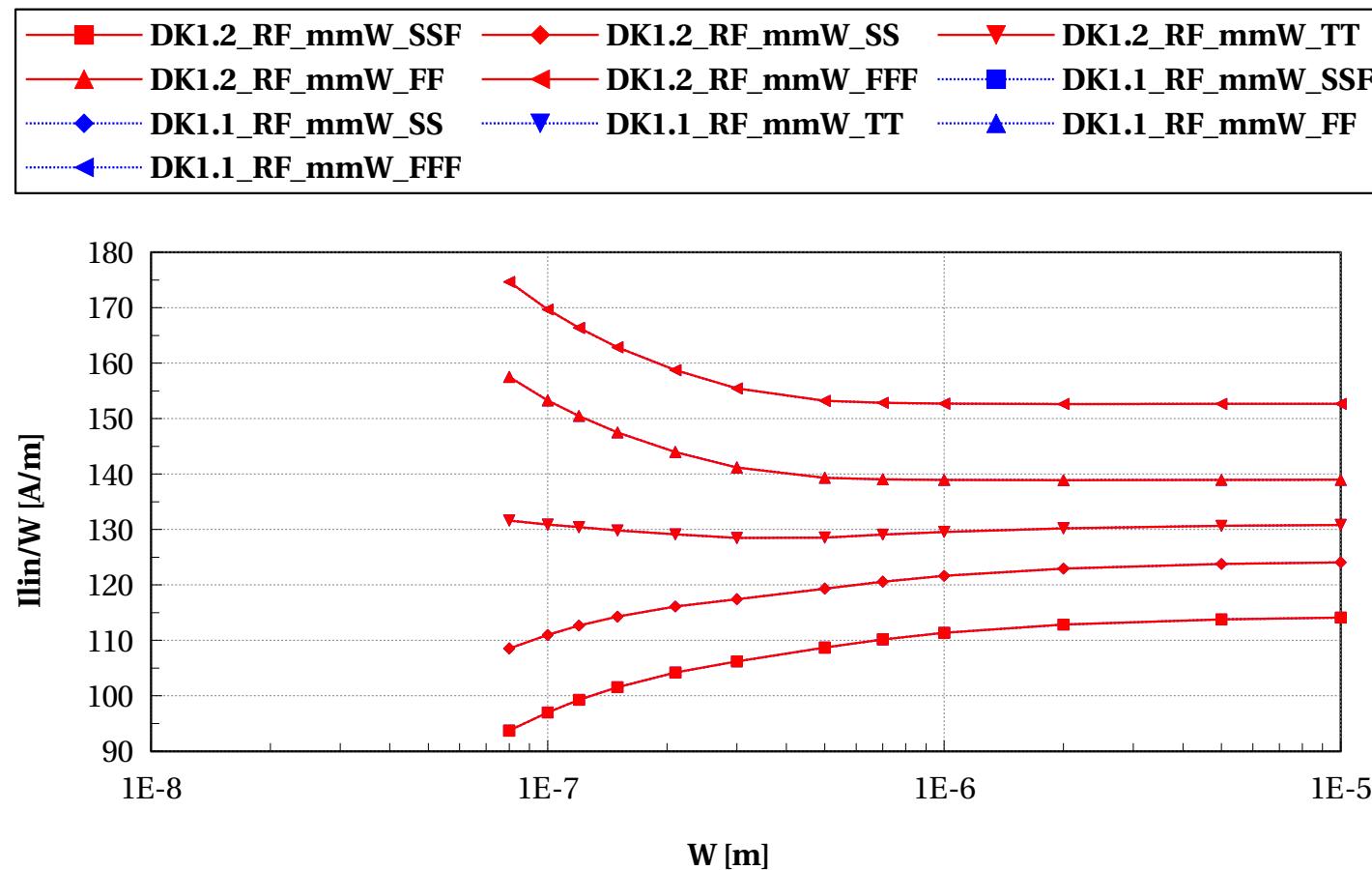
nfet_acc, Vt_lin [mV] vs W [m]

$I_{DS} = 0.030e-6$ and Temp = 25 and Vbs = 0 and p_la = 0 and devType = "PCELLwoWPE"



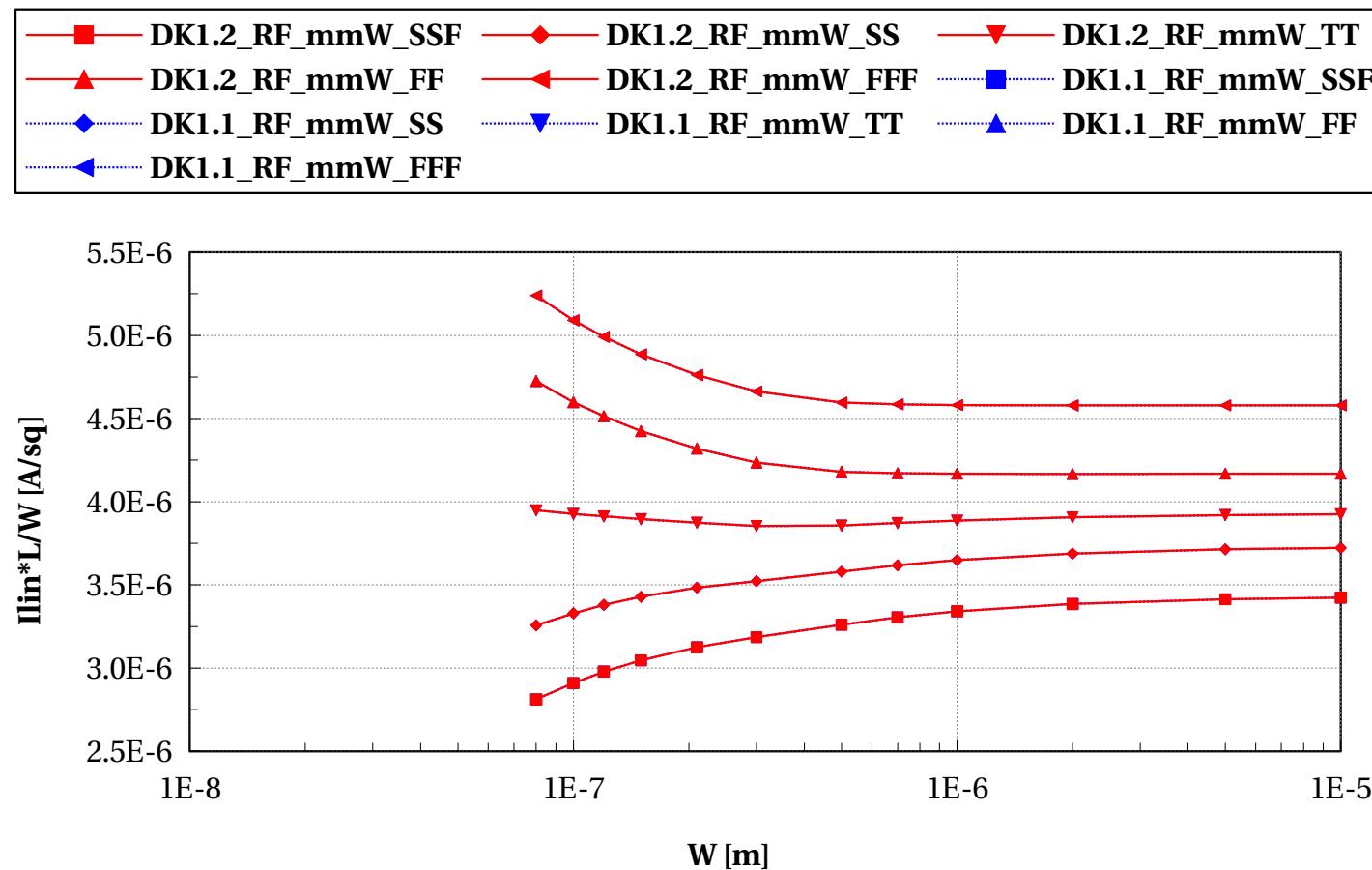
nfet_acc, I_{lin}/W [A/m] vs W [m]

$I=0.030e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_{la}=0$ and $devType="PCELLwoWPE"$



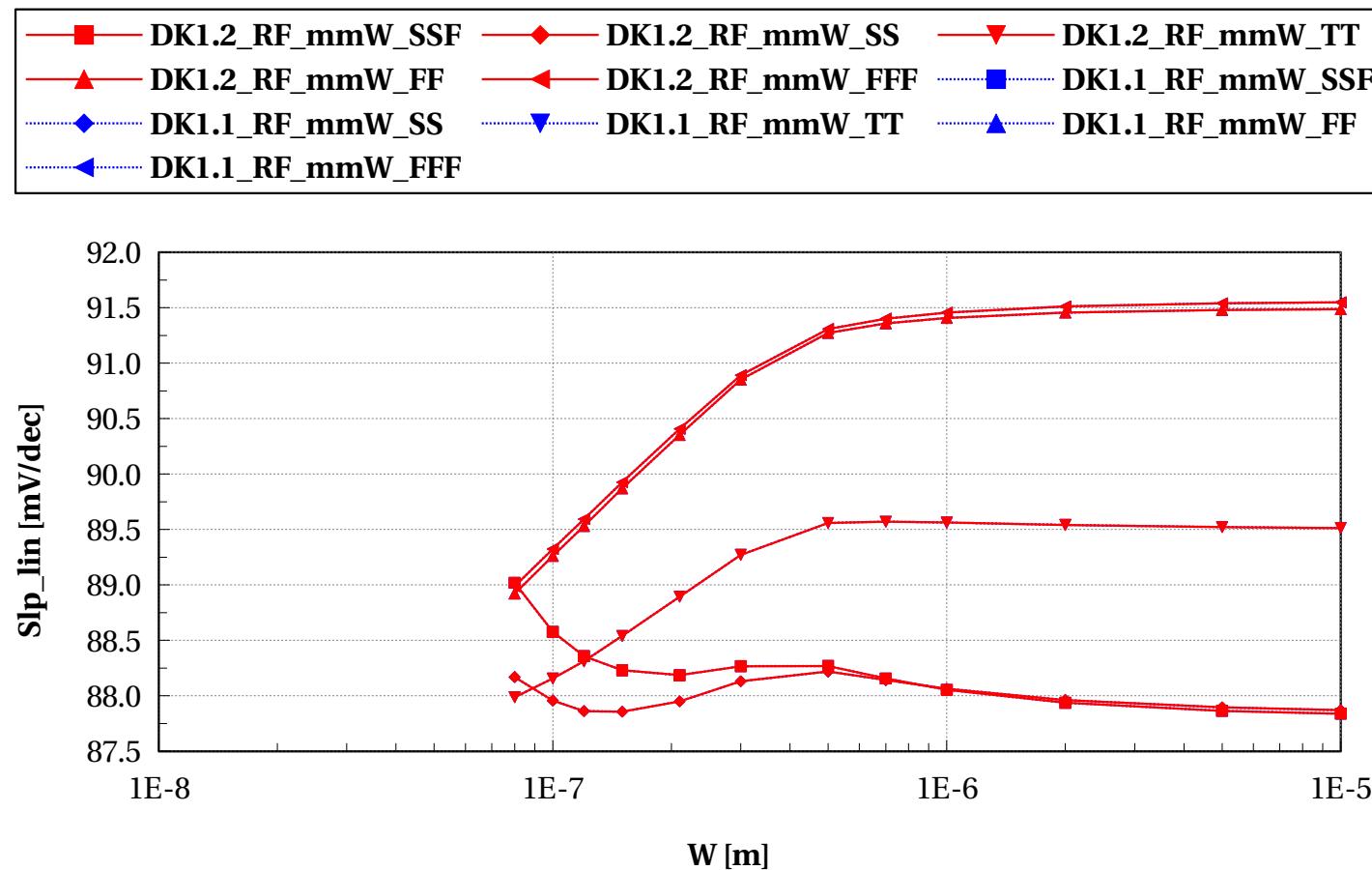
nfet_acc, $I_{lin} \cdot L/W$ [A/sq] vs W [m]

$I=0.030e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_{la}=0$ and $devType="PCELLwoWPE"$



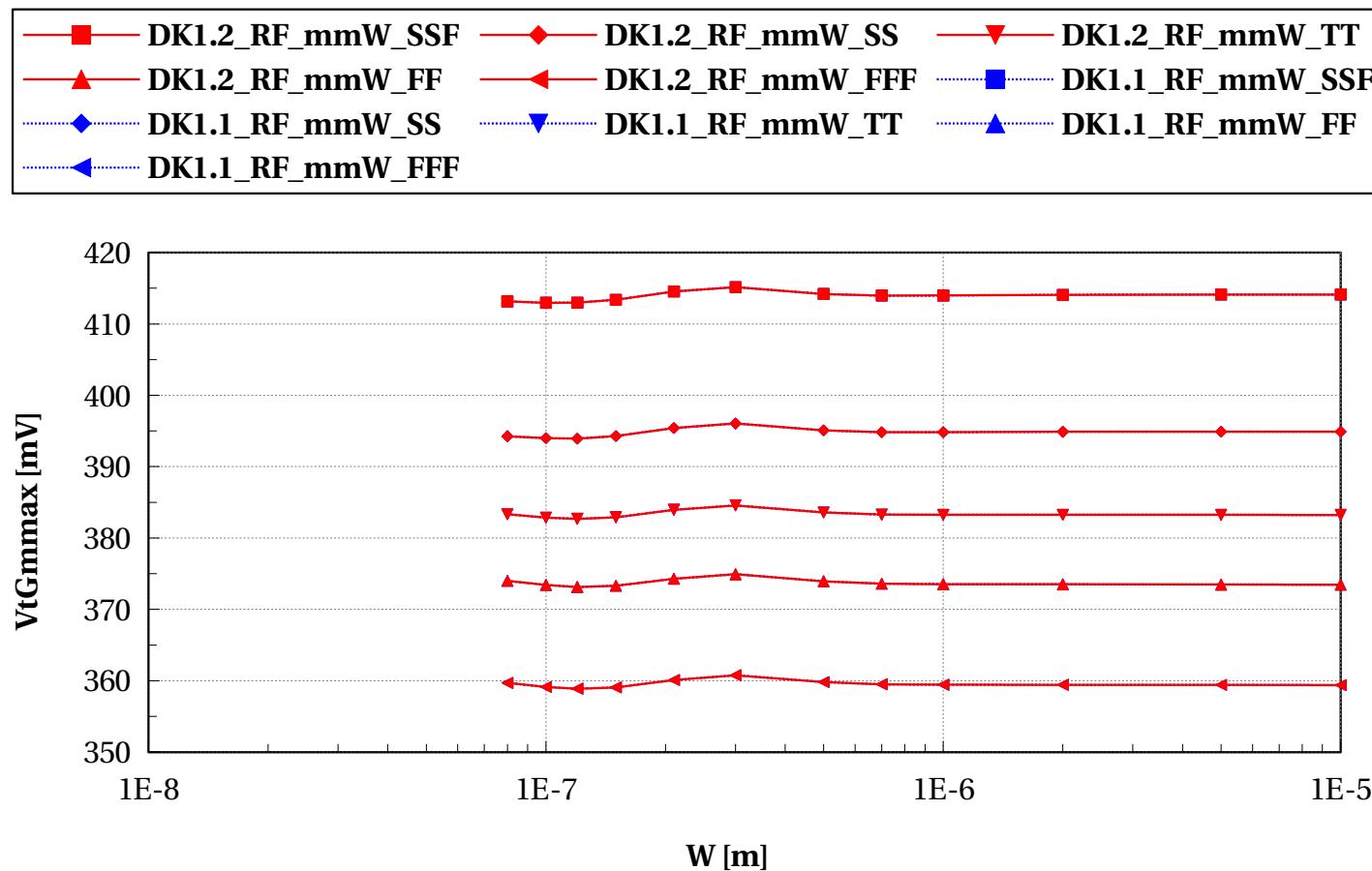
nfet_acc, Slp_lin [mV/dec] vs W [m]

$I_{DS} = 0.030e-6$ and Temp = 25 and V_{BS} = 0 and p_la = 0 and devType = "PCELLwoWPE"



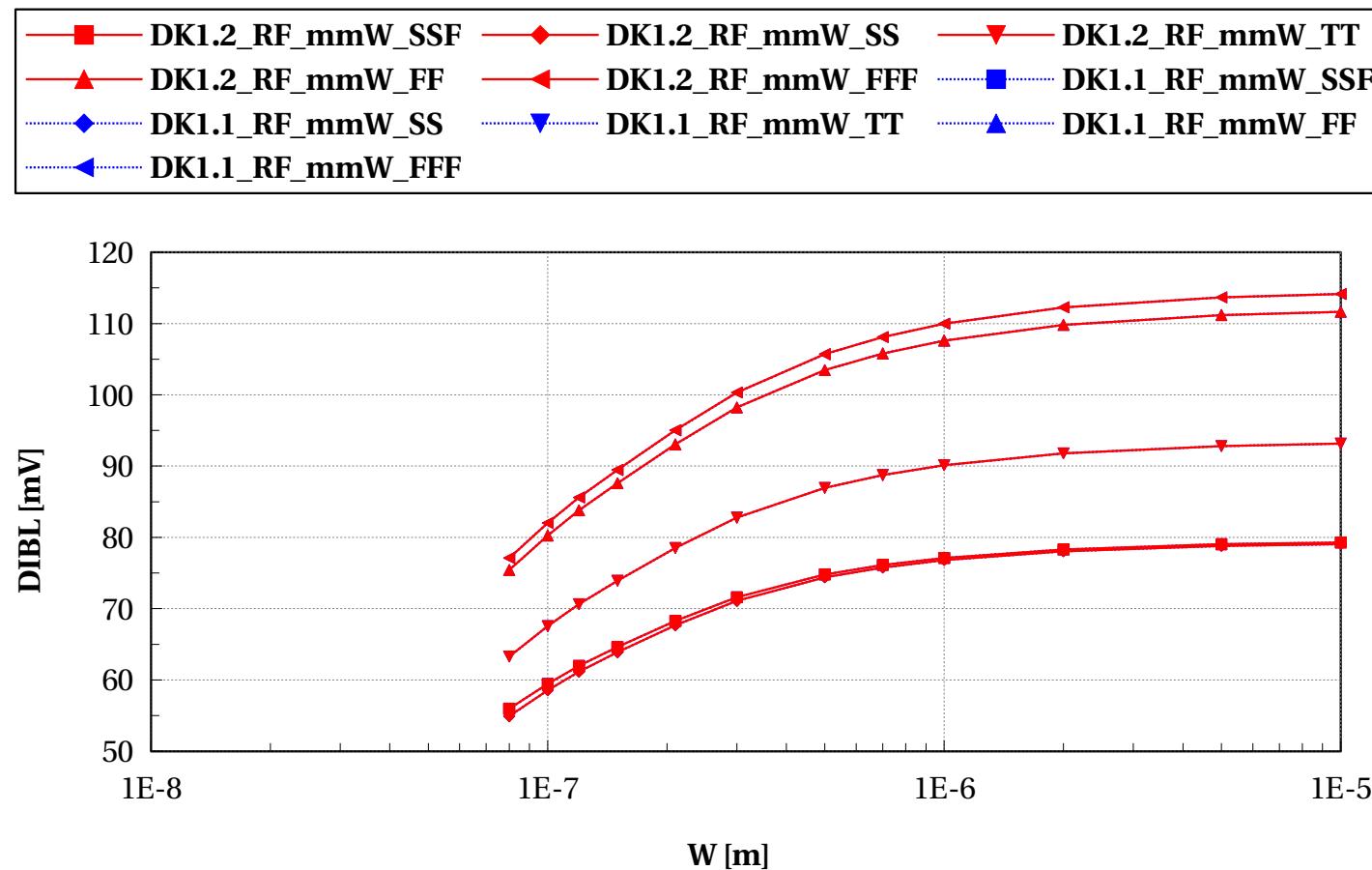
nfet_acc, VtGmmax [mV] vs W [m]

$I_{DS} = 0.030e-6$ and Temp = 25 and Vbs = 0 and p_la = 0 and devType = "PCELLwoWPE"



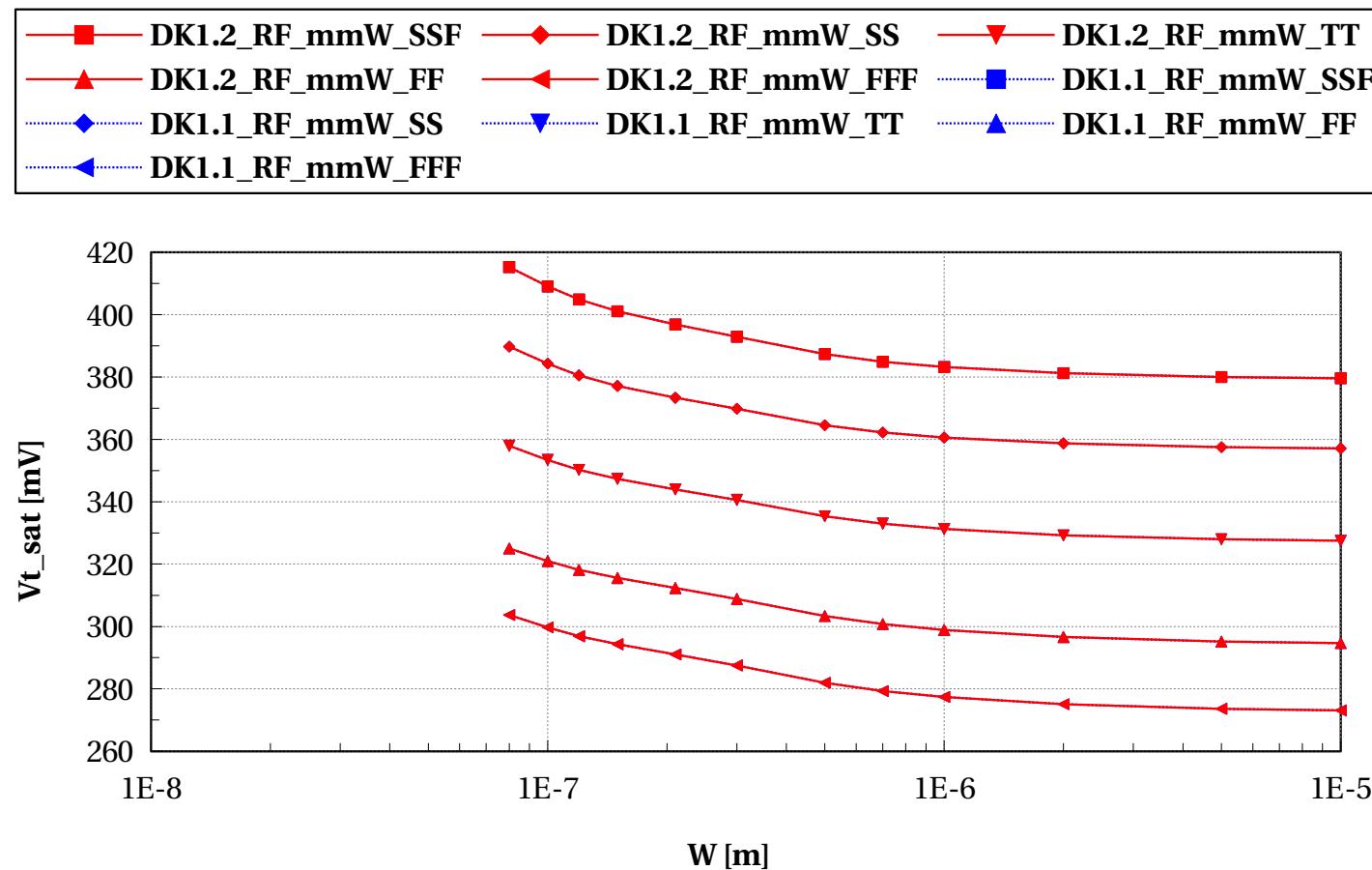
nfet_acc, DIBL [mV] vs W [m]

$I_{DS} = 0.030e-6$ and $Temp = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $devType = "PCELLwoWPE"$



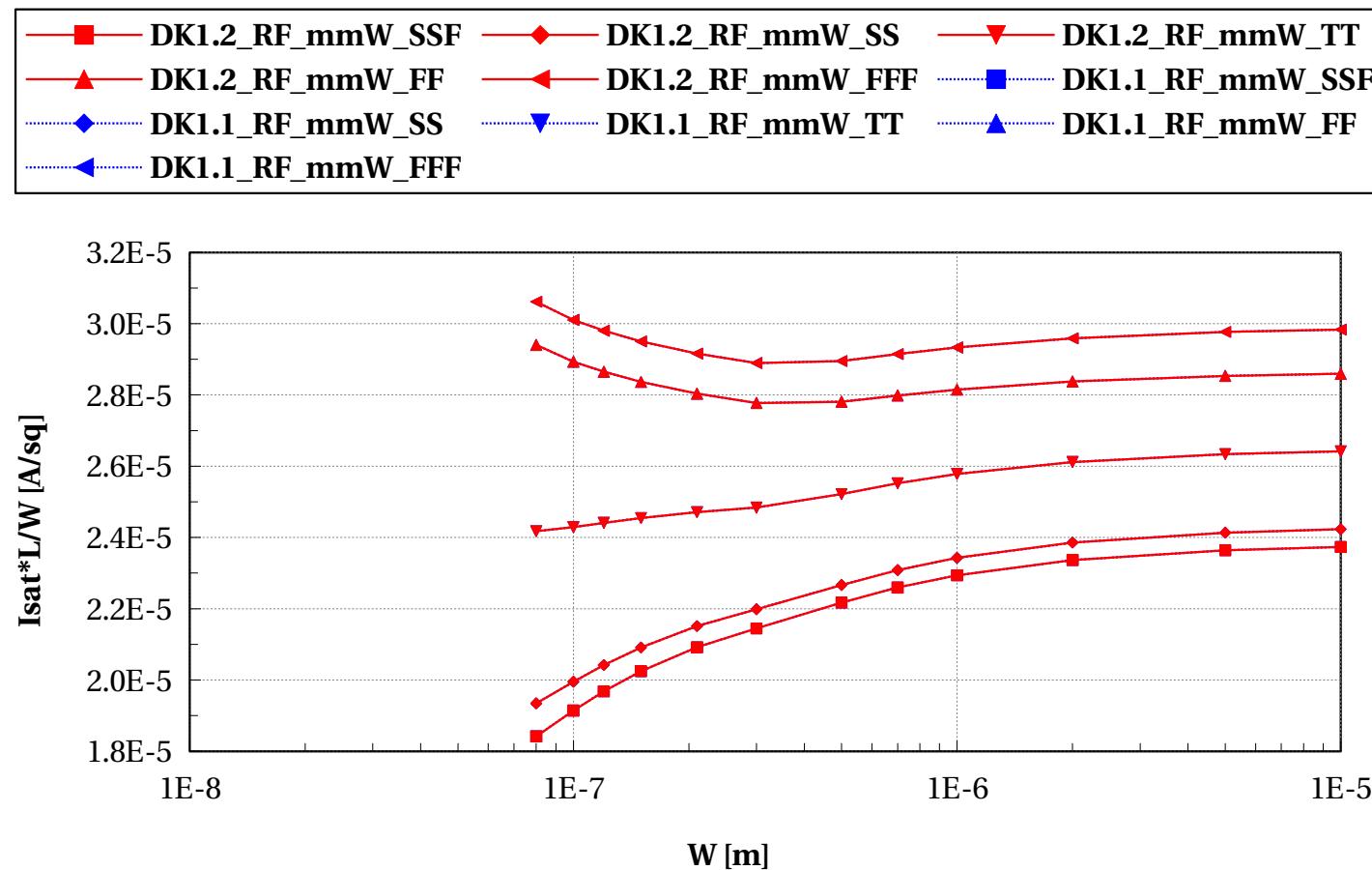
nfet_acc, Vt_sat [mV] vs W [m]

$I_{DSAT} = 0.030e-6$ and Temp = 25 and Vbs = 0 and p_la = 0 and devType = "PCELLwoWPE"



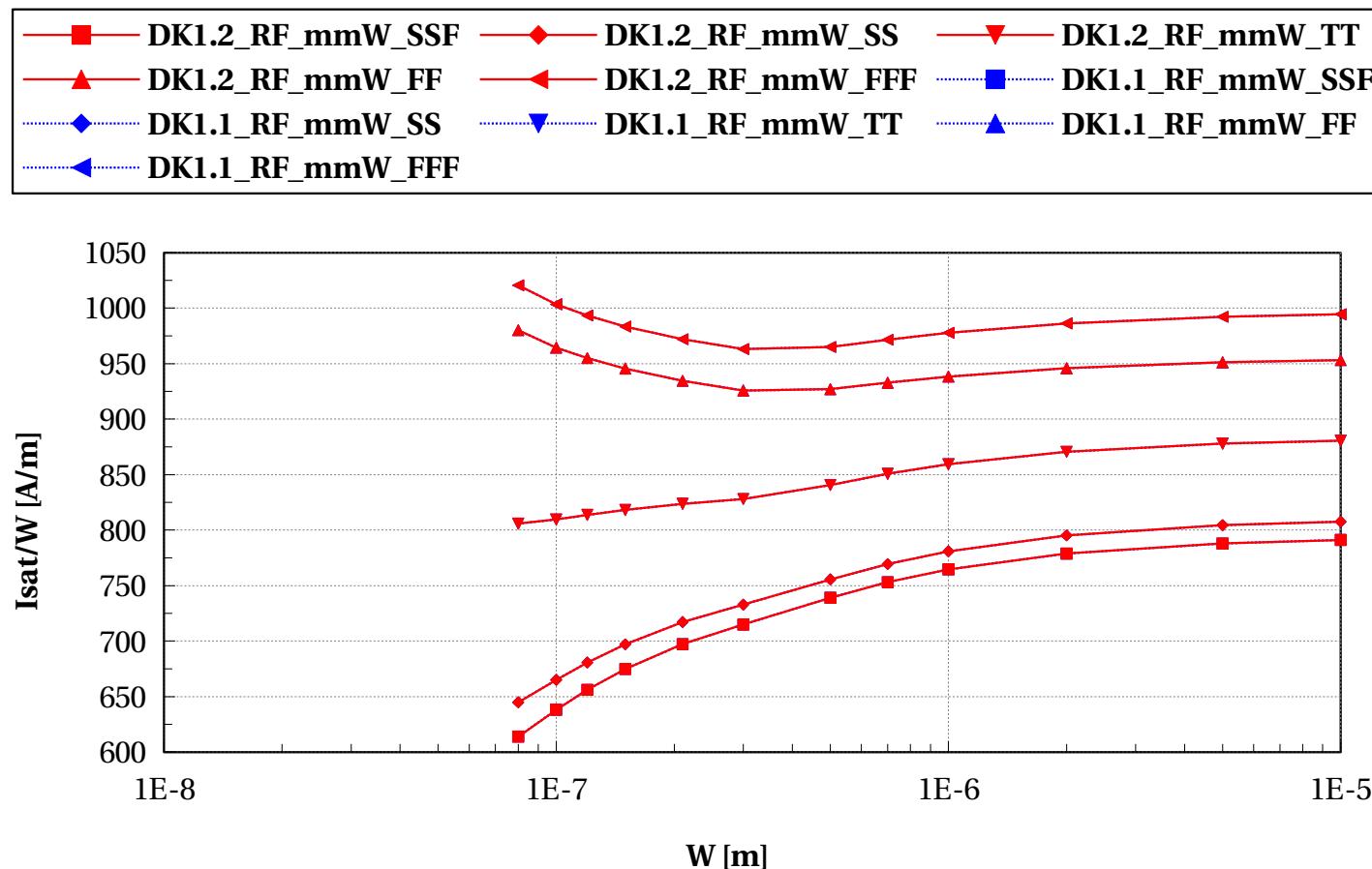
nfet_acc, $I_{sat} \cdot L/W$ [A/sq] vs W [m]

$I=0.030e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_{la}=0$ and $devType="PCELLwoWPE"$



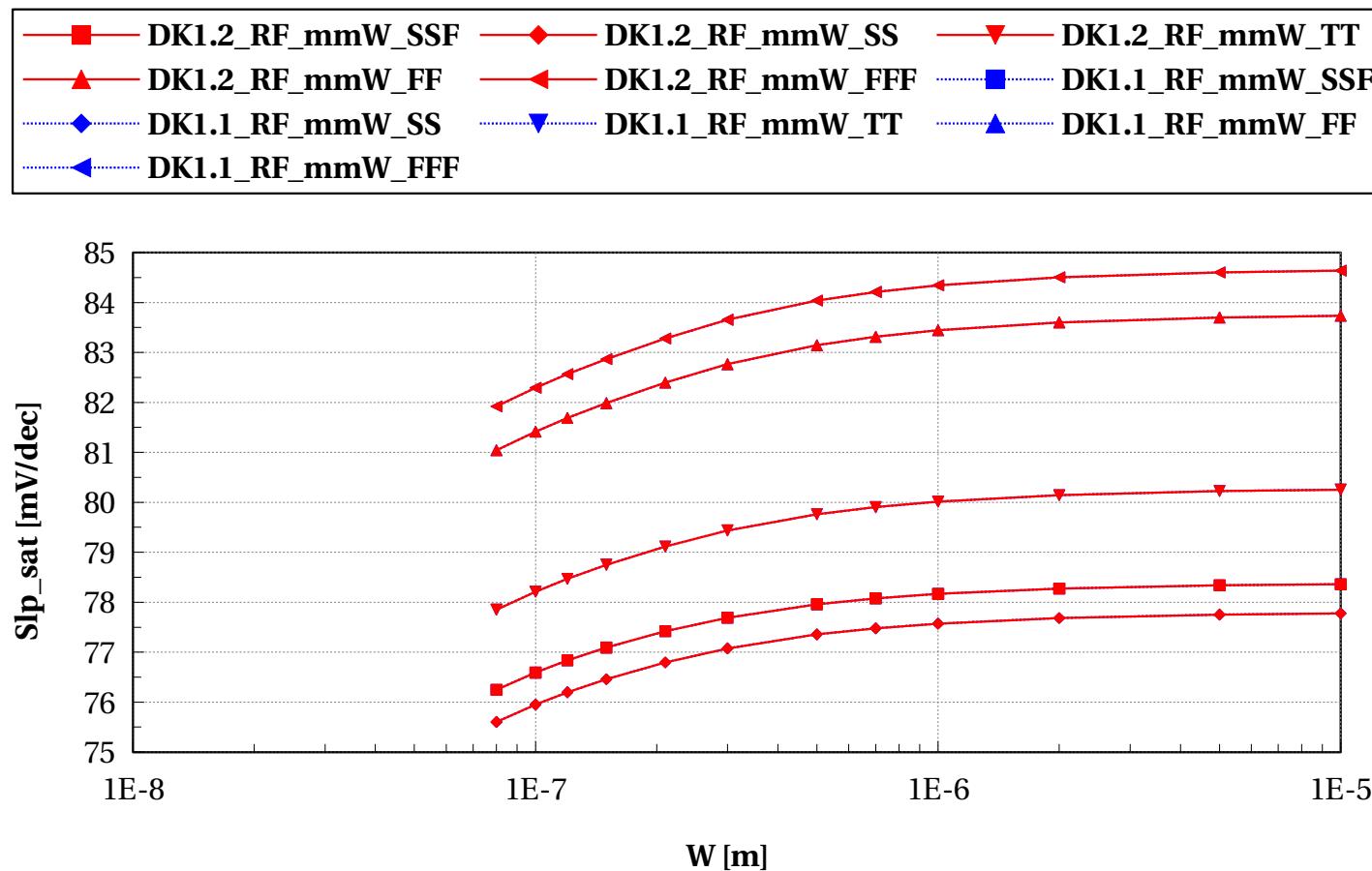
nfet_acc, Isat/W [A/m] vs W [m]

$I==0.030e-6$ and $\text{Temp}==25$ and $V_{bs}==0$ and $p_{la}==0$ and $\text{devType}=="\text{PCELLwoWPE}"$



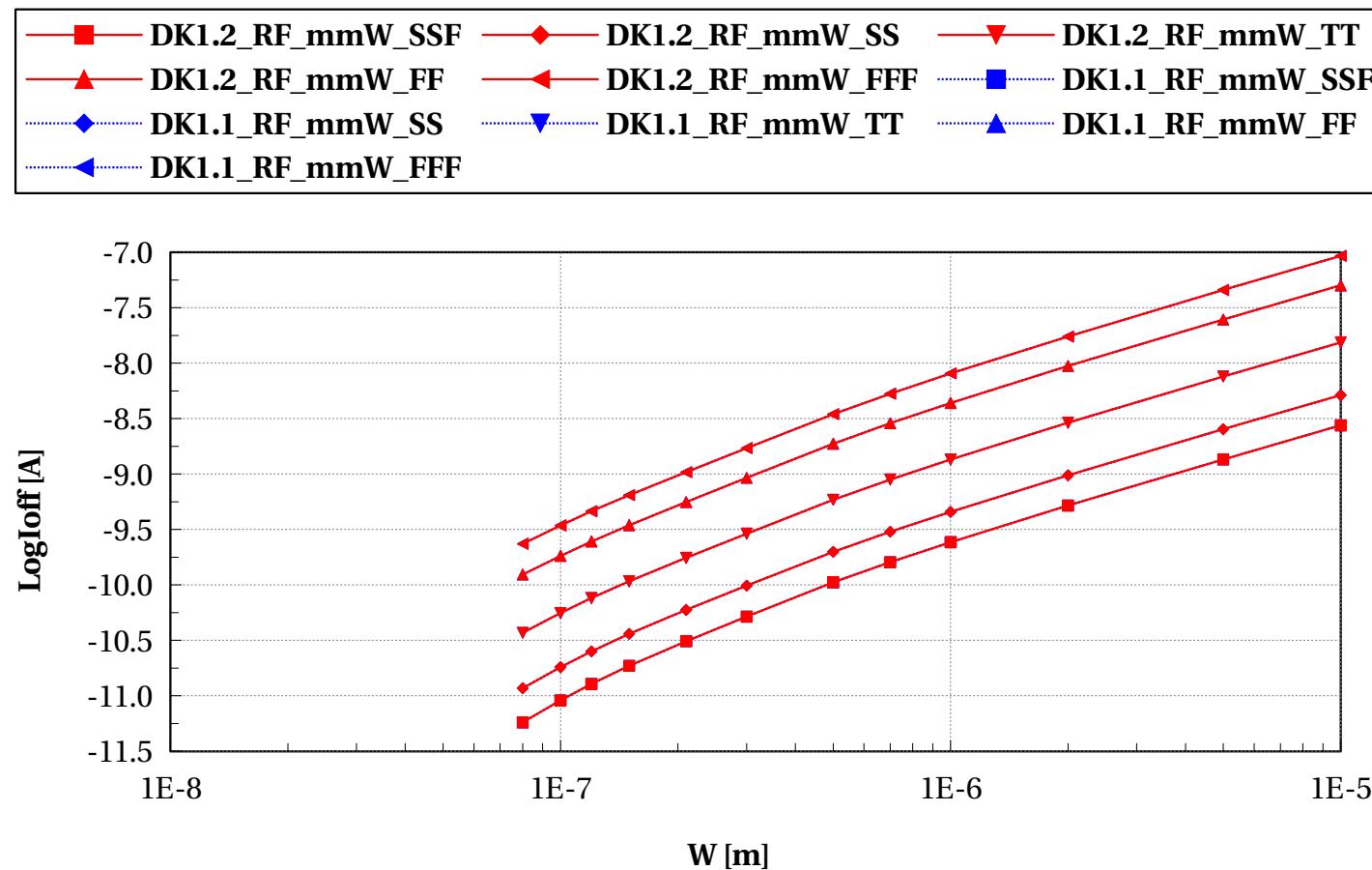
nfet_acc, Slp_sat [mV/dec] vs W [m]

$I_{DSAT} = 0.030e-6$ and Temp = 25 and V_{BS} = 0 and p_la = 0 and devType = "PCELLwoWPE"



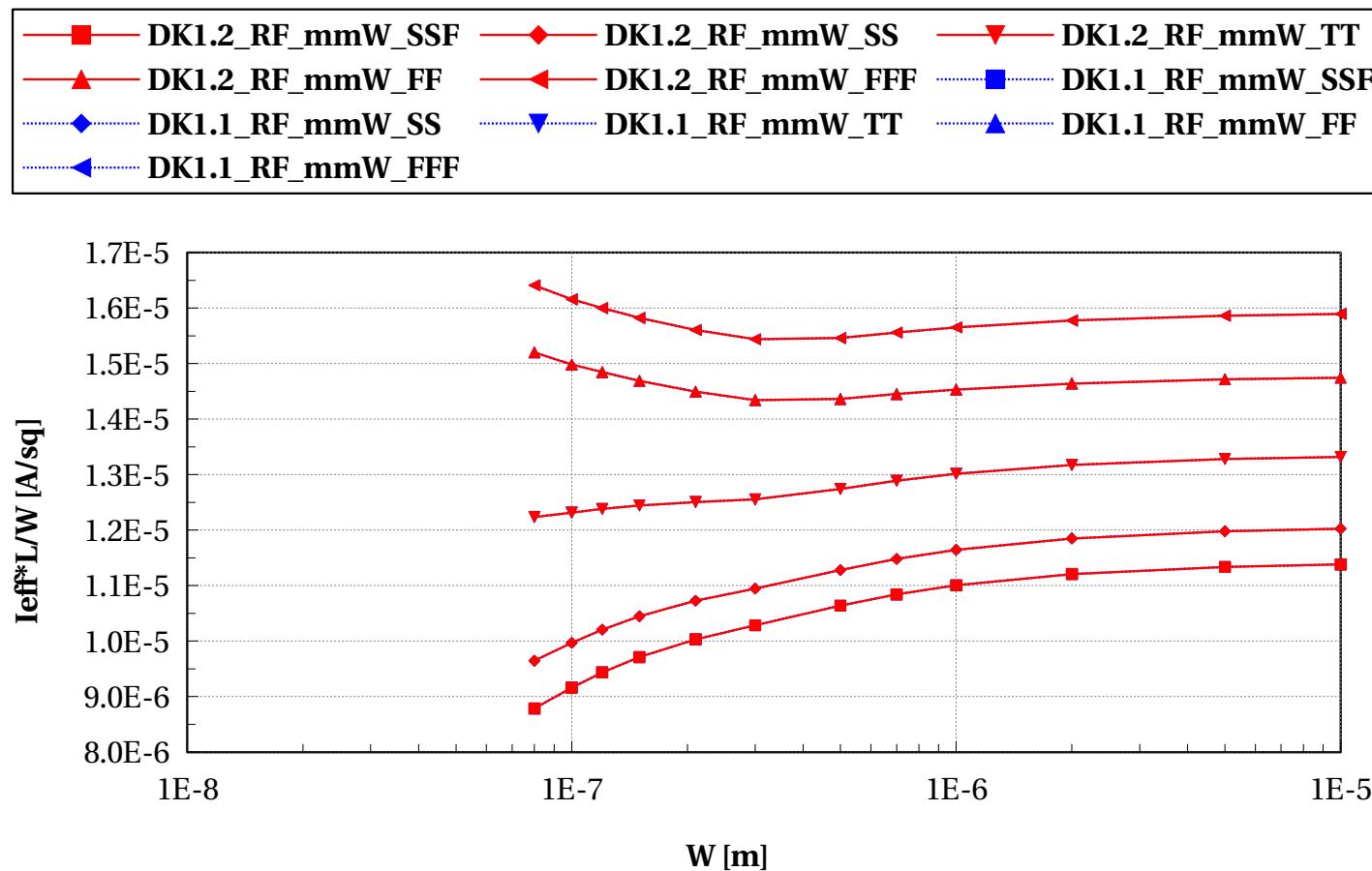
nfet_acc, LogIoff [A] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



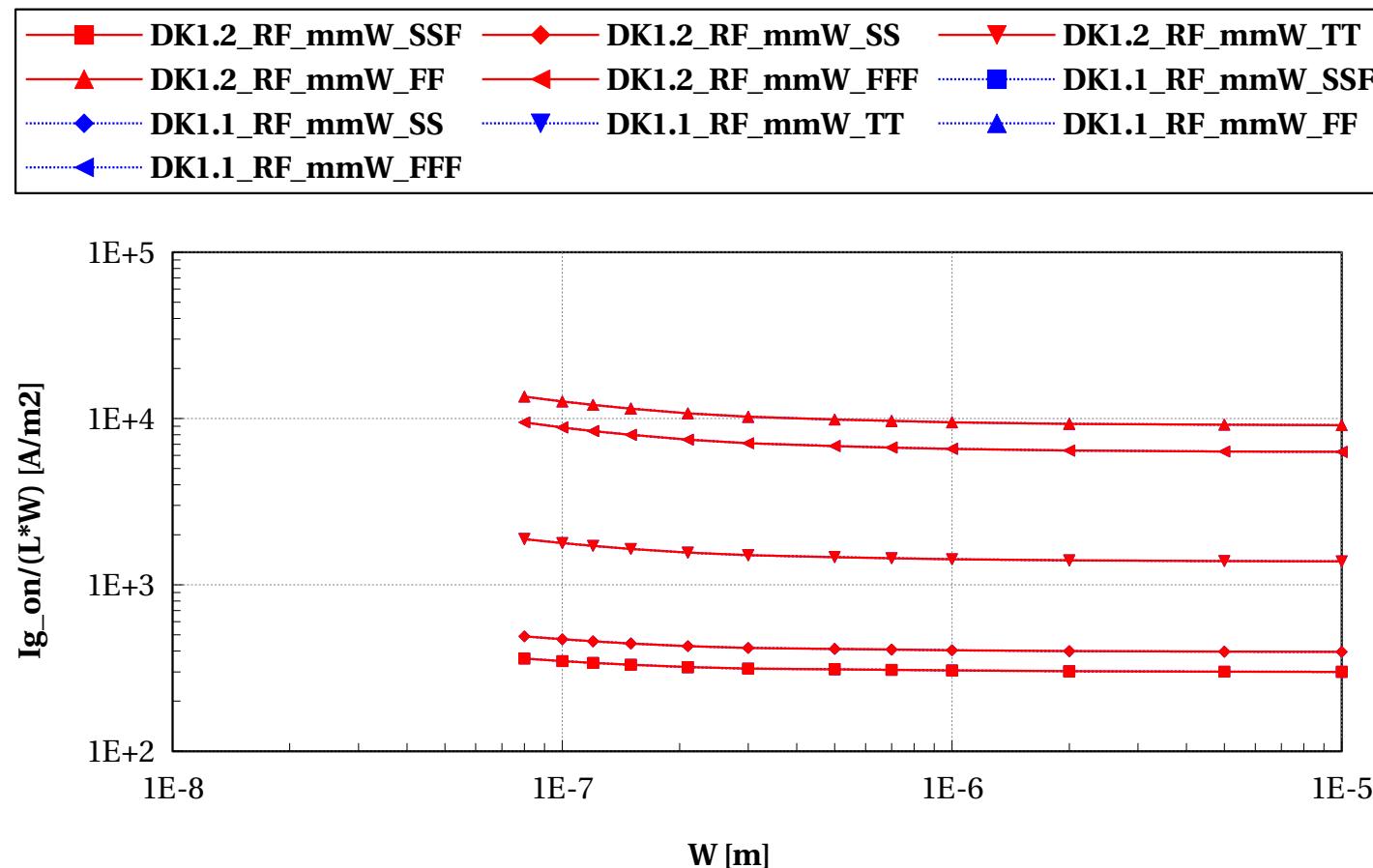
nfet_acc, $I_{eff} \cdot L/W$ [A/sq] vs W [m]

$I=0.030e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_{la}=0$ and $devType="PCELLwoWPE"$



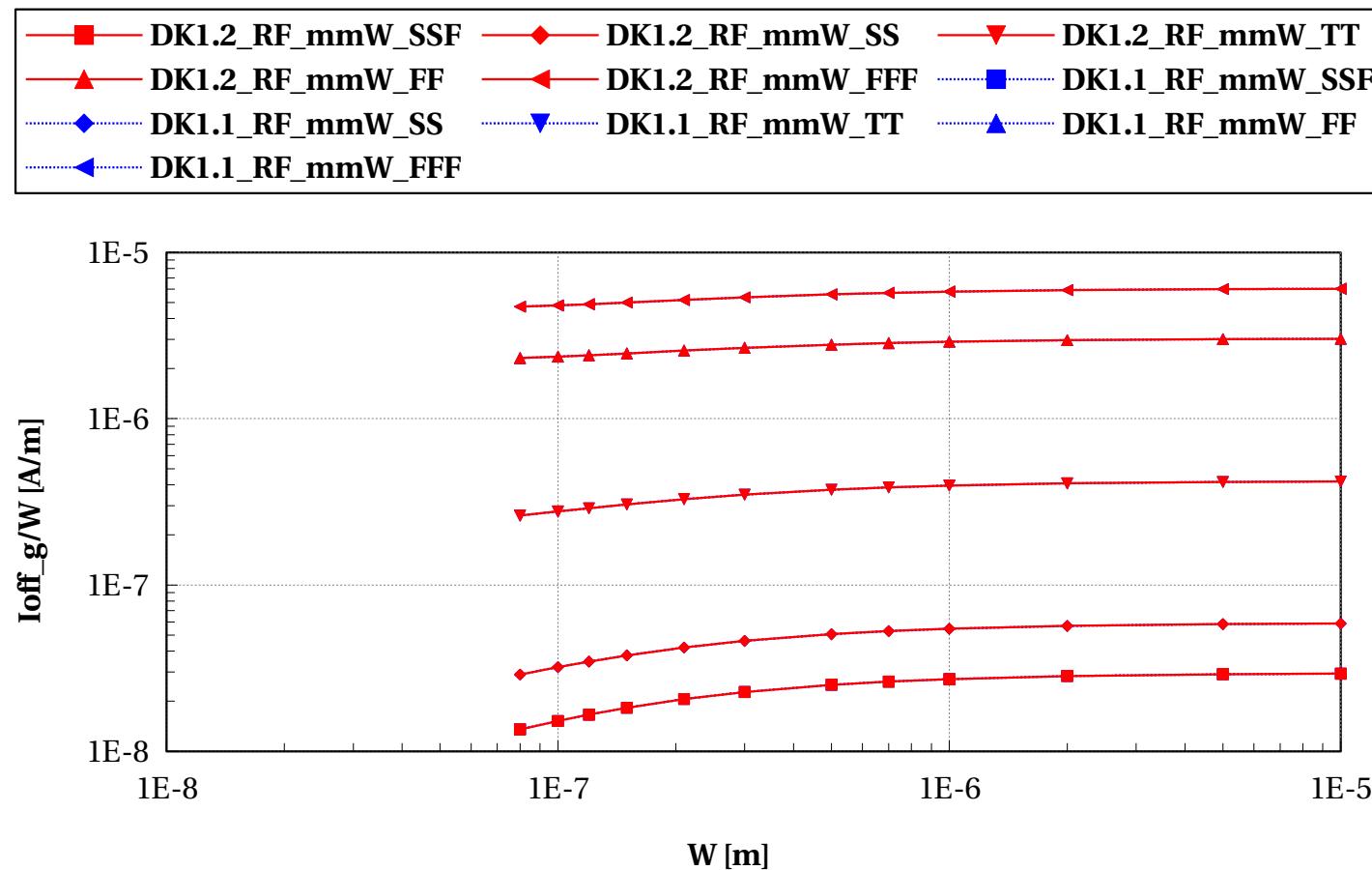
nfet_acc, Ig_on/(L*W) [A/m2] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



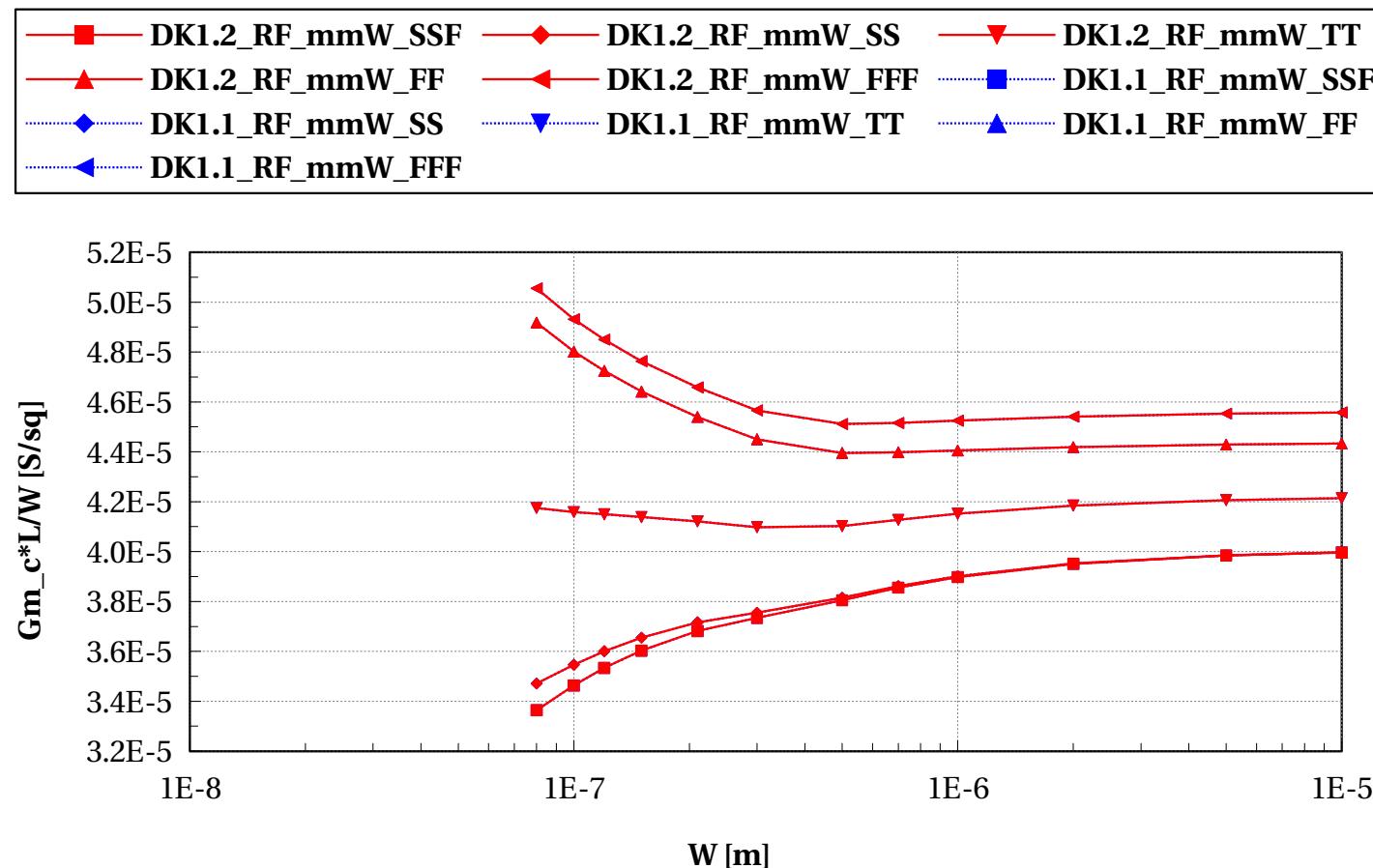
nfet_acc, Ioff_g/W [A/m] vs W [m]

$I_{off} = 0.030e-6$ and Temp = 25 and Vbs = 0 and p_la = 0 and devType = "PCELLwoWPE"



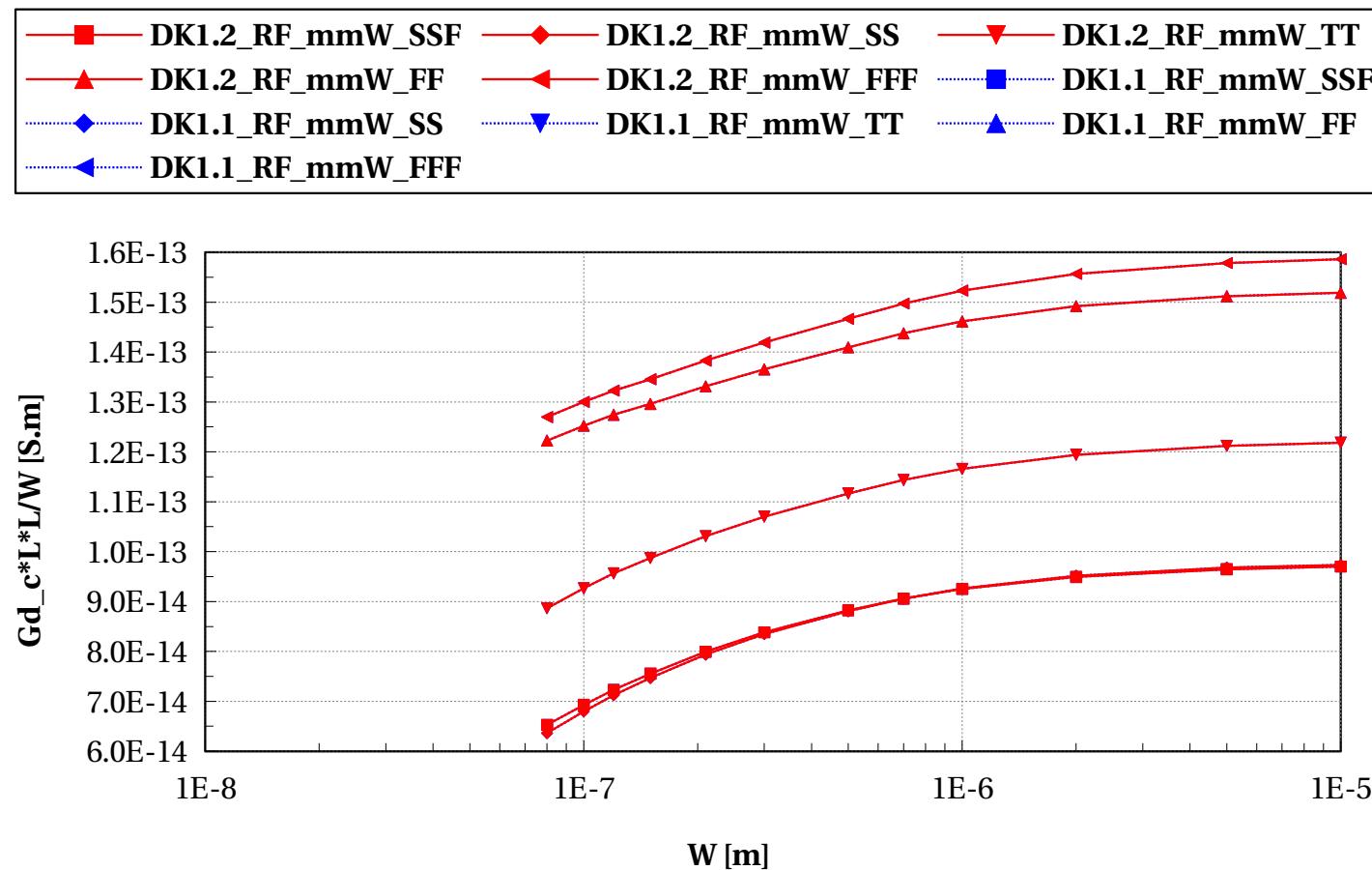
nfet_acc, Gm_c*L/W [S/sq] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



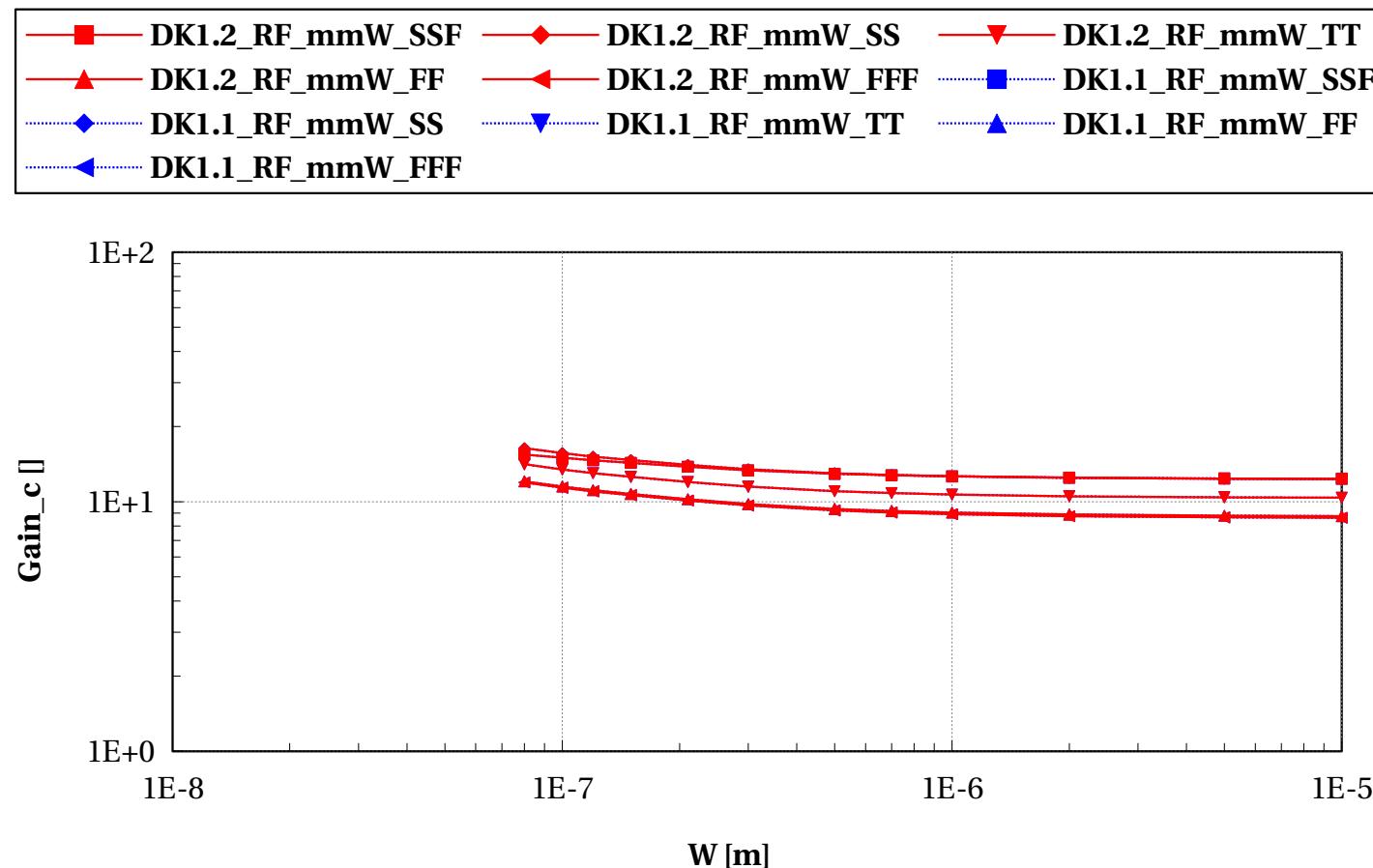
nfet_acc, Gd_c*L*L/W [S.m] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



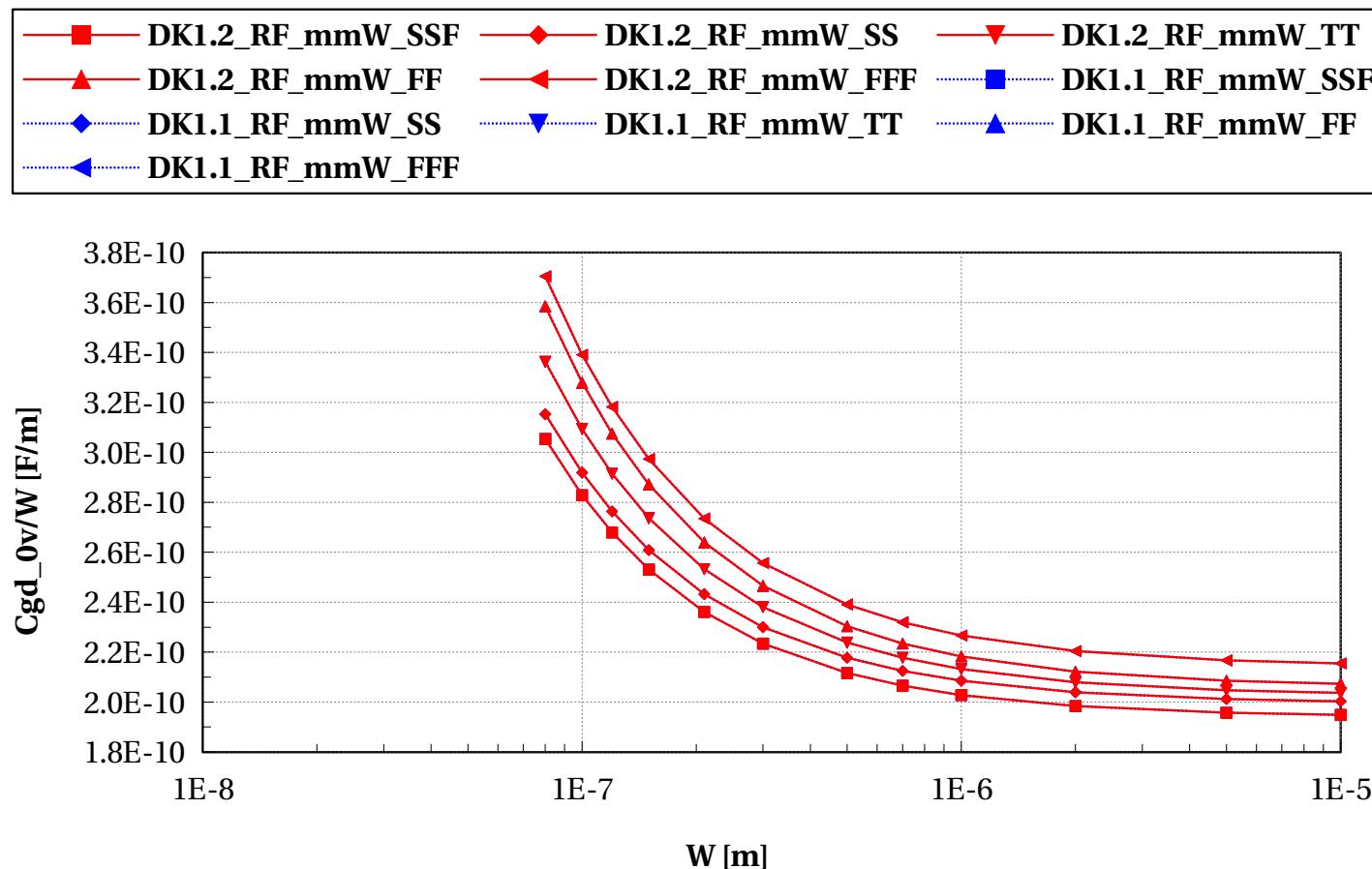
nfet_acc, Gain_c [] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



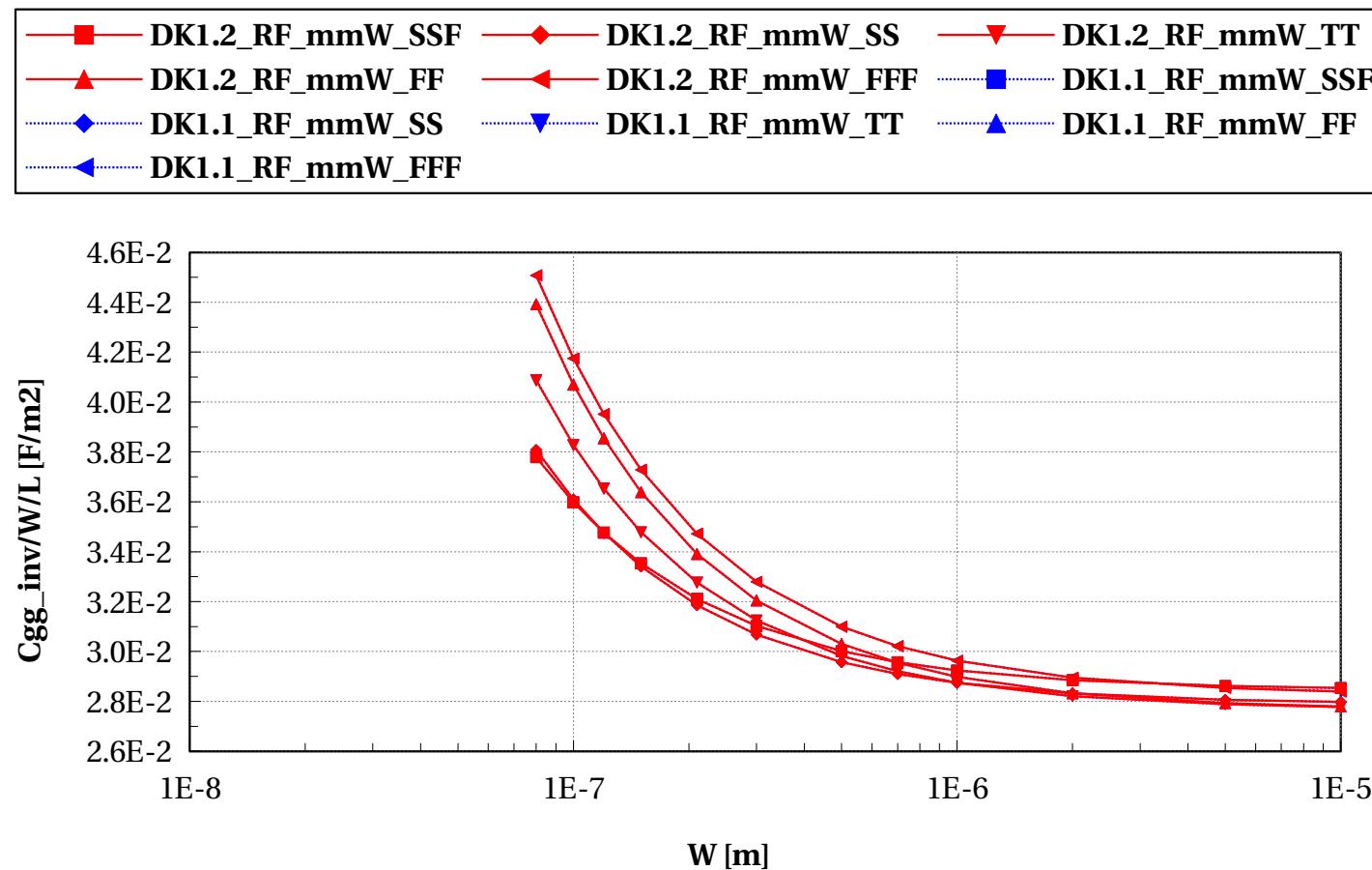
nfet_acc, Cgd_0v/W [F/m] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



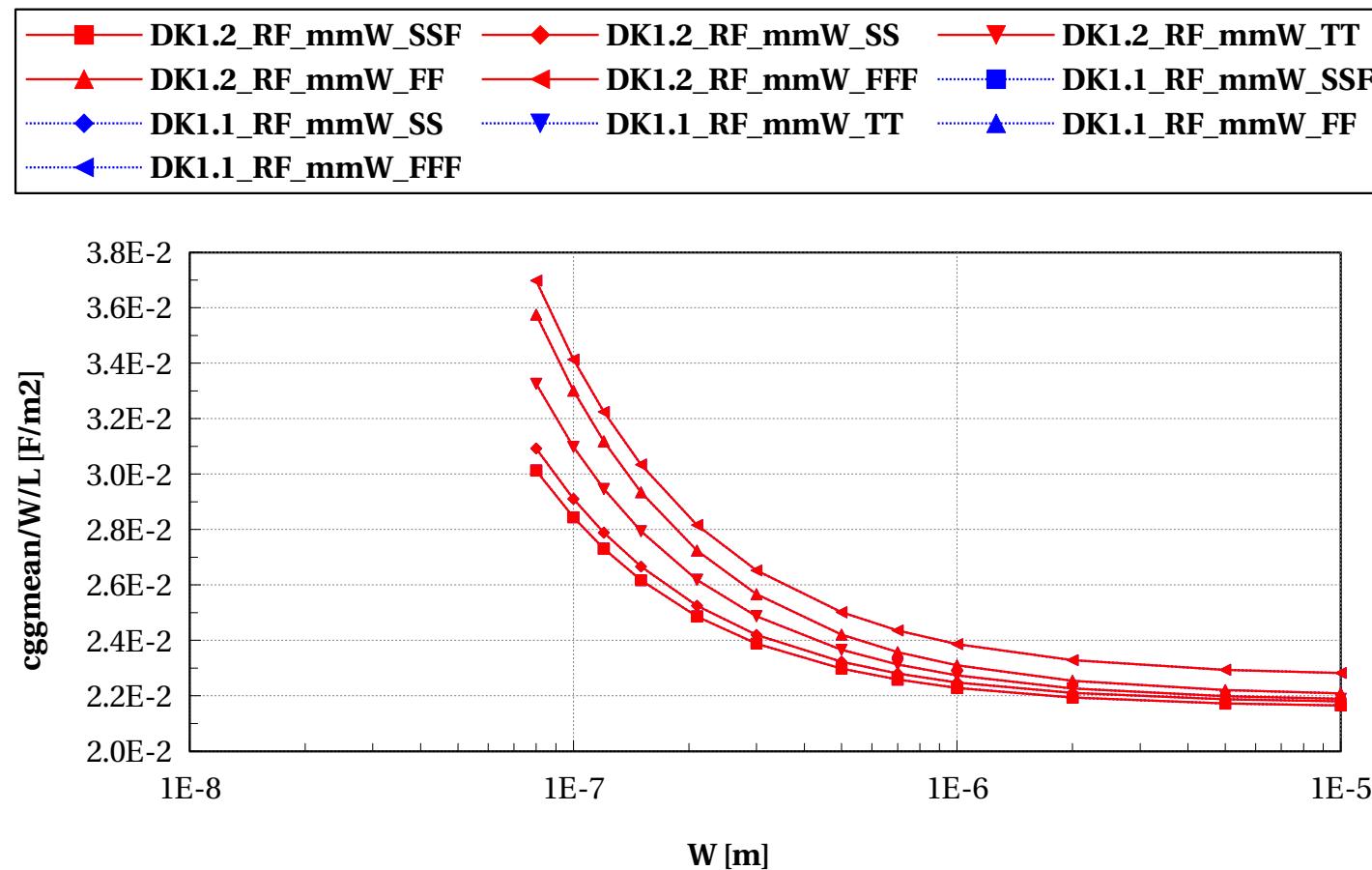
nfet_acc, Cgg_inv/W/L [F/m²] vs W [m]

$I_{DS} = 0.030e-6$ and $Temp = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $devType = "PCELLwoWPE"$



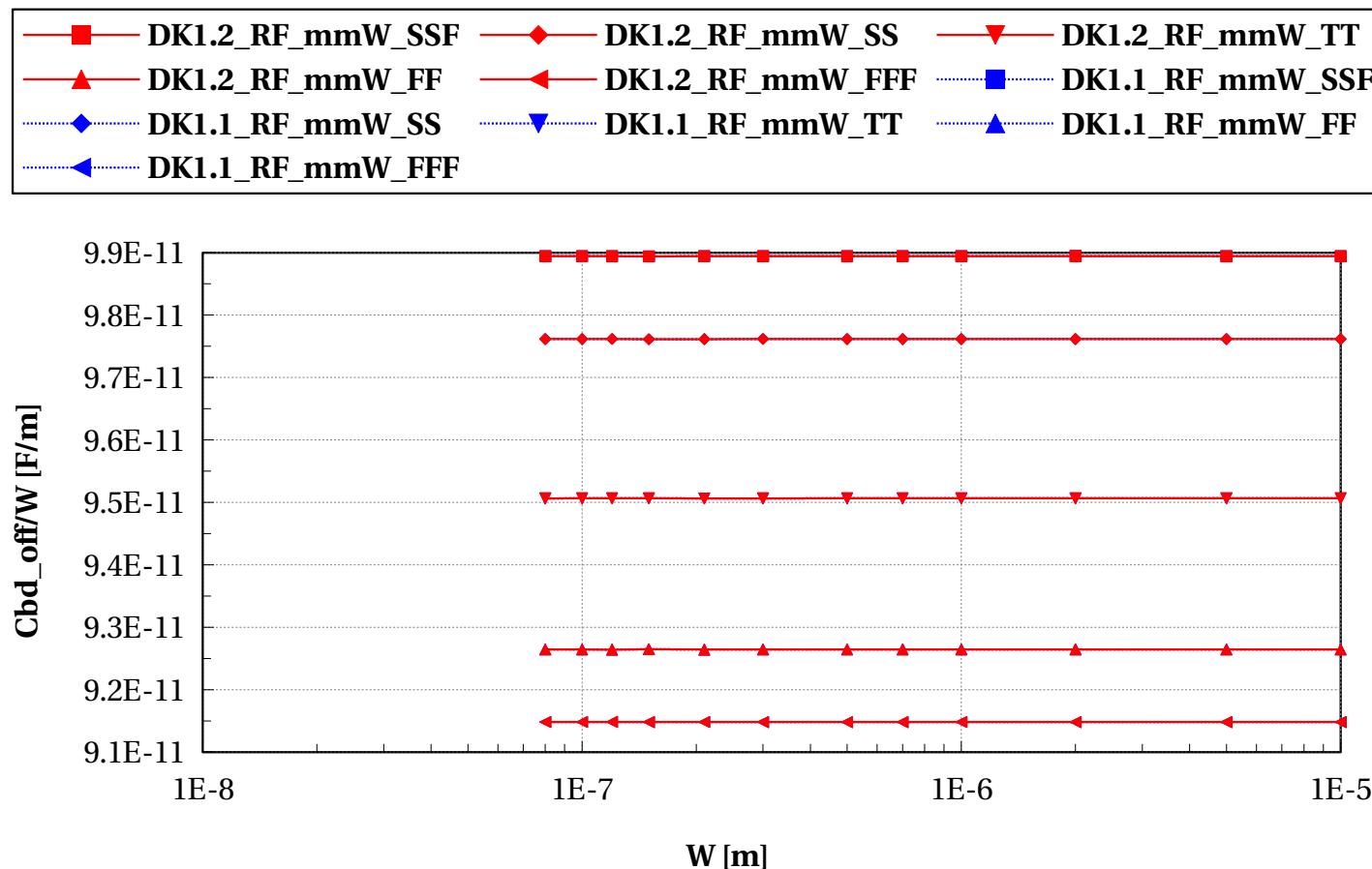
nfet_acc, cggmean/W/L [F/m²] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



nfet_acc, Cbd_off/W [F/m] vs W [m]

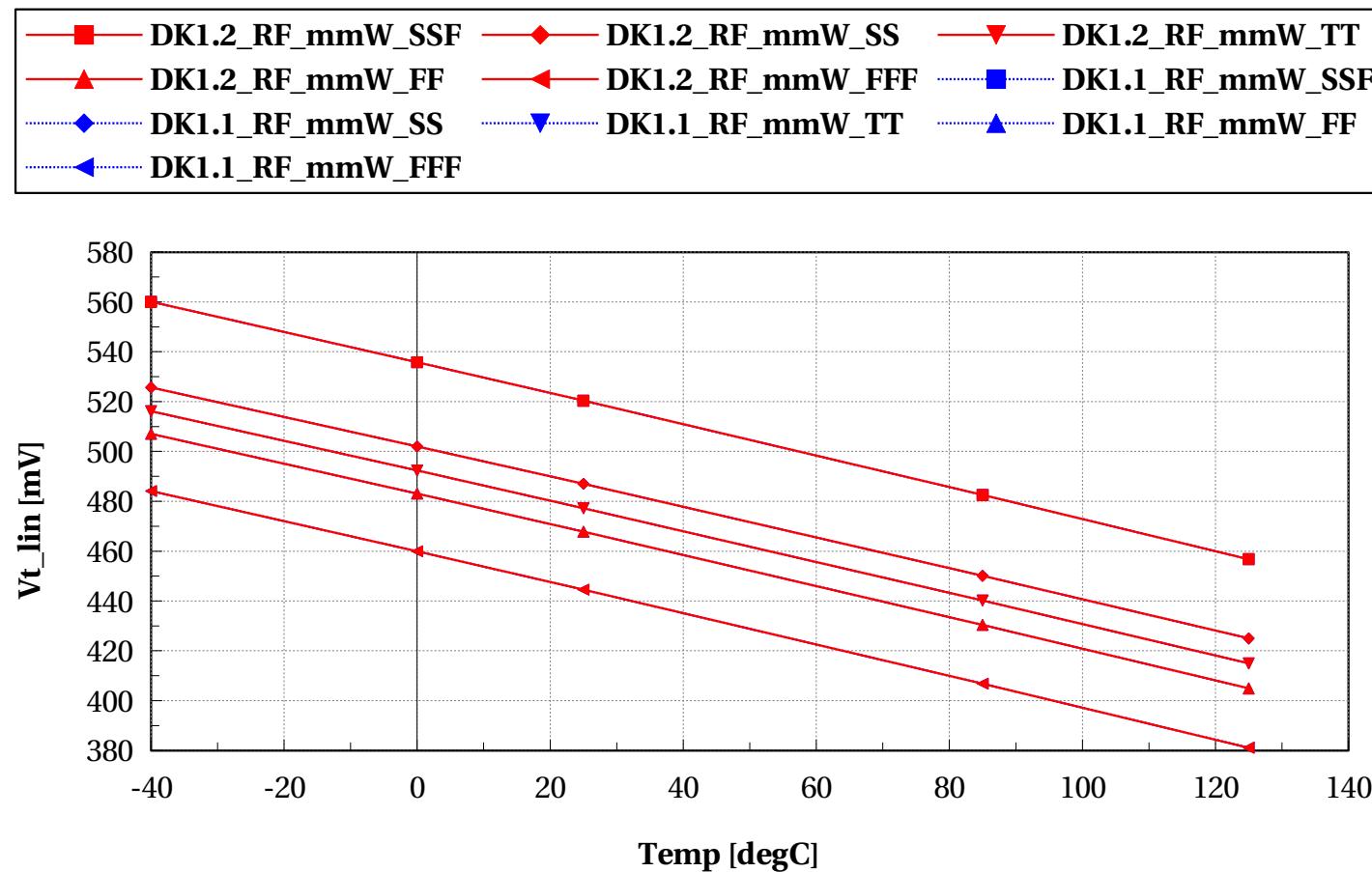
$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



Scaling versus Temp (L=1um,W=1um)

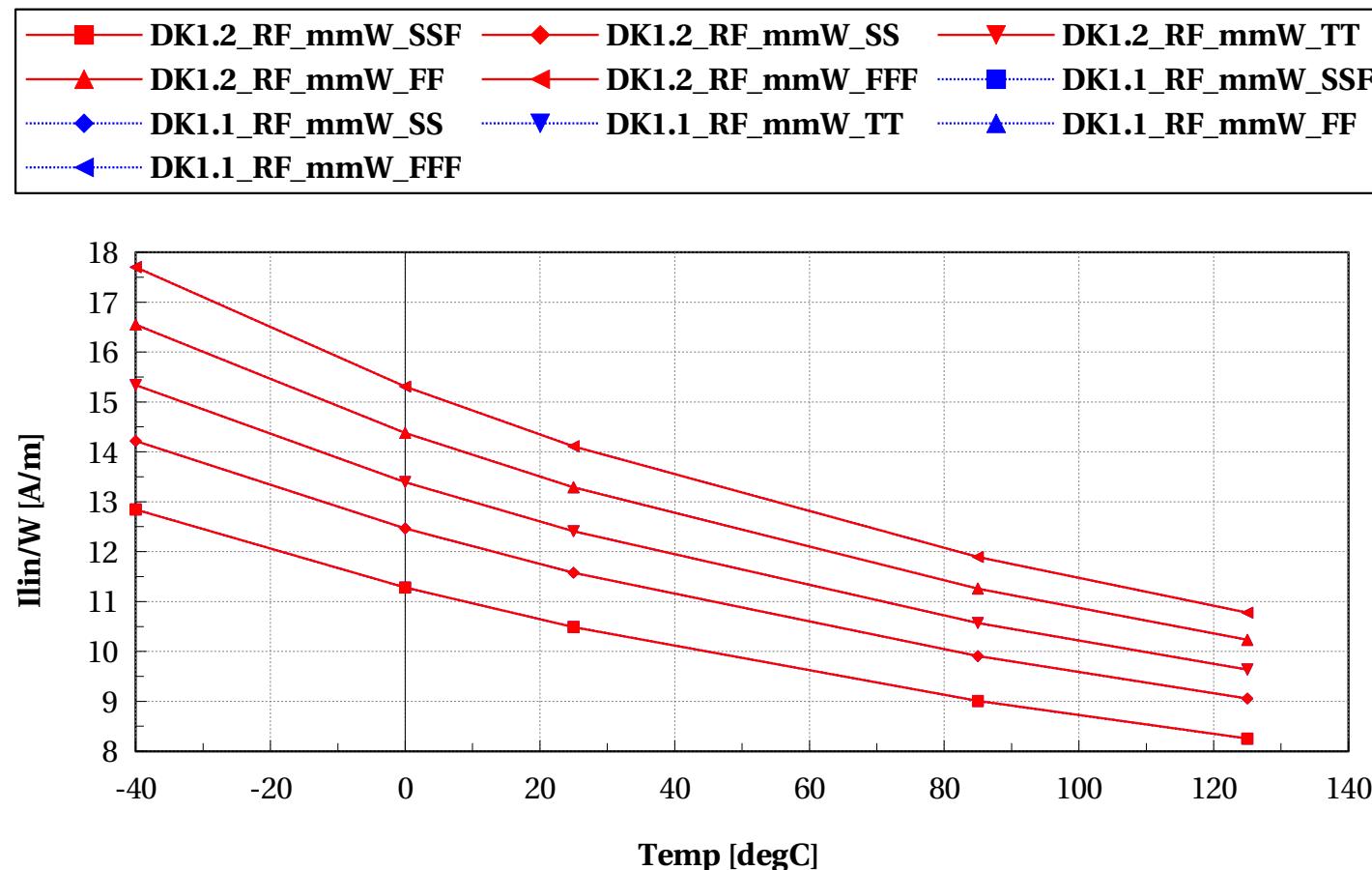
nfet_acc, Vt_lin [mV] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



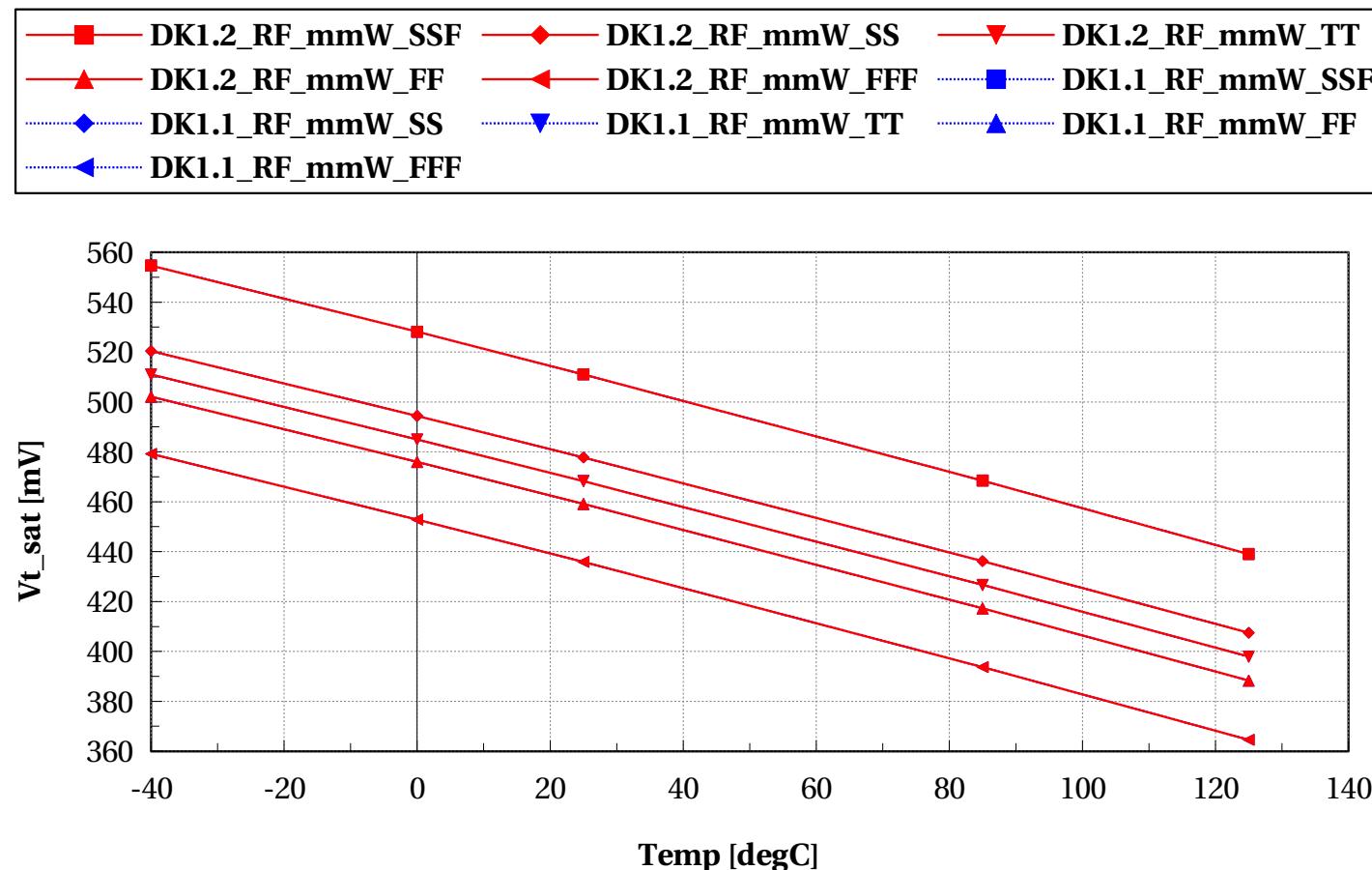
nfet_acc, Ilin/W [A/m] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



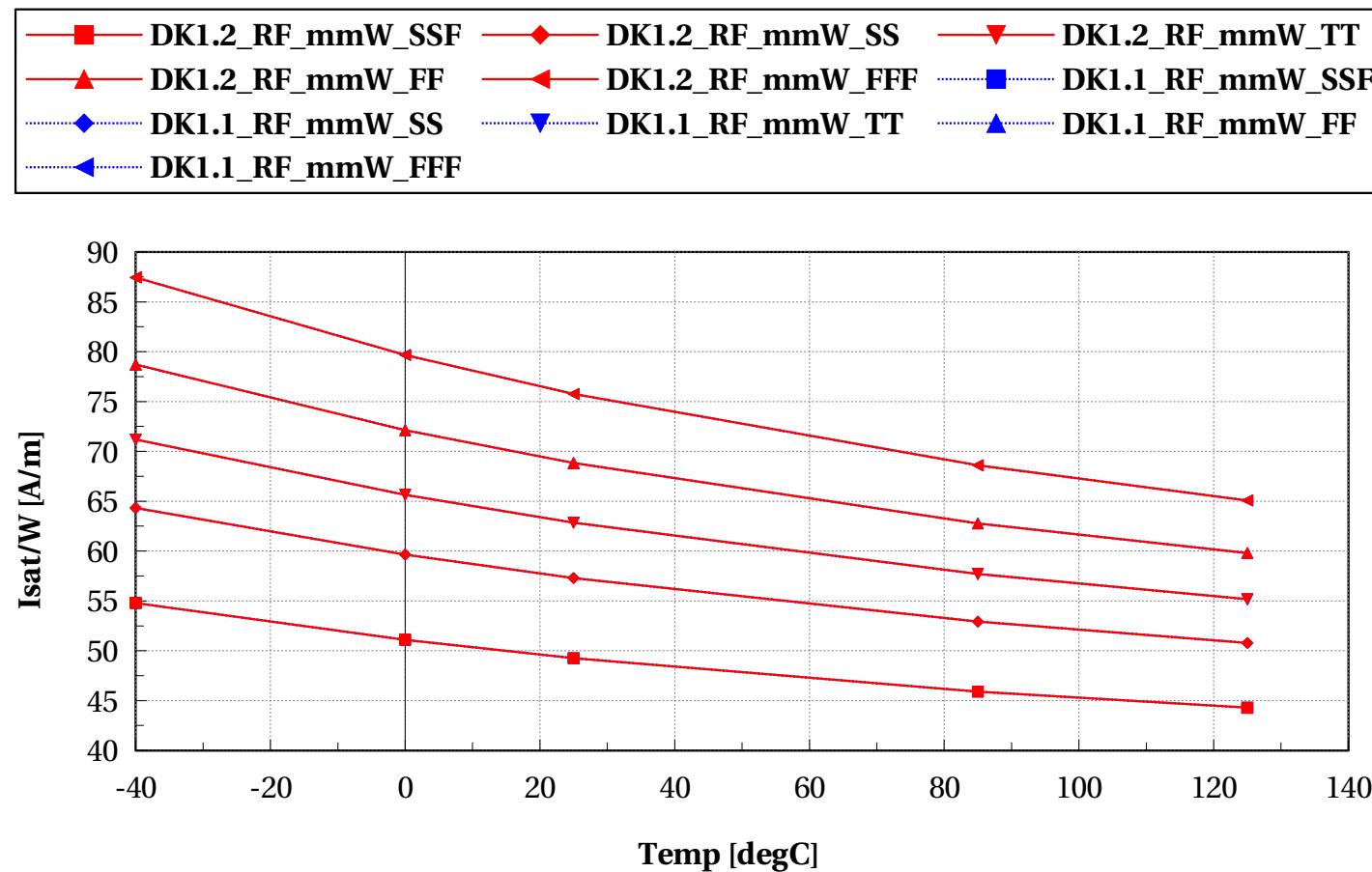
nfet_acc, Vt_sat [mV] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



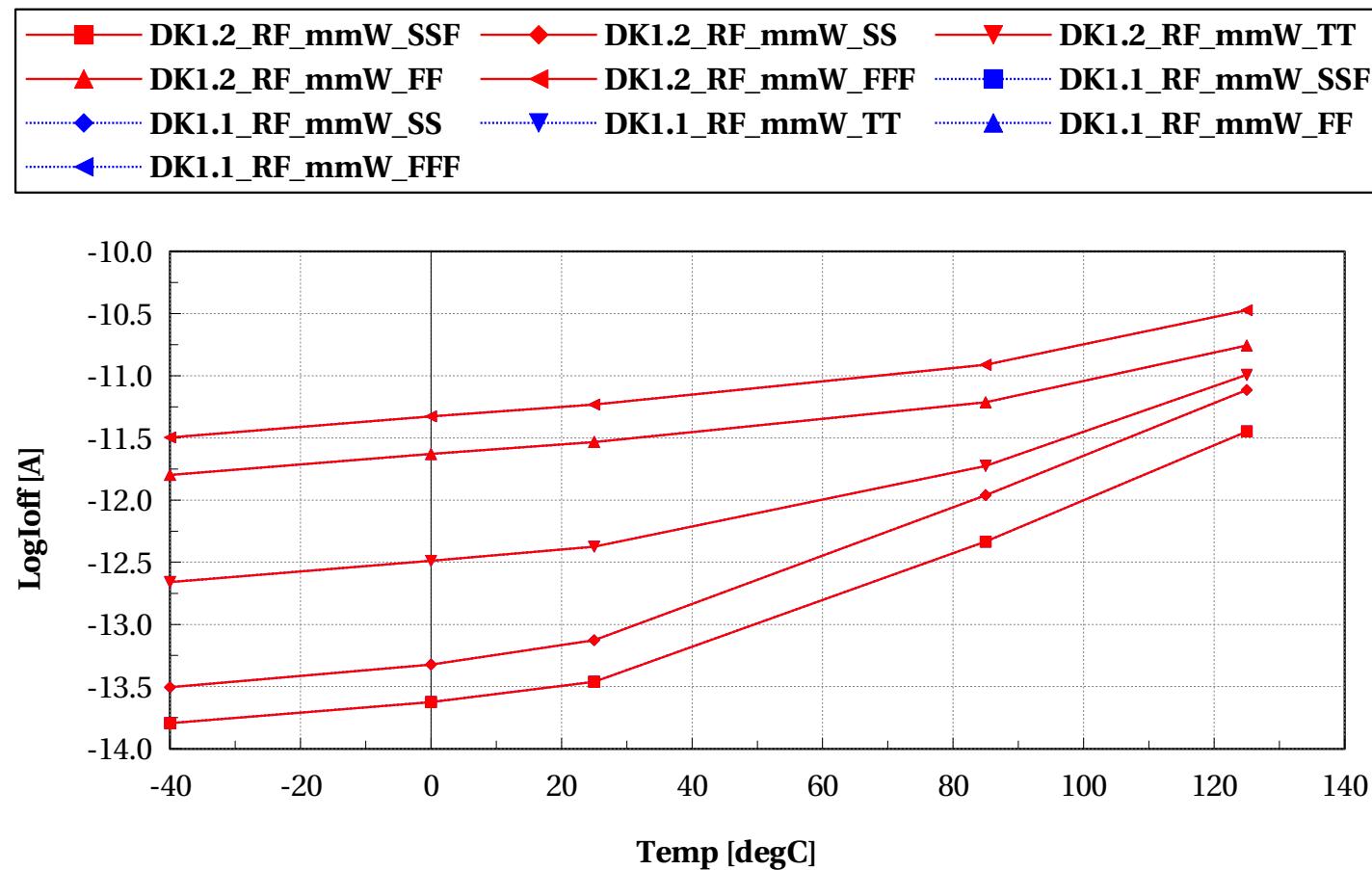
nfet_acc, Isat/W [A/m] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



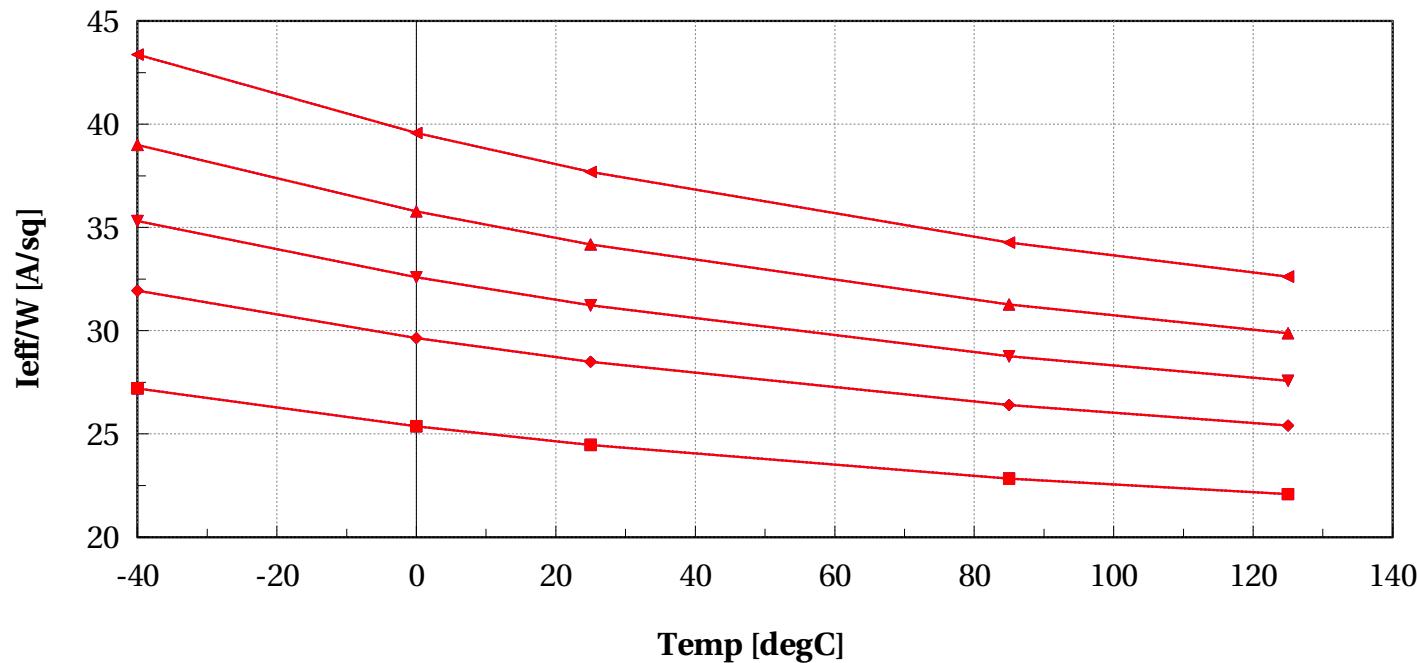
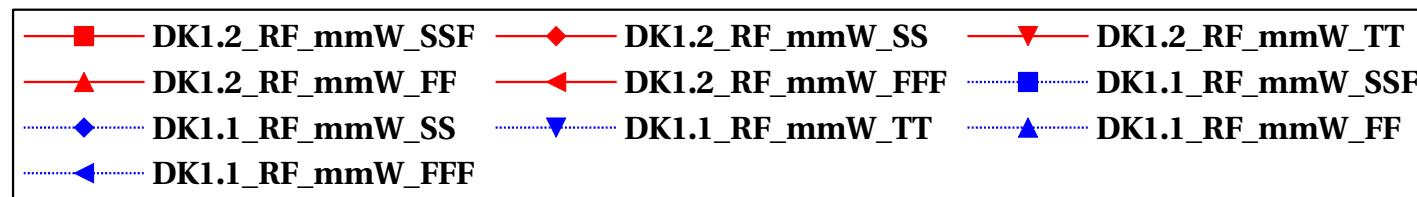
nfet_acc, LogIoff [A] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



nfet_acc, Ieff/W [A/sq] vs Temp [degC]

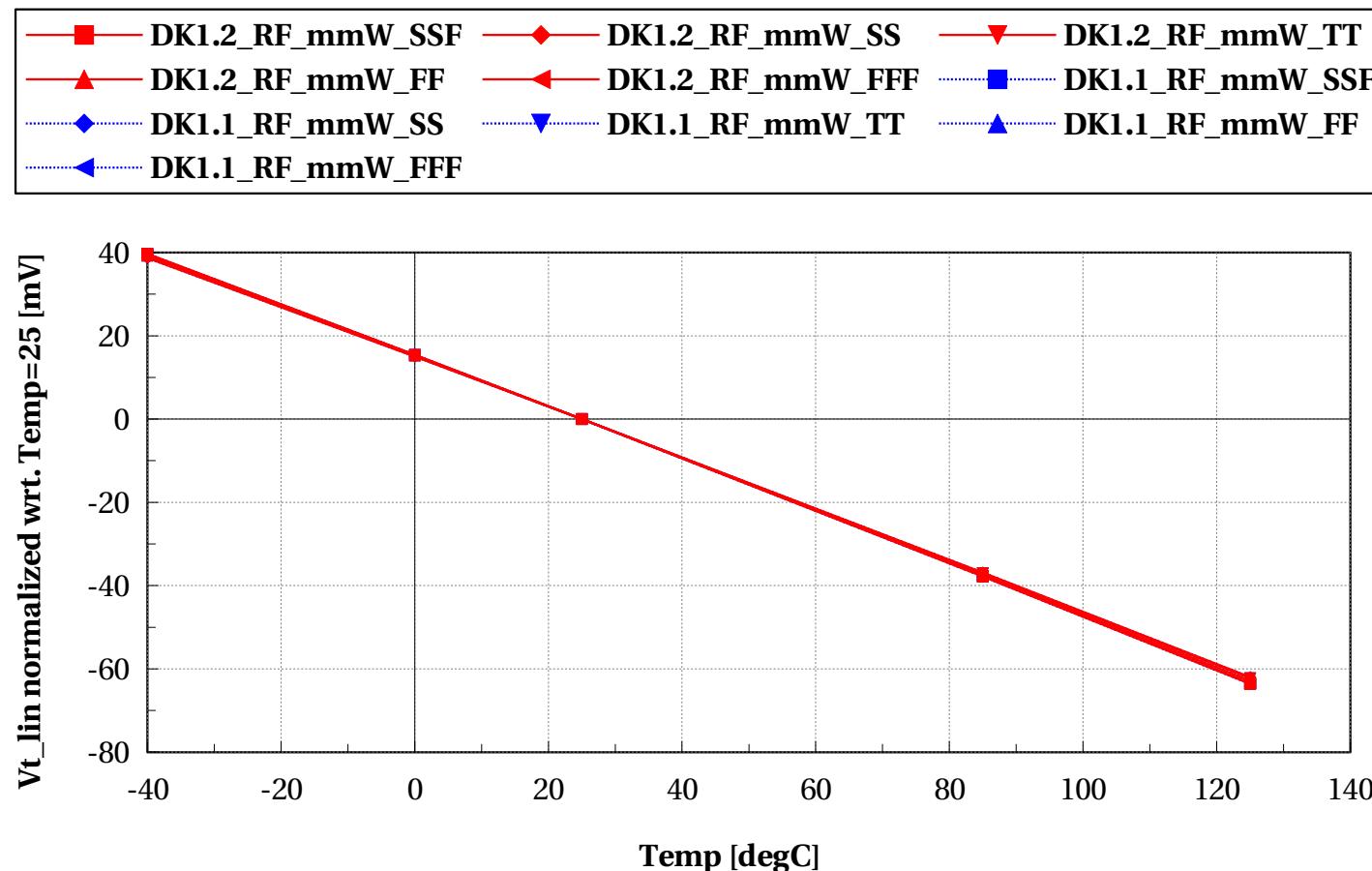
w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Scaling versus Temp normalized (L=1um,W=1um)

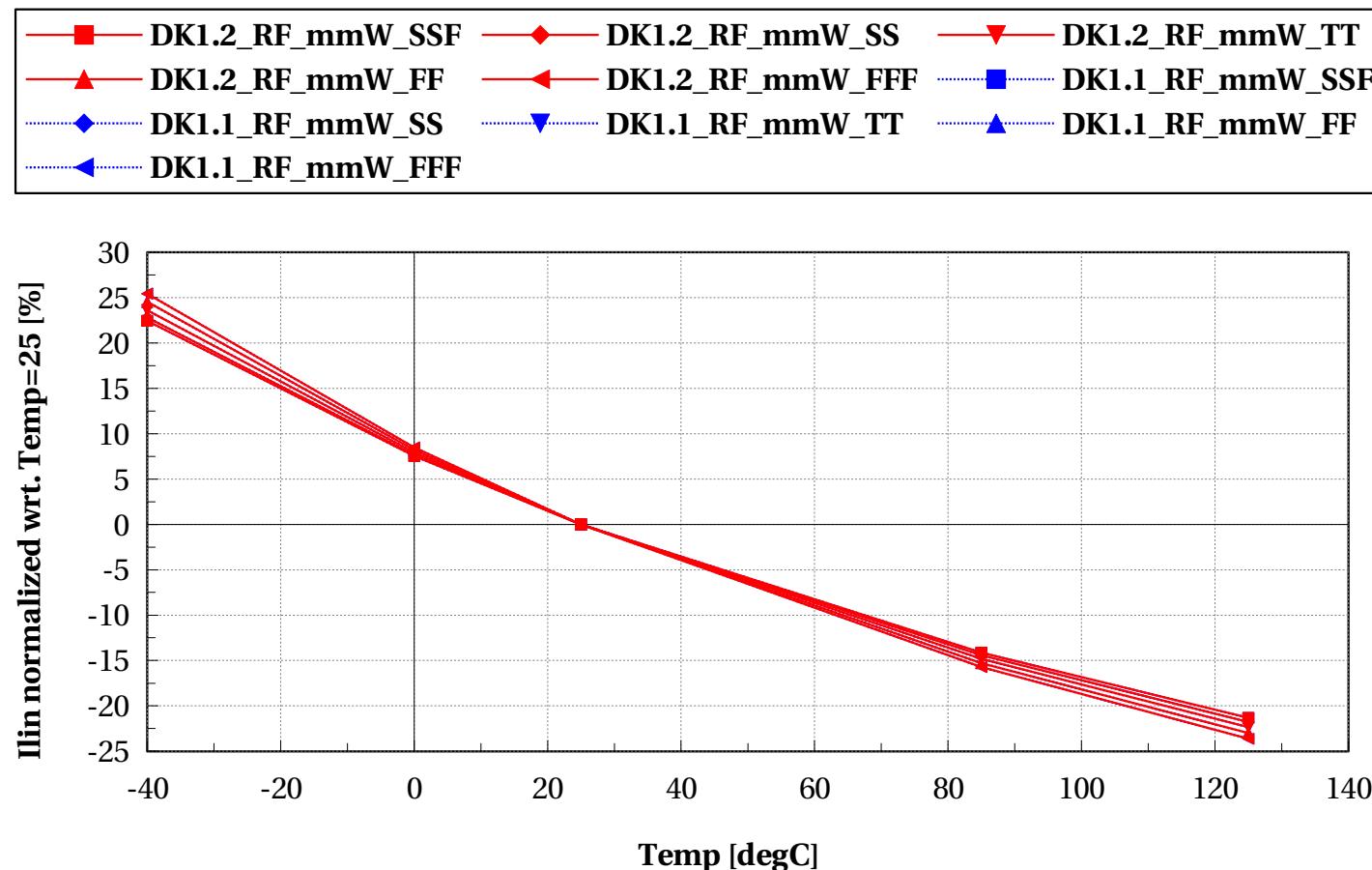
nfet_acc, Vt_lin normalized wrt. Temp=25 [mV] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



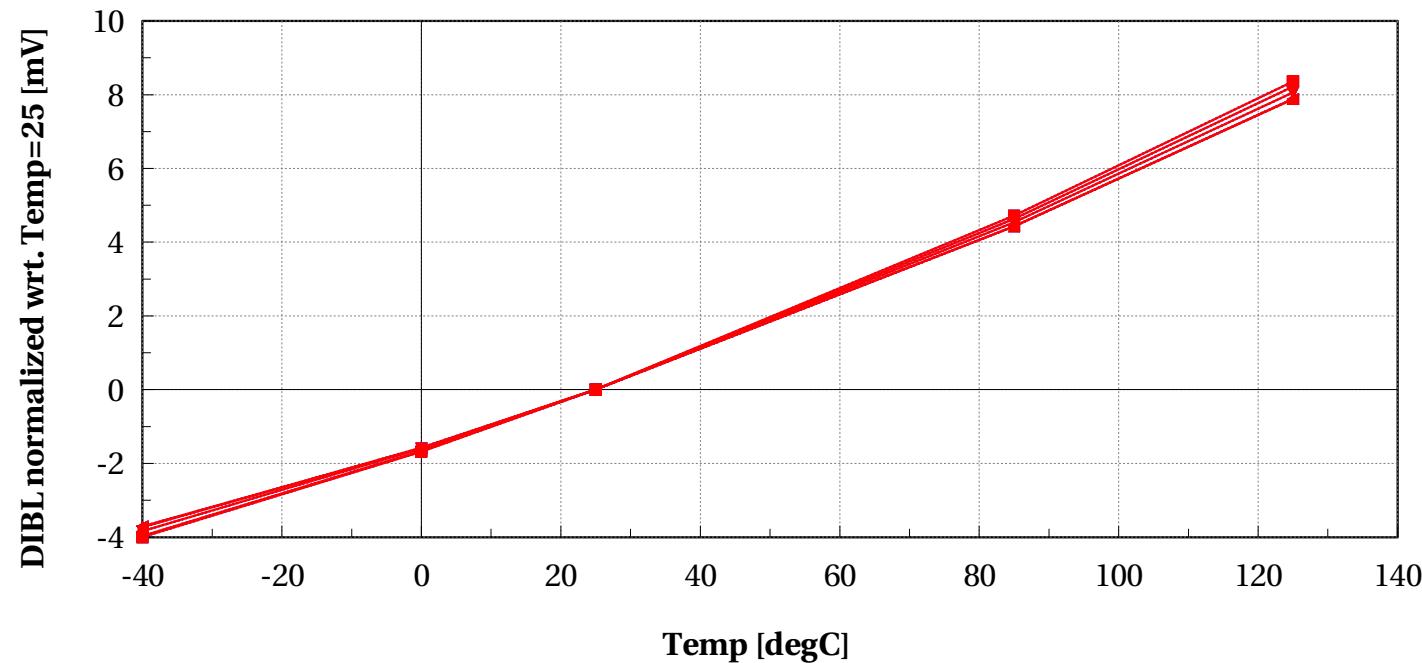
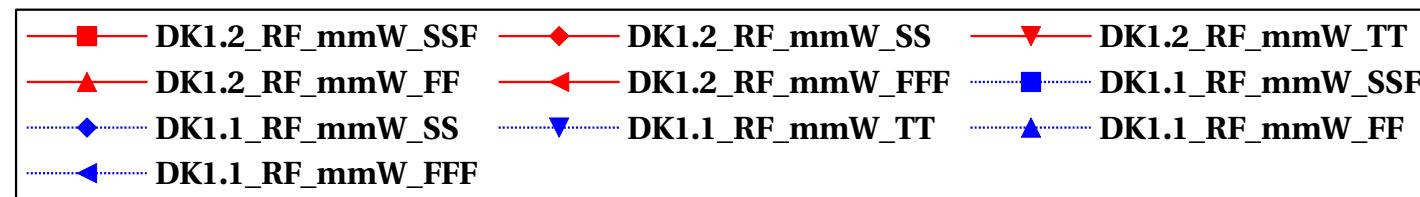
nfet_acc, Ilin normalized wrt. Temp=25 [%] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



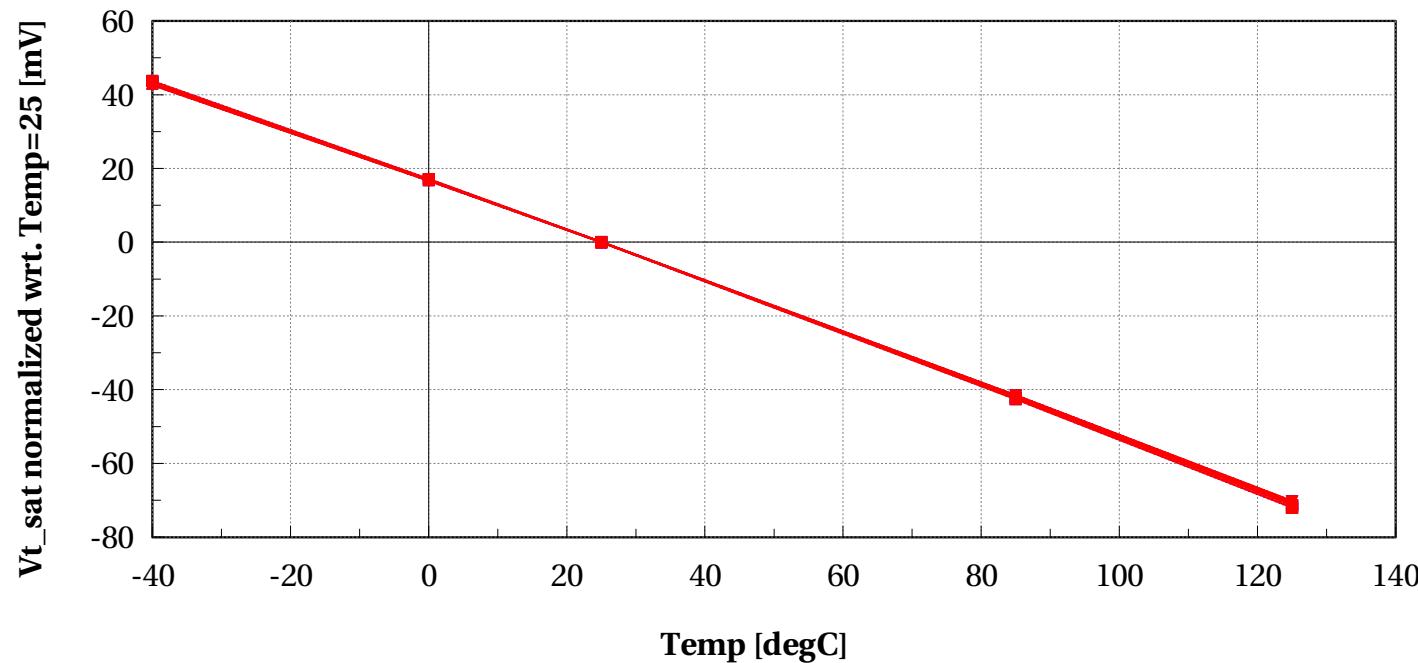
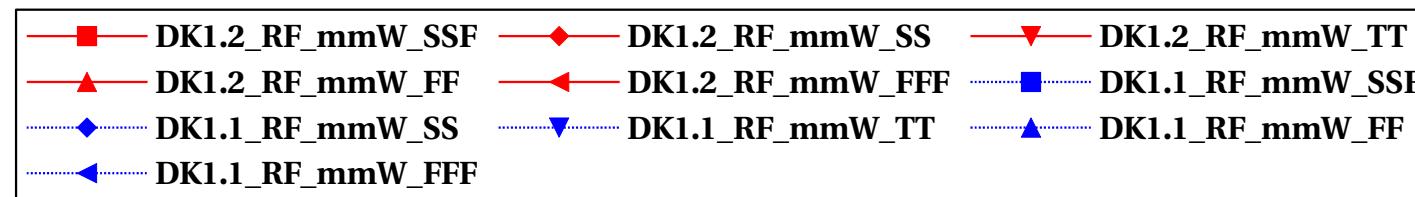
nfet_acc, DIBL normalized wrt. Temp=25 [mV] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



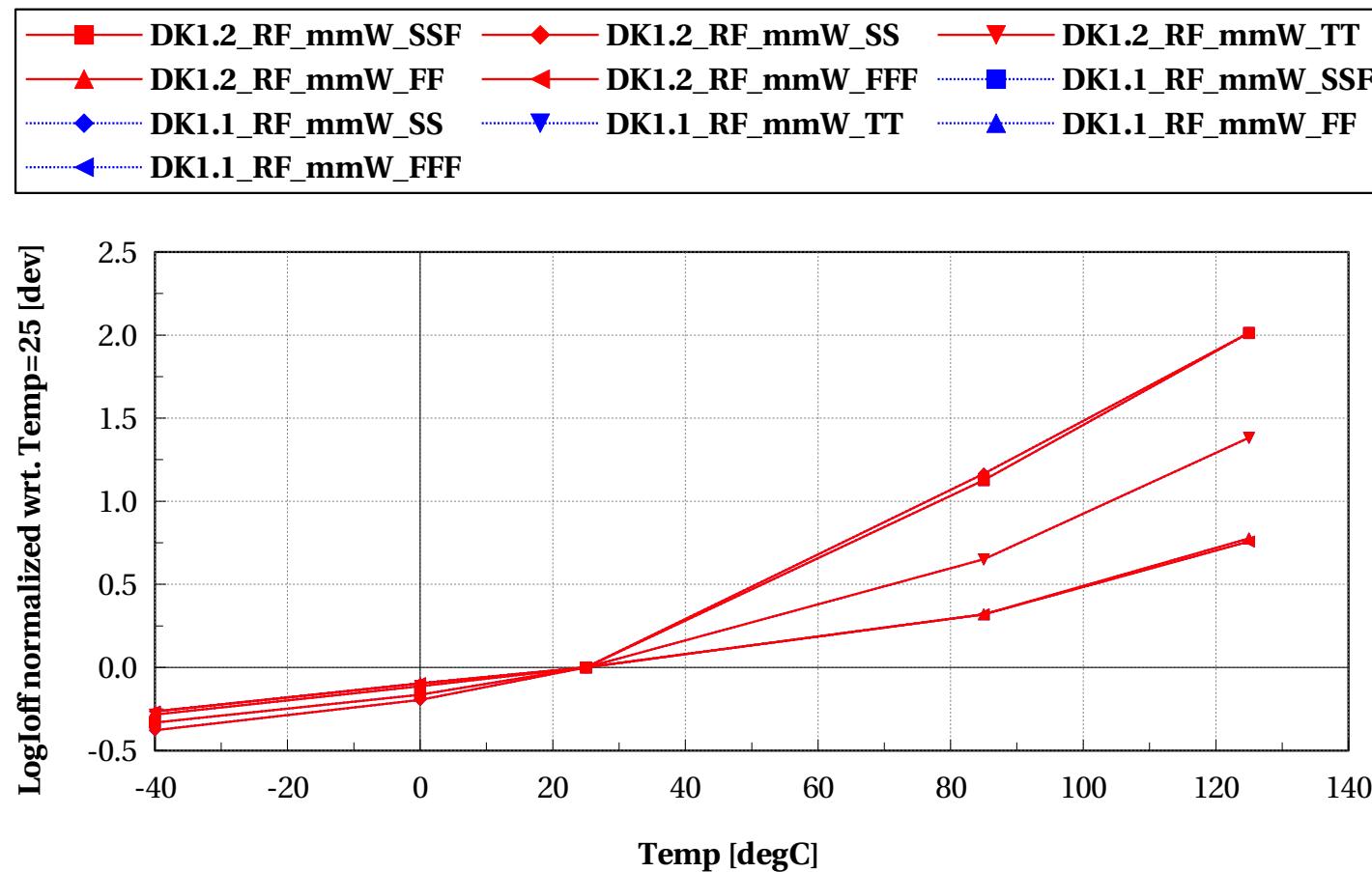
nfet_acc, Vt_sat normalized wrt. Temp=25 [mV] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



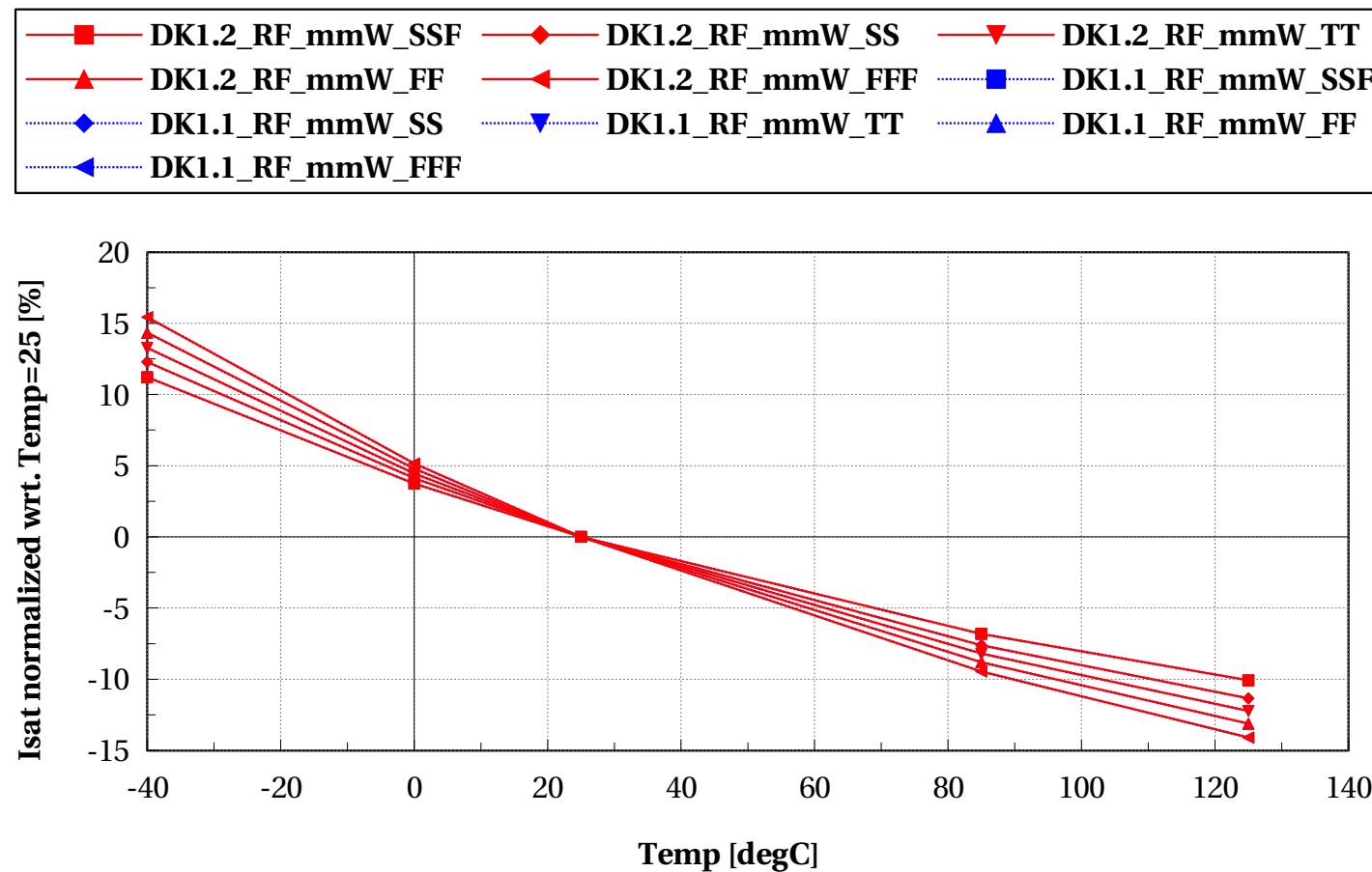
nfet_acc, LogIoff normalized wrt. Temp=25 [dev] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



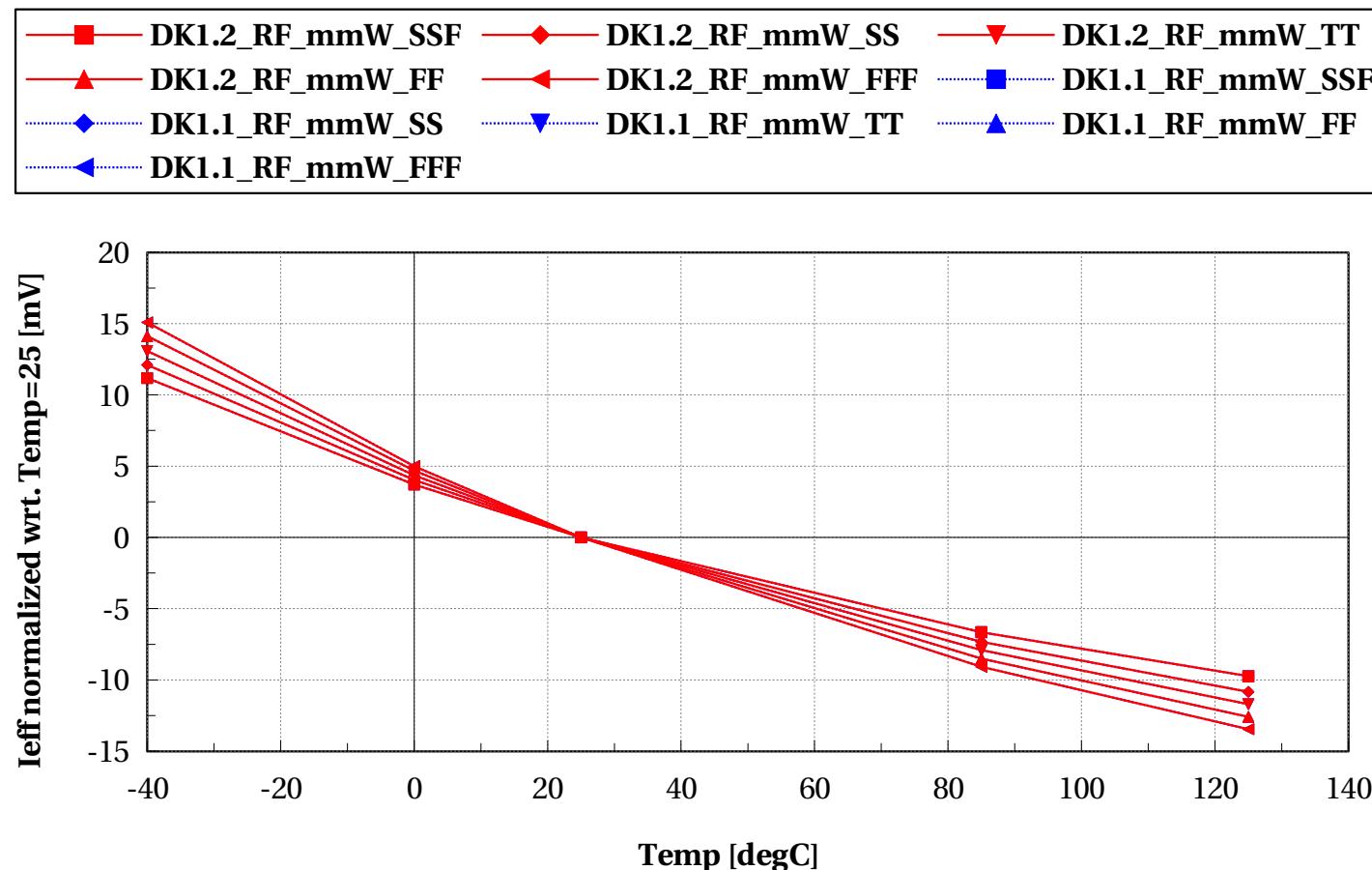
nfet_acc, Isat normalized wrt. Temp=25 [%] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



nfet_acc, Ieff normalized wrt. Temp=25 [mV] vs Temp [degC]

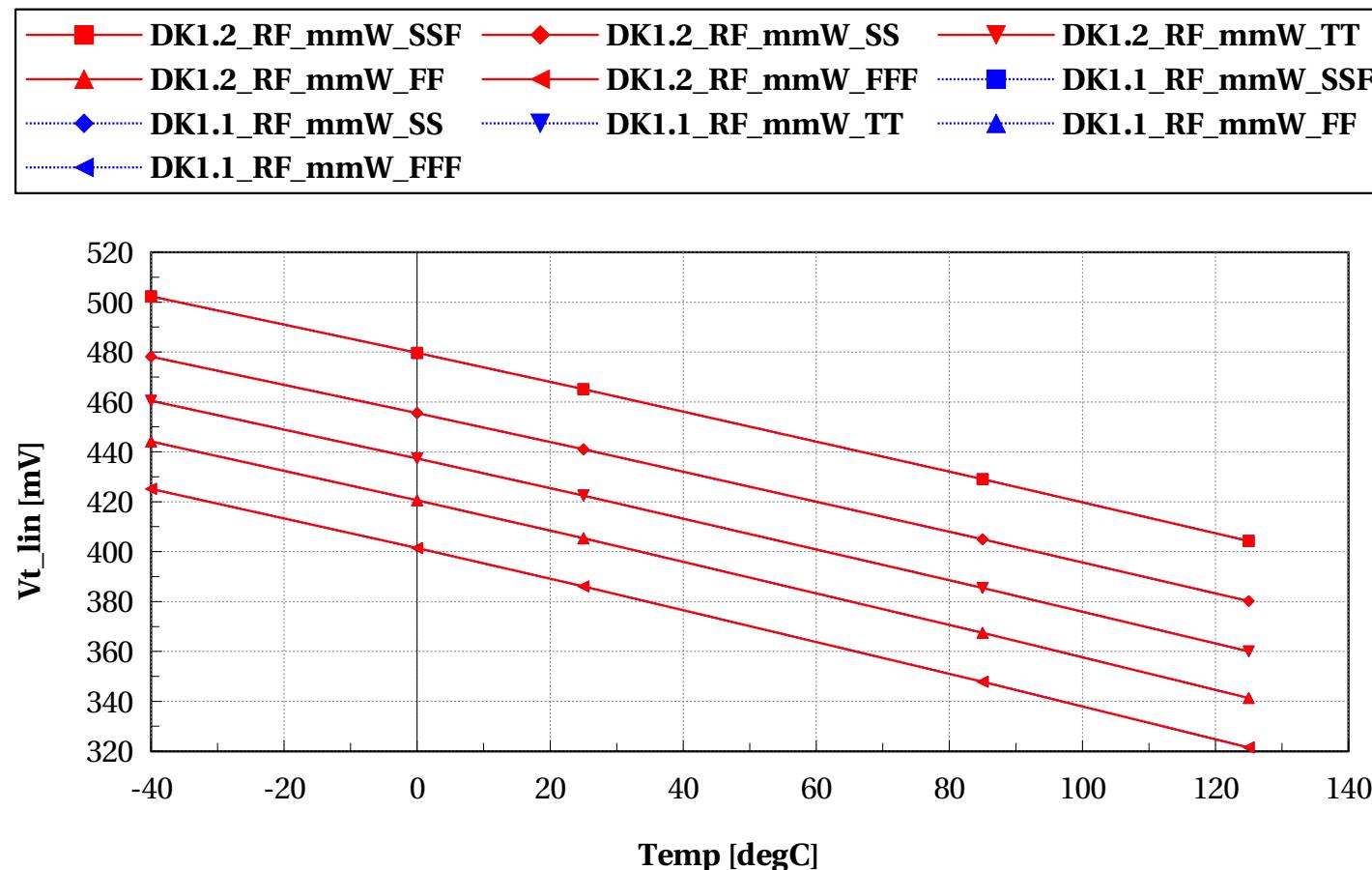
w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Scaling versus Temp (L=30nm,W=210nm)

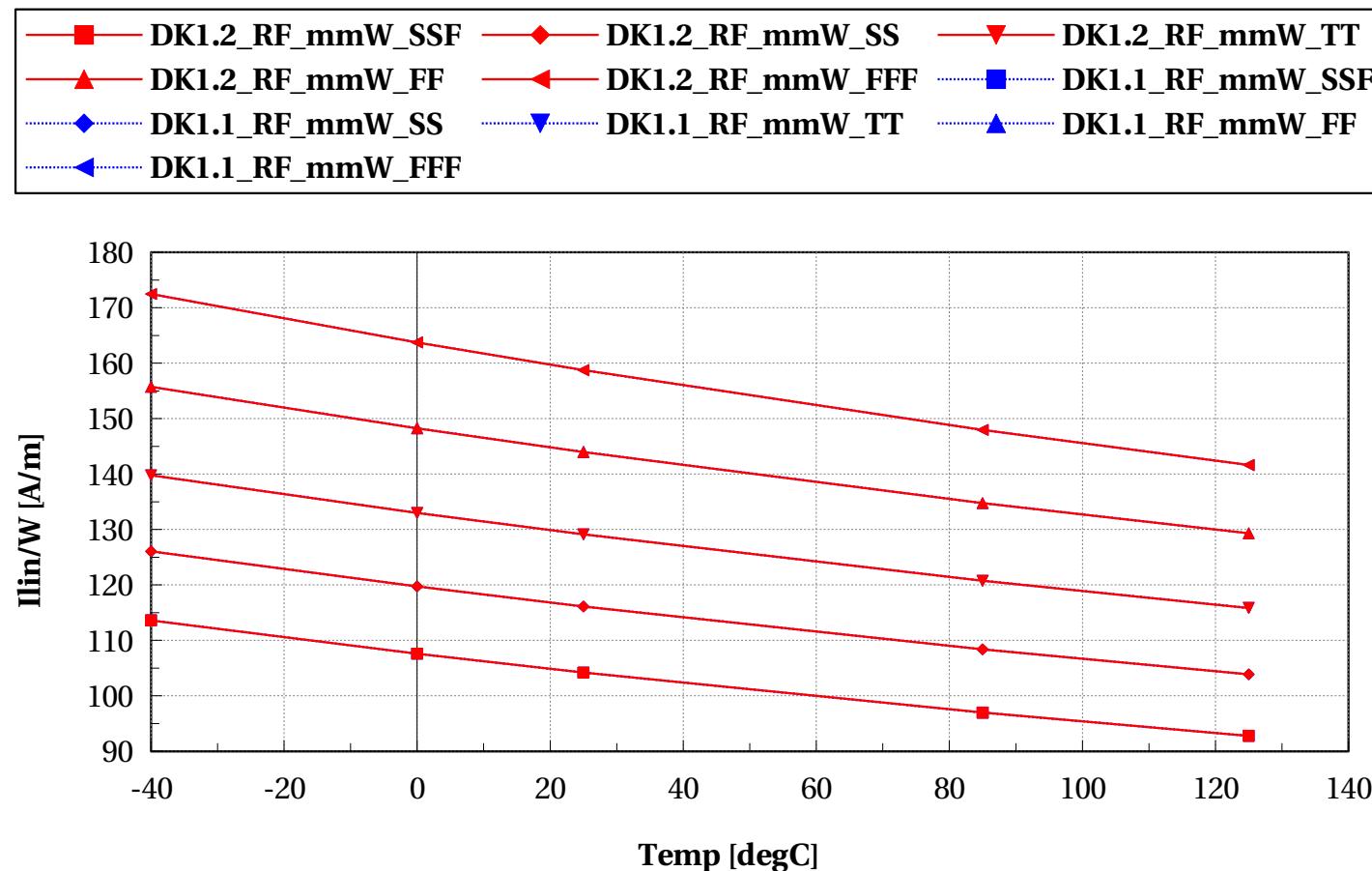
nfet_acc, Vt_lin [mV] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



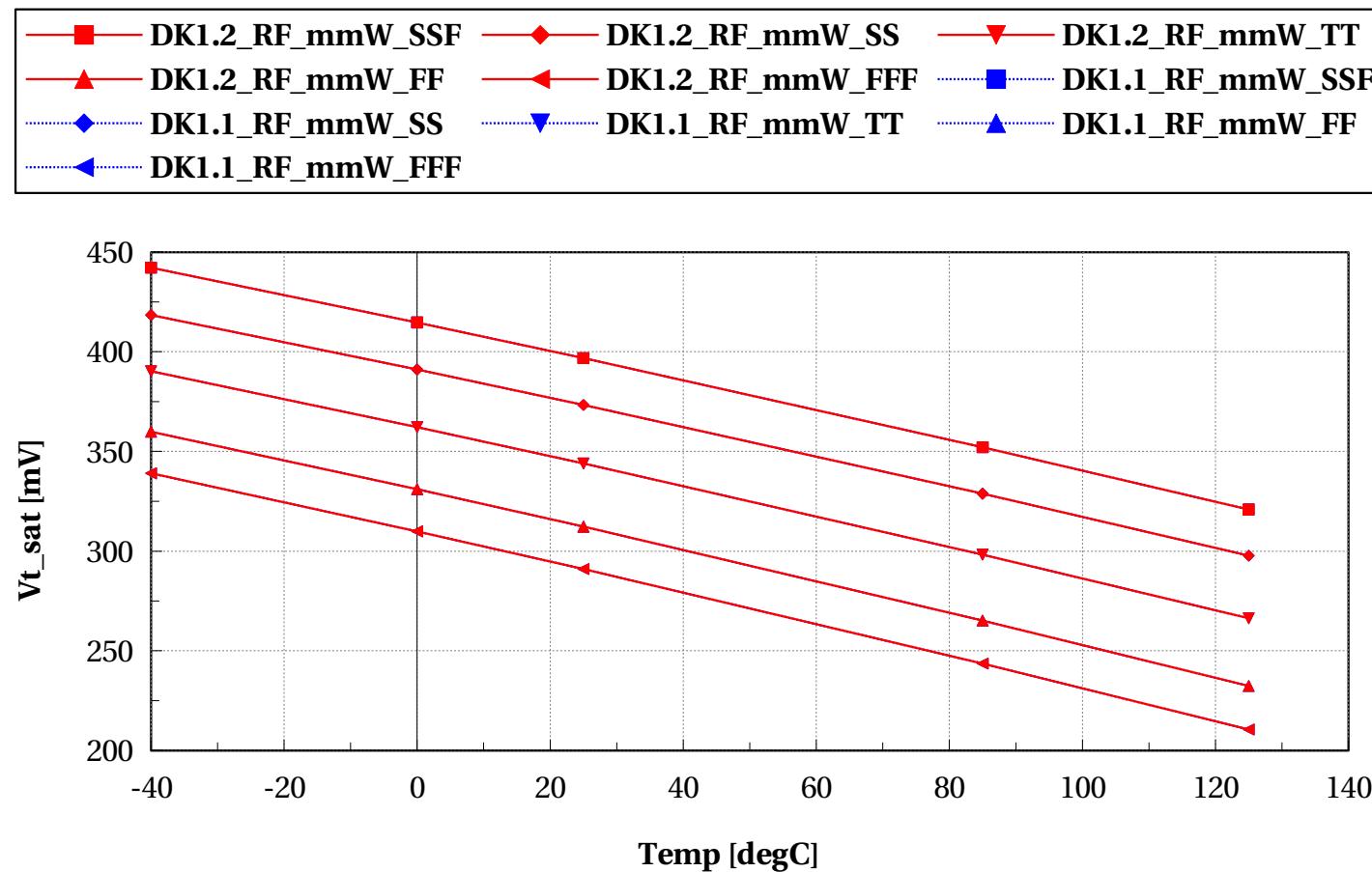
nfet_acc, Ilin/W [A/m] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



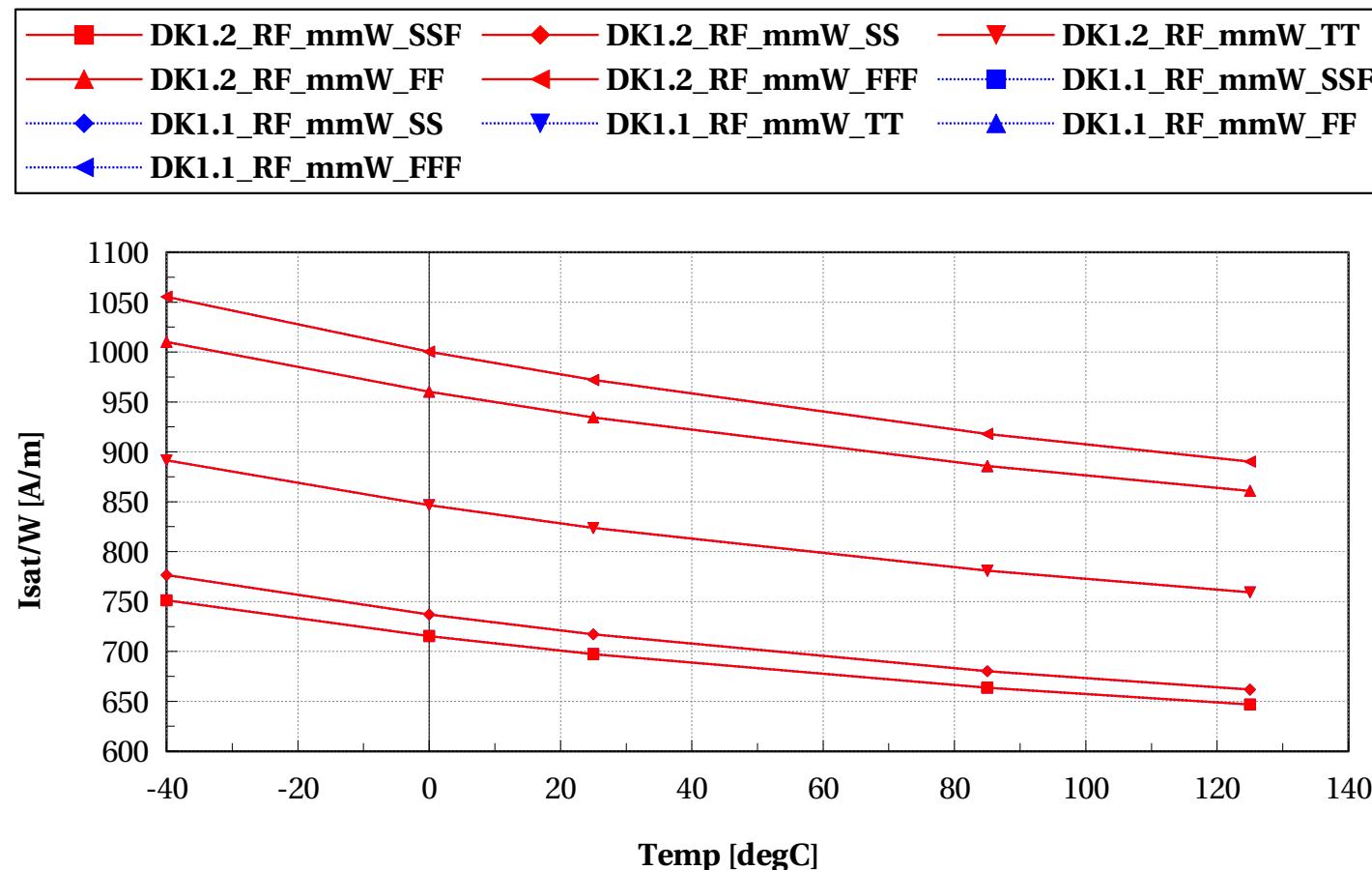
nfet_acc, Vt_sat [mV] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



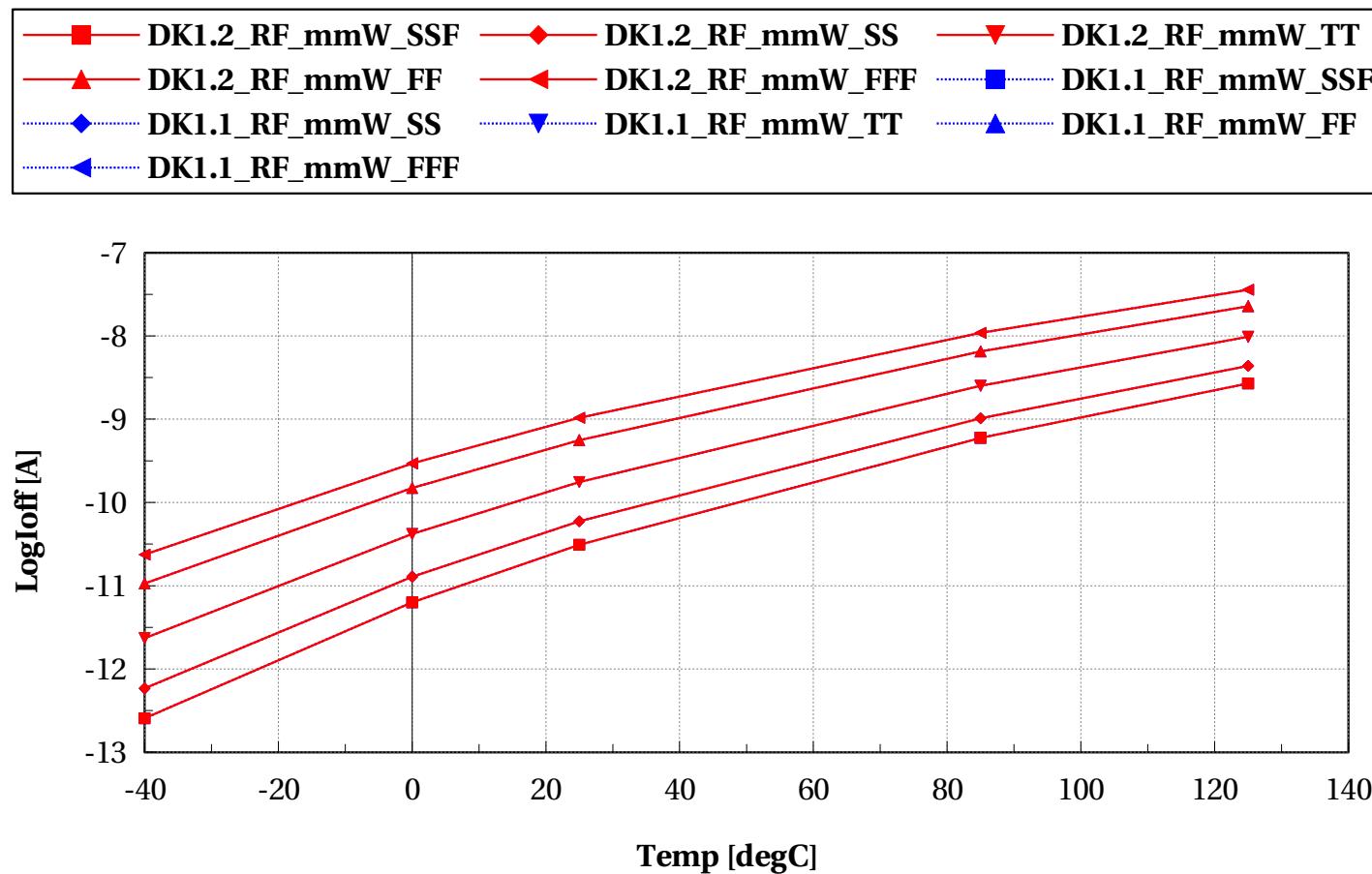
nfet_acc, Isat/W [A/m] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



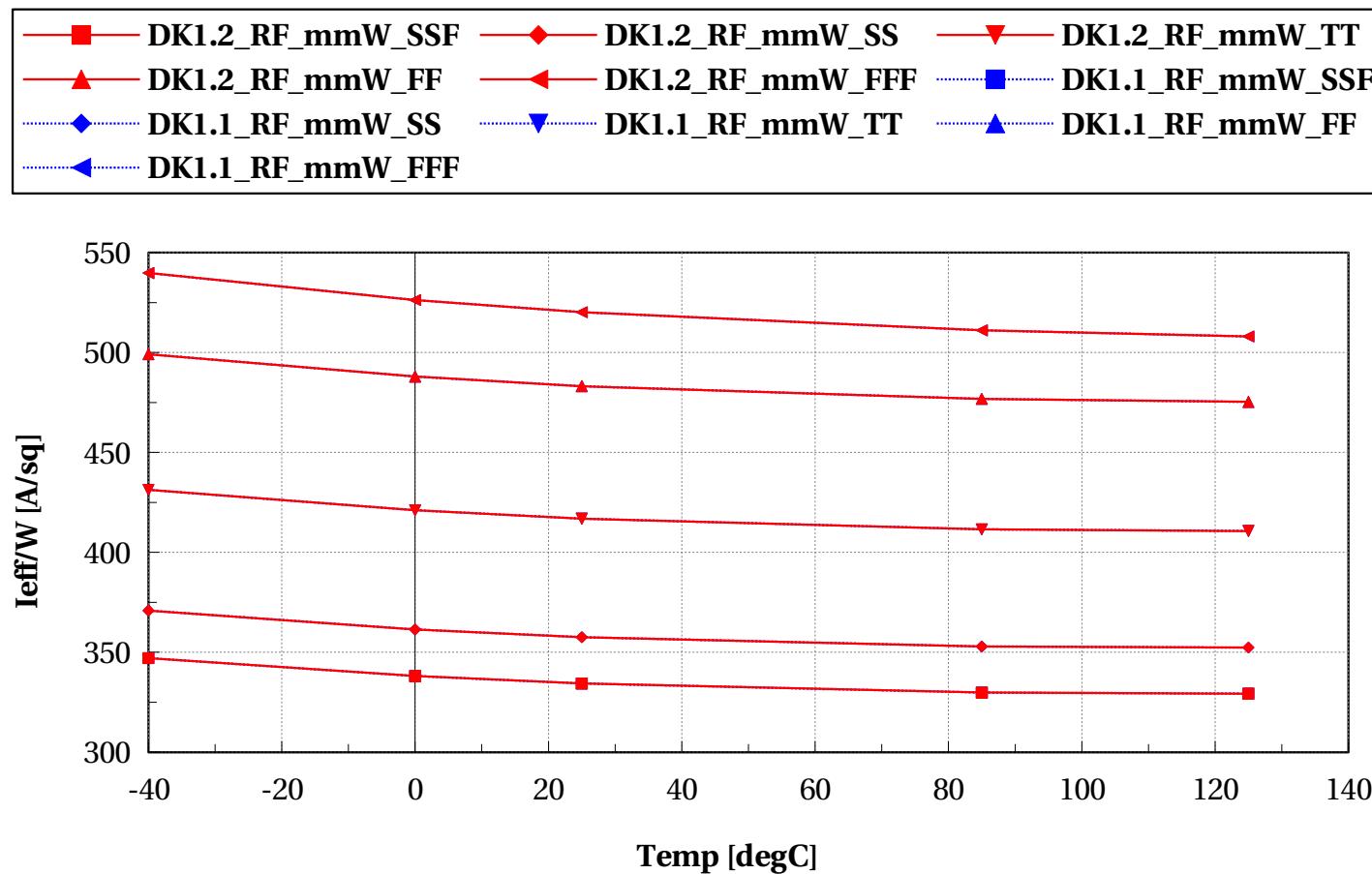
nfet_acc, LogIoff [A] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



nfet_acc, Ieff/W [A/sq] vs Temp [degC]

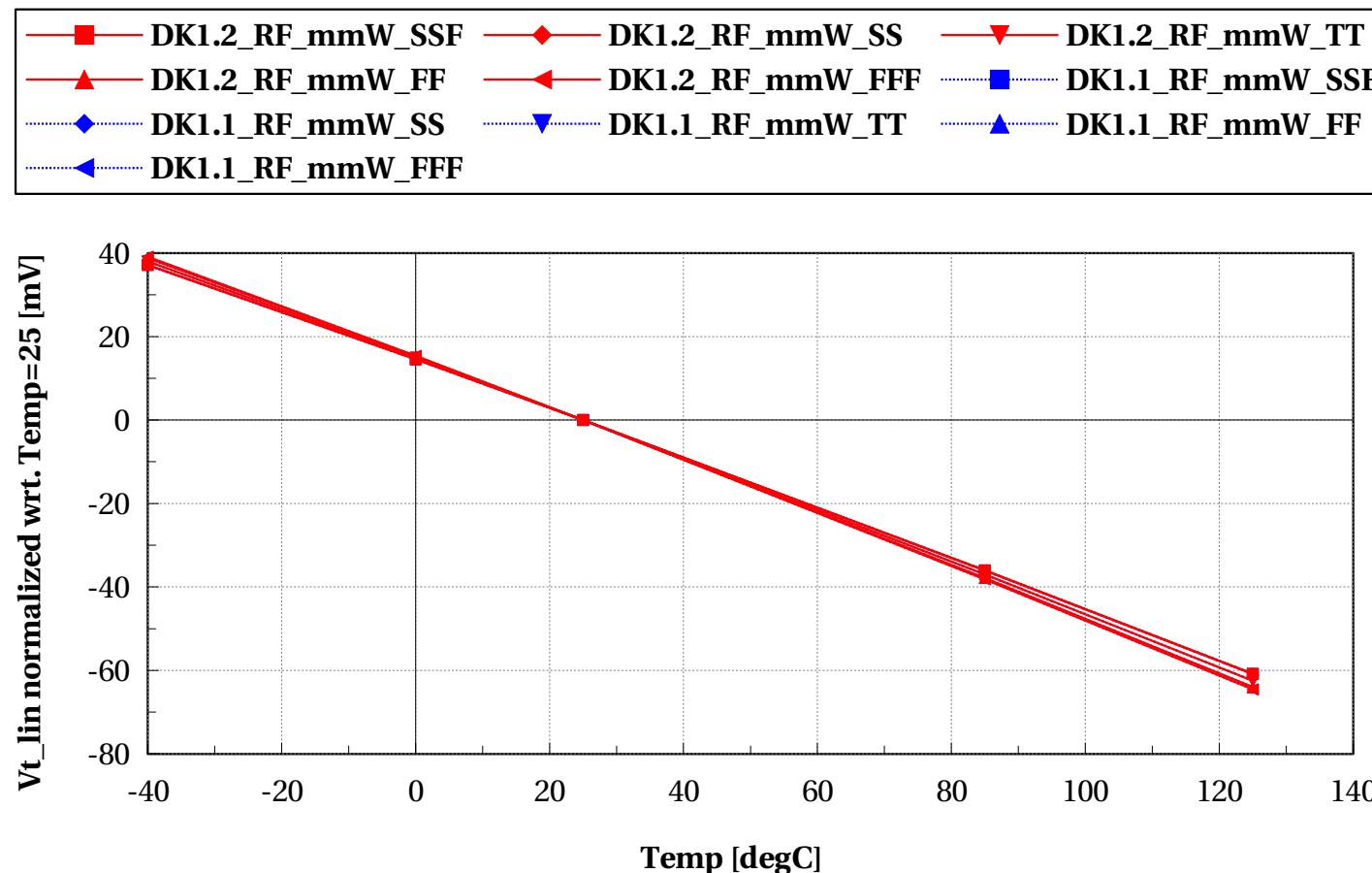
w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Scaling versus Temp normalized (L=30nm,W=210nm)

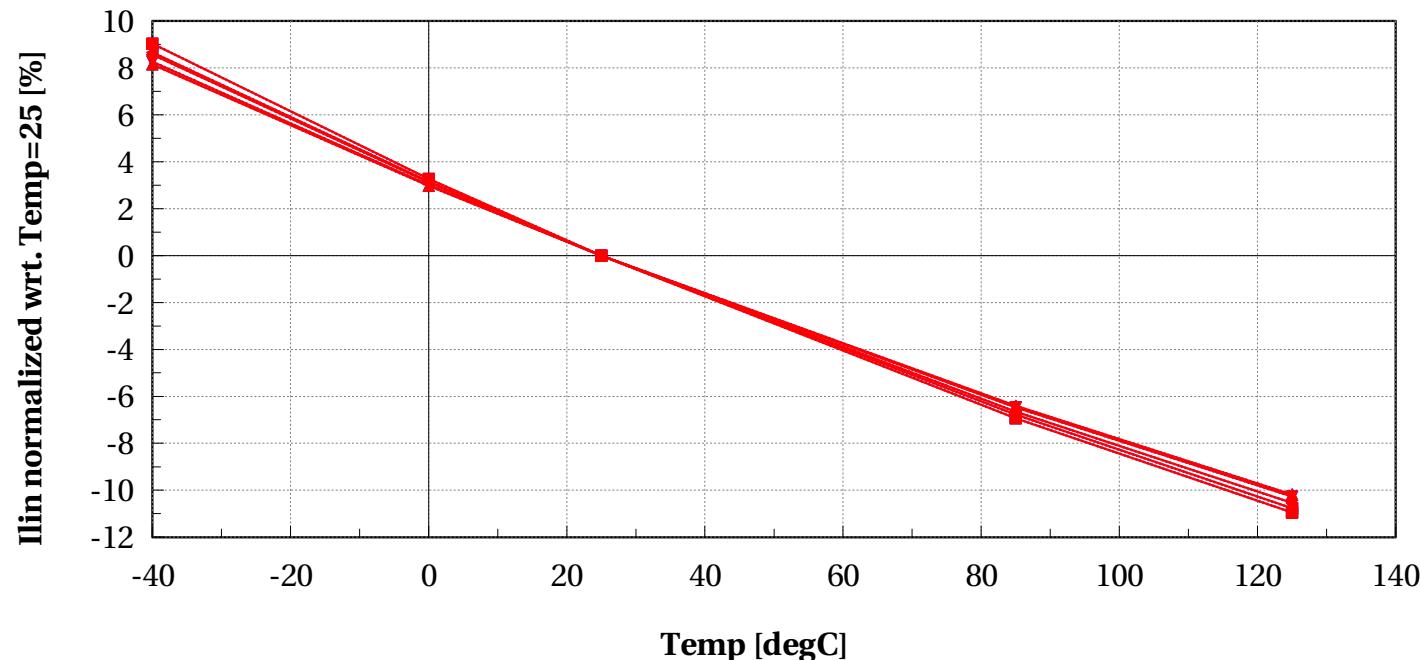
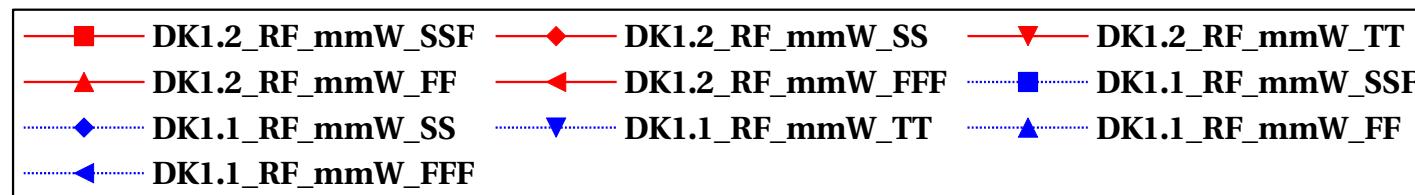
nfet_acc, Vt_lin normalized wrt. Temp=25 [mV] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



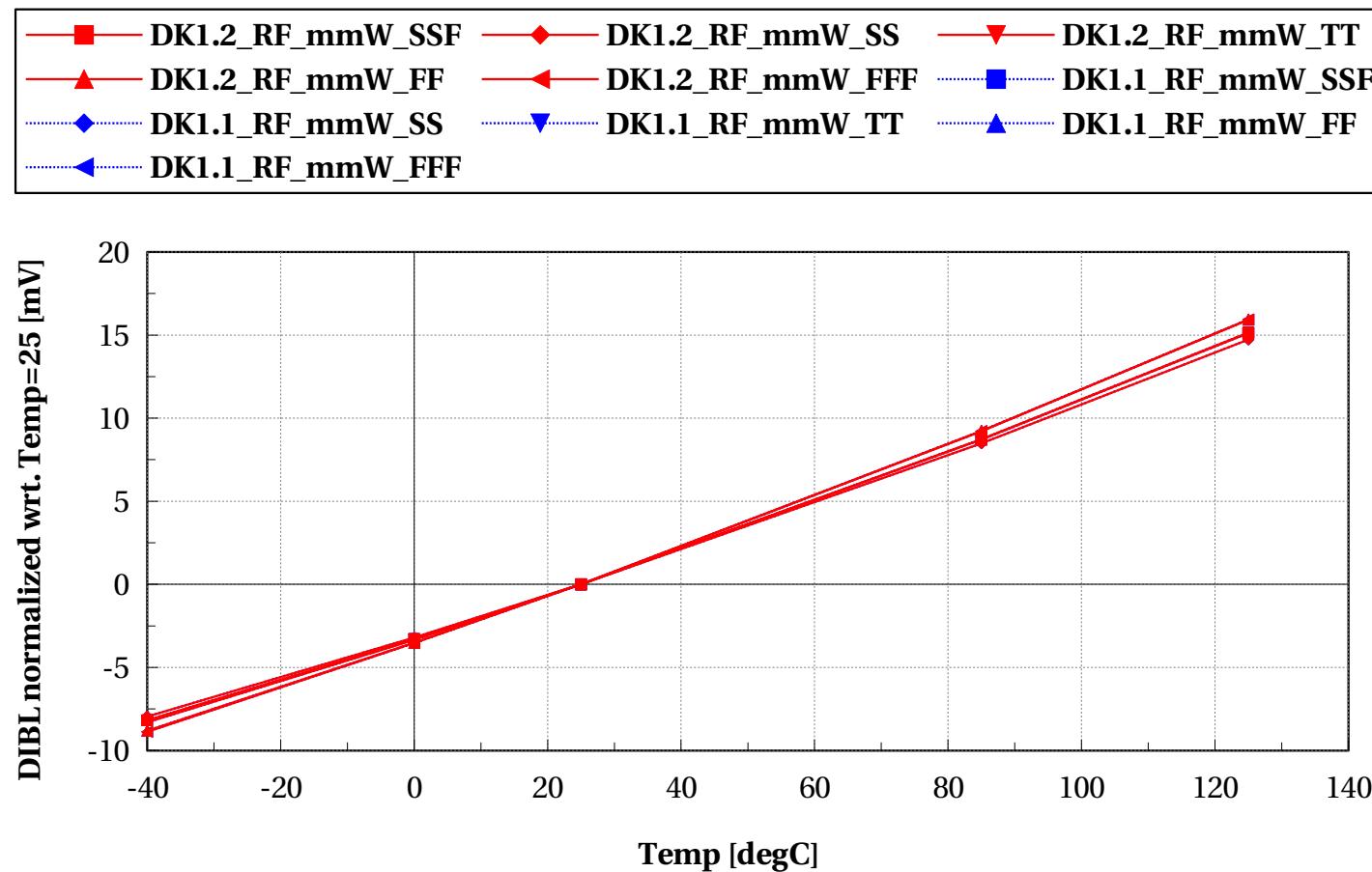
nfet_acc, Ilin normalized wrt. Temp=25 [%] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



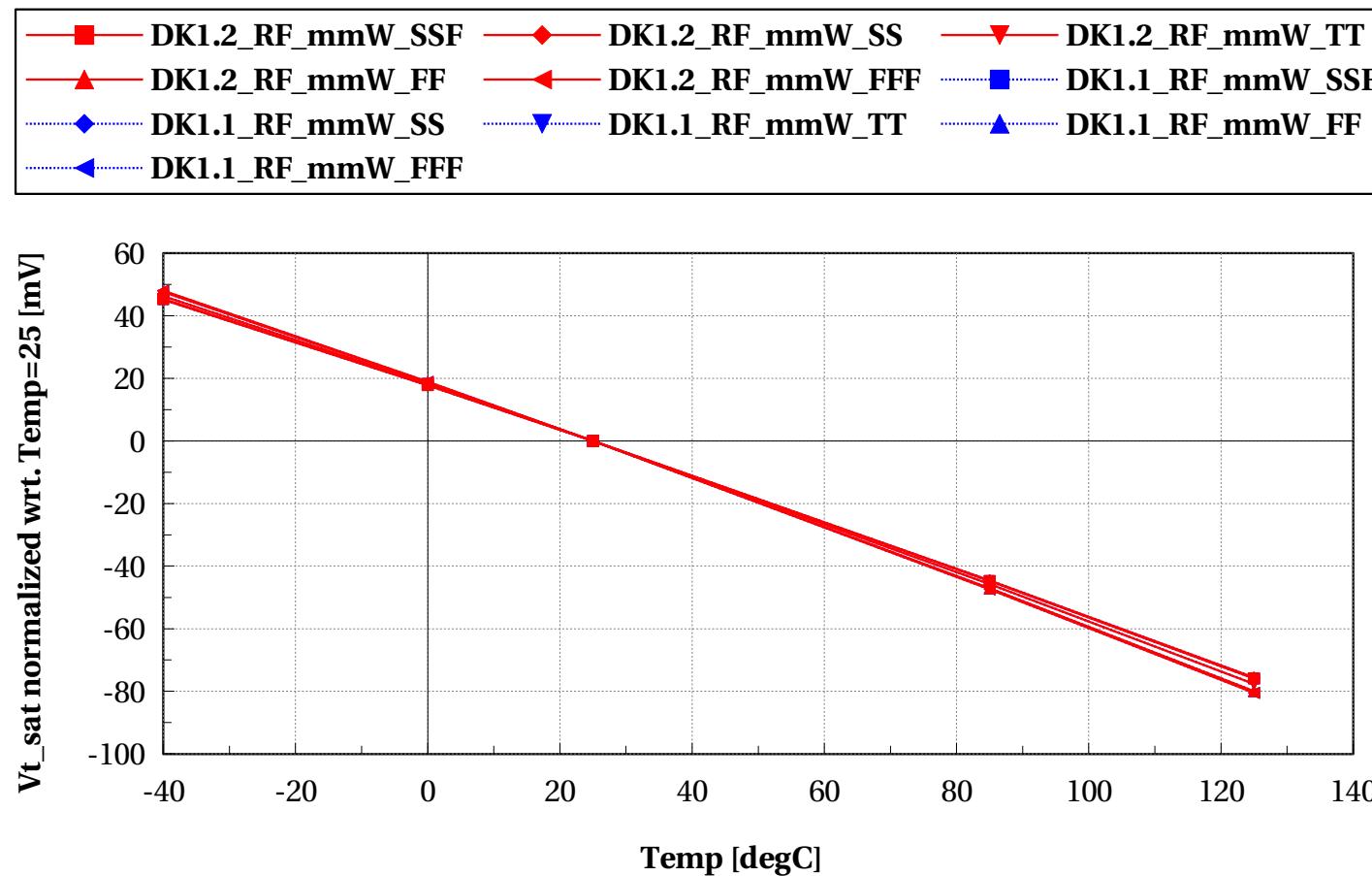
nfet_acc, DIBL normalized wrt. Temp=25 [mV] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



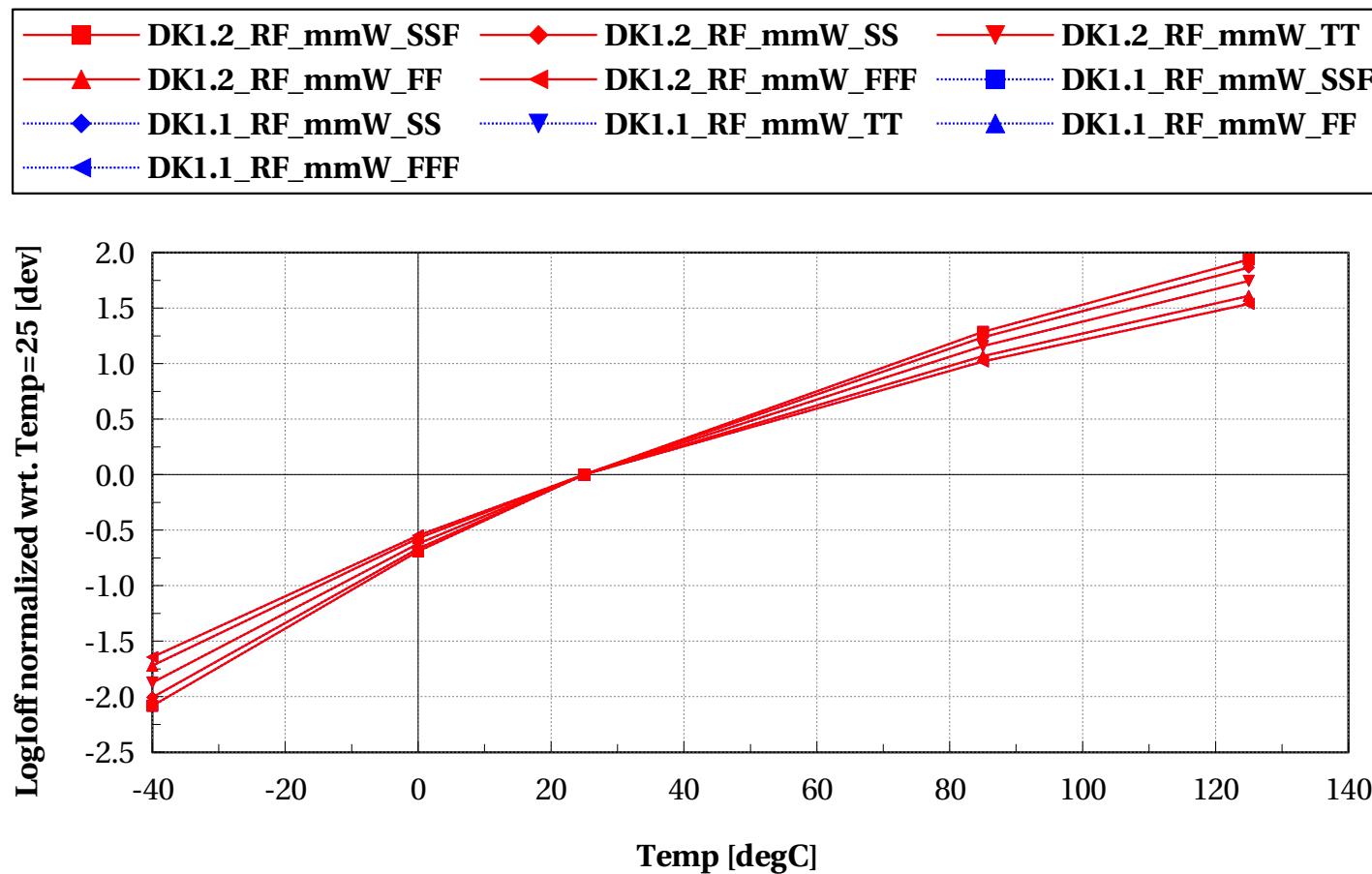
nfet_acc, Vt_sat normalized wrt. Temp=25 [mV] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



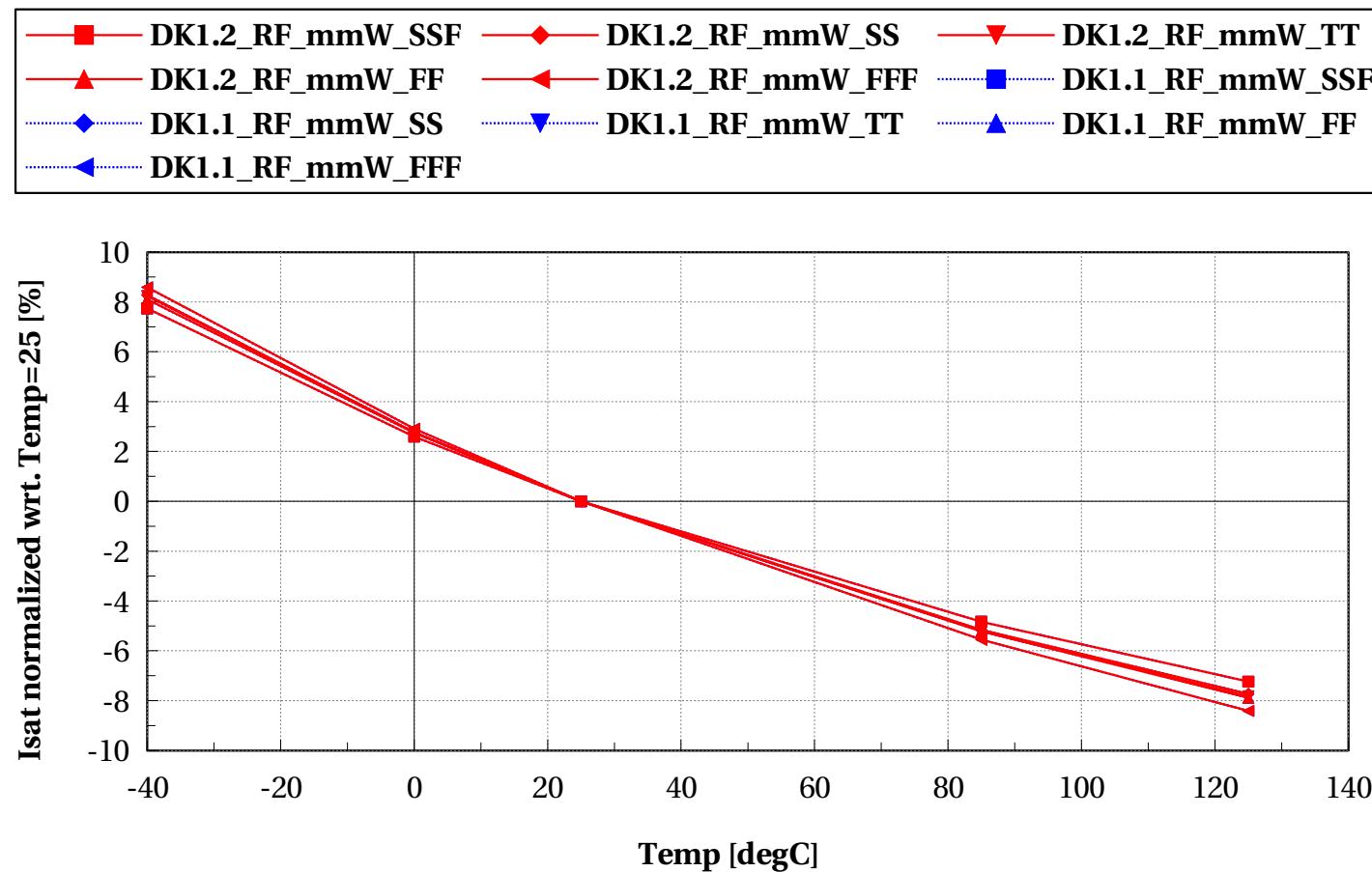
nfet_acc, LogIoff normalized wrt. Temp=25 [dev] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



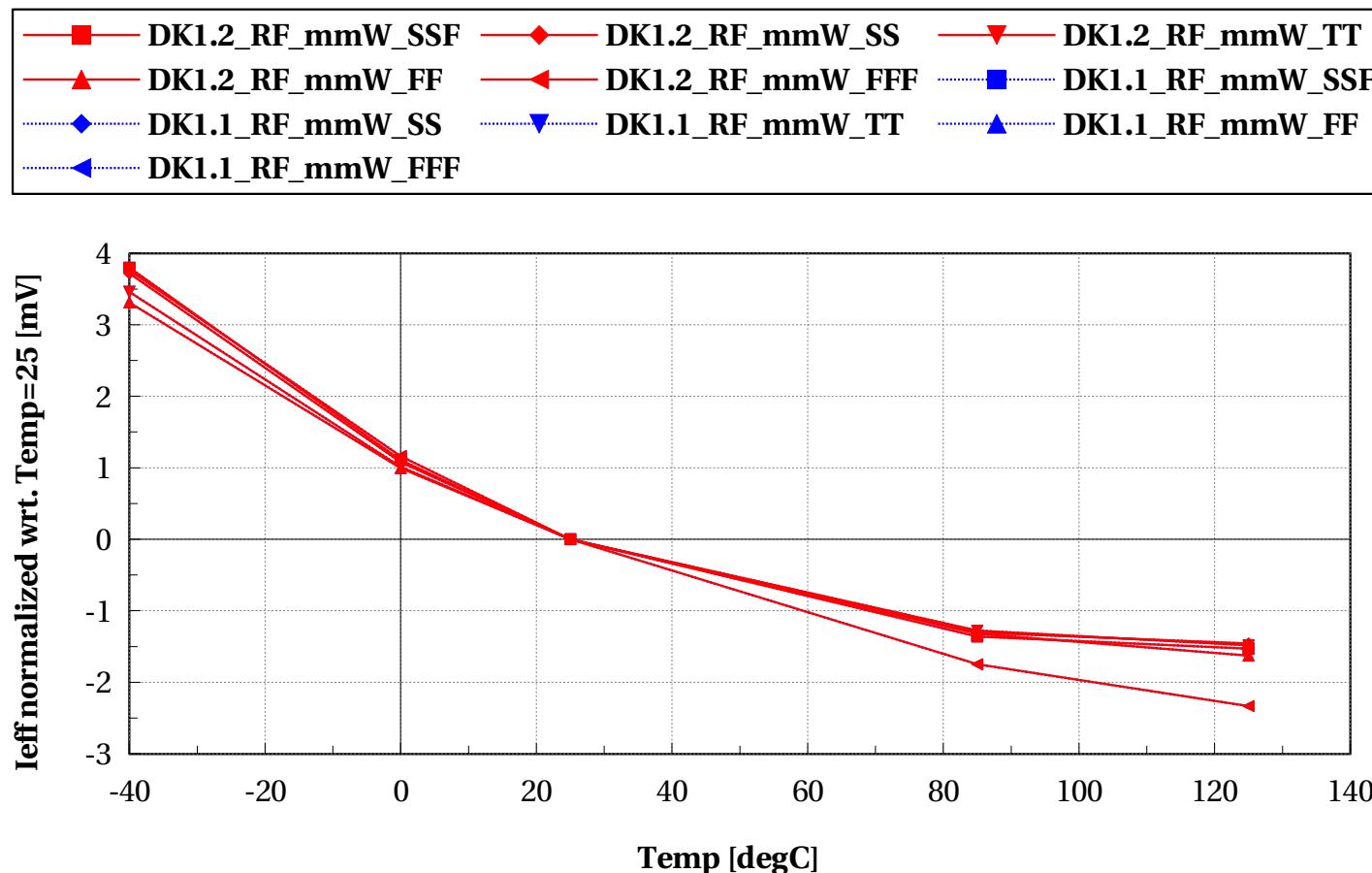
nfet_acc, Isat normalized wrt. Temp=25 [%] vs Temp [degC]

w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



nfet_acc, Ieff normalized wrt. Temp=25 [mV] vs Temp [degC]

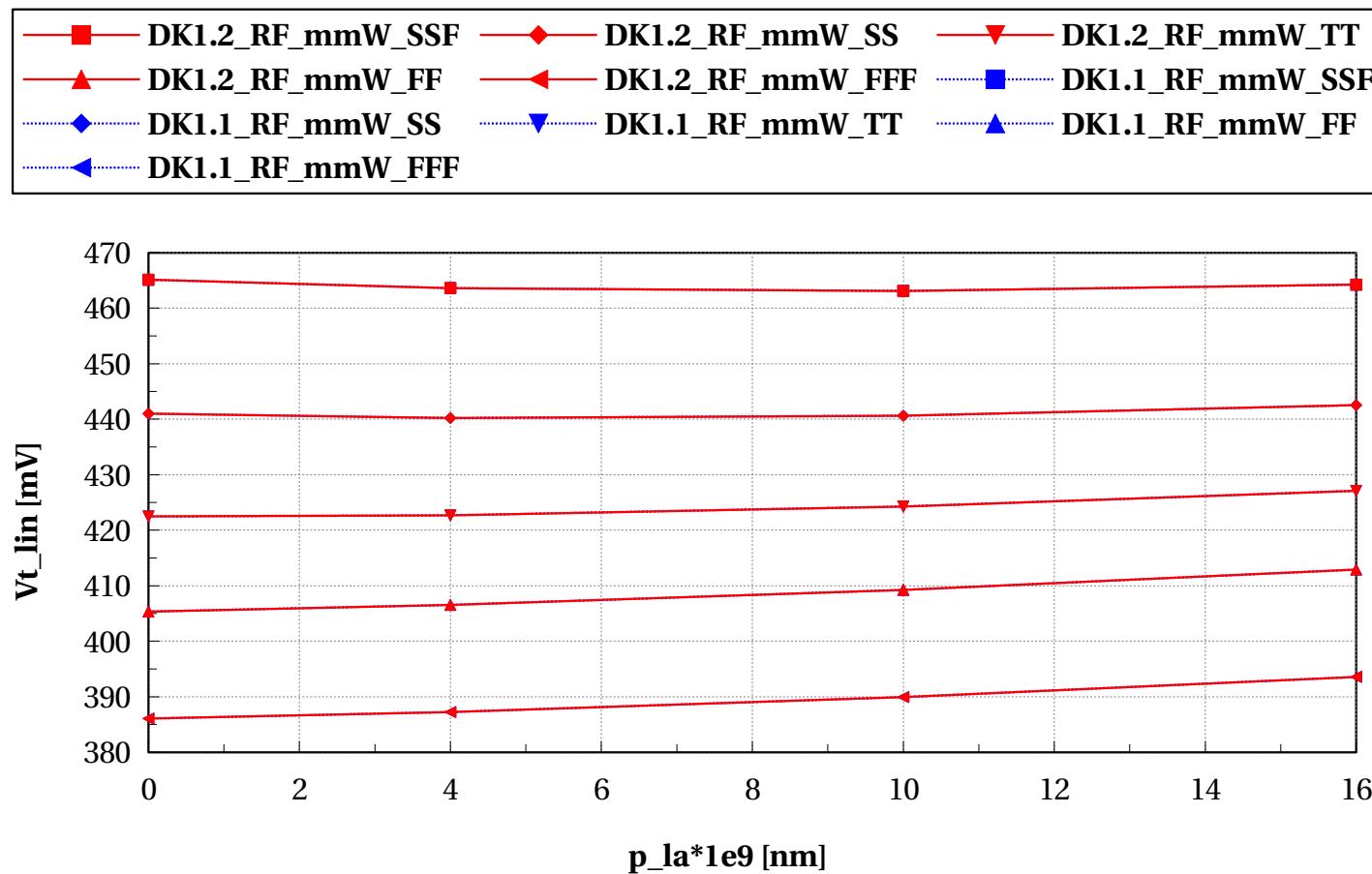
w==210e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Poly bias effect (L=30nm, W=210nm)

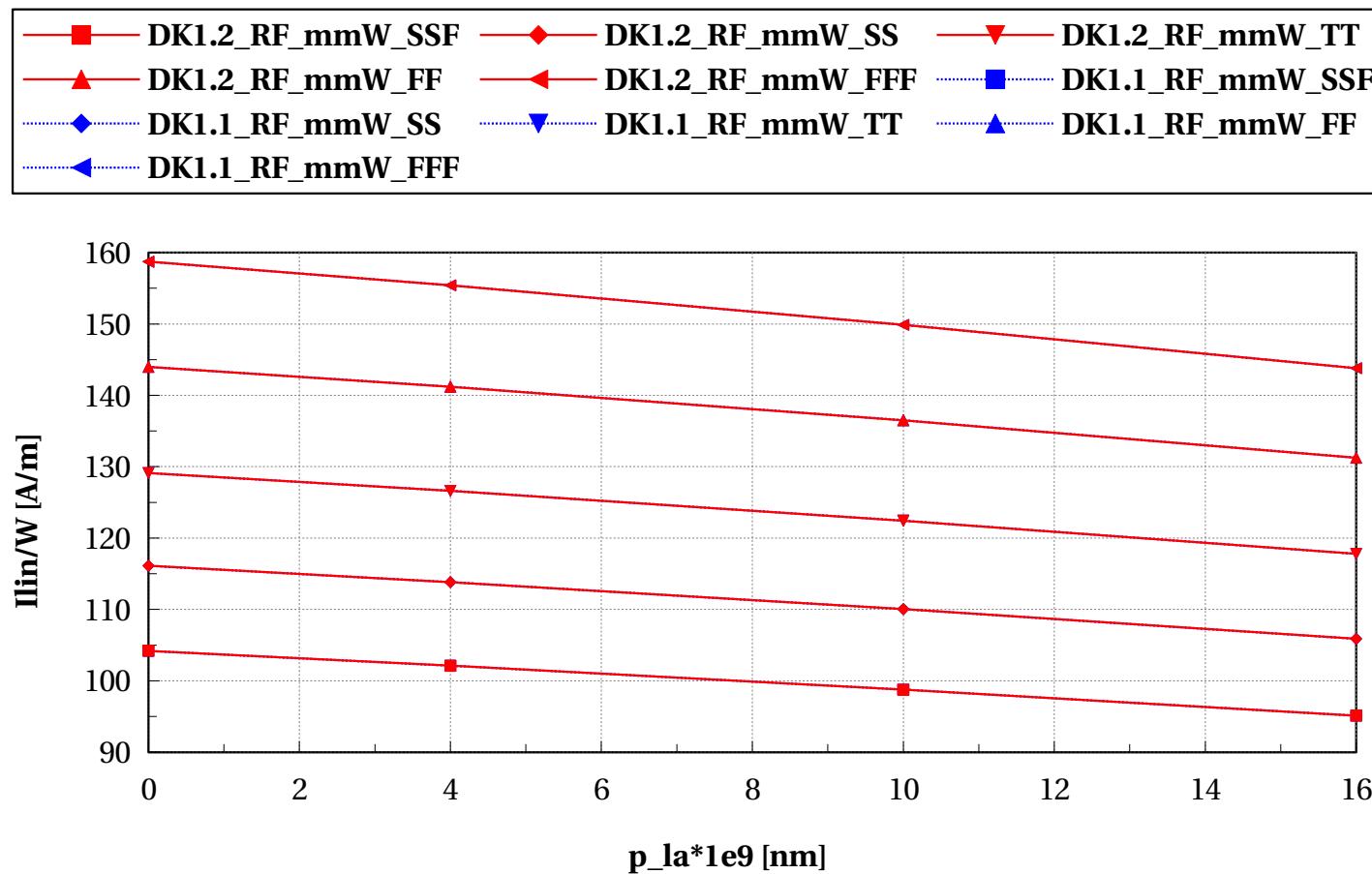
nfet_acc, Vt_lin [mV] vs p_la*1e9 [nm]

$I_{DS} = 30 \text{ e-9 A}$ and $W = 0.21 \text{ e-6 m}$ and $V_{BS} = 0 \text{ V}$ and $T = 25 \text{ °C}$ and $\text{devType} = \text{"PCELLwoWPE"}$



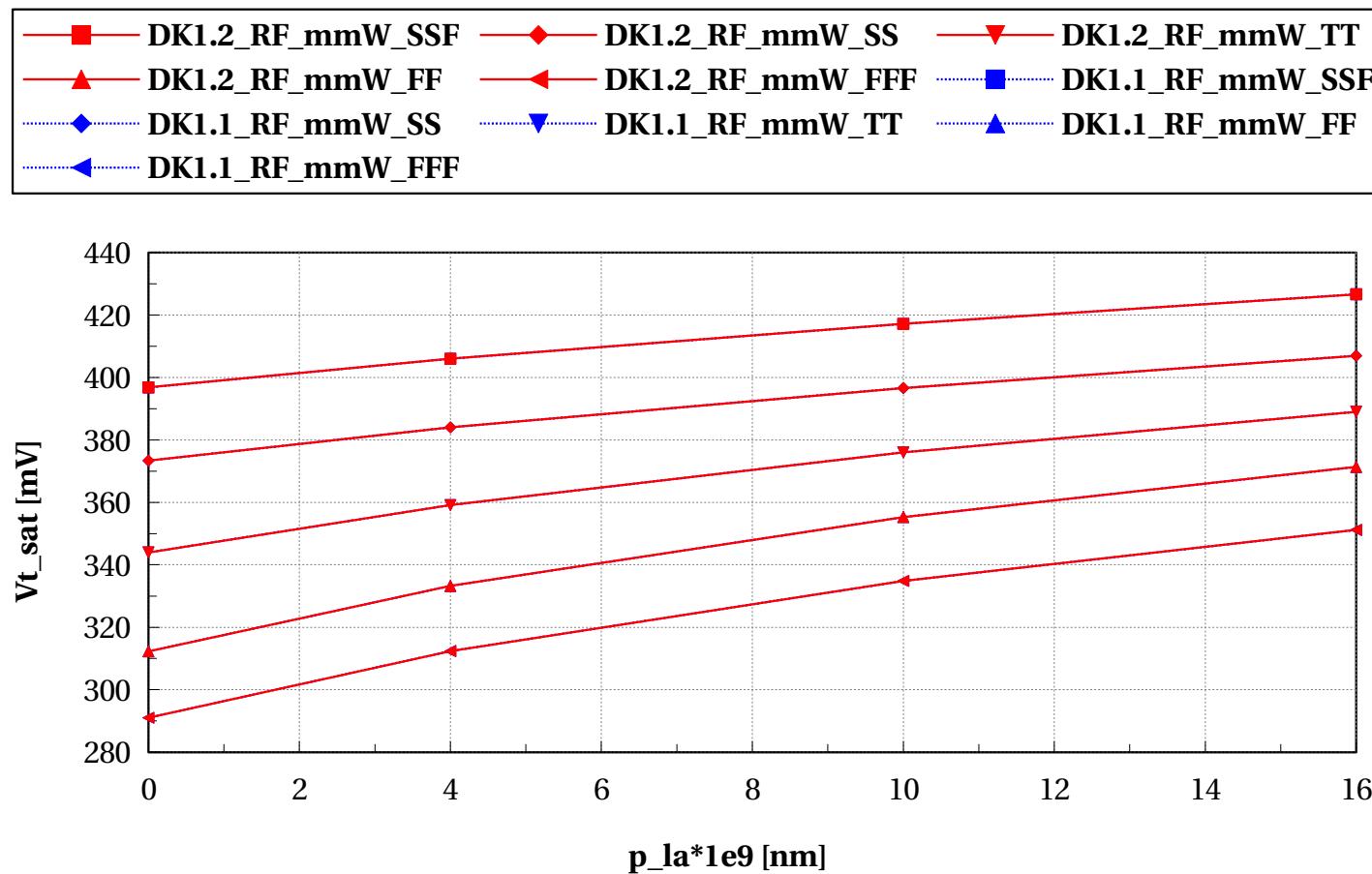
nfet_acc, Ilin/W [A/m] vs p_la*1e9 [nm]

$I_l=30e-9$ and $w=0.21e-6$ and $V_{bs}=0$ and $Temp=25$ and $devType="PCELLwoWPE"$



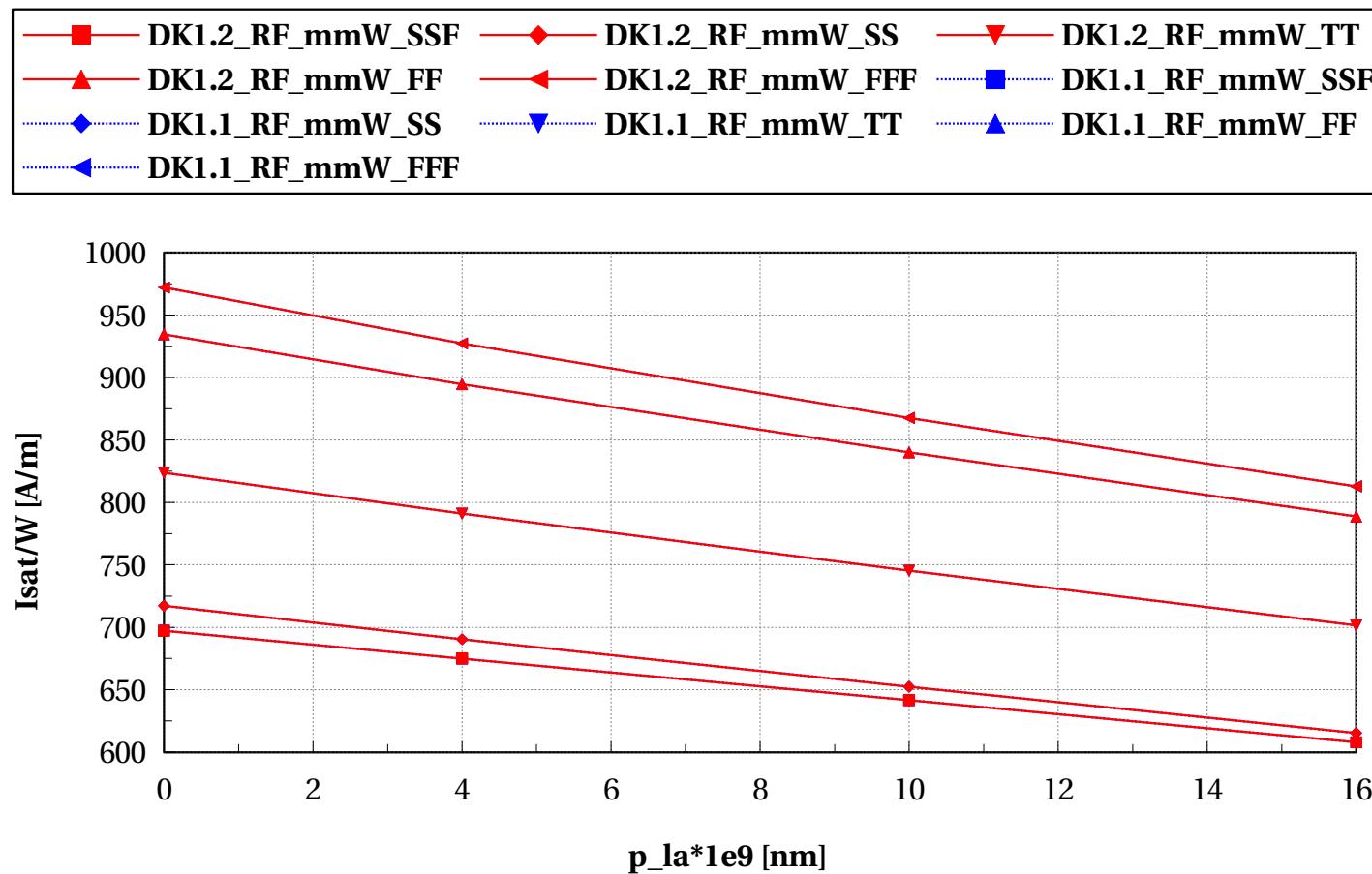
nfet_acc, Vt_sat [mV] vs p_la*1e9 [nm]

$I_{DS} = 30\text{e-9}$ and $W = 0.21\text{e-6}$ and $V_{BS} = 0$ and $\text{Temp} = 25$ and $\text{devType} = \text{"PCELLwoWPE"}$



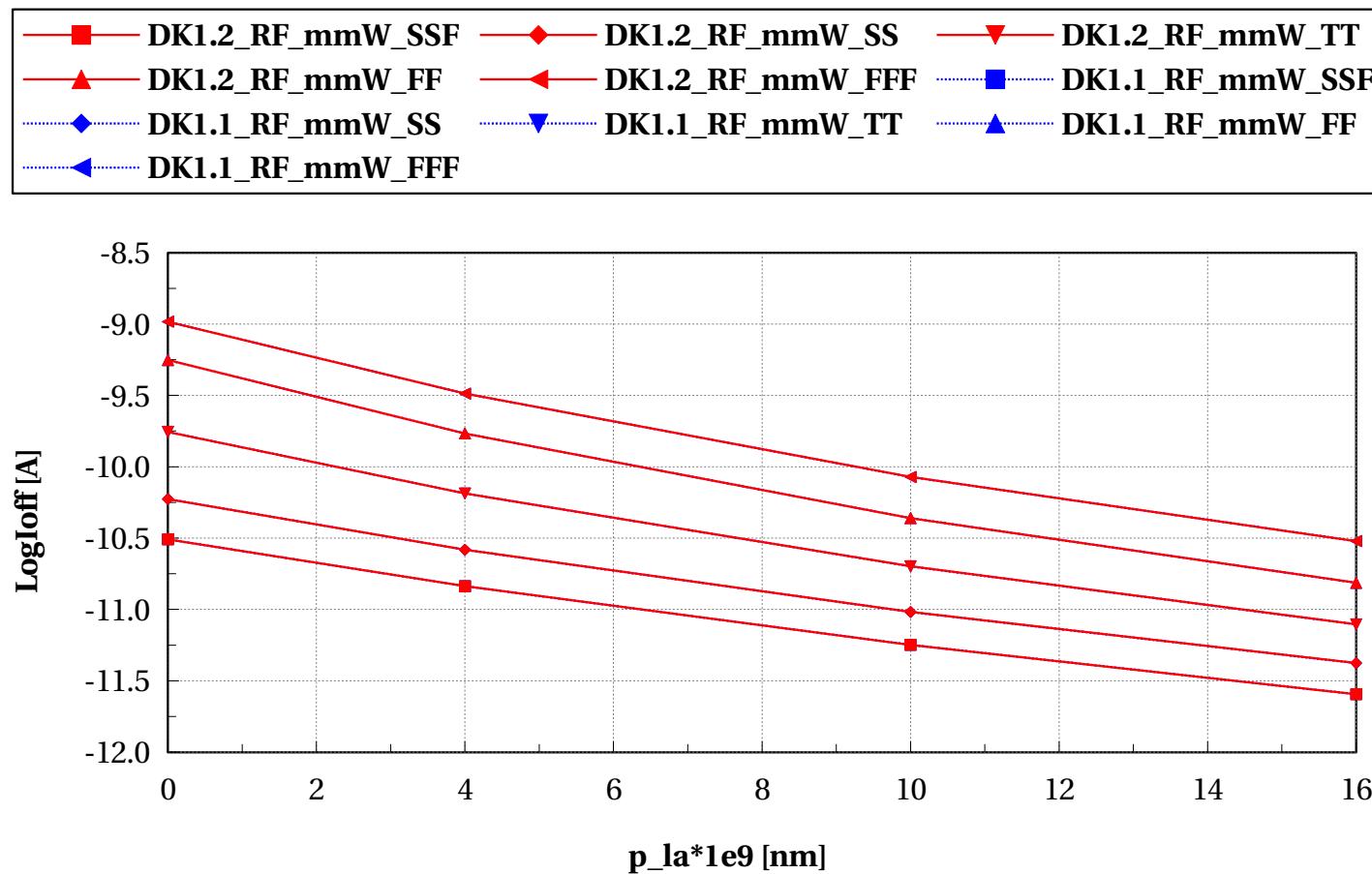
nfet_acc, Isat/W [A/m] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.21e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



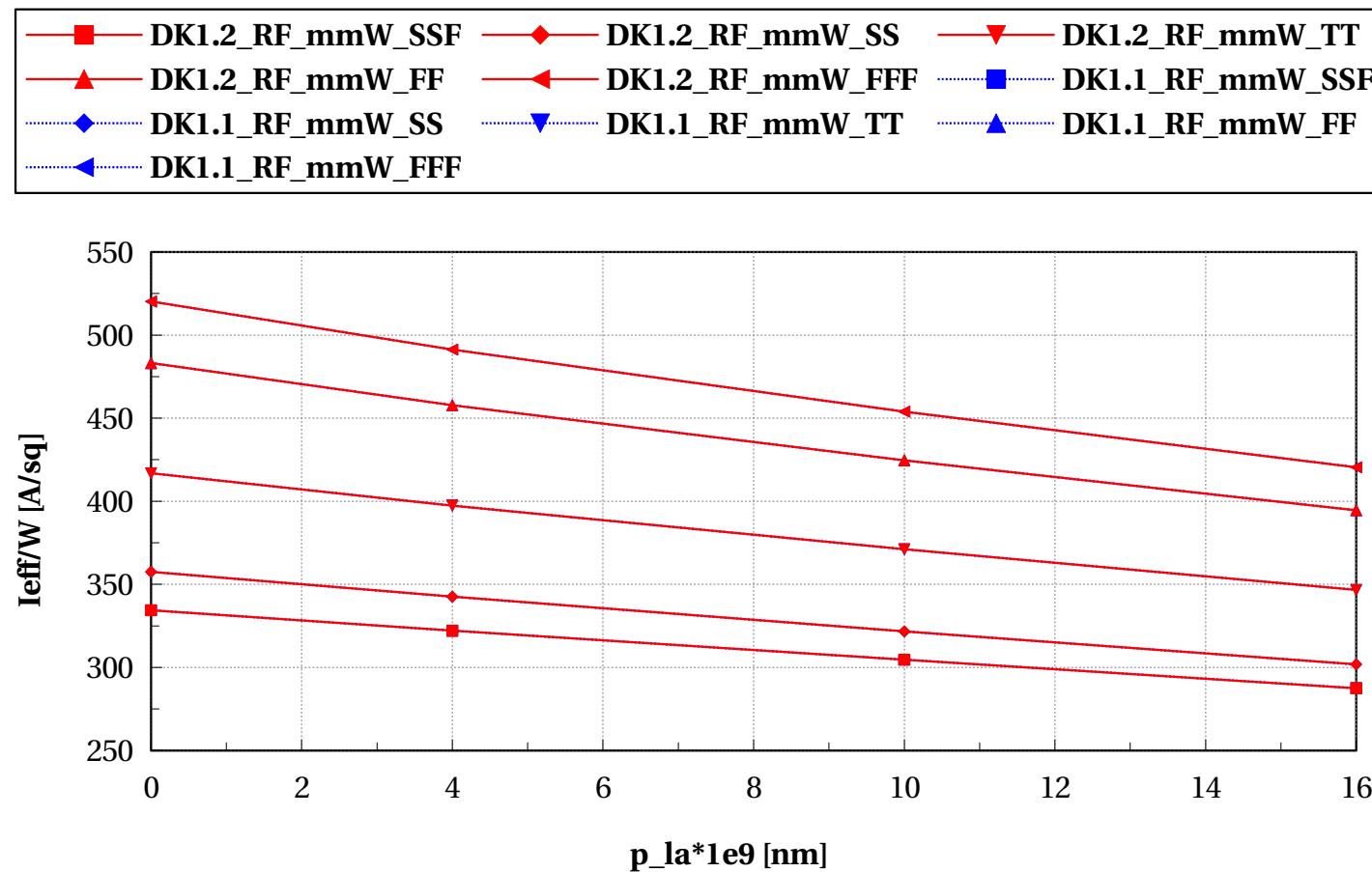
nfet_acc, LogIoff [A] vs p_la*1e9 [nm]

$I_{DSS} = 30\text{e-9}$ and $W = 0.21\text{e-6}$ and $V_{BS} = 0$ and $T = 25$ and $\text{devType} = \text{"PCELLwoWPE"}$



nfet_acc, Ieff/W [A/sq] vs p_la*1e9 [nm]

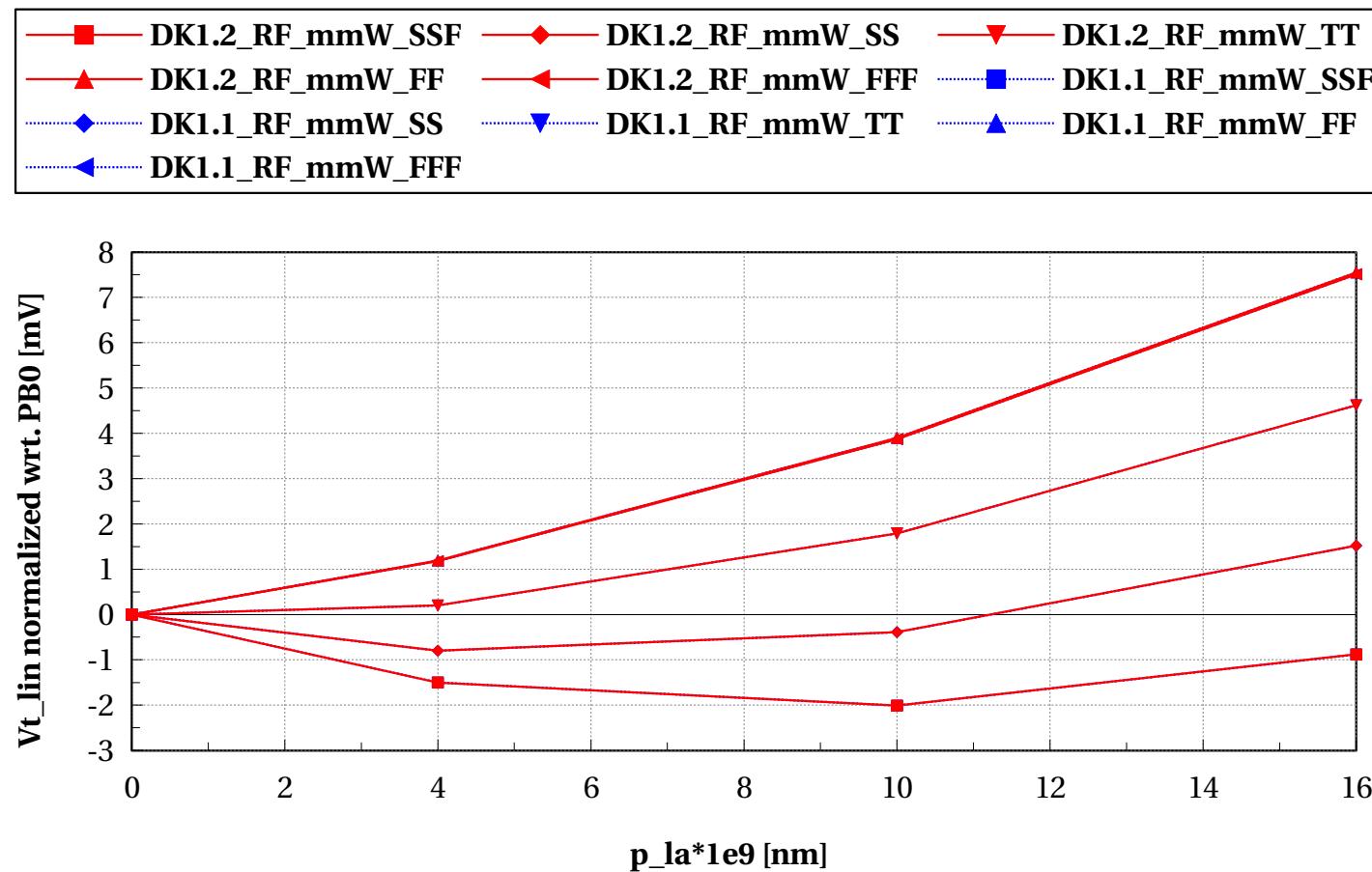
$I = 30e-9$ and $w = 0.21e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



Poly bias effect normalized (L=30nm,W=210nm)

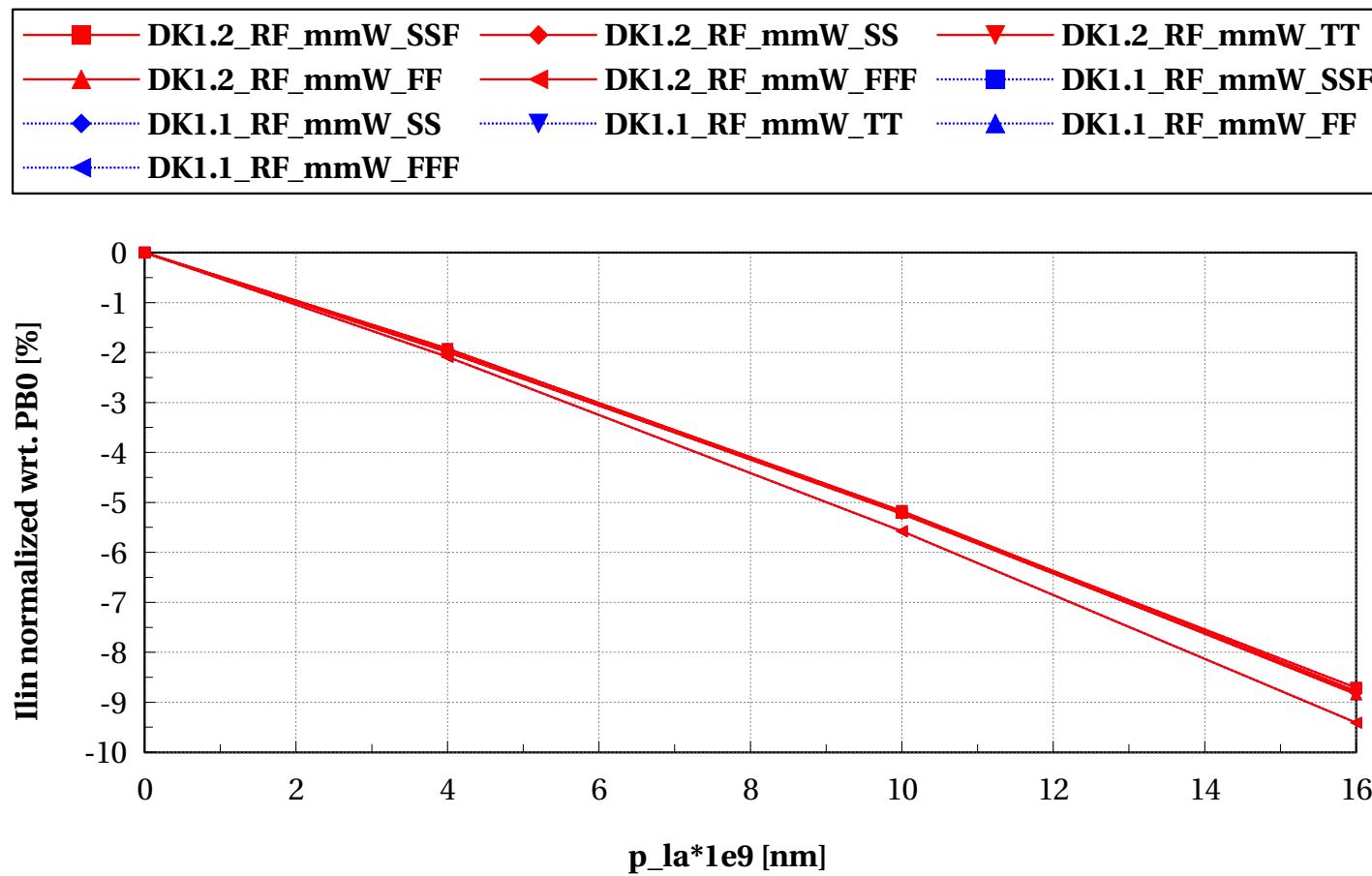
nfet_acc, Vt_lin normalized wrt. PB0 [mV] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.21e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



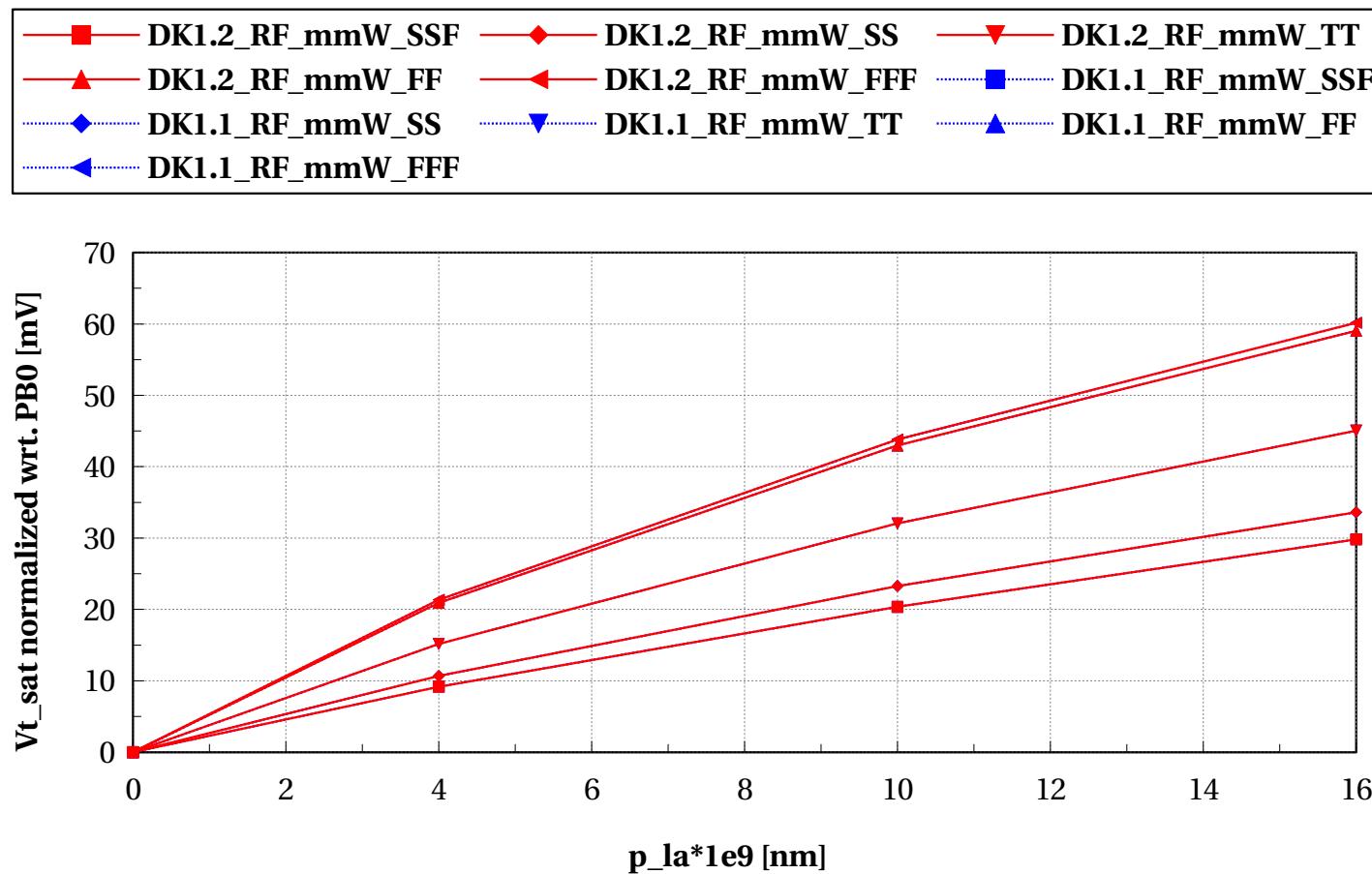
nfet_acc, Ilin normalized wrt. PB0 [%] vs p_la*1e9 [nm]

$I_l = 30e-9$ and $w = 0.21e-6$ and $V_{bs} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



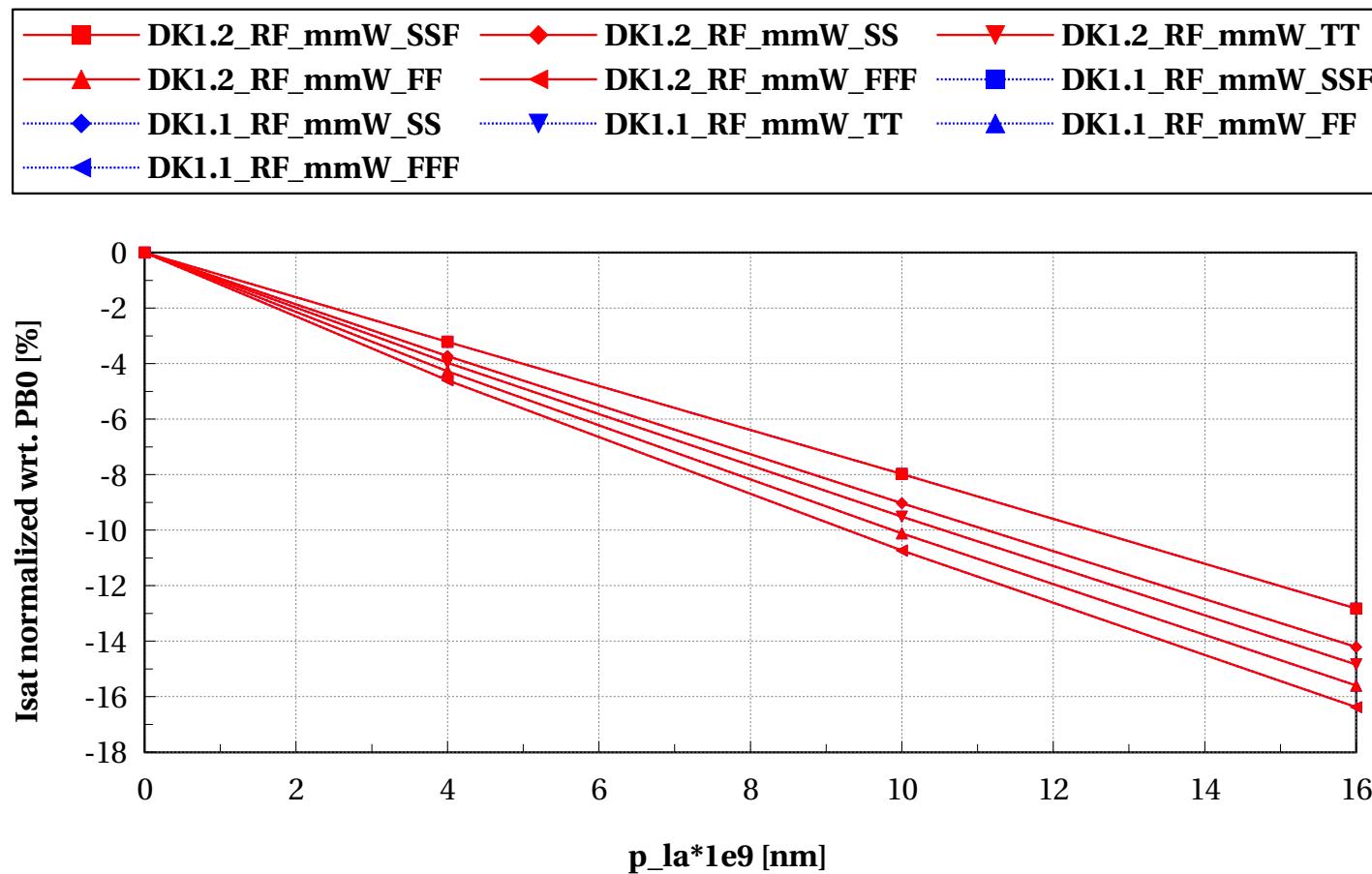
nfet_acc, Vt_sat normalized wrt. PB0 [mV] vs p_la*1e9 [nm]

$I_{DS} = 30\text{e-9}$ and $W = 0.21\text{e-6}$ and $V_{BS} = 0$ and $\text{Temp} = 25$ and $\text{devType} = \text{"PCELLwoWPE"}$



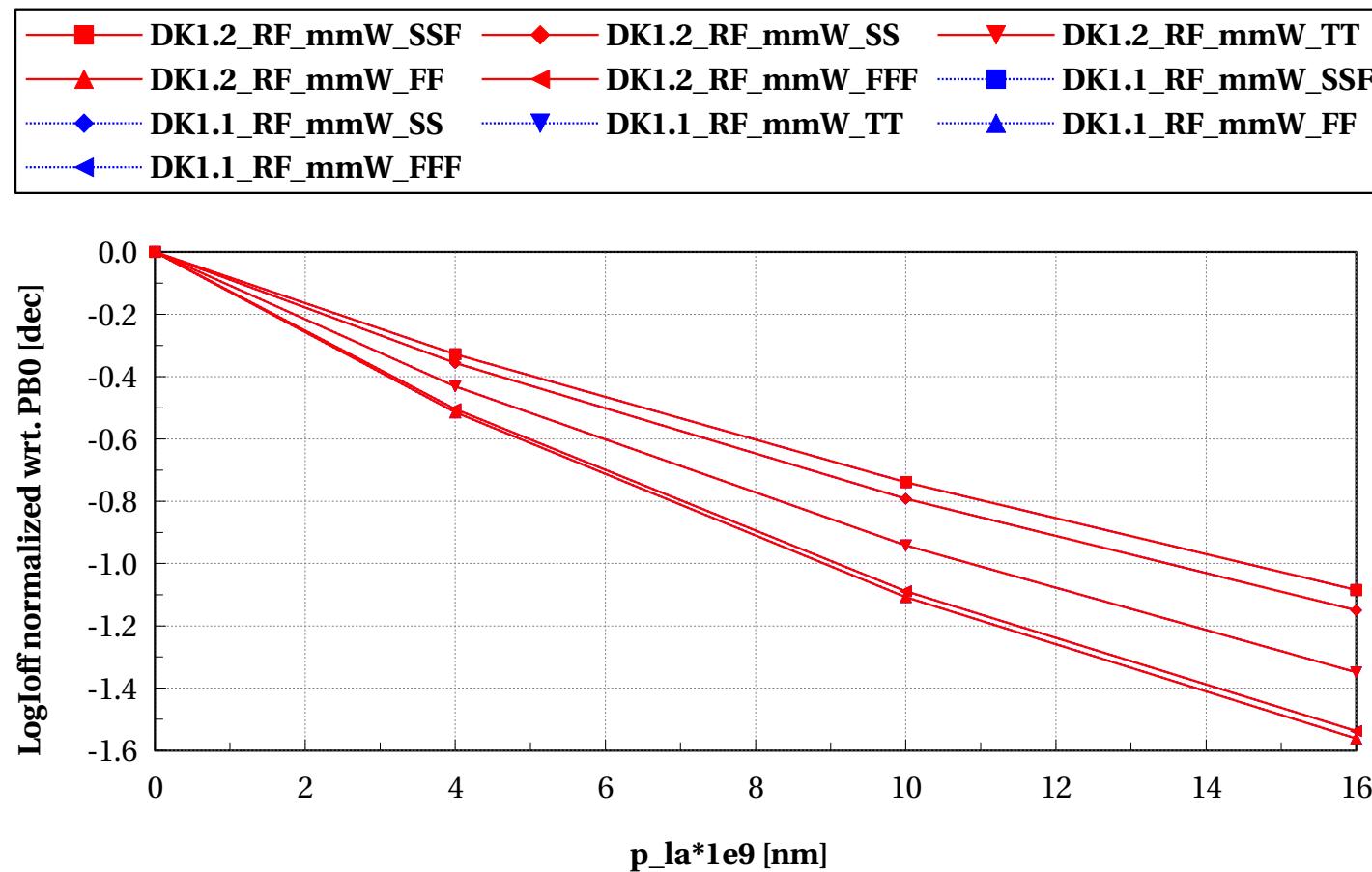
nfet_acc, Isat normalized wrt. PB0 [%] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.21e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



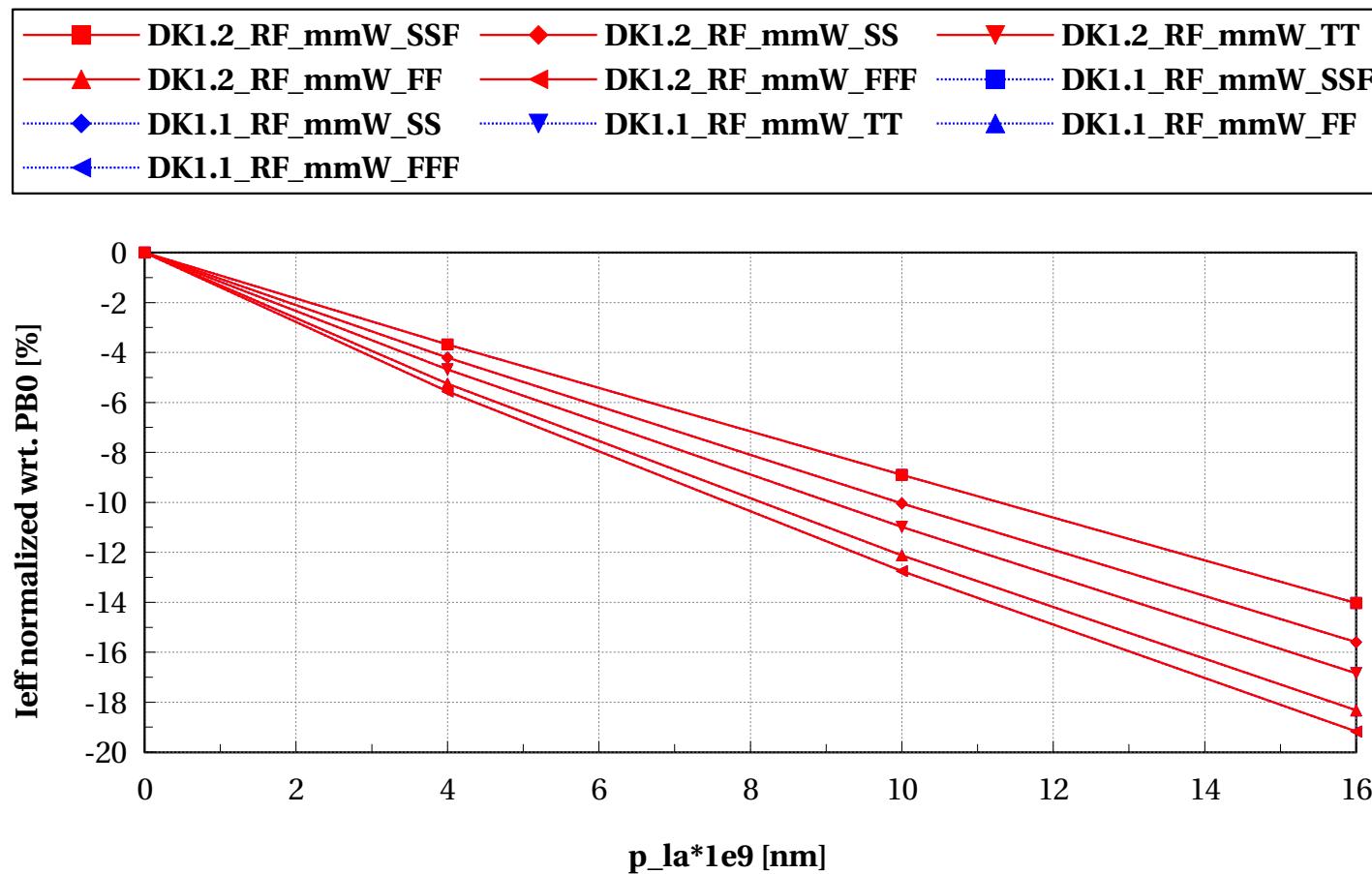
nfet_acc, LogIoff normalized wrt. PB0 [dec] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.21e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



nfet_acc, Ieff normalized wrt. PB0 [%] vs p_la*1e9 [nm]

$I_{eff} = 30e-9$ and $w = 0.21e-6$ and $V_{bs} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



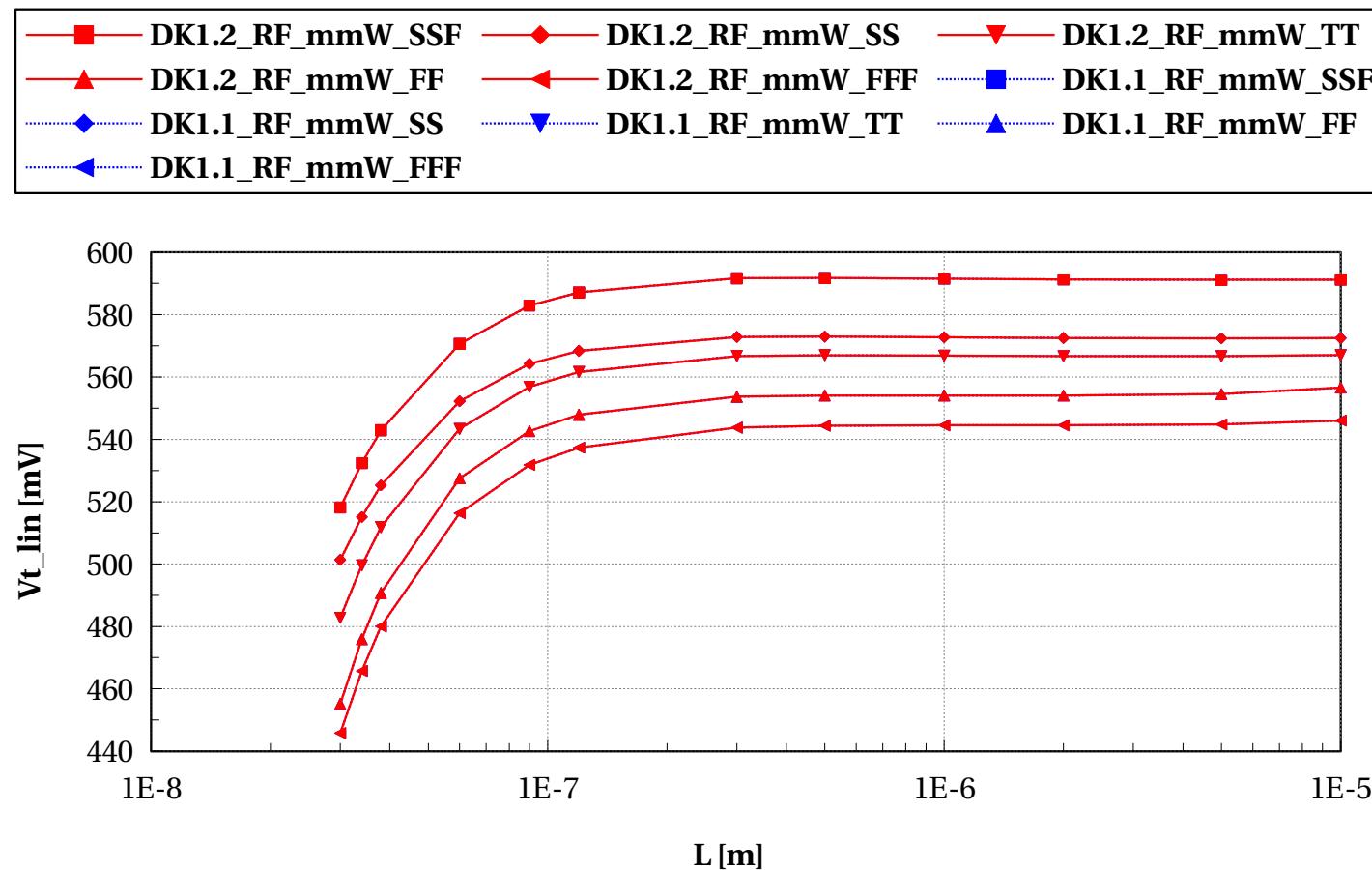
pfet_acc

Electrical characteristics scaling

Scaling versus Length ($W=1\text{ }\mu\text{m}$)

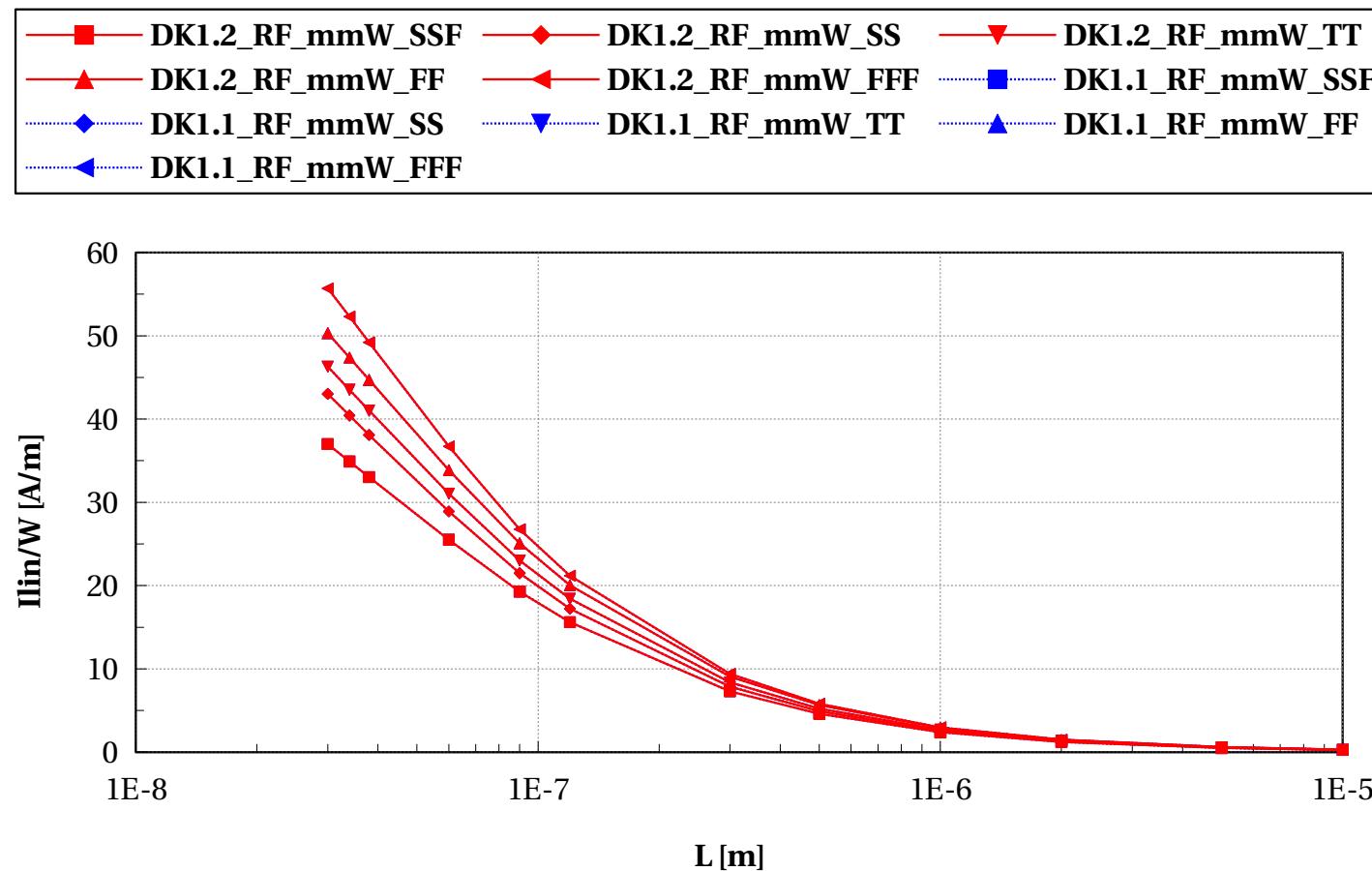
pfet_acc, Vt_lin [mV] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



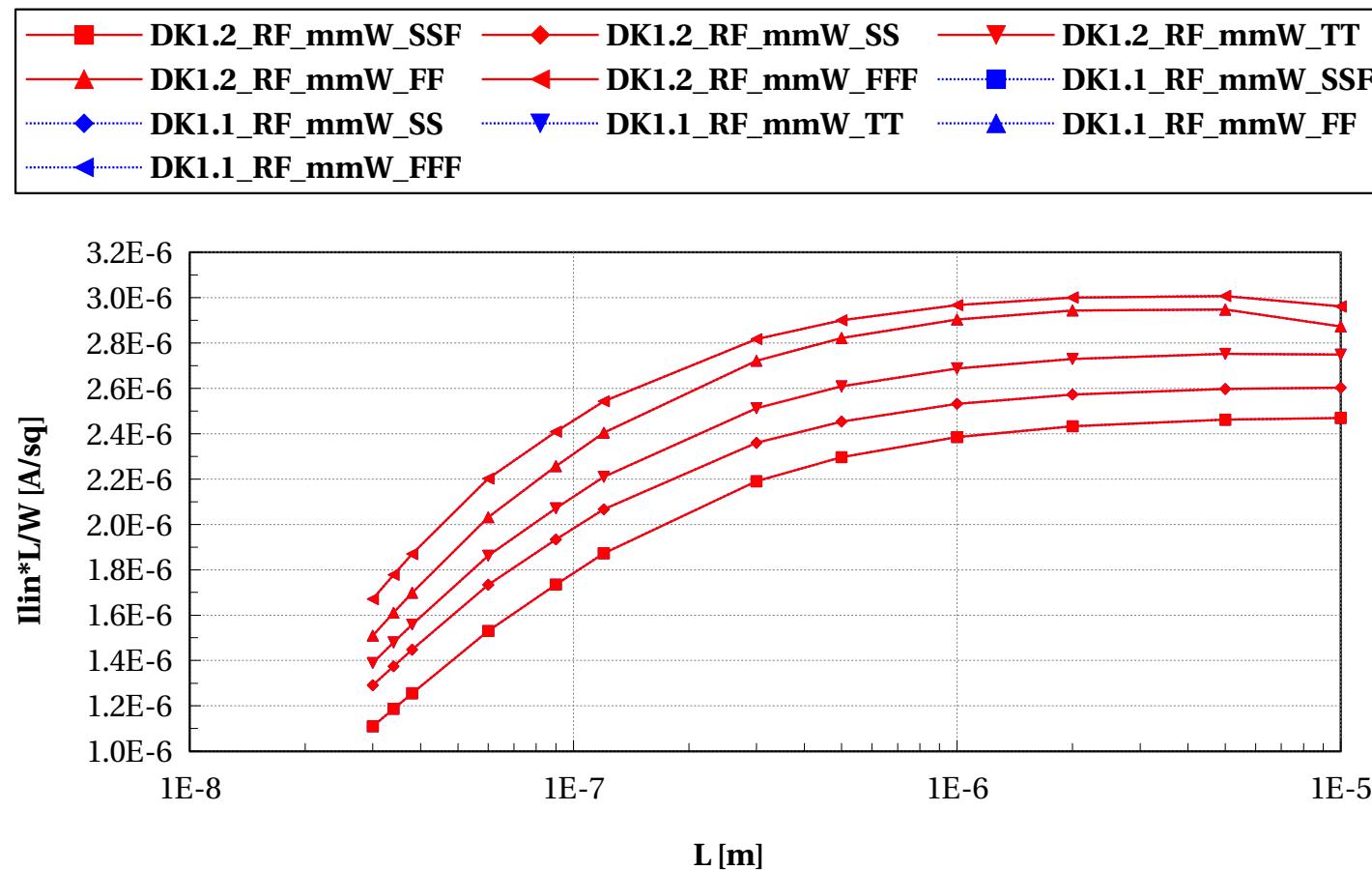
pfet_acc, I_{lin}/W [A/m] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



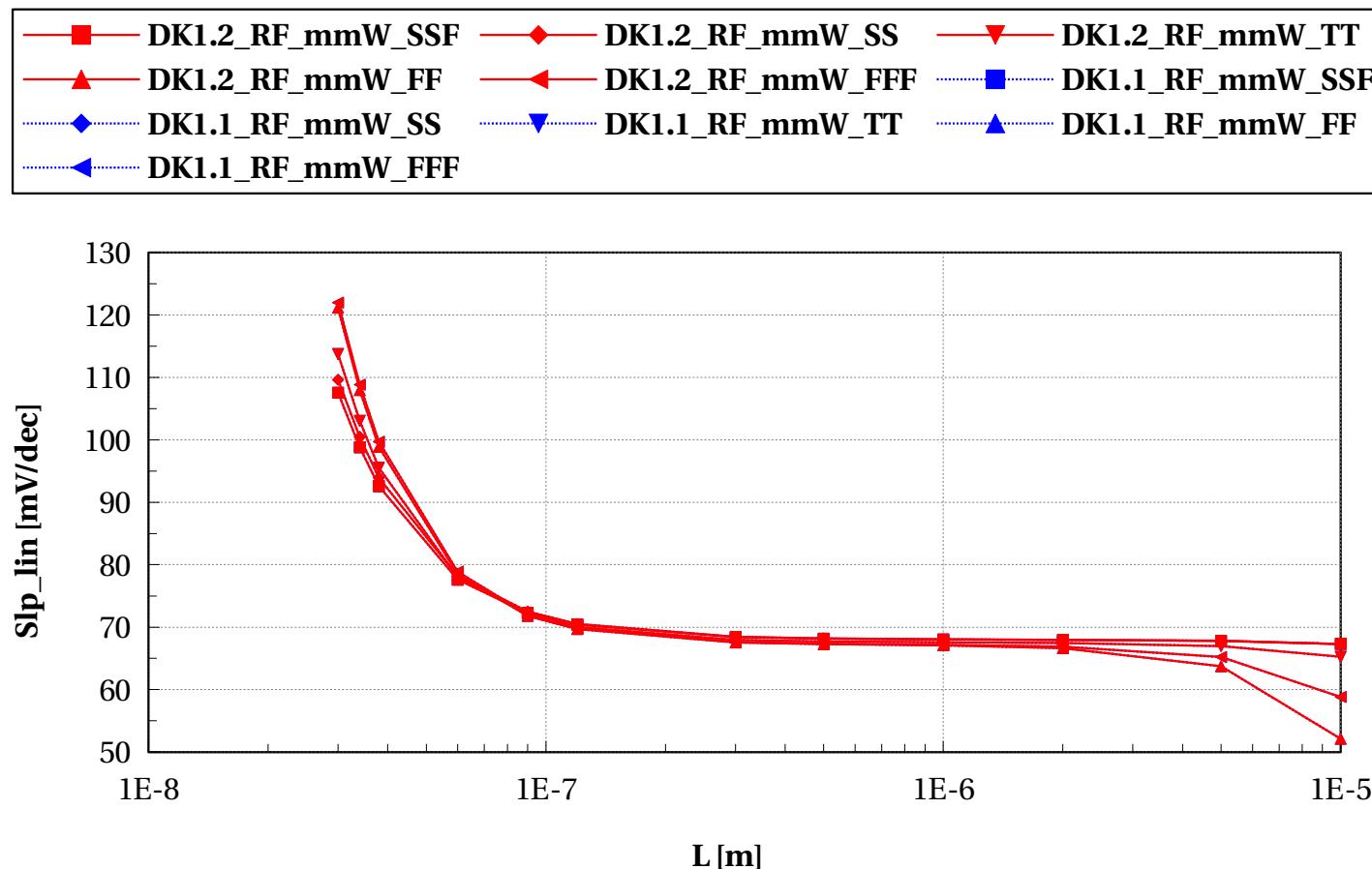
pfet_acc, $I_{lin} \cdot L/W$ [A/sq] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



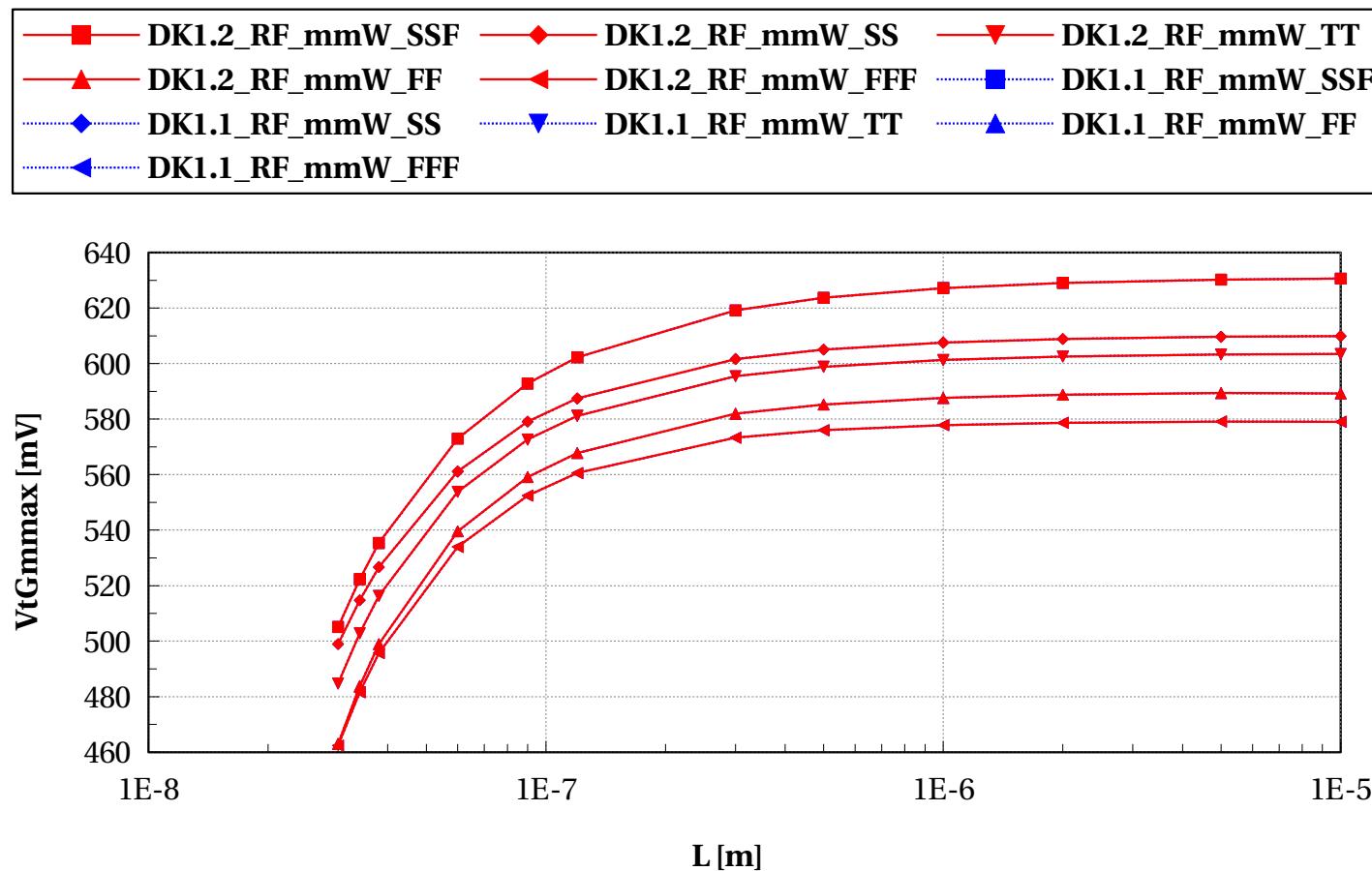
pfet_acc, Slp_lin [mV/dec] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



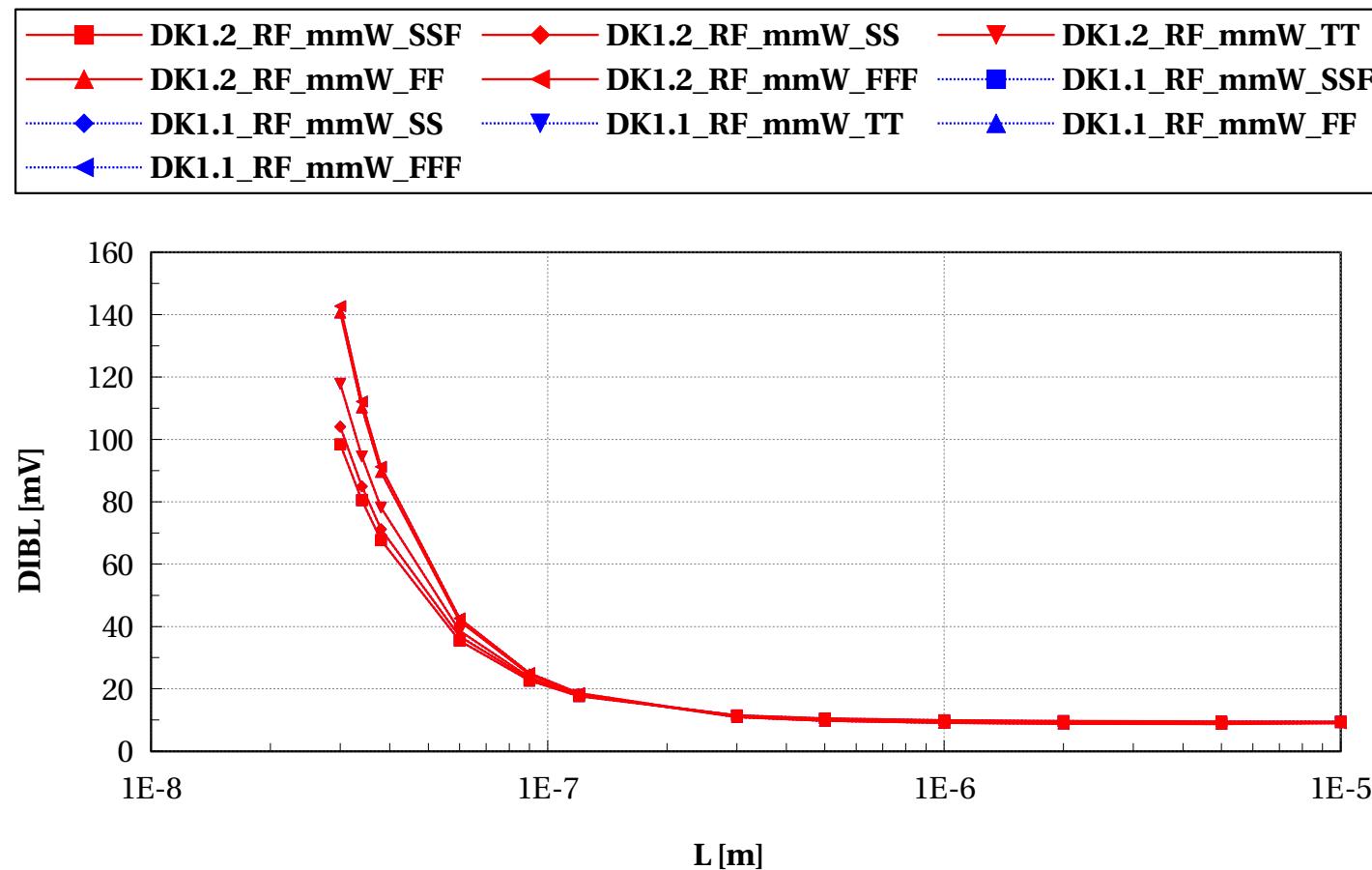
pfet_acc, VtGmmax [mV] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



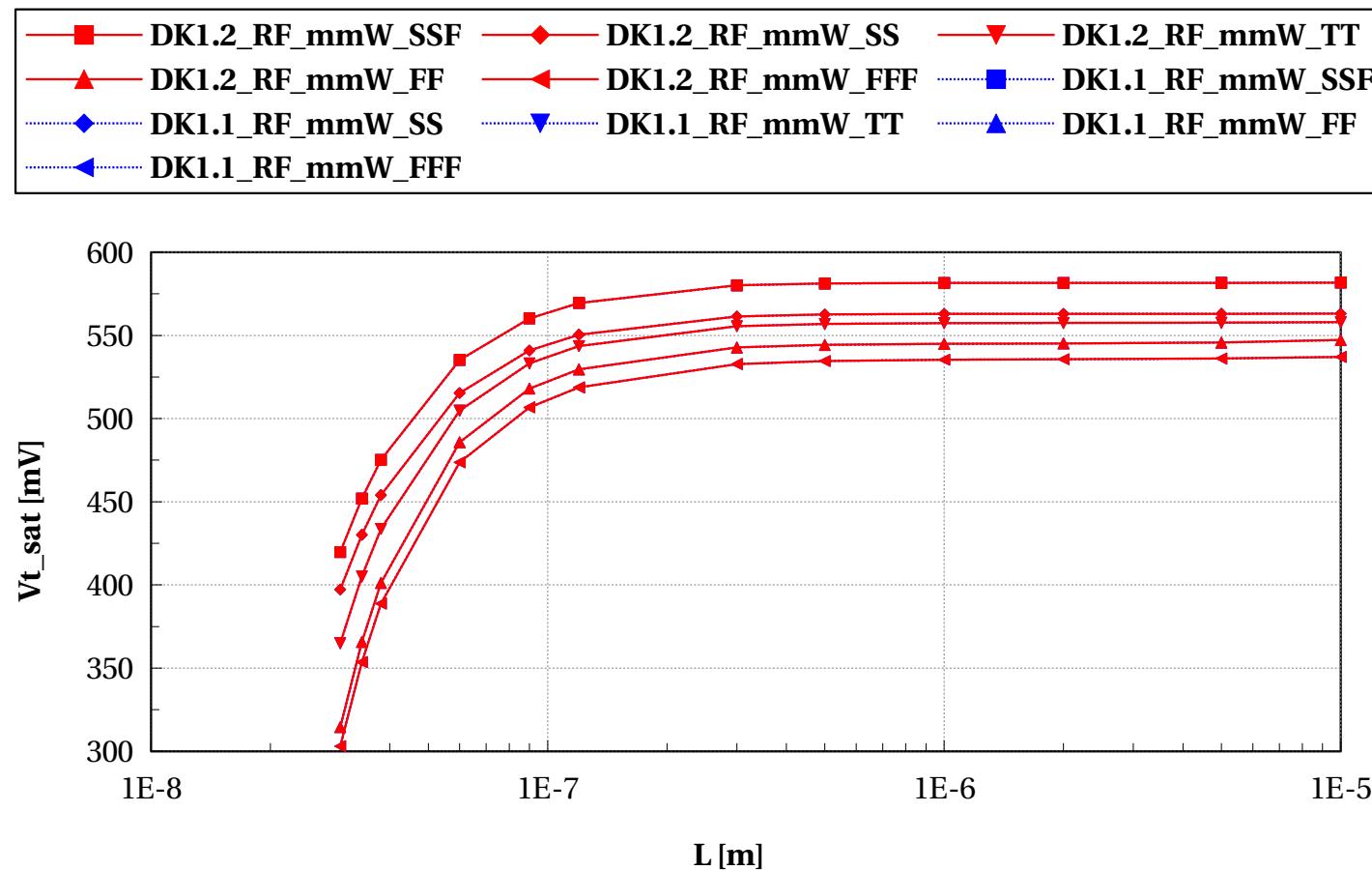
pfet_acc, DIBL [mV] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



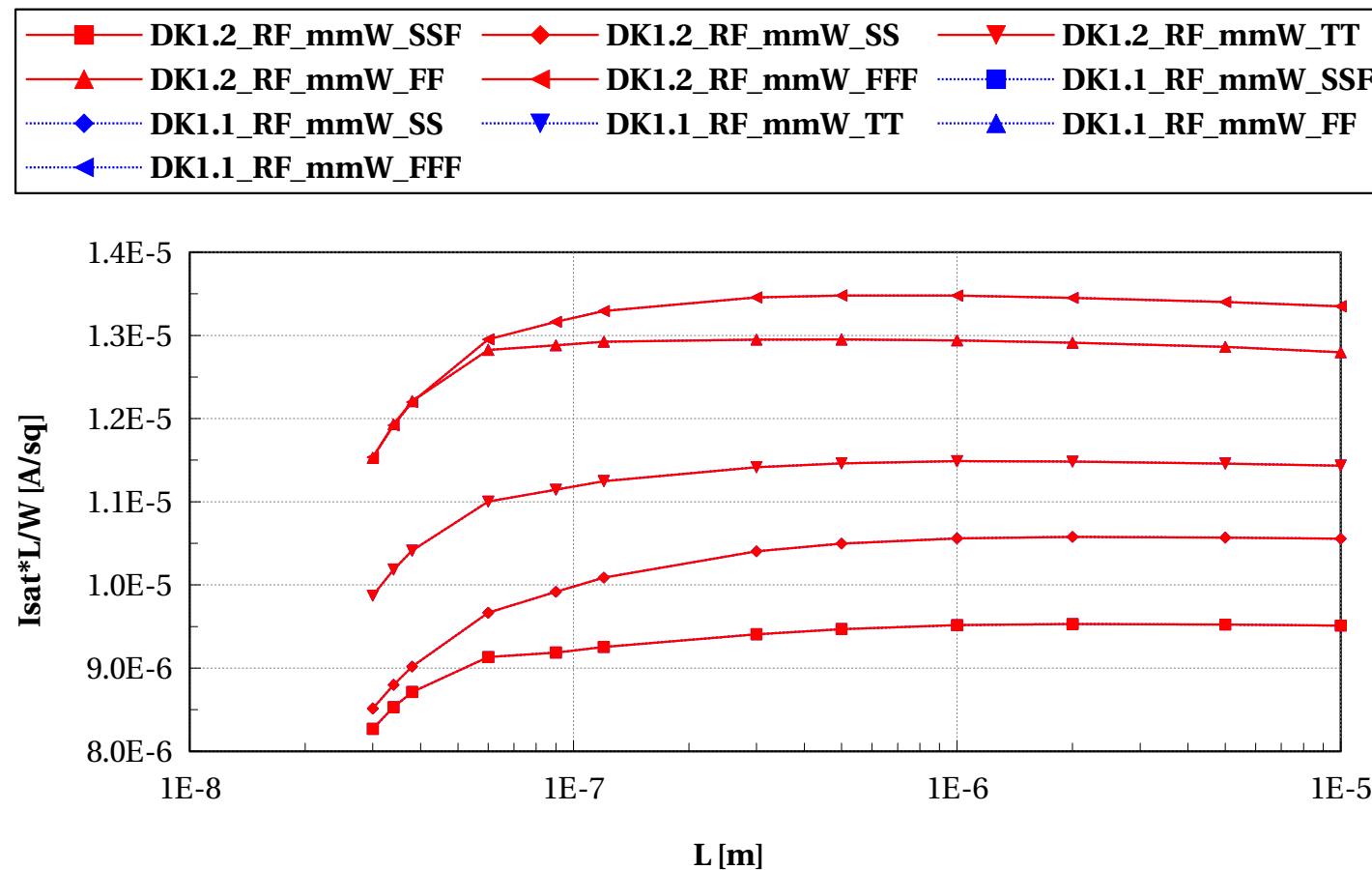
pfet_acc, Vt_sat [mV] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



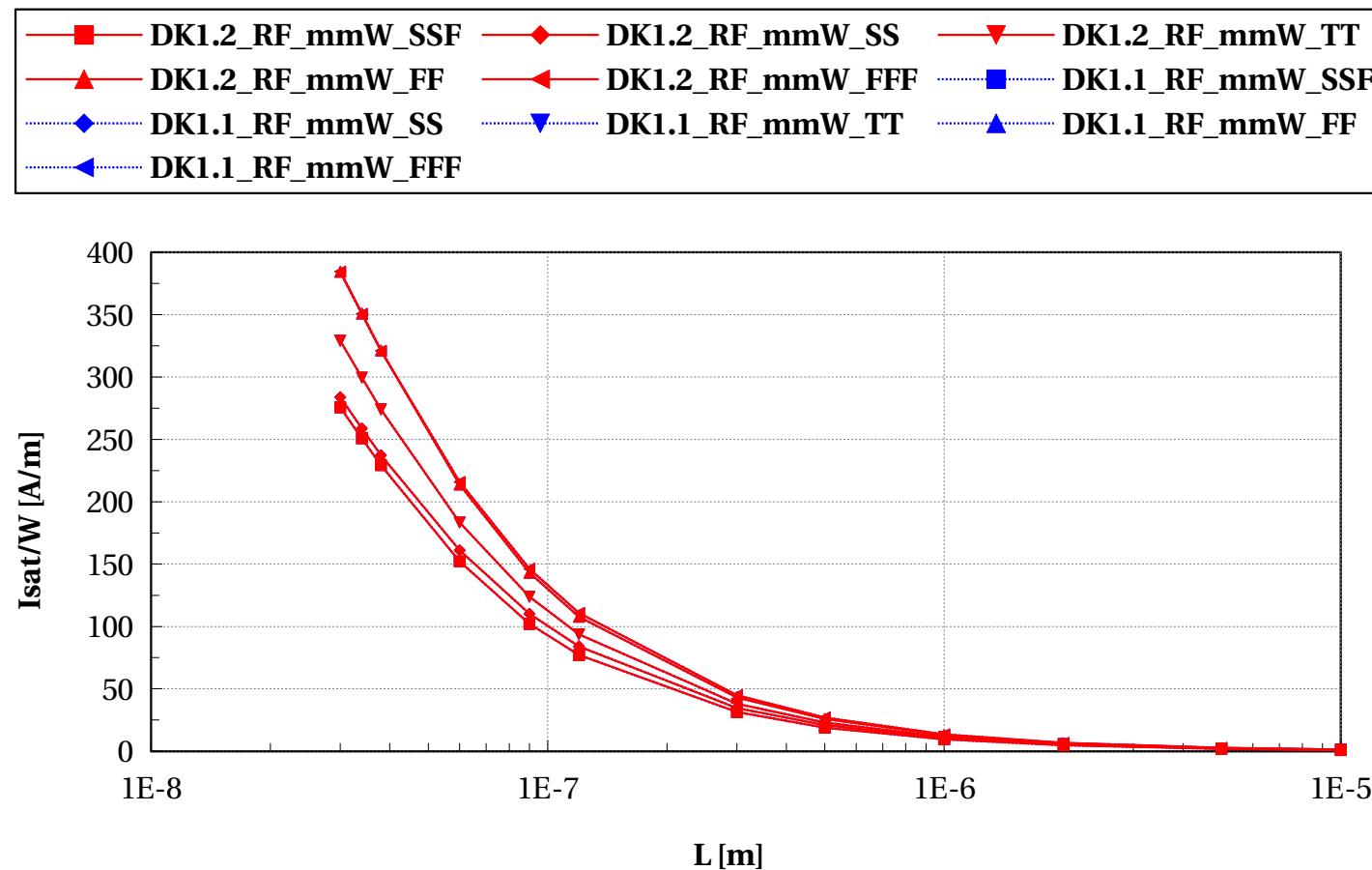
pfet_acc, $I_{sat} \cdot L/W$ [A/sq] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



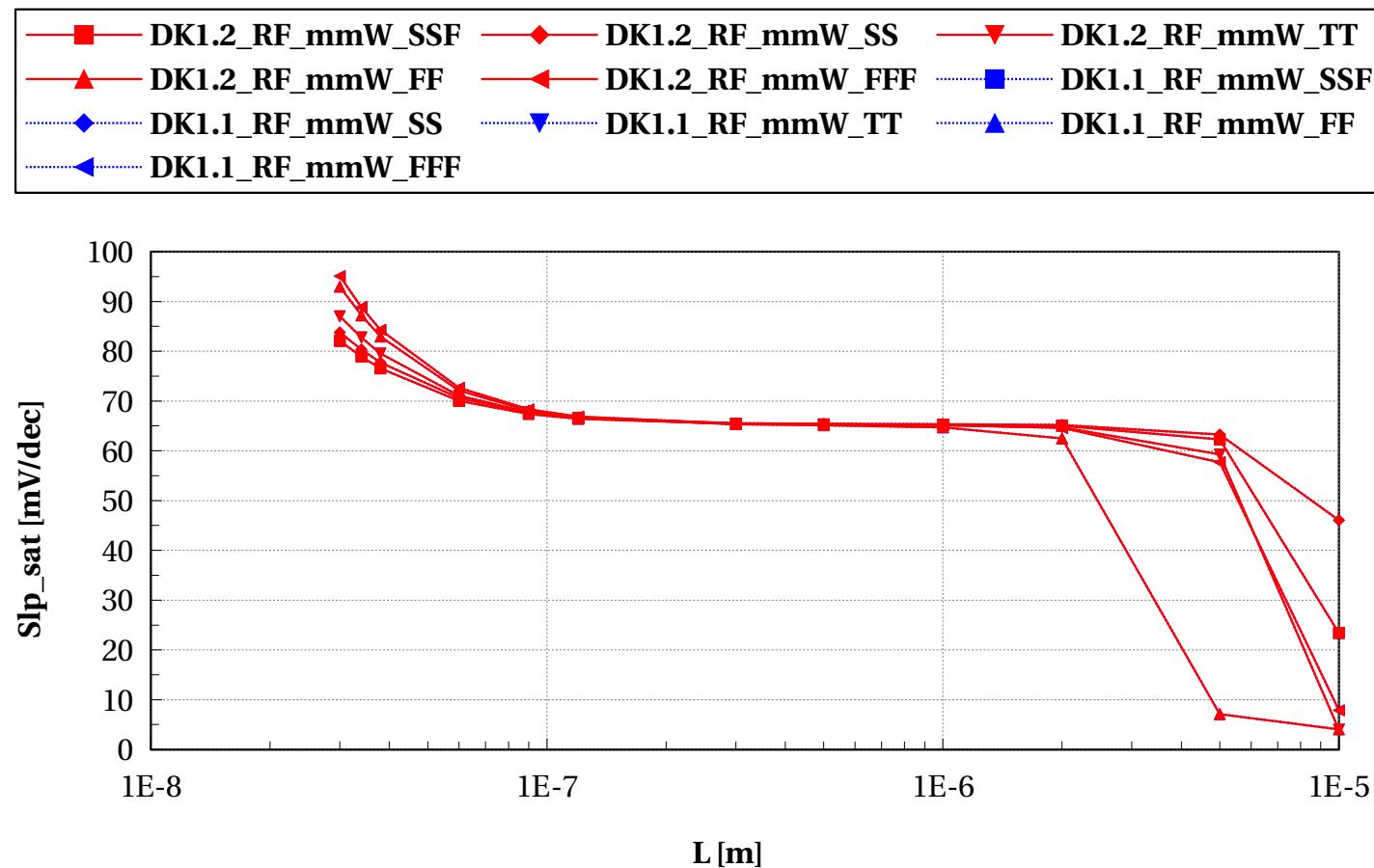
pfet_acc, Isat/W [A/m] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



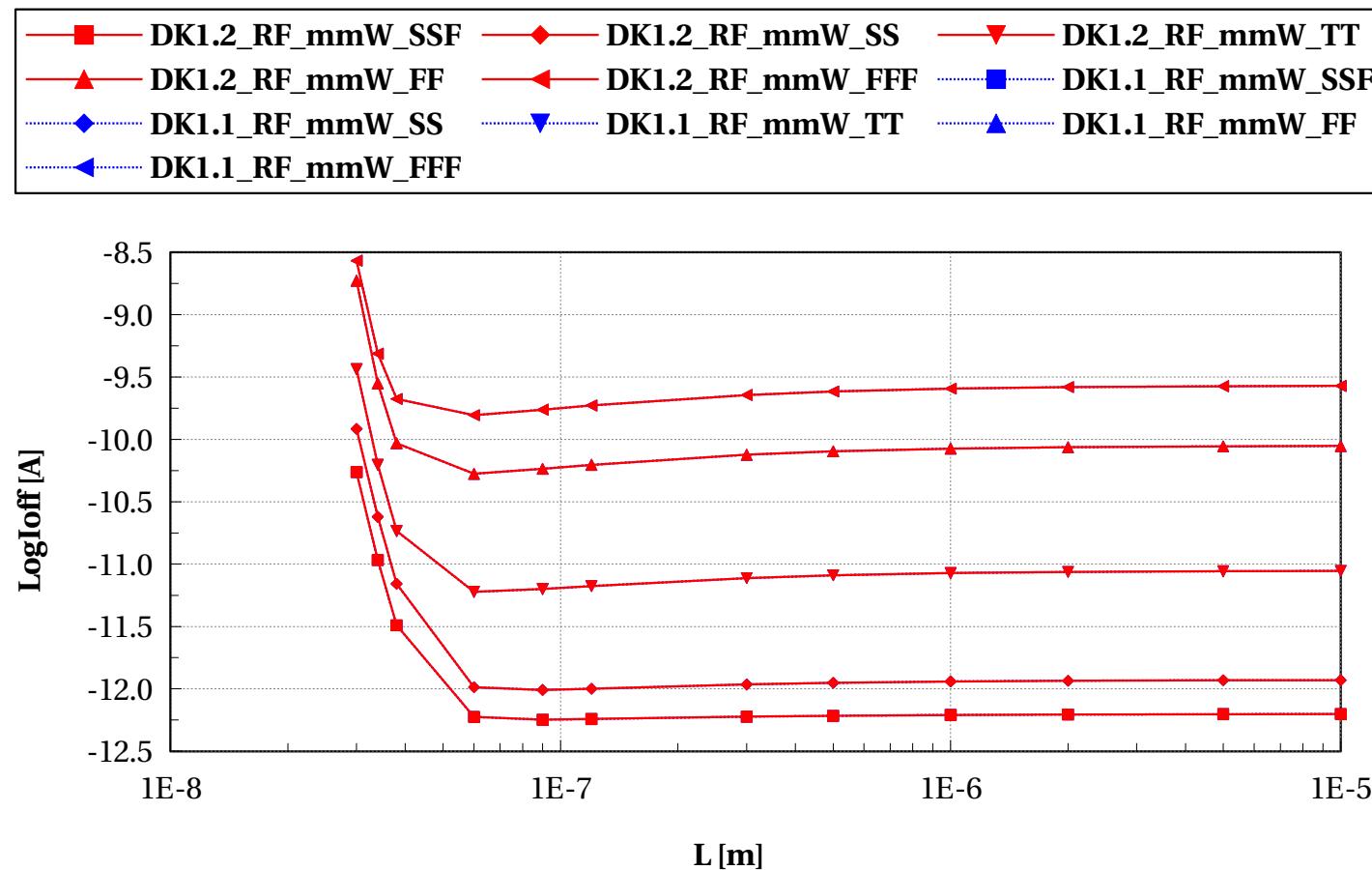
pfet_acc, Slp_sat [mV/dec] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



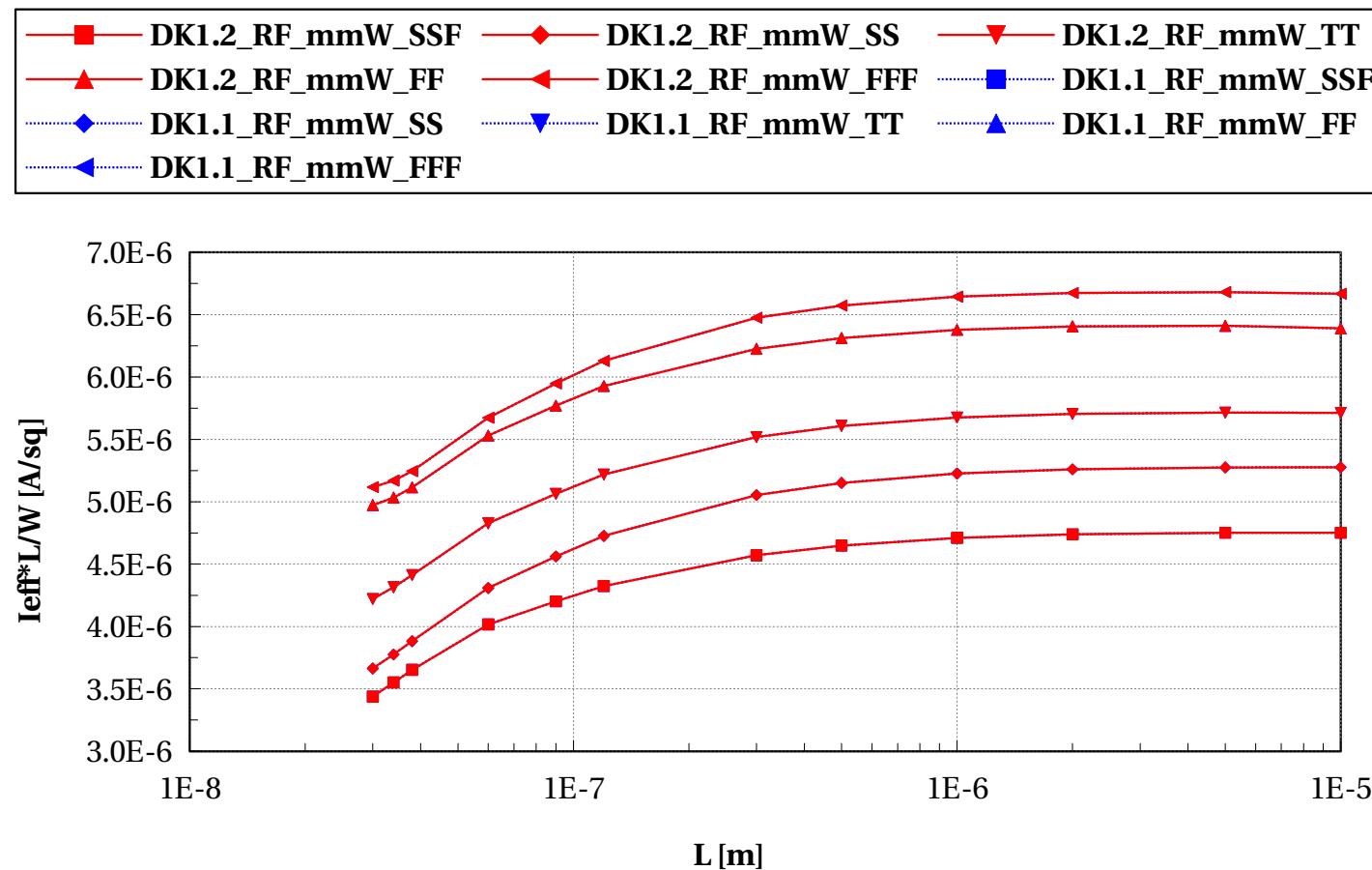
pfet_acc, LogIoff [A] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



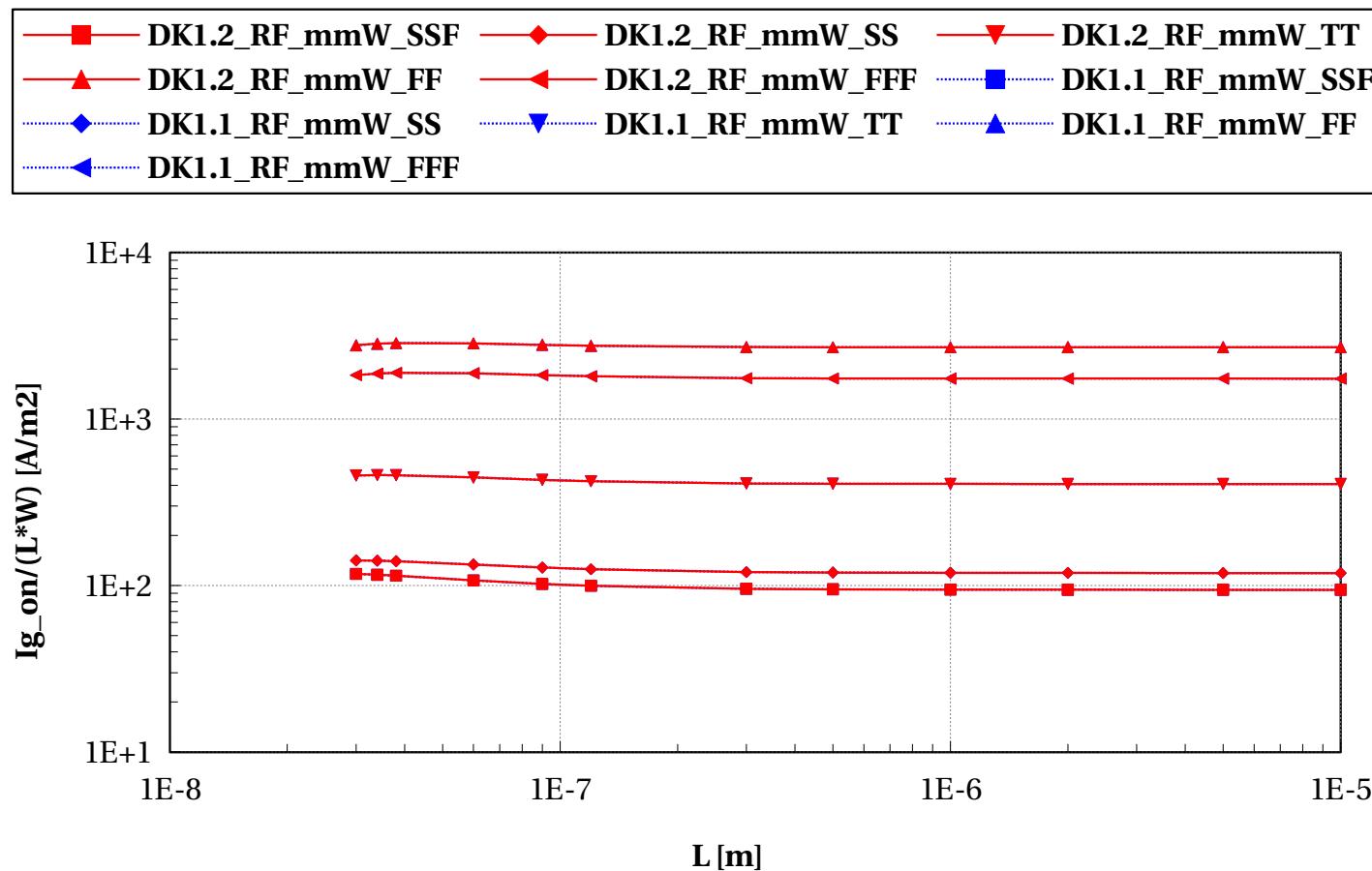
pfet_acc, $I_{eff} \cdot L/W$ [A/sq] vs L [m]

$w=1e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_{la}=0$ and $devType=="PCELLwoWPE"$



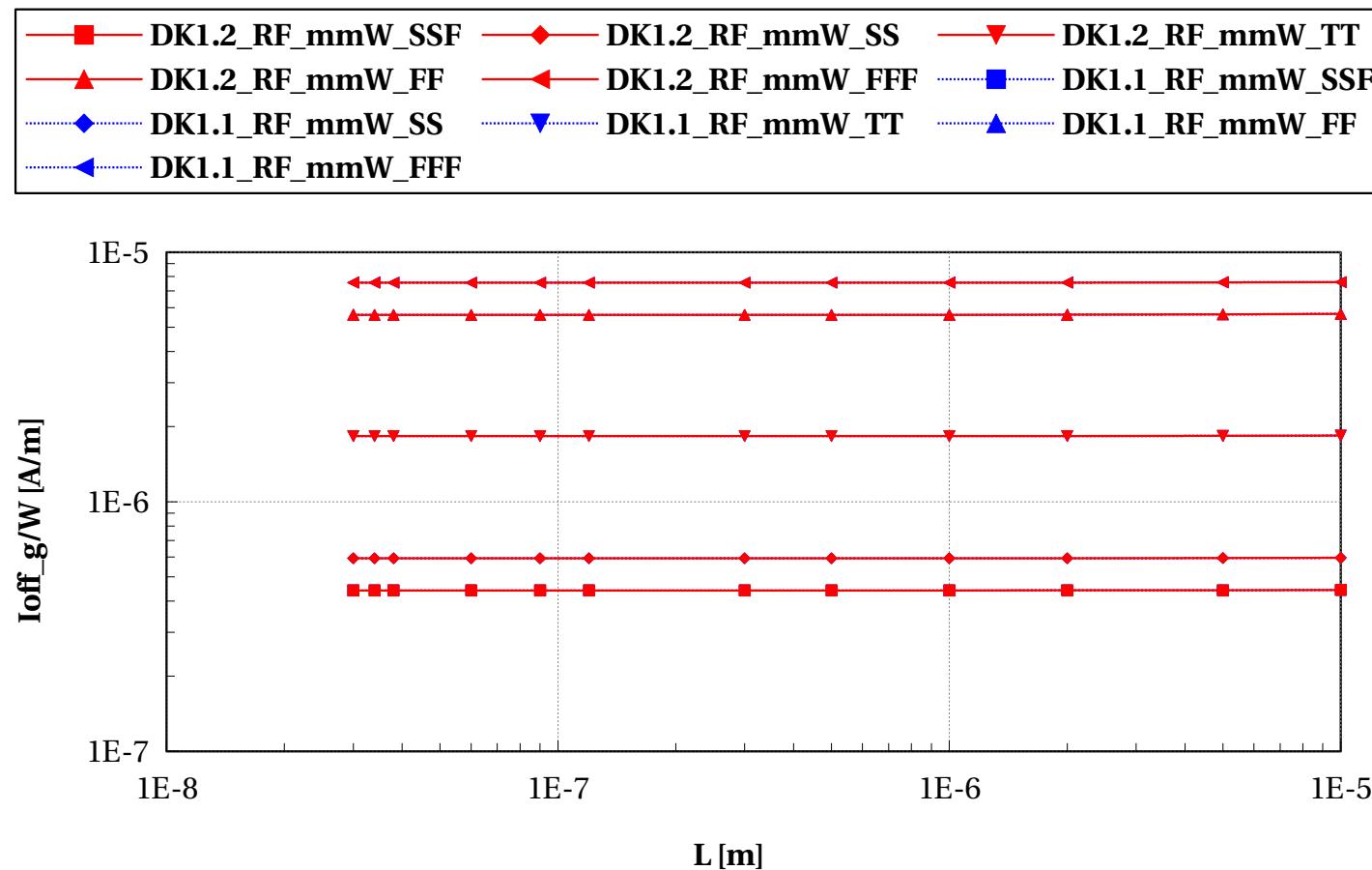
pfet_acc, $I_{g_on}/(L^*W)$ [A/m²] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



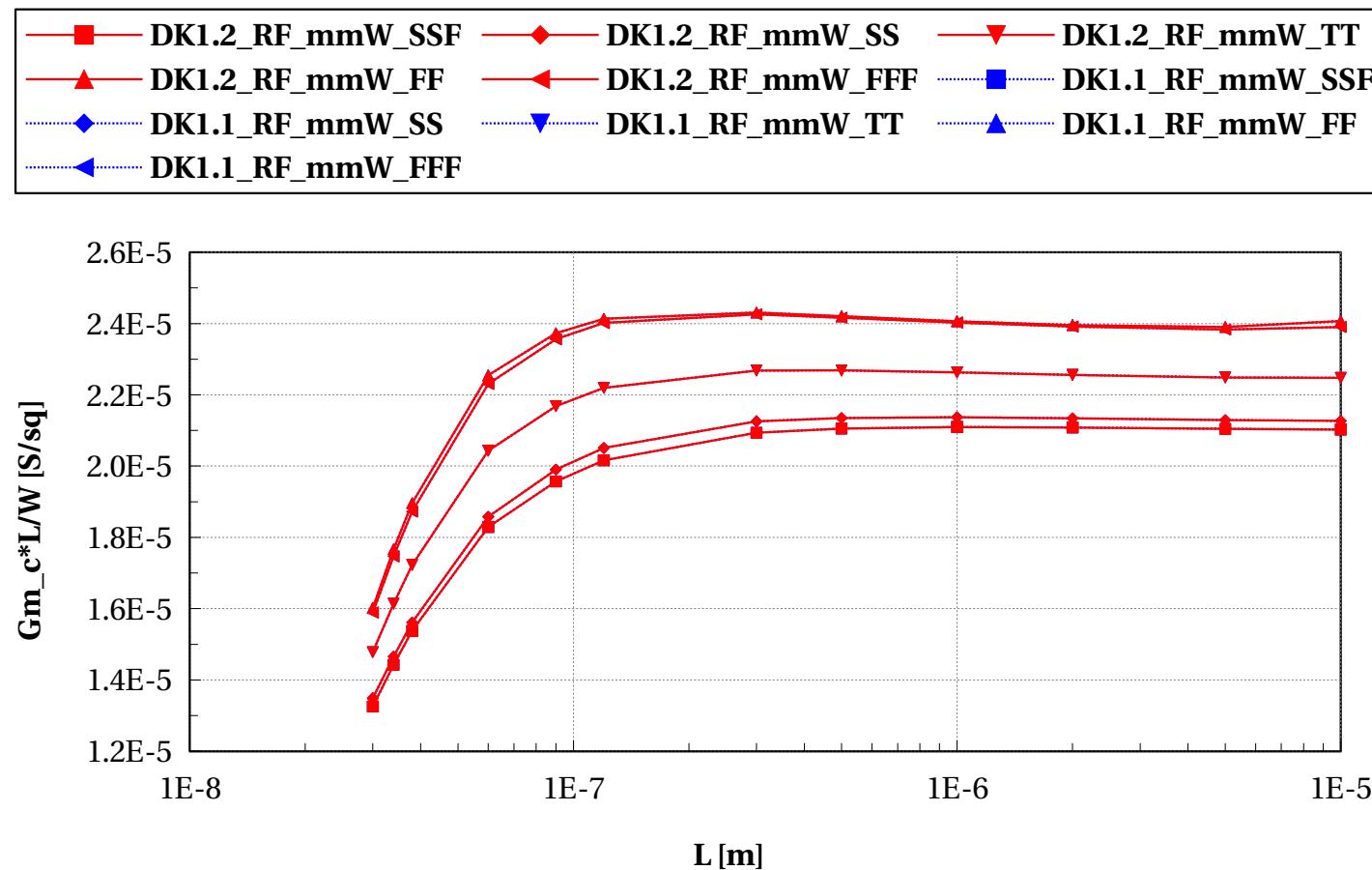
pfet_acc, Ioff_g/W [A/m] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



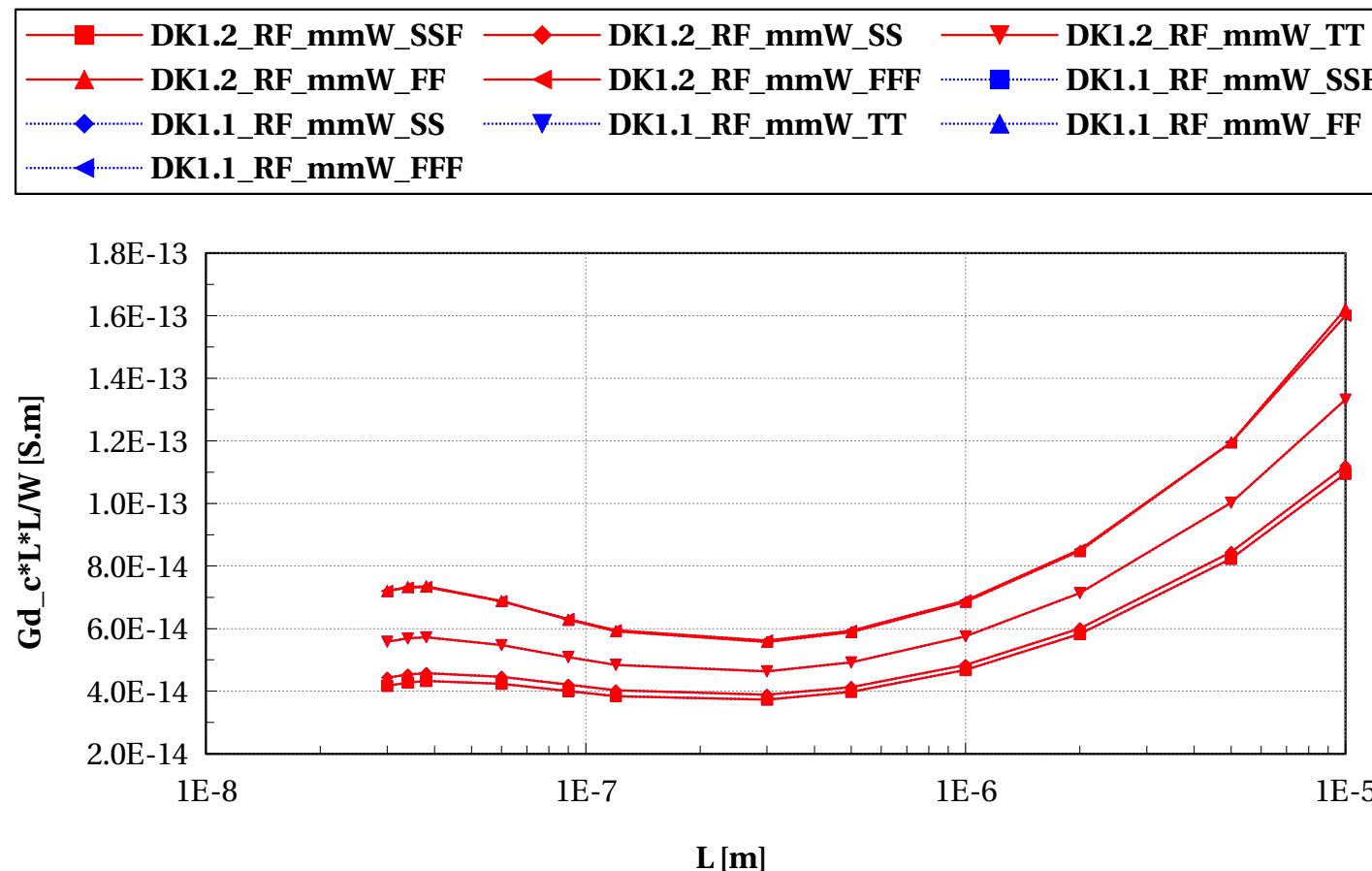
pfet_acc, Gm_c*L/W [S/sq] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



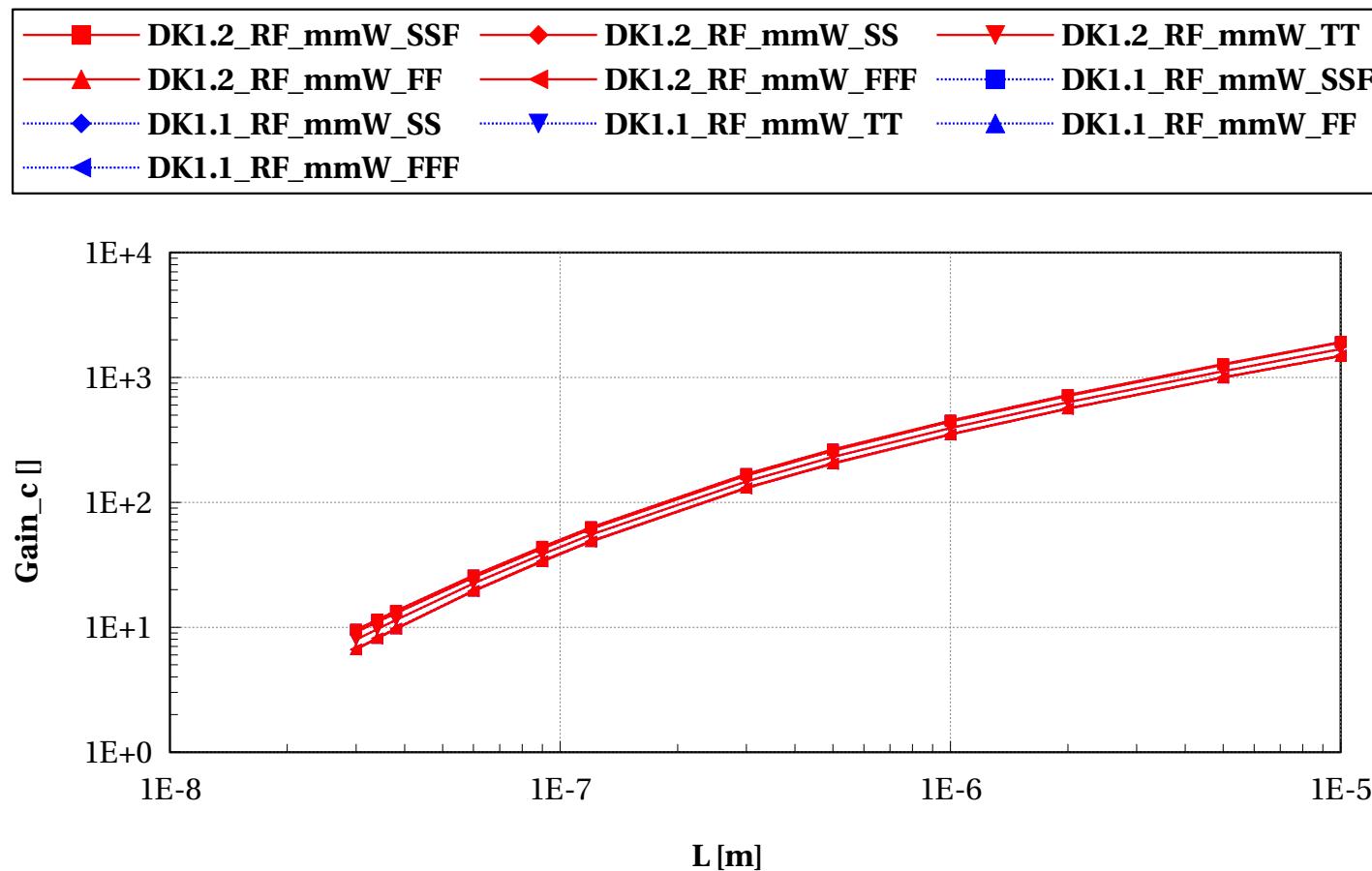
pfet_acc, $G_d \cdot c^* L^* L/W$ [S.m] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



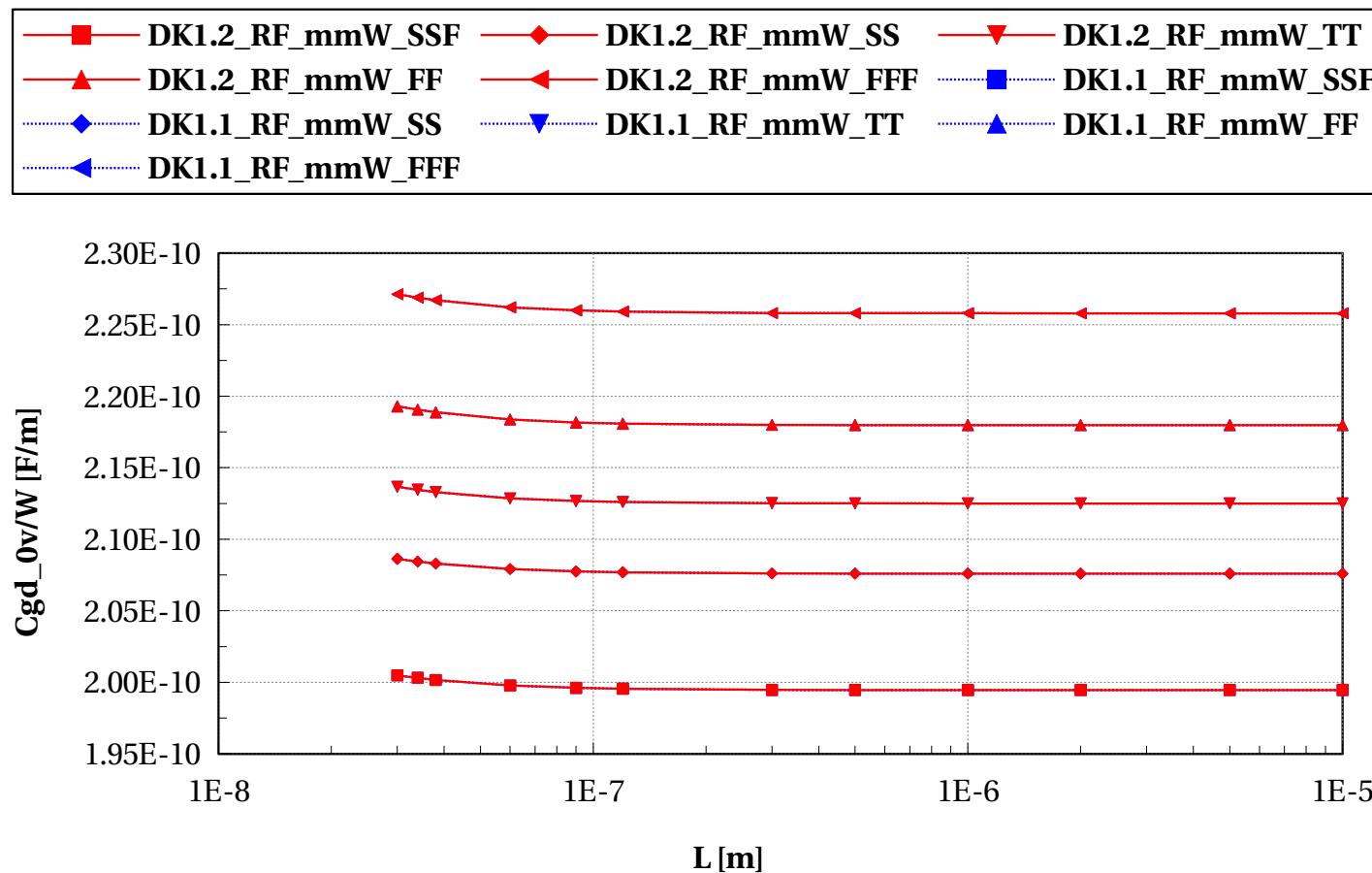
pfet_acc, Gain_c [] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



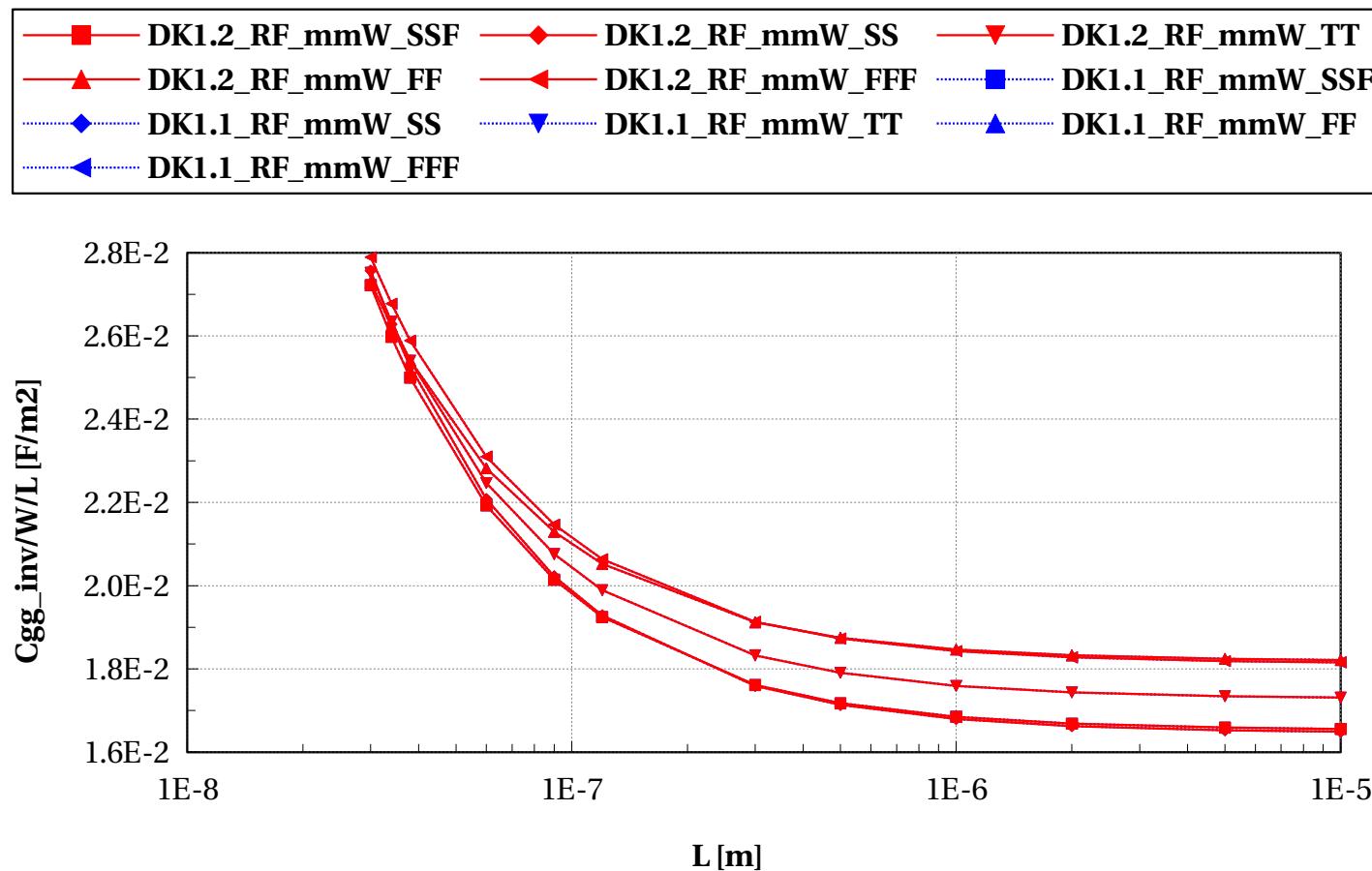
pfet_acc, Cgd_0v/W [F/m] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



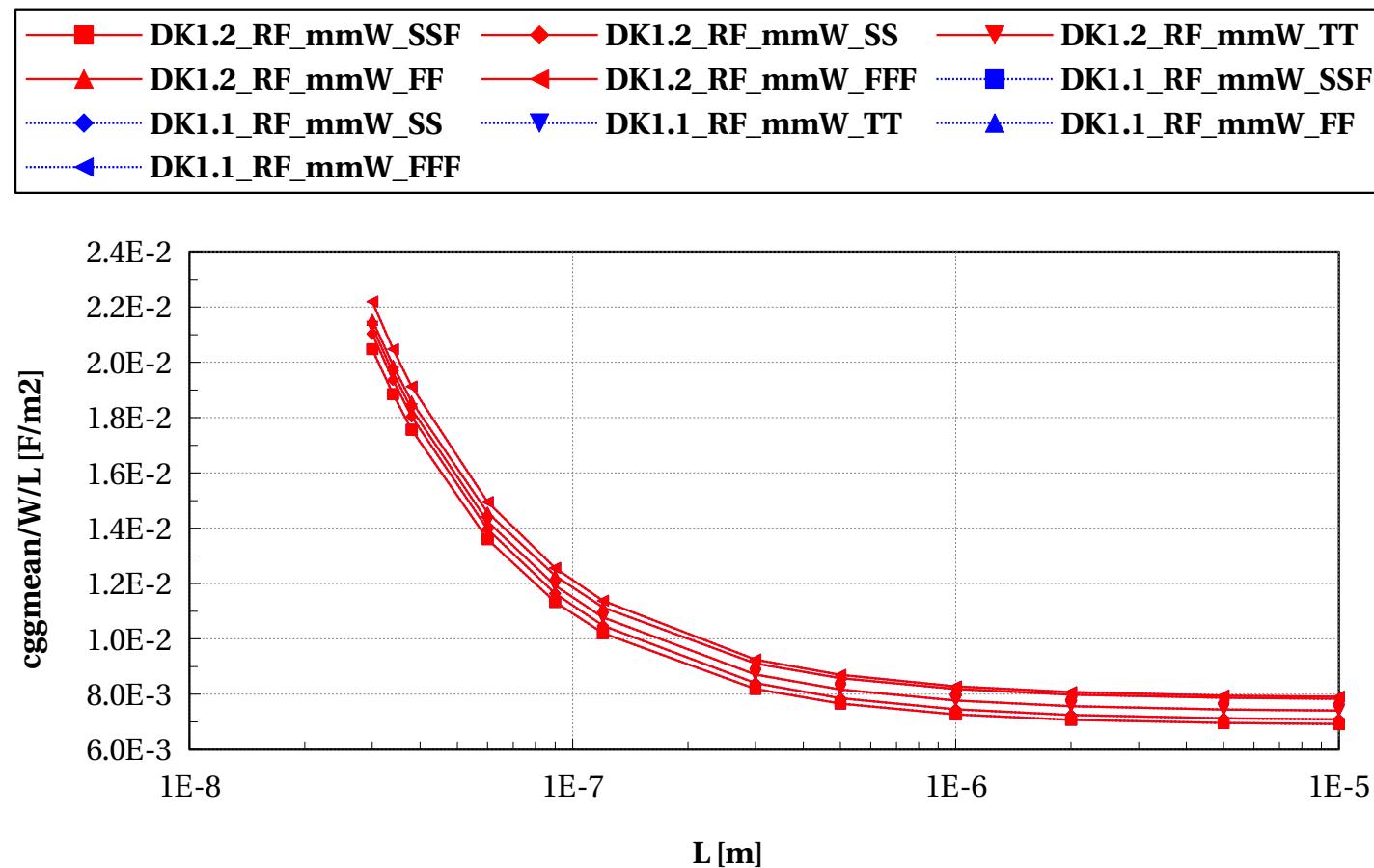
pfet_acc, Cgg_inv/W/L [F/m2] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



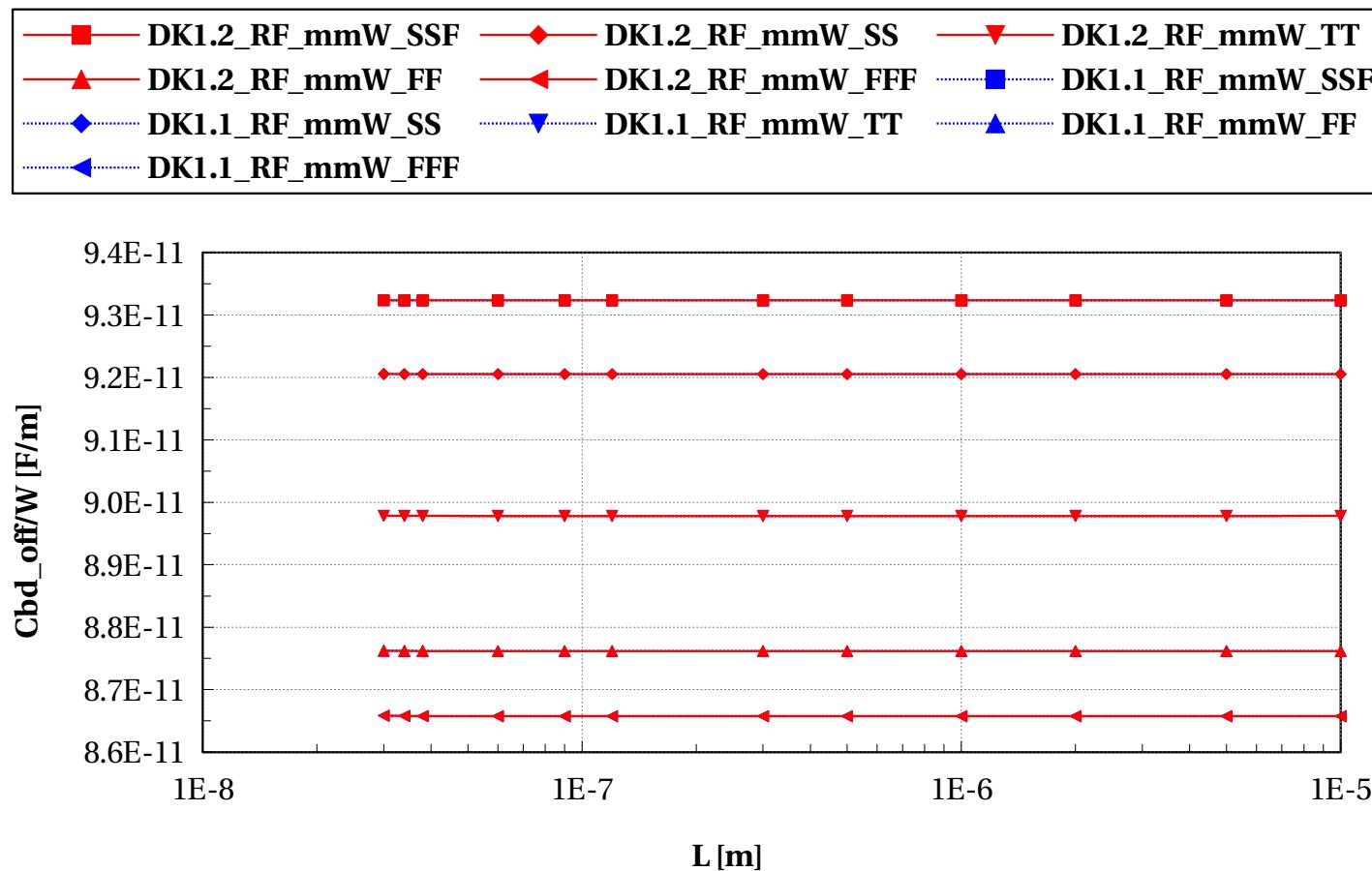
pfet_acc, cggmean/W/L [F/m²] vs L [m]

w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



pfet_acc, C_{bd_off}/W [F/m] vs L [m]

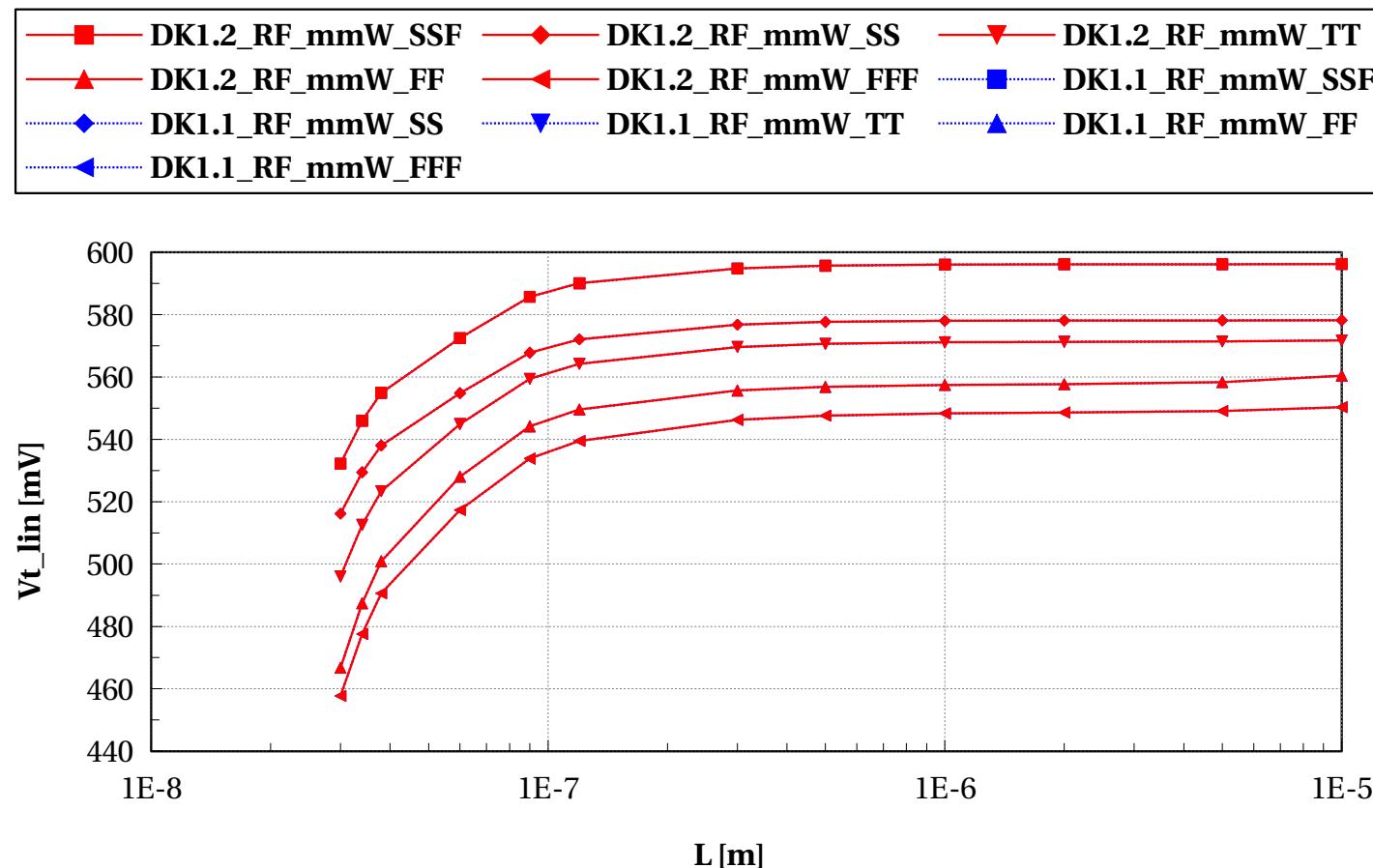
w==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Scaling versus Length (W=300nm)

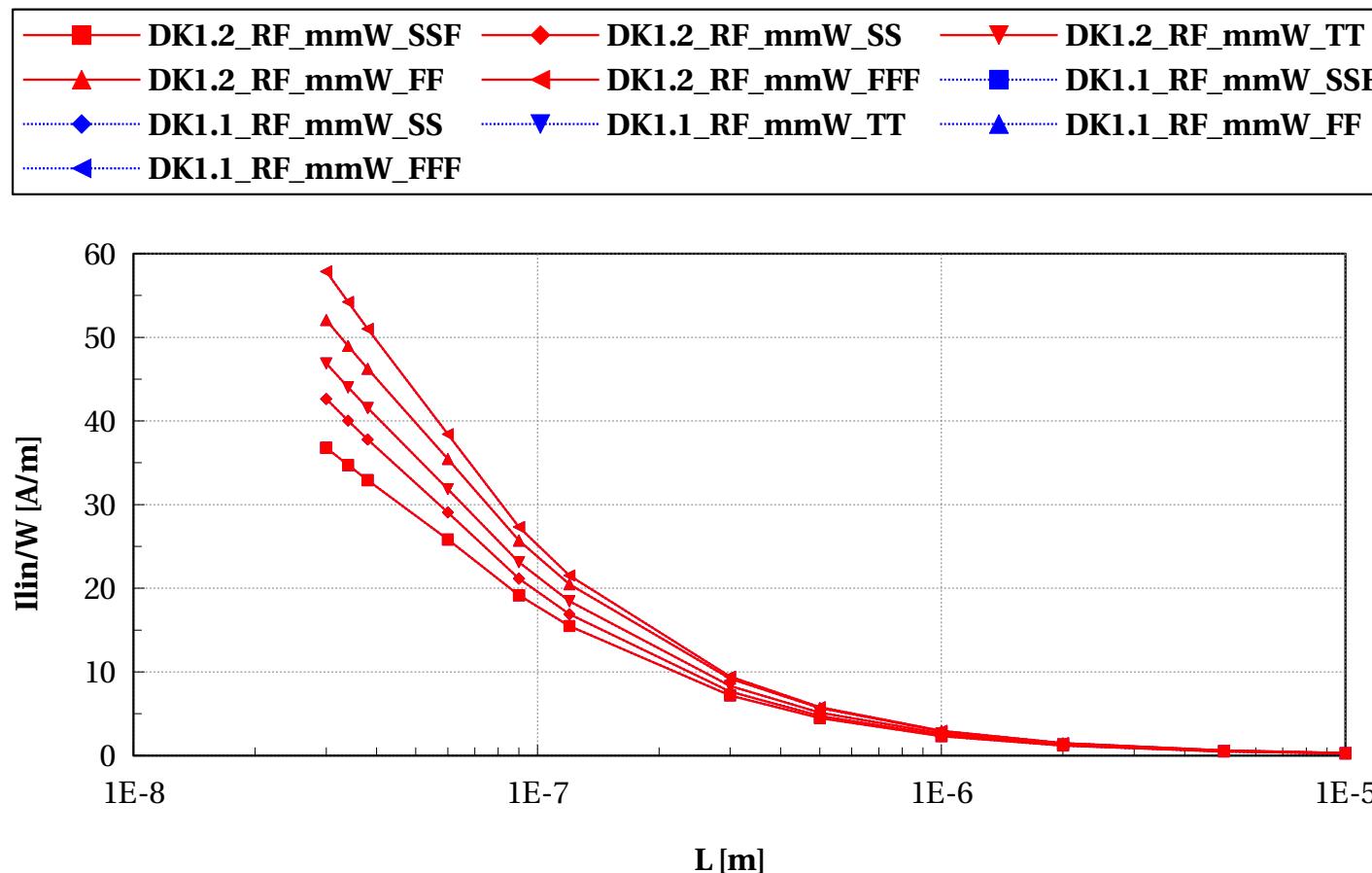
pfet_acc, Vt_lin [mV] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



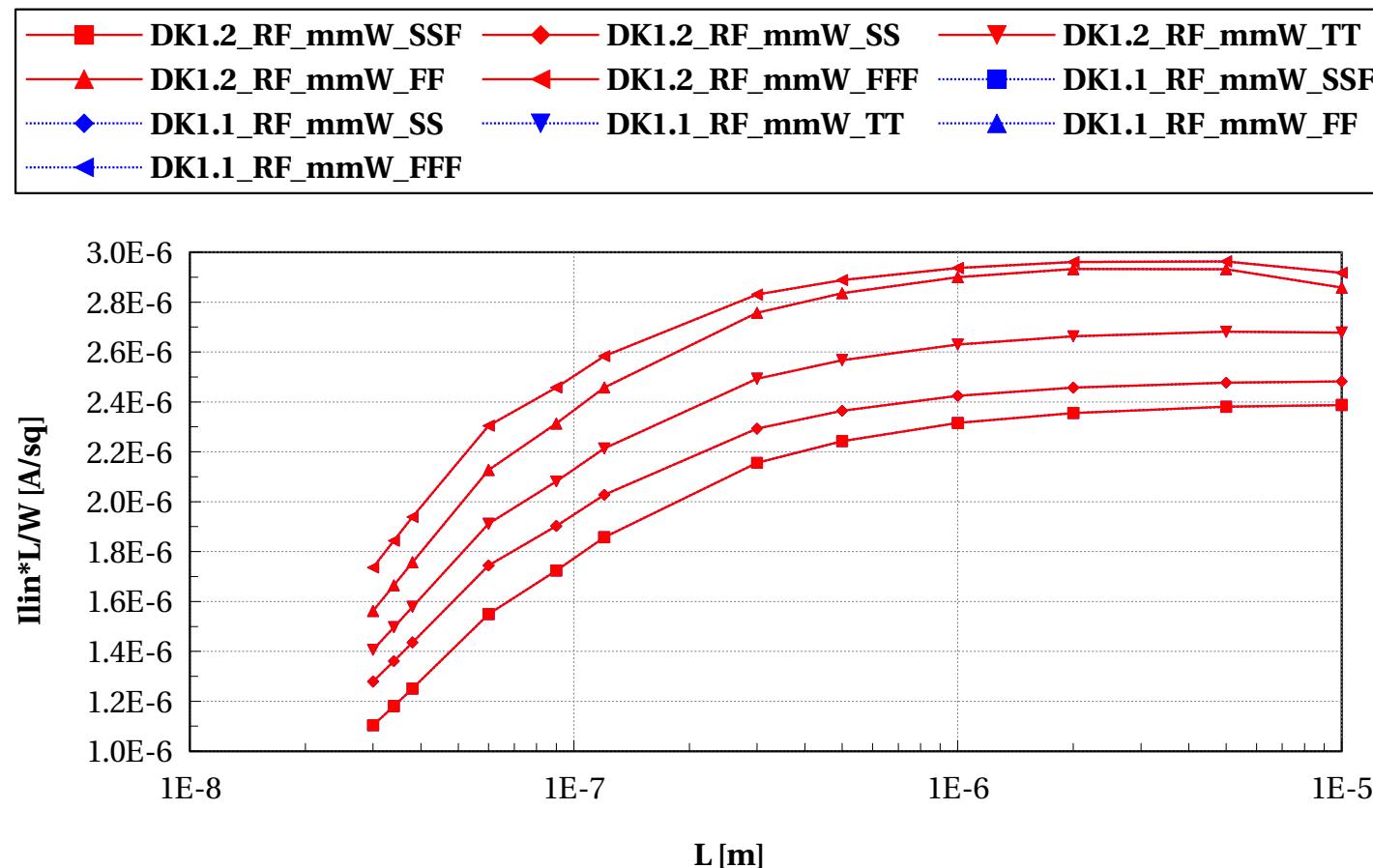
pfet_acc, I_{lin}/W [A/m] vs L [m]

$w==0.3e-6$ and $Temp==25$ and $V_{bs}==0$ and $p_la==0$ and $devType=="PCELLwoWPE"$



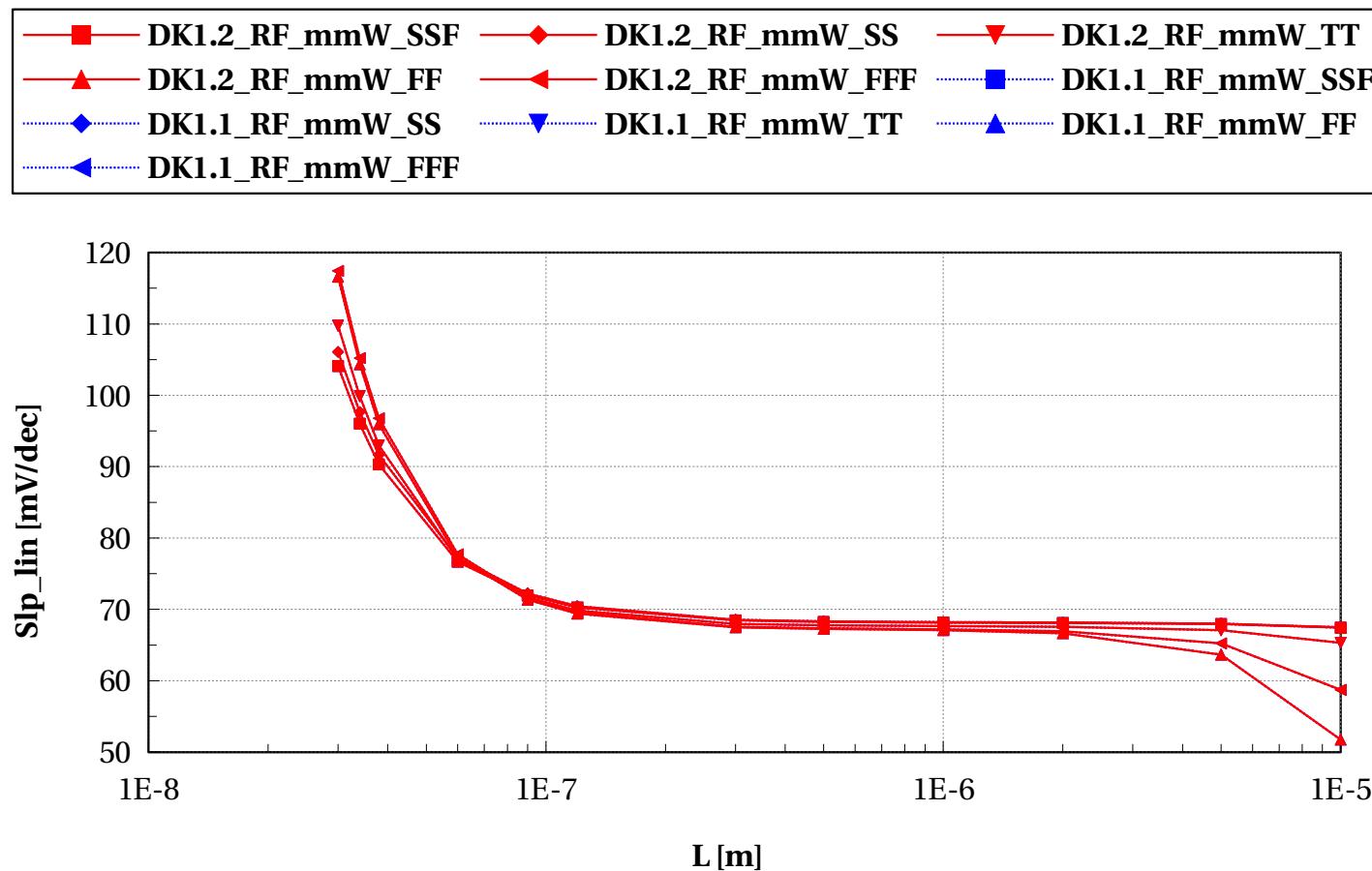
pfet_acc, $I_{lin} \cdot L/W$ [A/sq] vs L [m]

$w==0.3e-6$ and $Temp==25$ and $V_{bs}==0$ and $p_la==0$ and $devType=="PCELLwoWPE"$



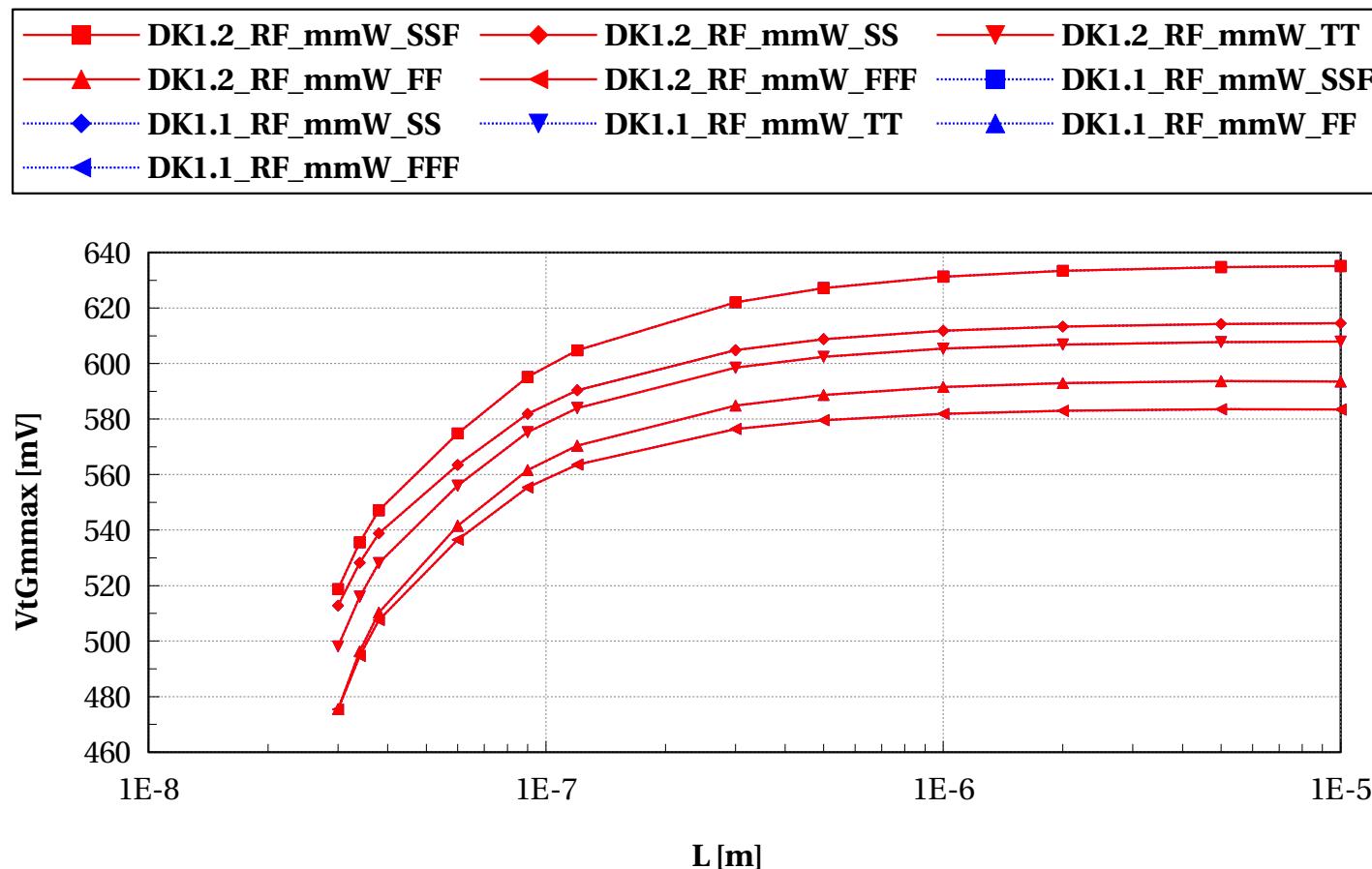
pfet_acc, Slp_lin [mV/dec] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



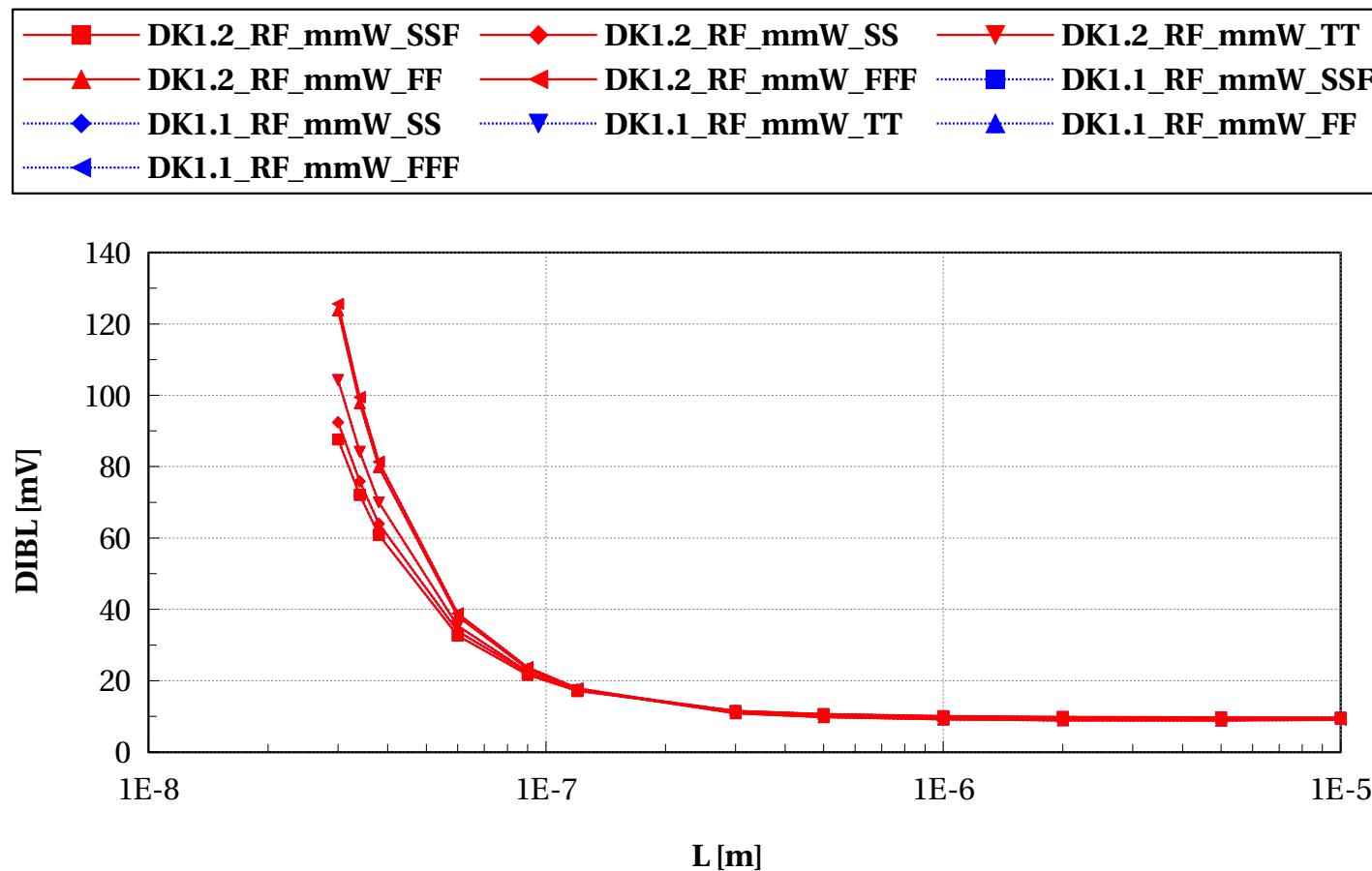
pfet_acc, VtGmmax [mV] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



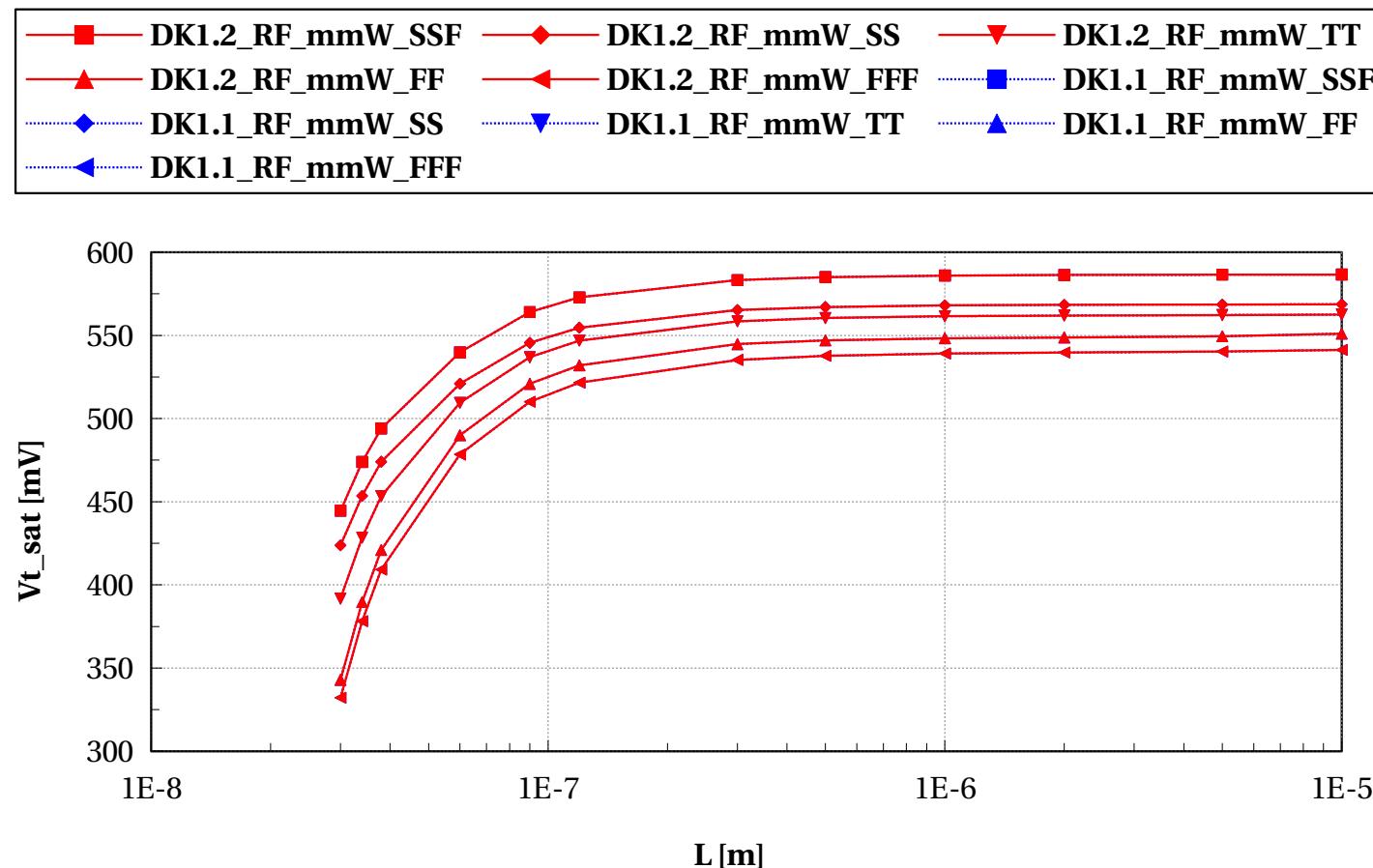
pfet_acc, DIBL [mV] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



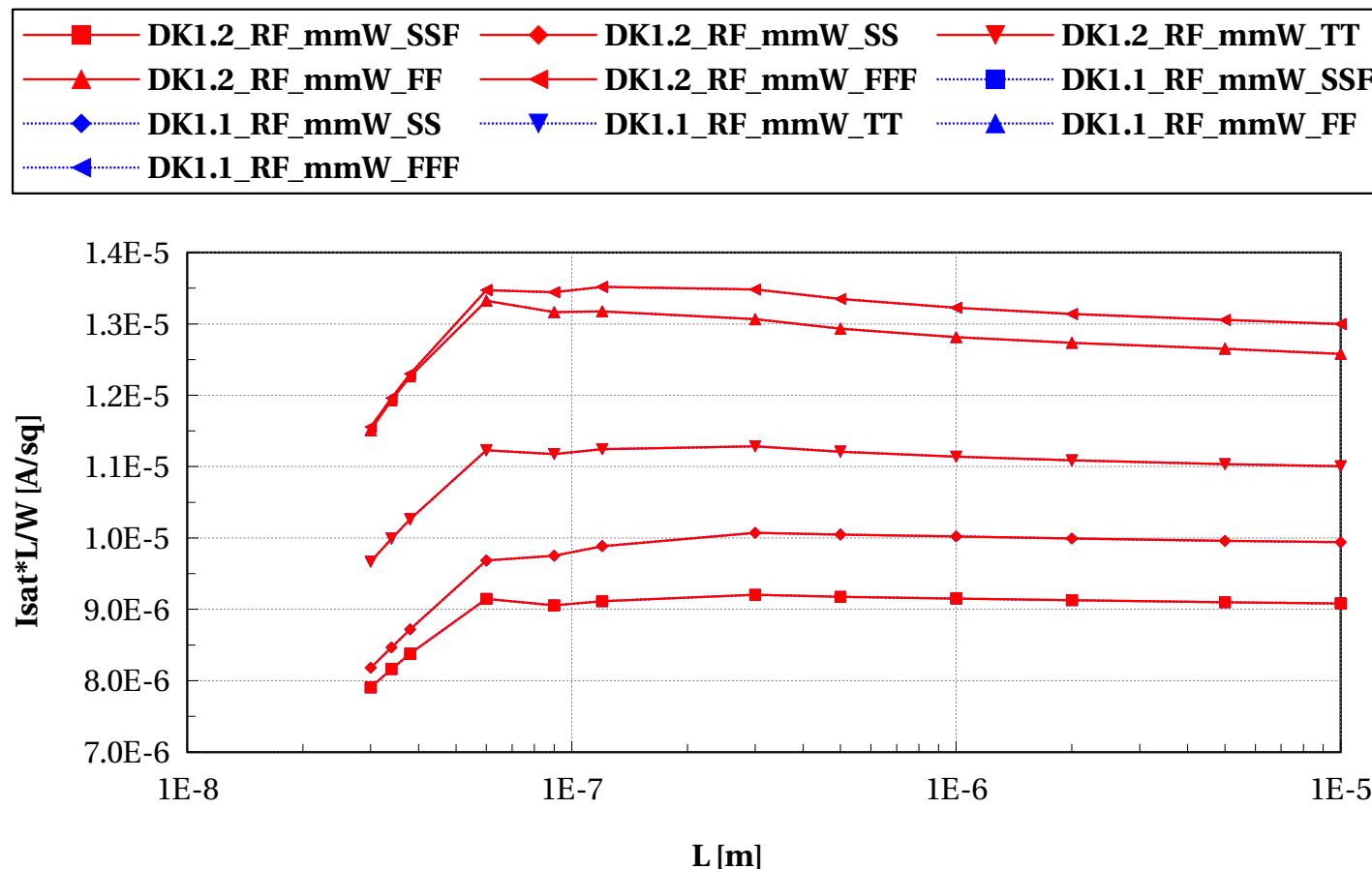
pfet_acc, Vt_sat [mV] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



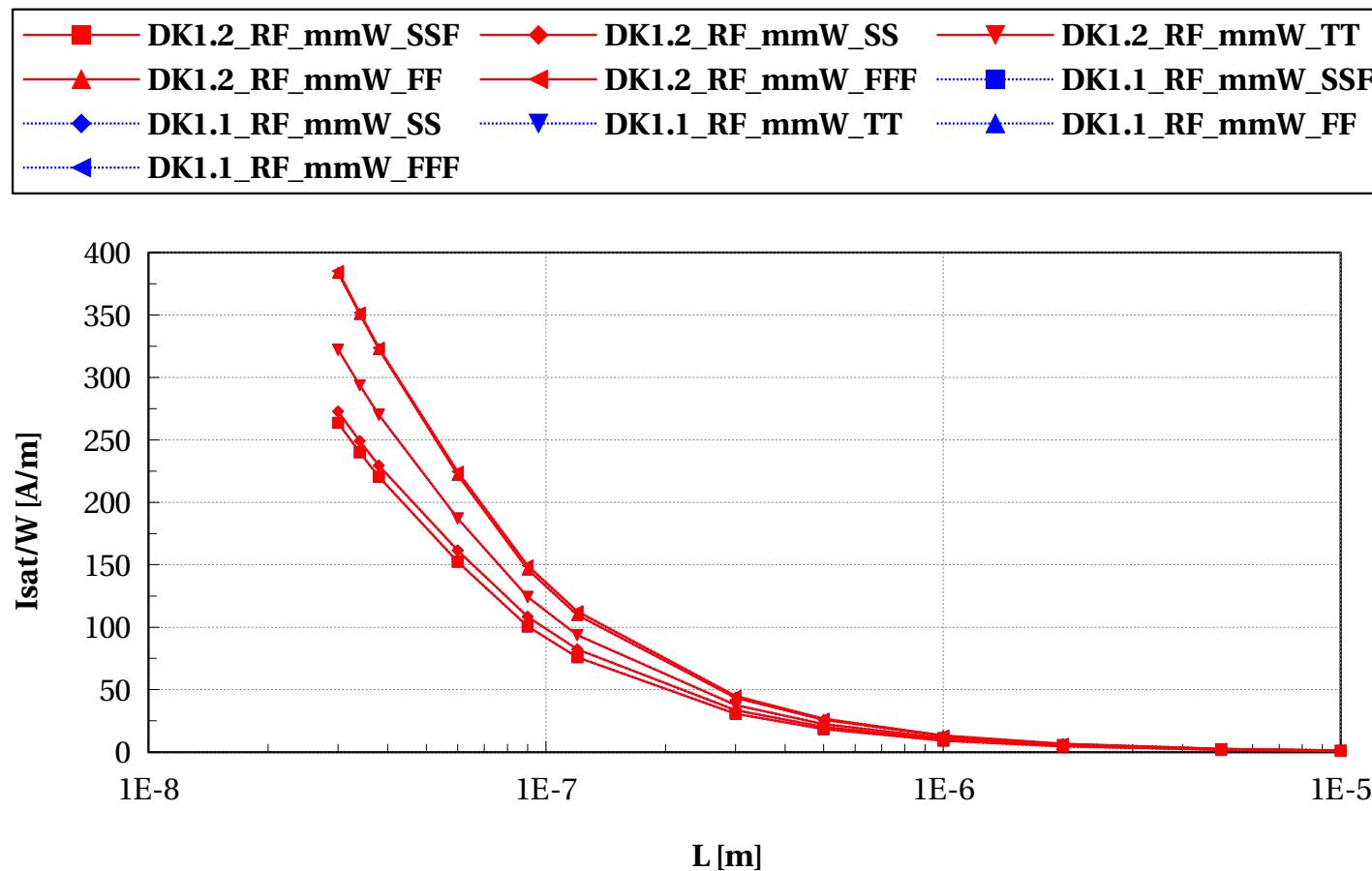
pfet_acc, $I_{sat} \cdot L/W$ [A/sq] vs L [m]

$w==0.3e-6$ and $Temp==25$ and $V_{bs}==0$ and $p_la==0$ and $devType=="PCELLwoWPE"$



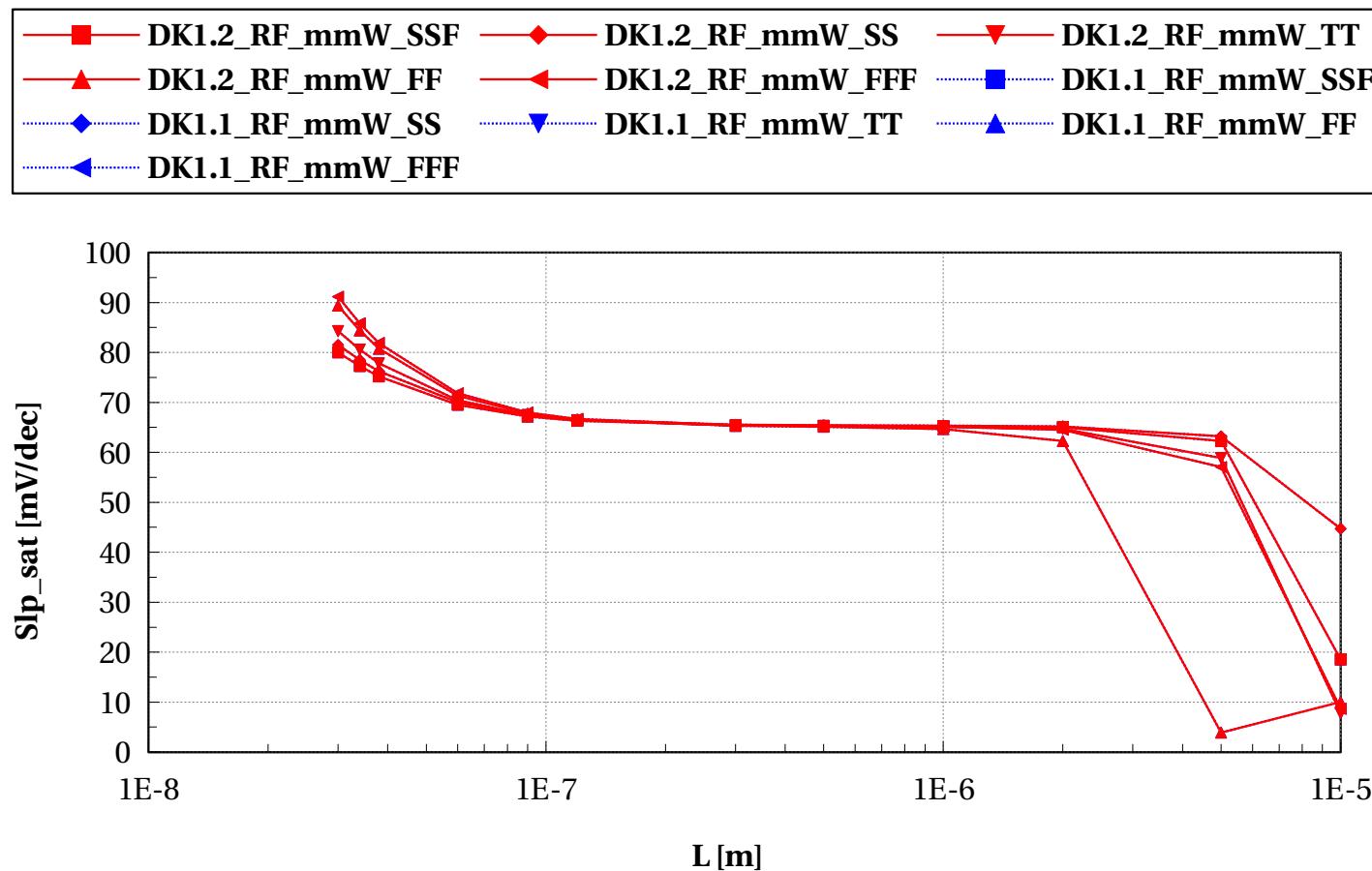
pfet_acc, Isat/W [A/m] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



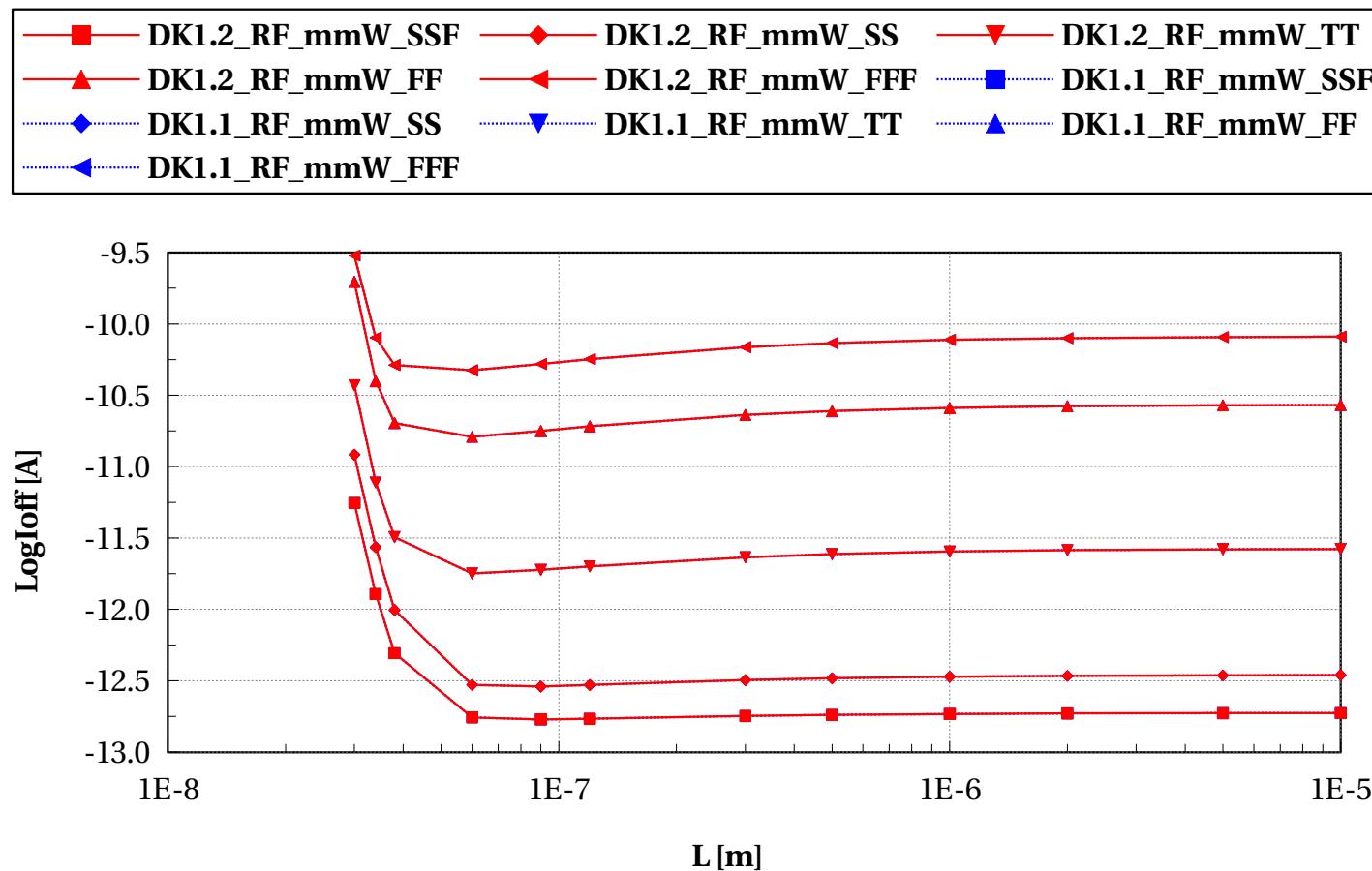
pfet_acc, Slp_sat [mV/dec] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



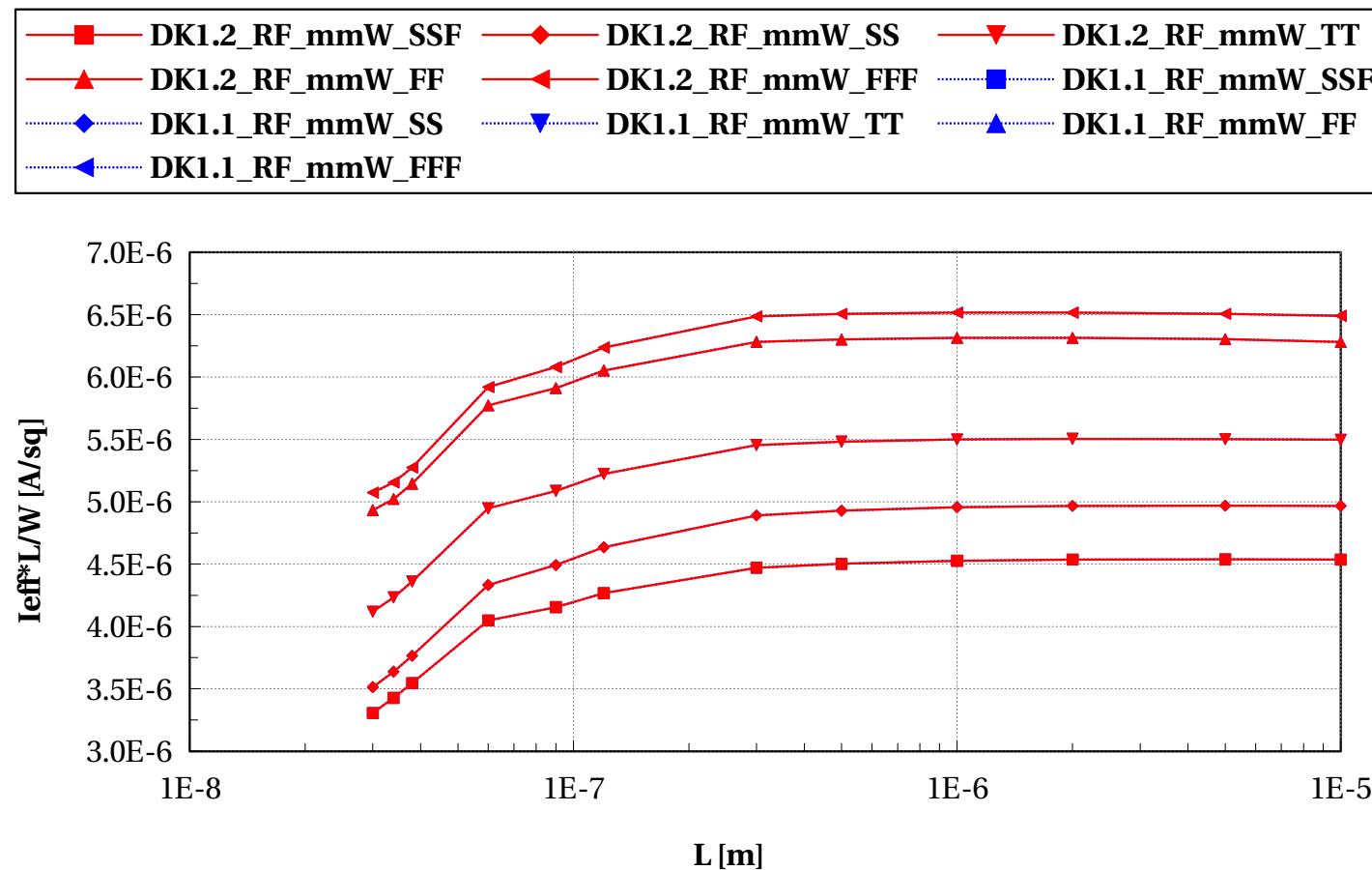
pfet_acc, LogIoff [A] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



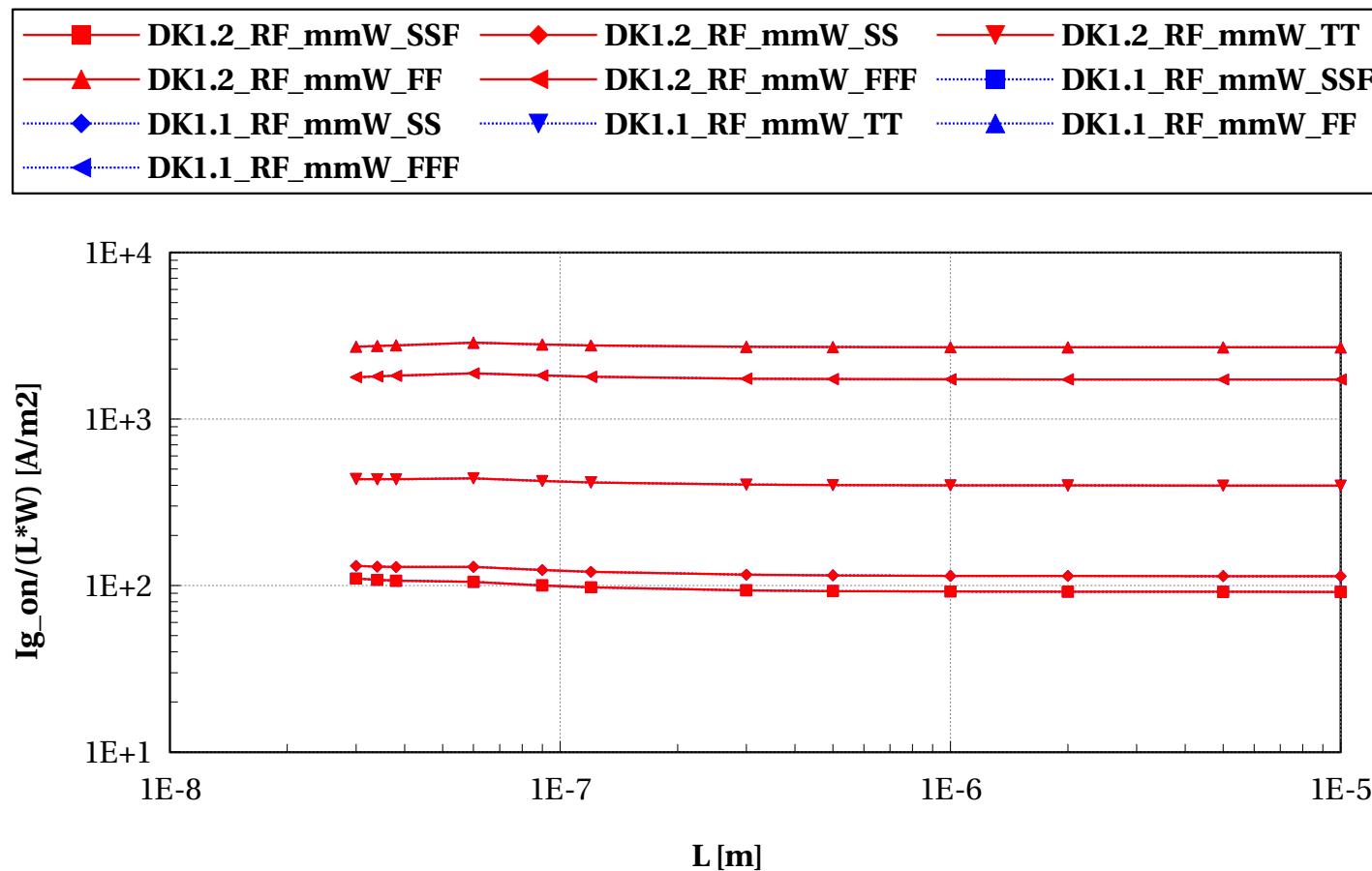
pfet_acc, Ieff*L/W [A/sq] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



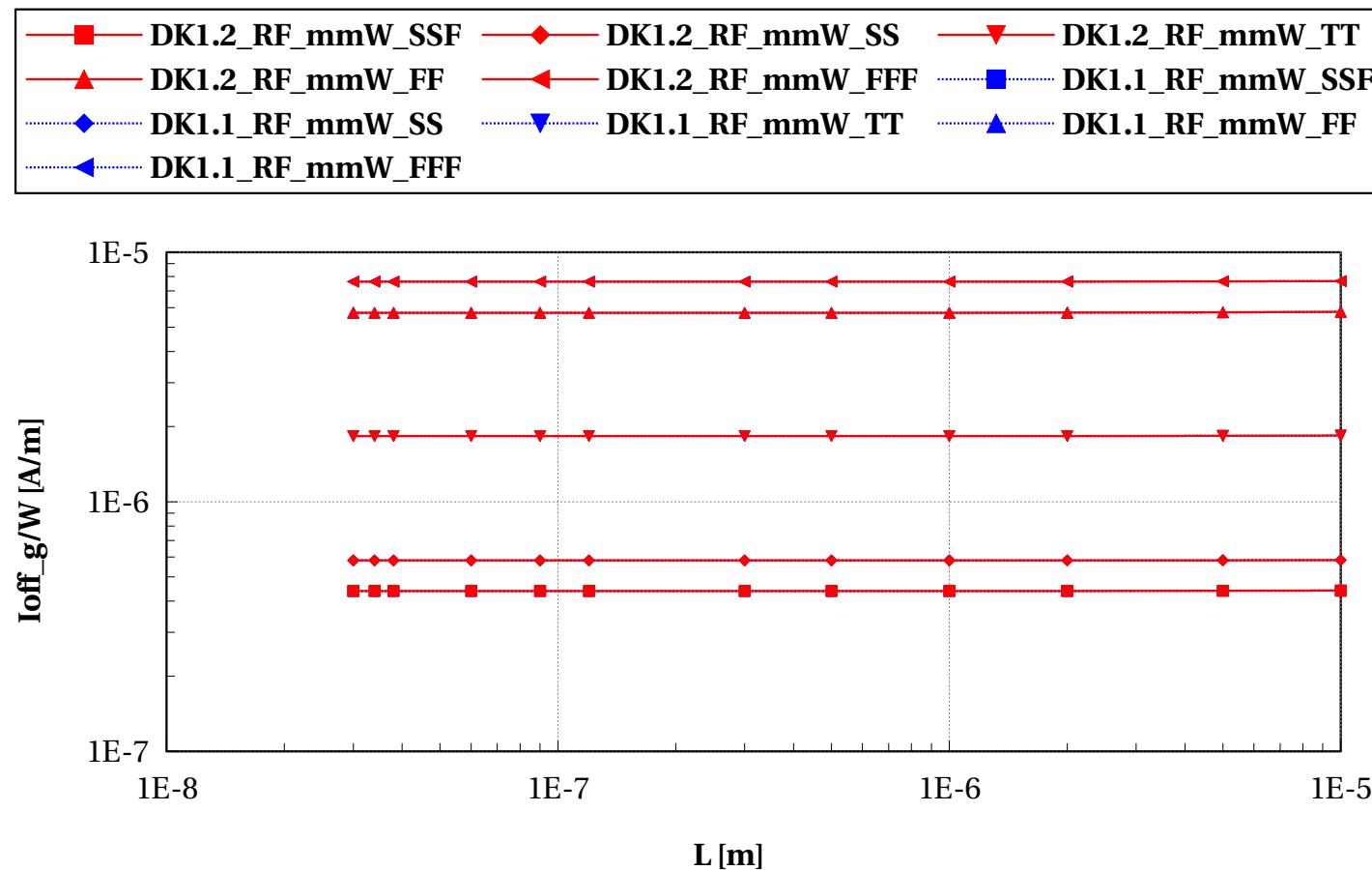
pfet_acc, Ig_on/(L*W) [A/m²] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



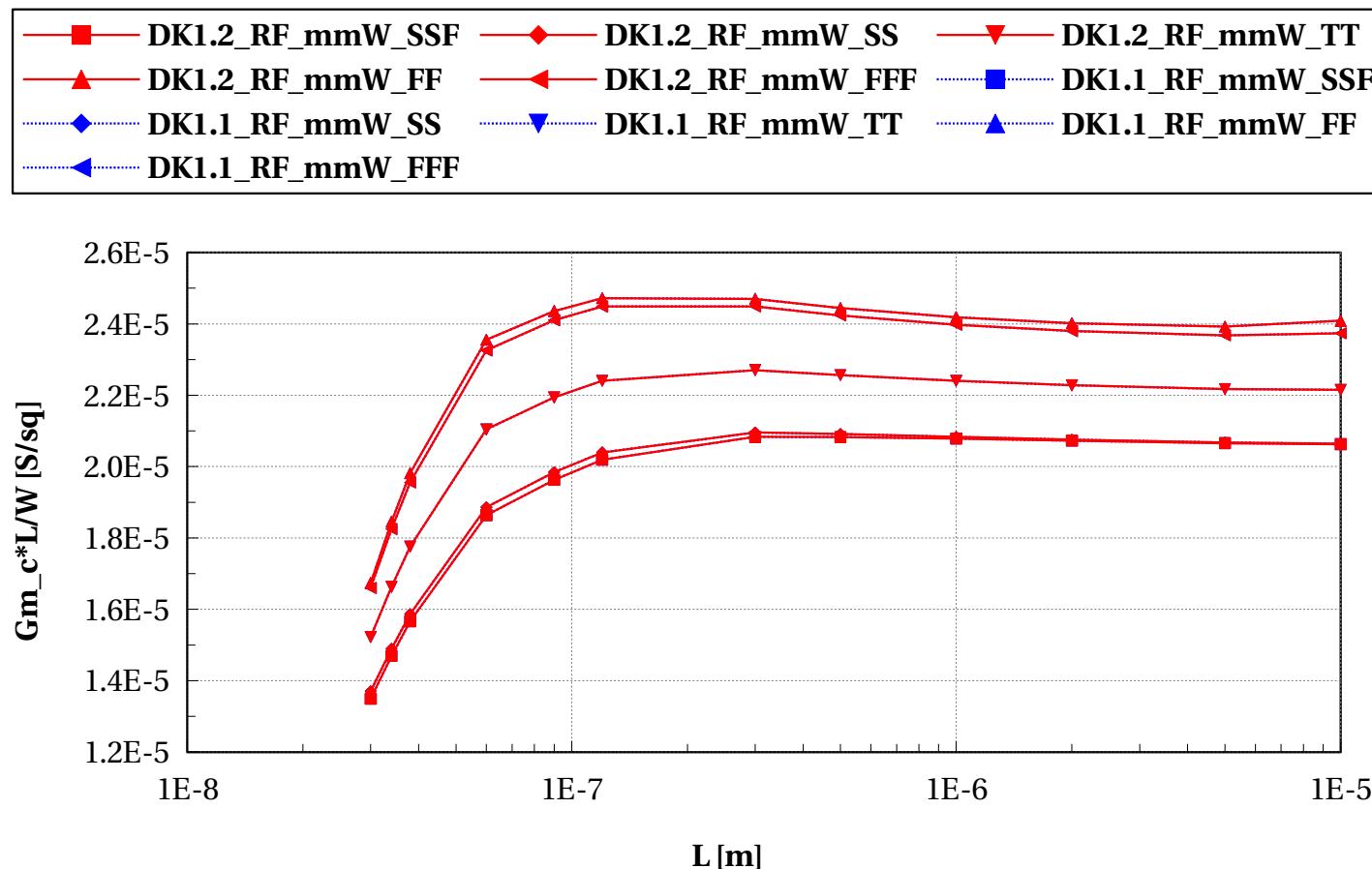
pfet_acc, Ioff_g/W [A/m] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



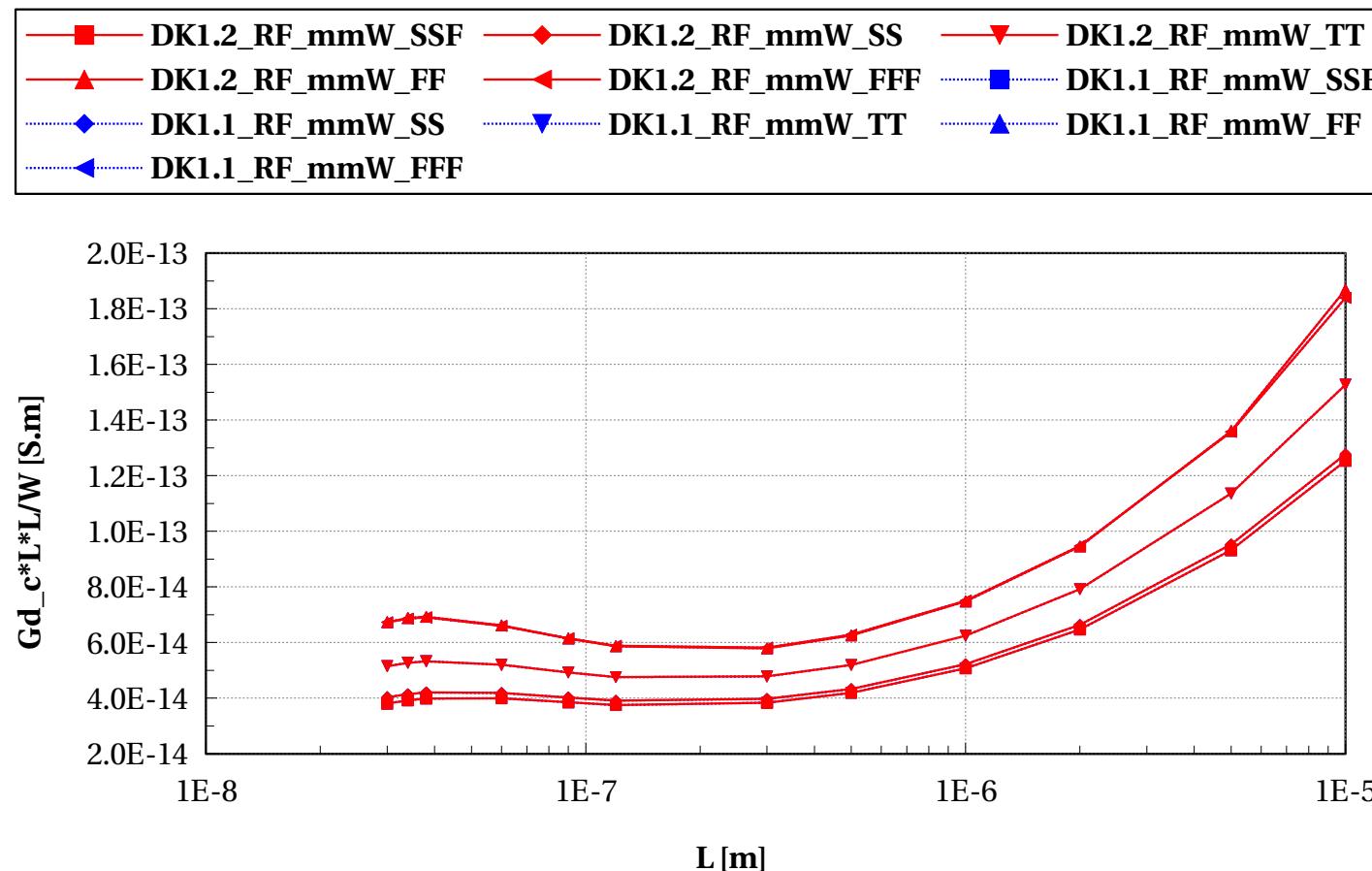
pfet_acc, $Gm_c \cdot L/W$ [S/sq] vs L [m]

$w==0.3e-6$ and $Temp==25$ and $Vbs==0$ and $p_la==0$ and $devType=="PCELLwoWPE"$



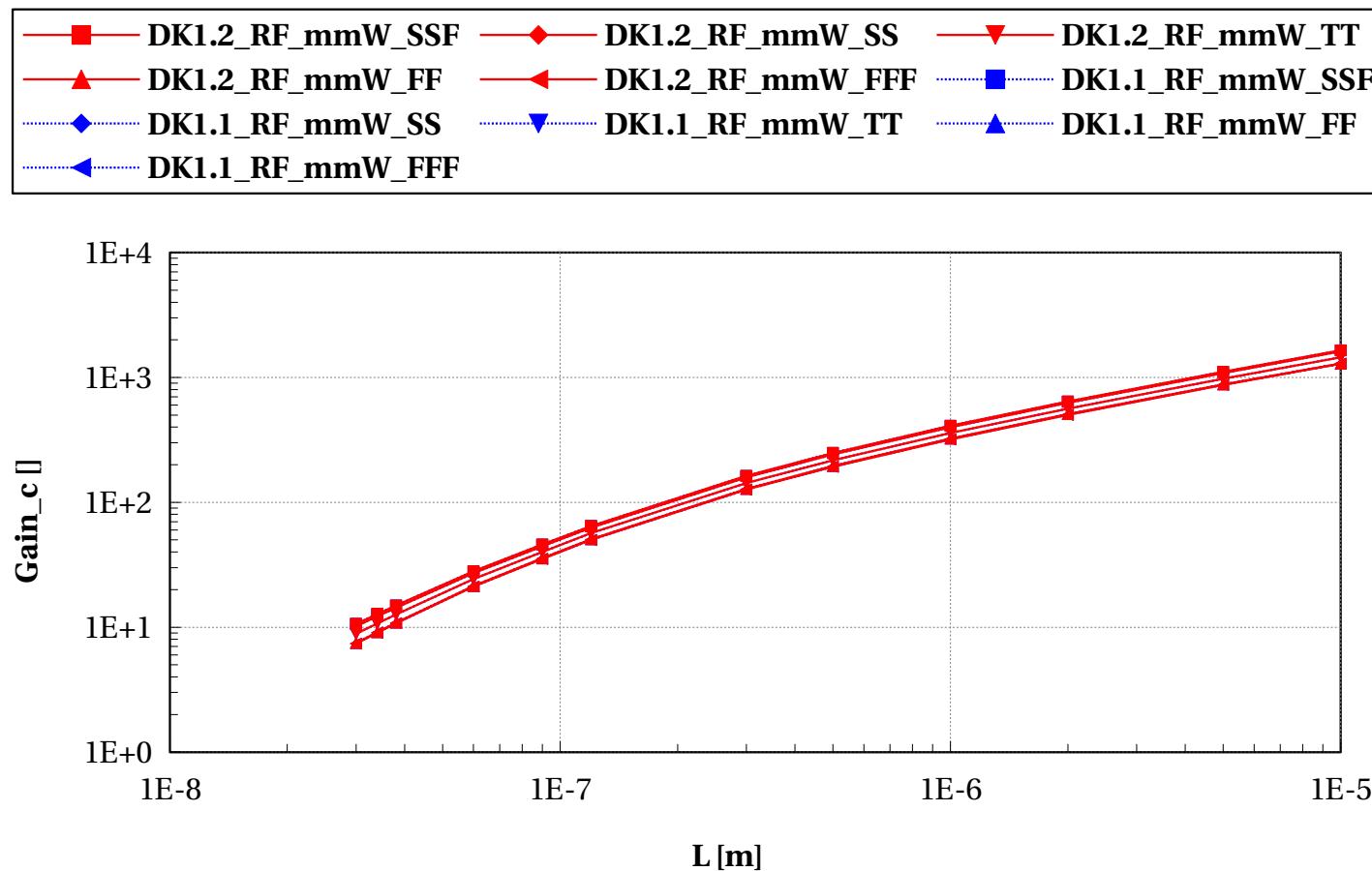
pfet_acc, $G_d \cdot c^* L^* L/W$ [S.m] vs L [m]

$w==0.3e-6$ and $Temp==25$ and $V_{bs}==0$ and $p_{la}==0$ and $devType=="PCELLwoWPE"$



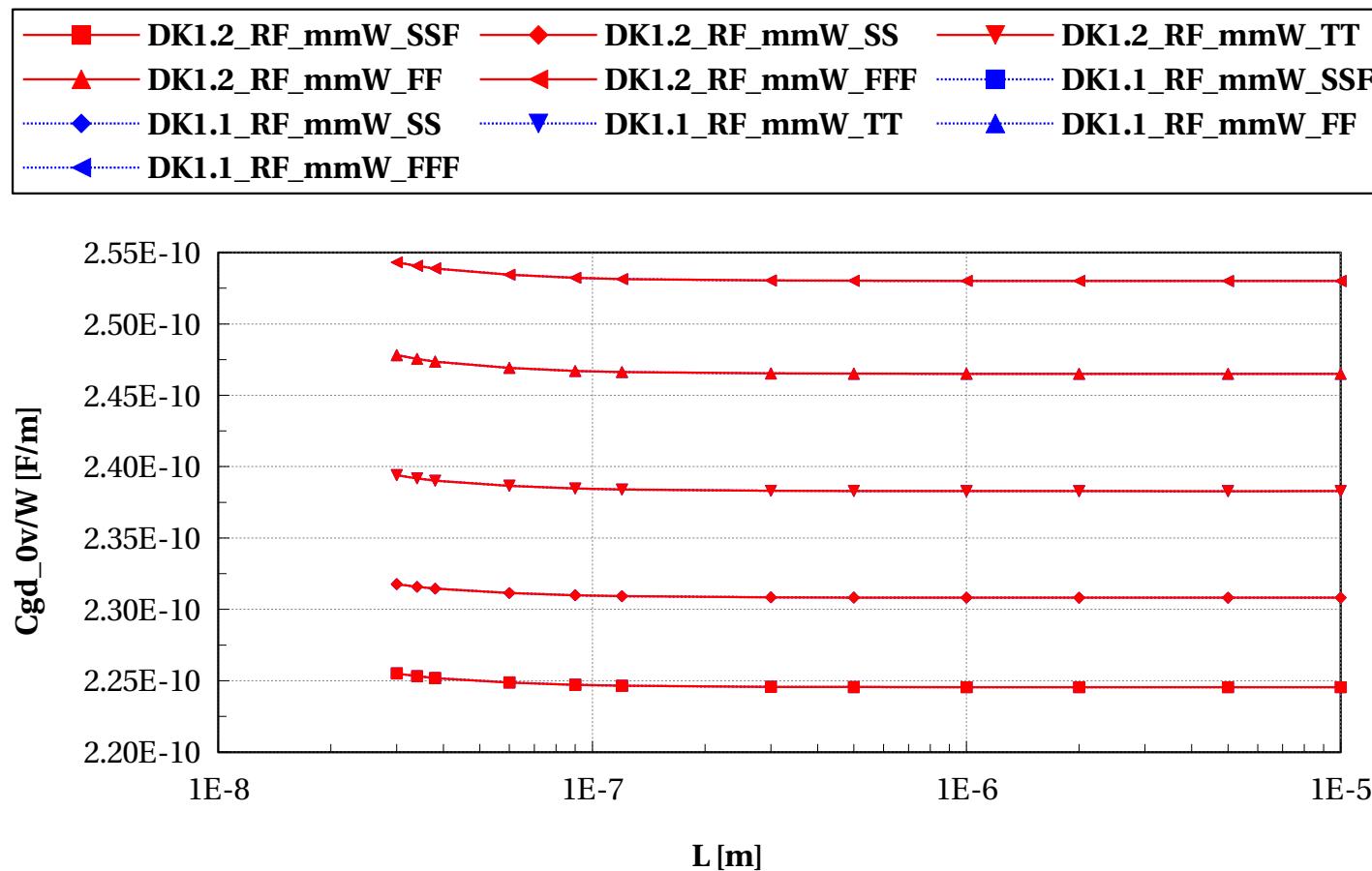
pfet_acc, Gain_c [] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



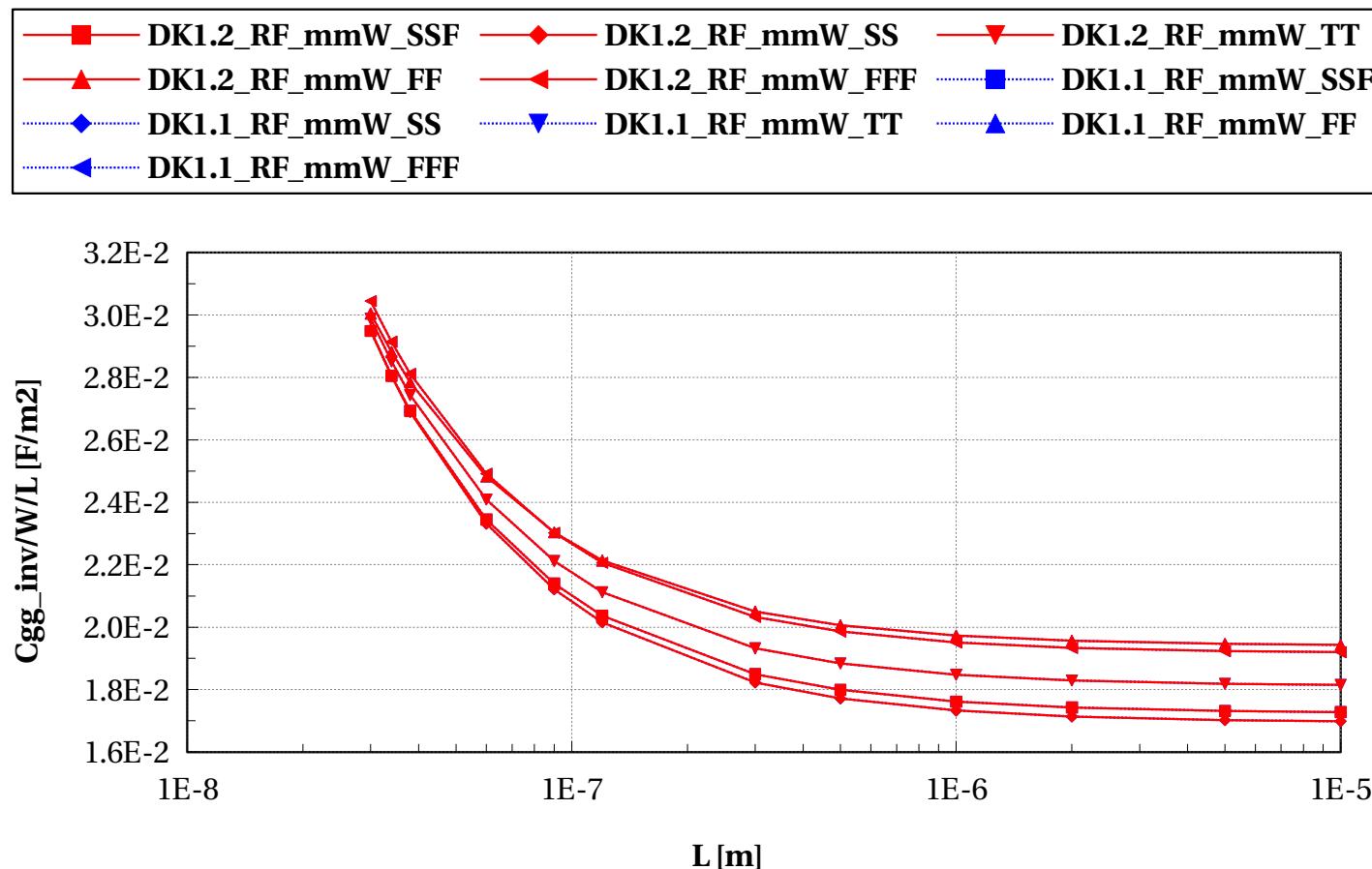
pfet_acc, Cgd_0v/W [F/m] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



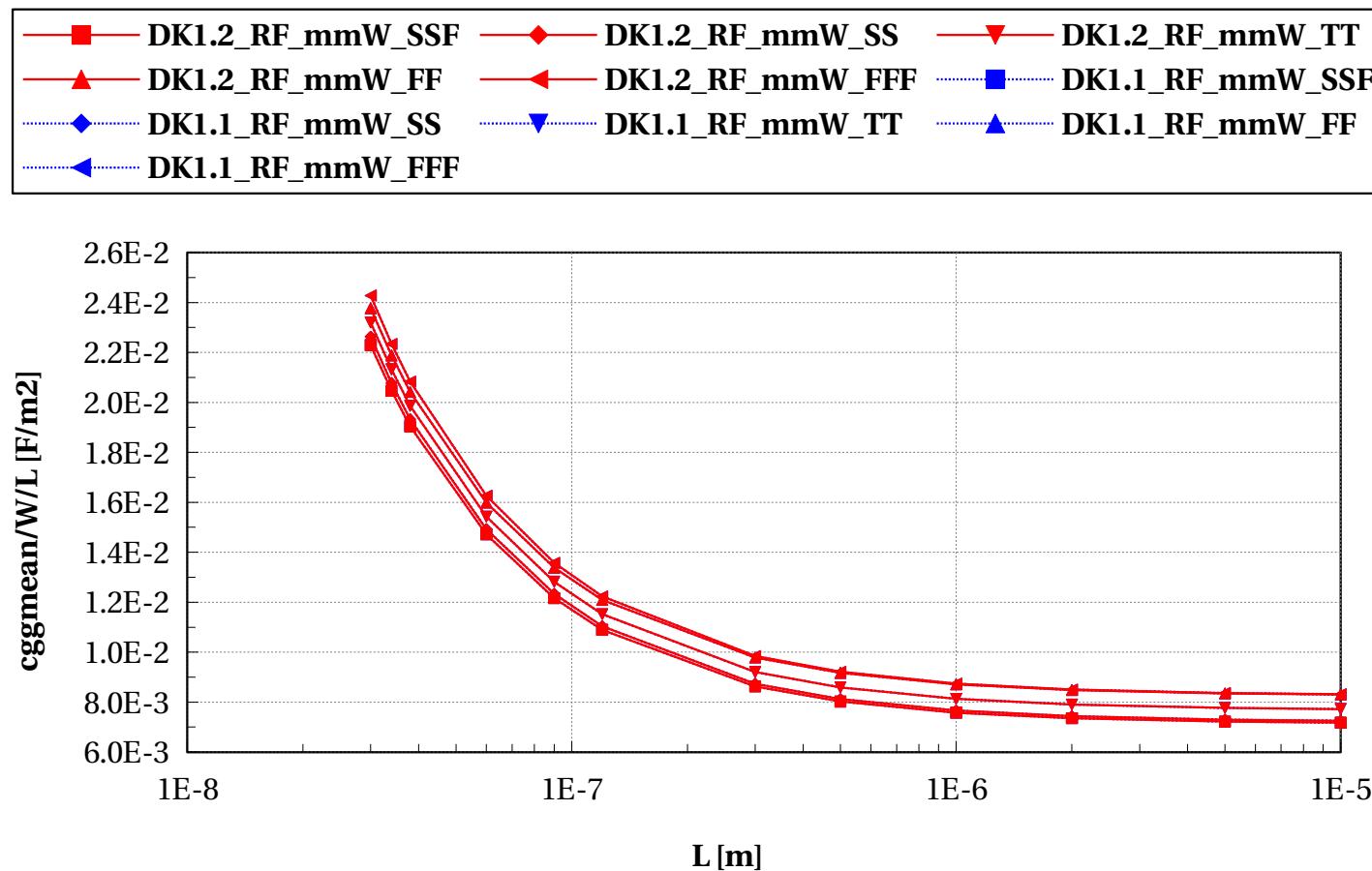
pfet_acc, Cgg_inv/W/L [F/m2] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



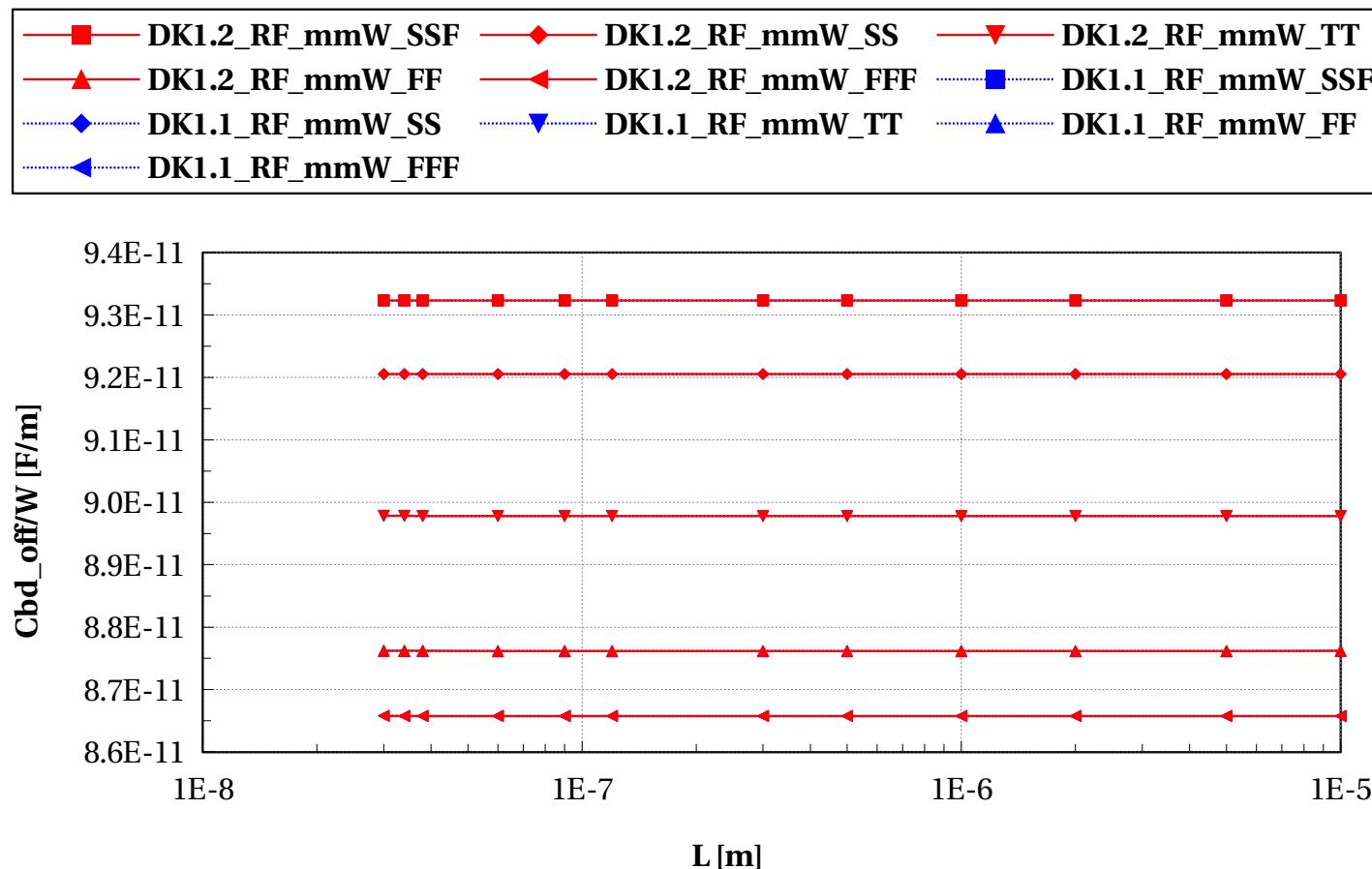
pfet_acc, cggmean/W/L [F/m²] vs L [m]

w==0.3e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



pfet_acc, C_{bd_off}/W [F/m] vs L [m]

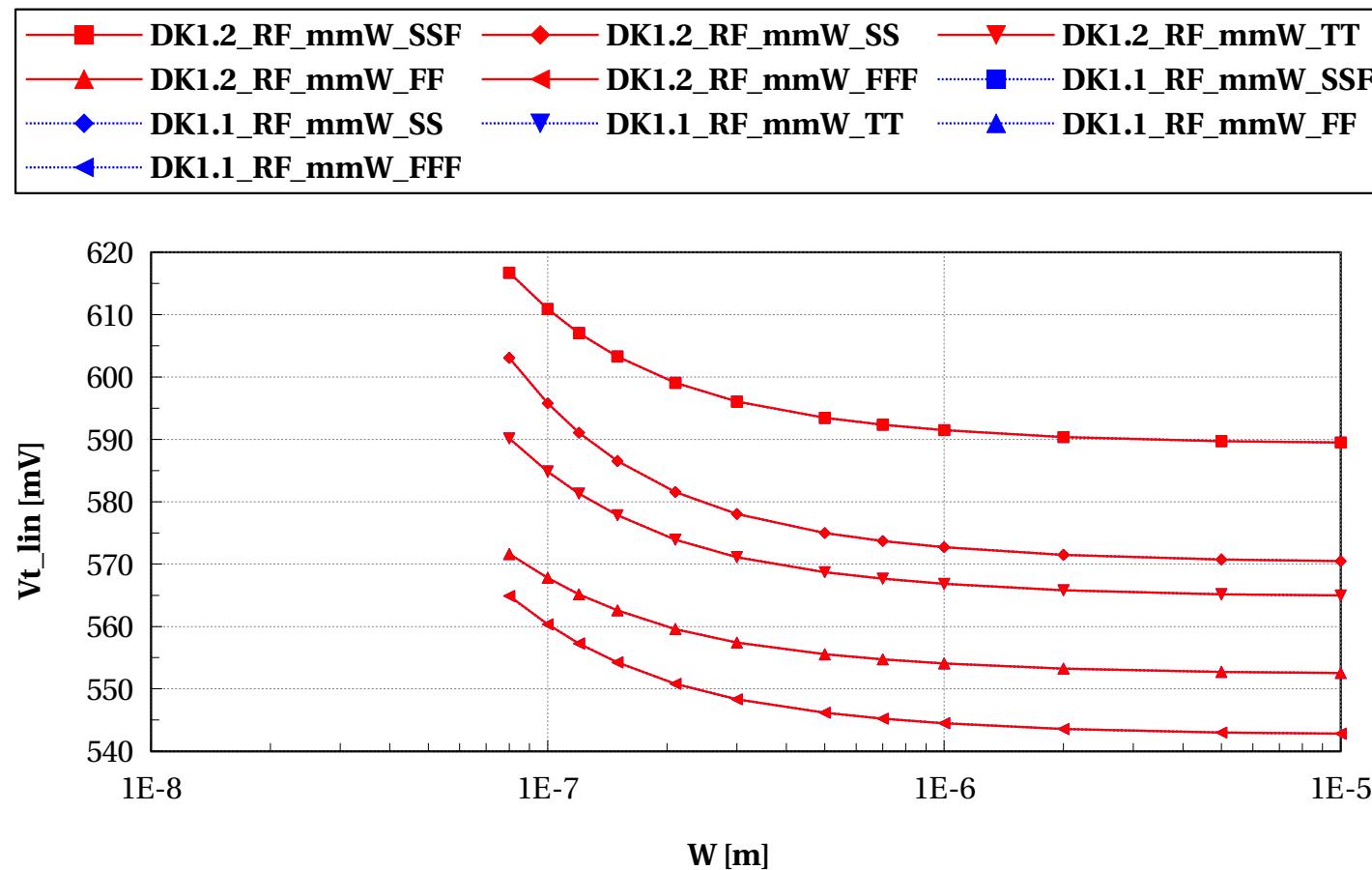
$w==0.3e-6$ and $Temp==25$ and $V_{bs}==0$ and $p_la==0$ and $devType=="PCELLwoWPE"$



Scaling versus Width (L=1um)

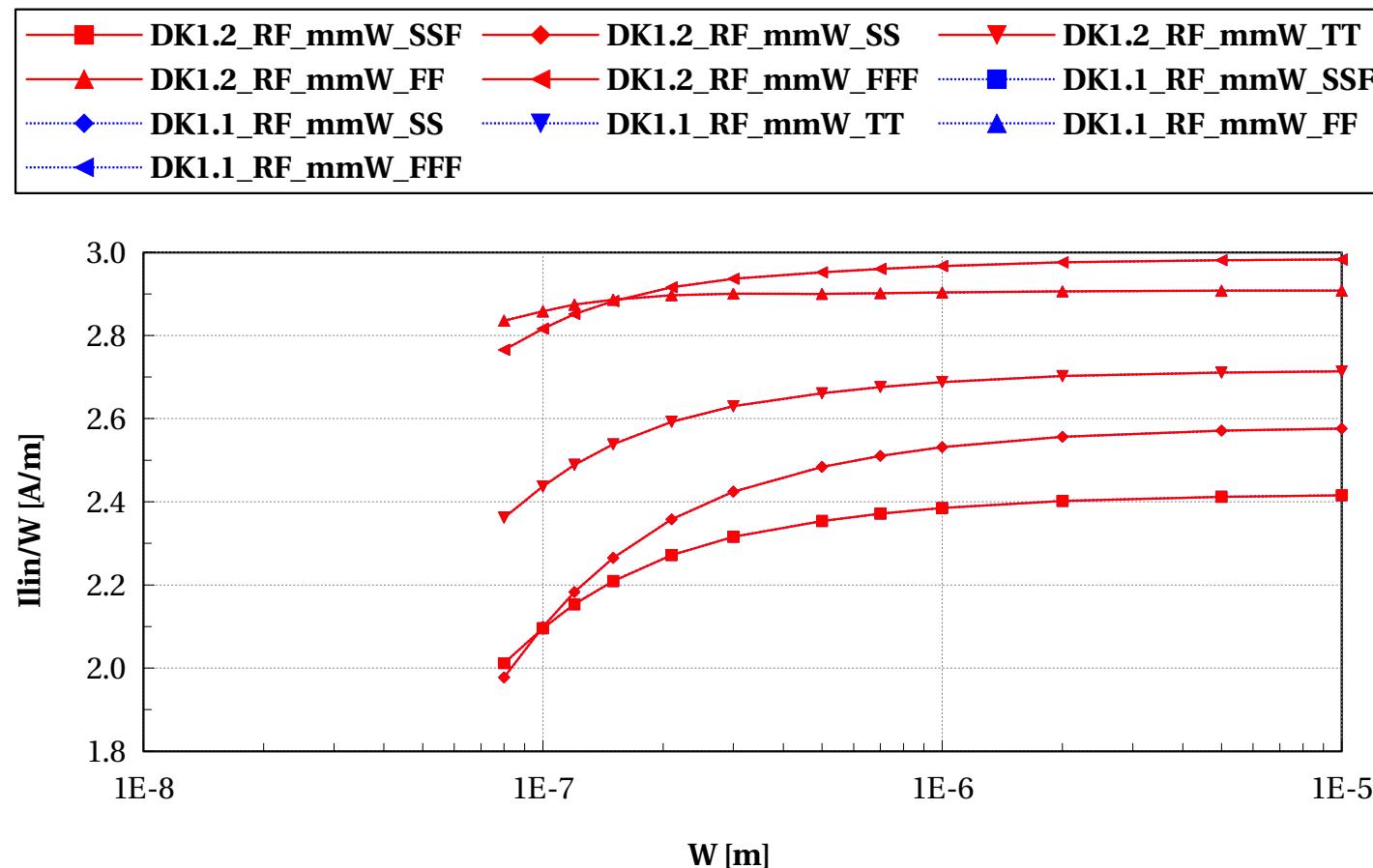
pfet_acc, Vt_lin [mV] vs W [m]

I==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



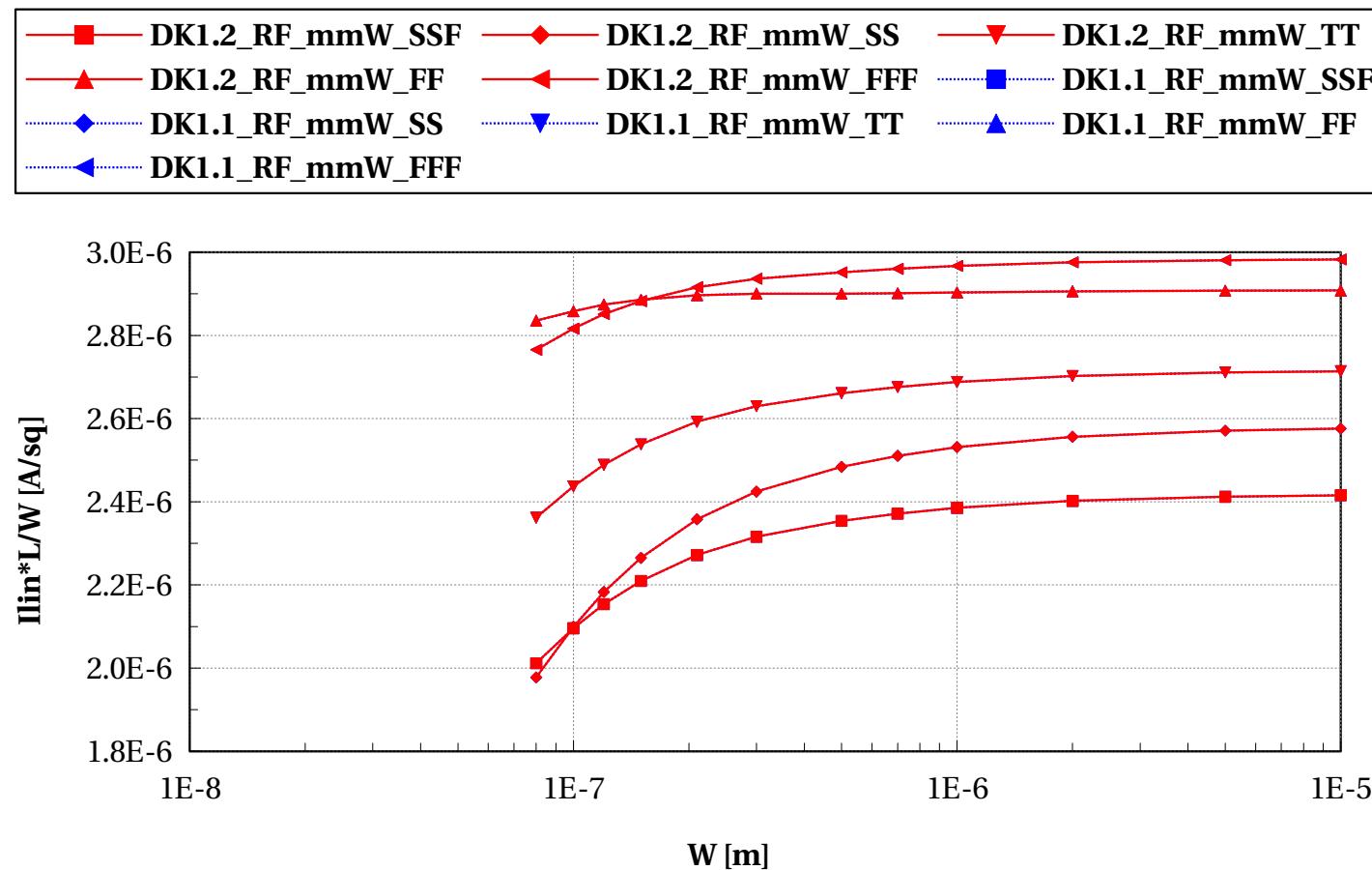
pfet_acc, I_{lin}/W [A/m] vs W [m]

$I=1e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_la=0$ and $devType="PCELLwoWPE"$



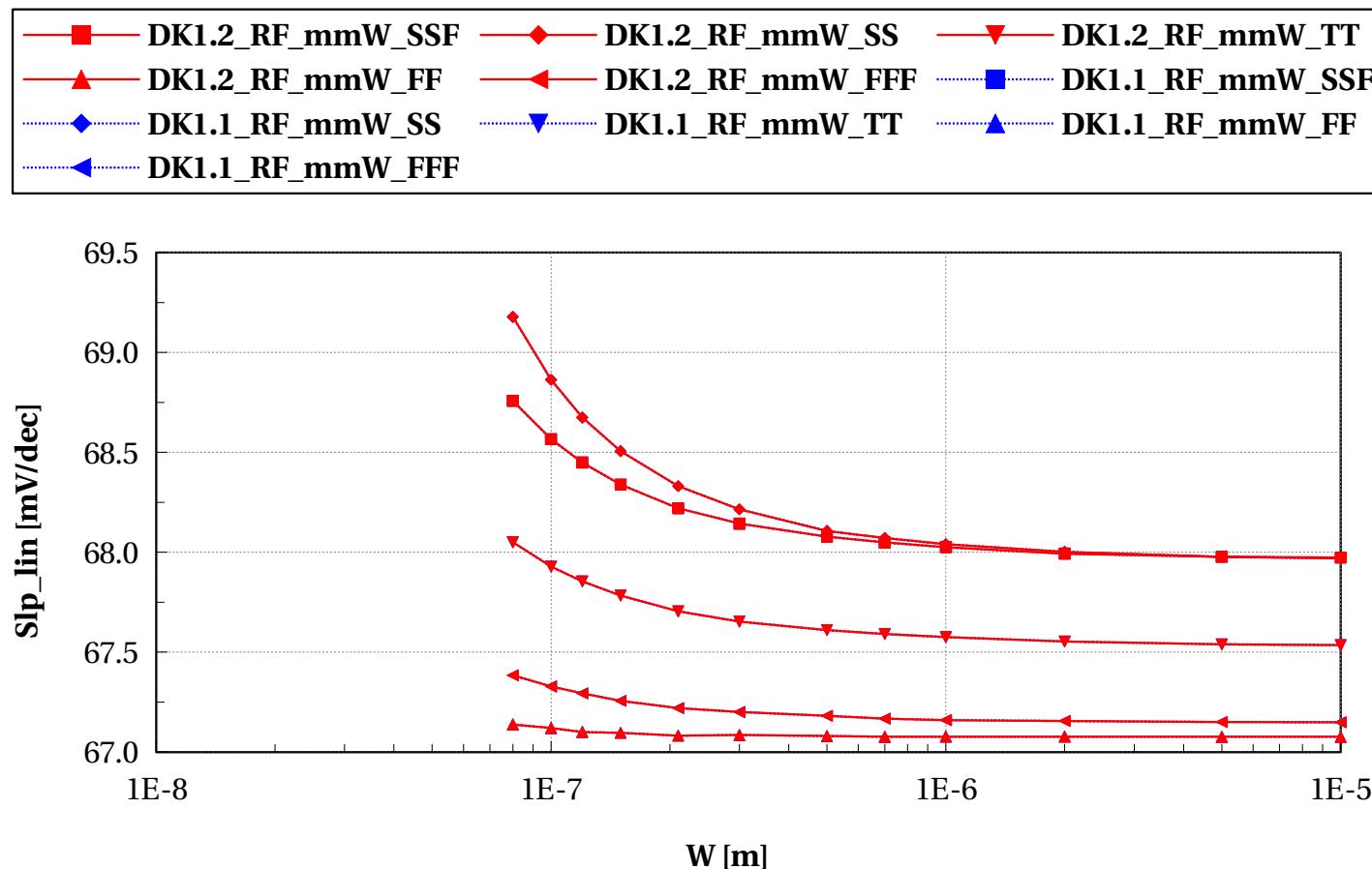
pfet_acc, $I_{lin} \cdot L/W$ [A/sq] vs W [m]

$I=1e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_la=0$ and $devType="PCELLwoWPE"$



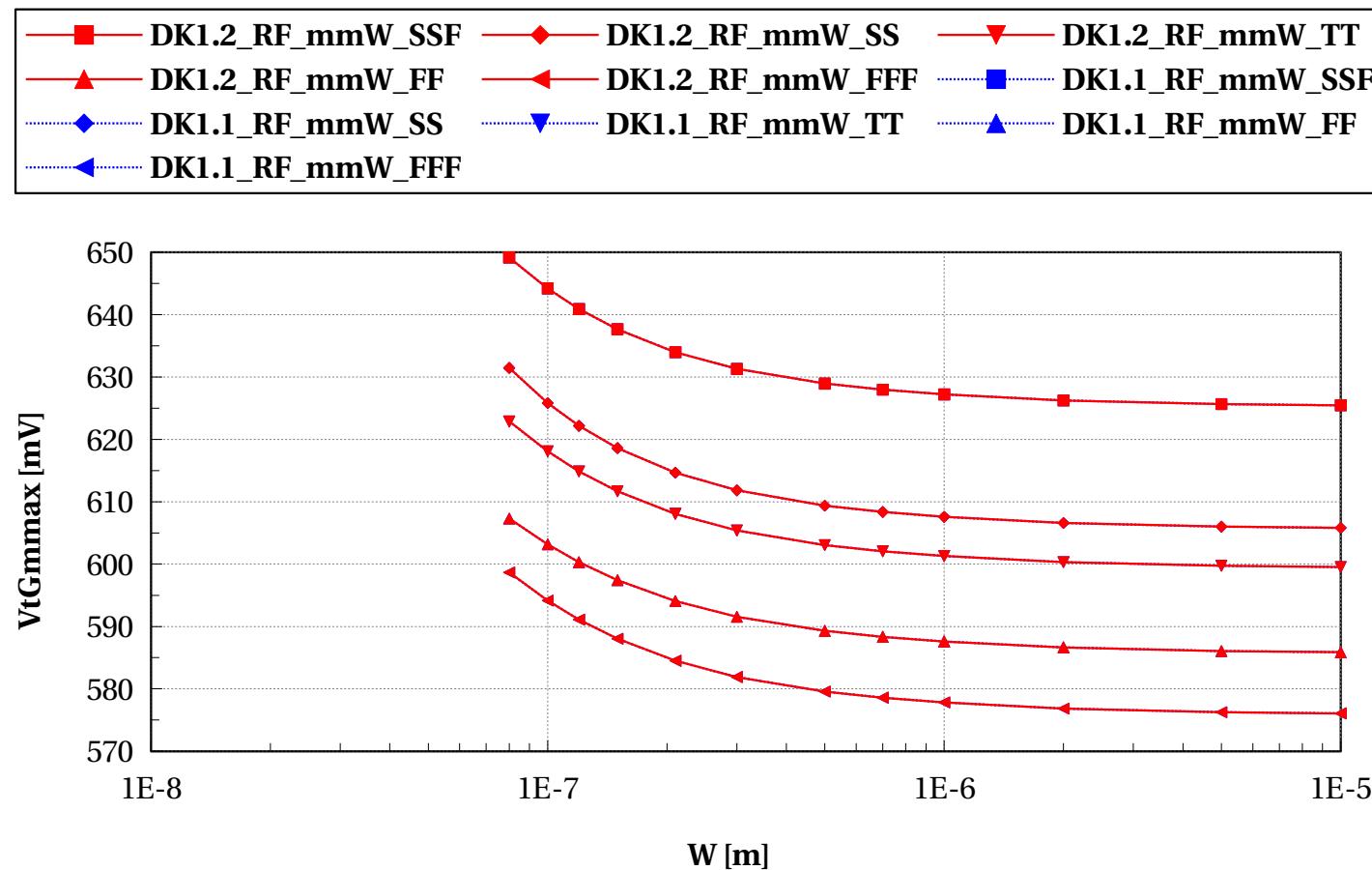
pfet_acc, Slp_lin [mV/dec] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



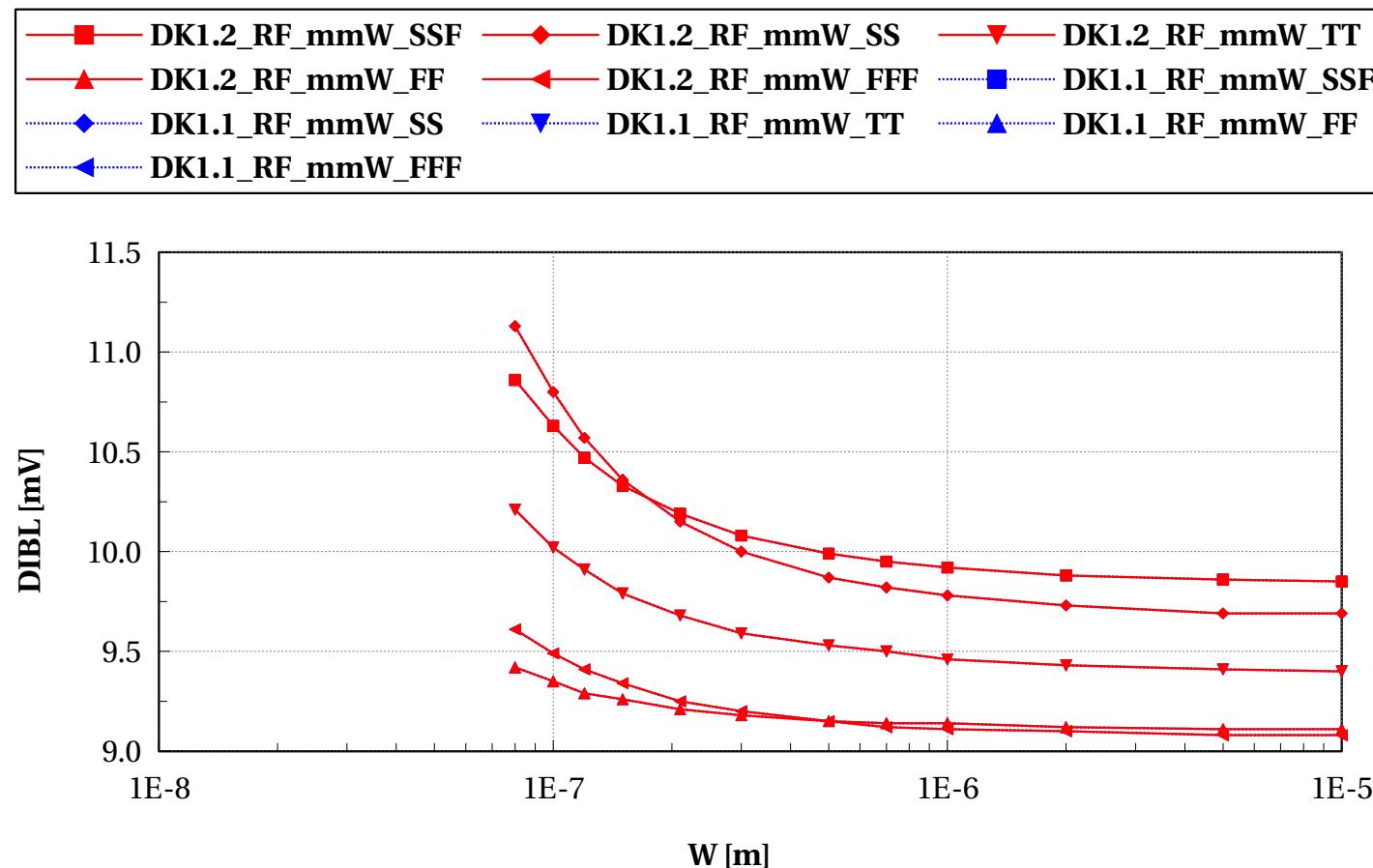
pfet_acc, VtGmmax [mV] vs W [m]

$I = 1e-6$ and Temp == 25 and Vbs == 0 and p_la == 0 and devType == "PCELLwoWPE"



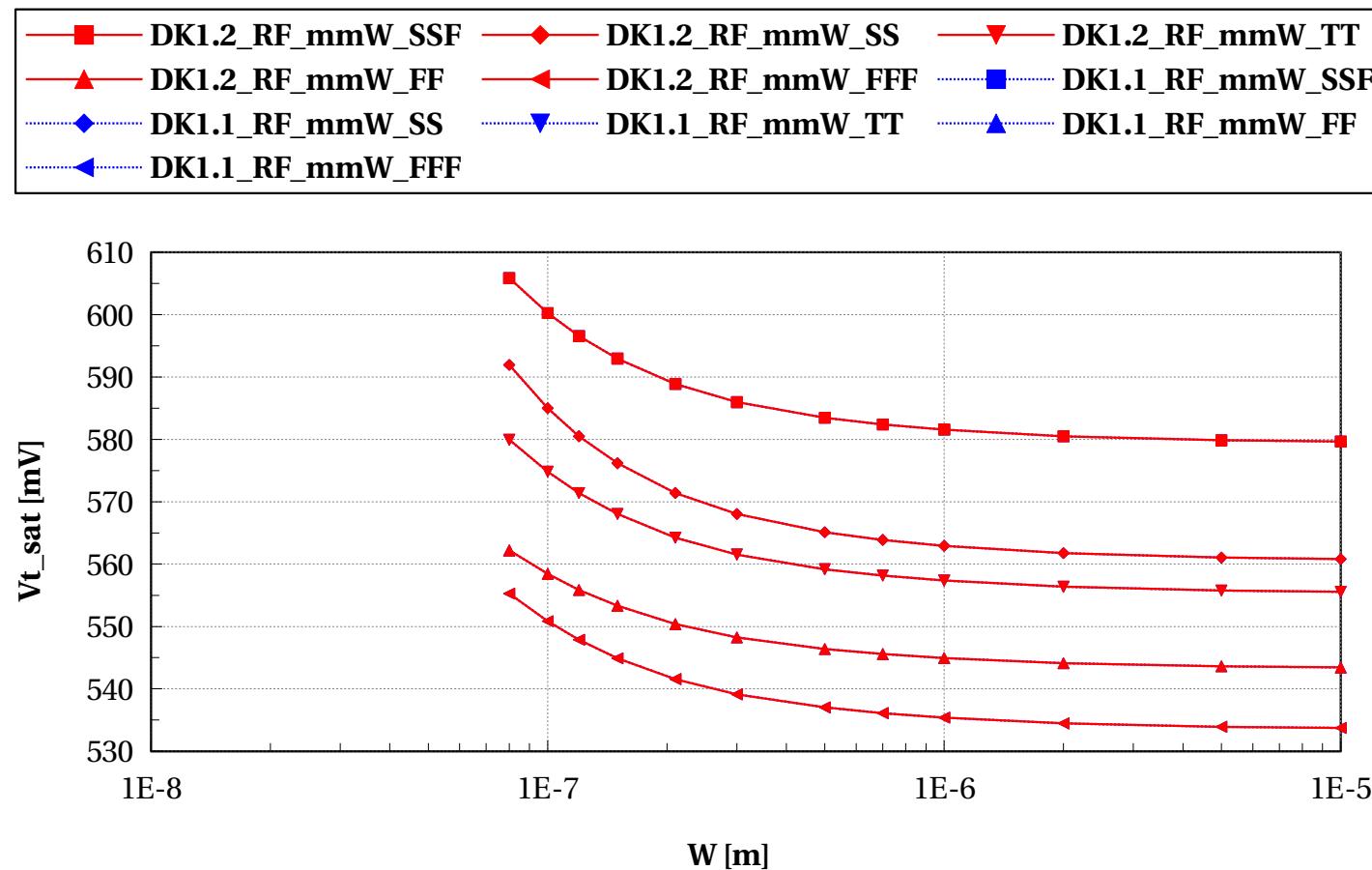
pfet_acc, DIBL [mV] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



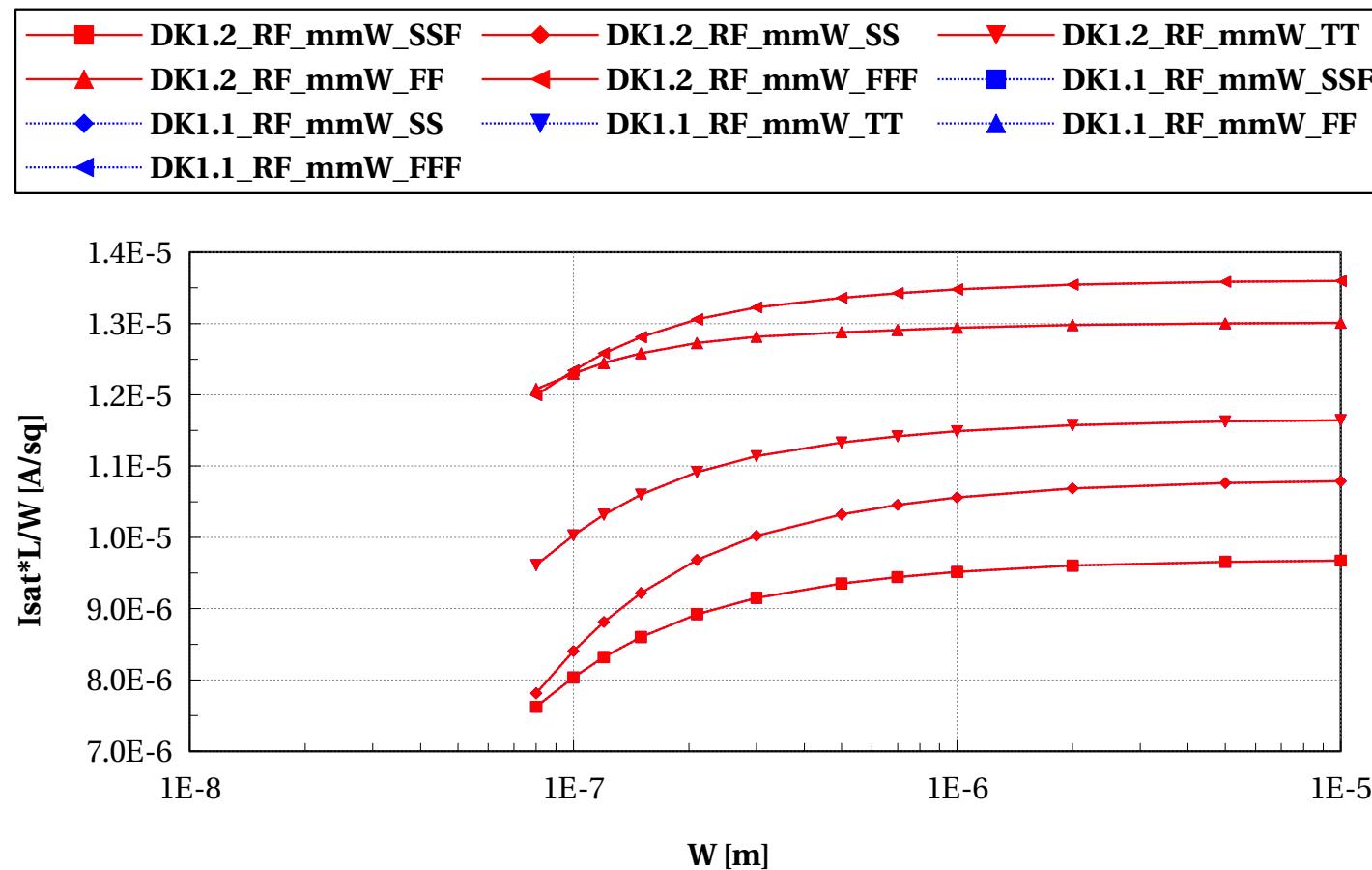
pfet_acc, Vt_sat [mV] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



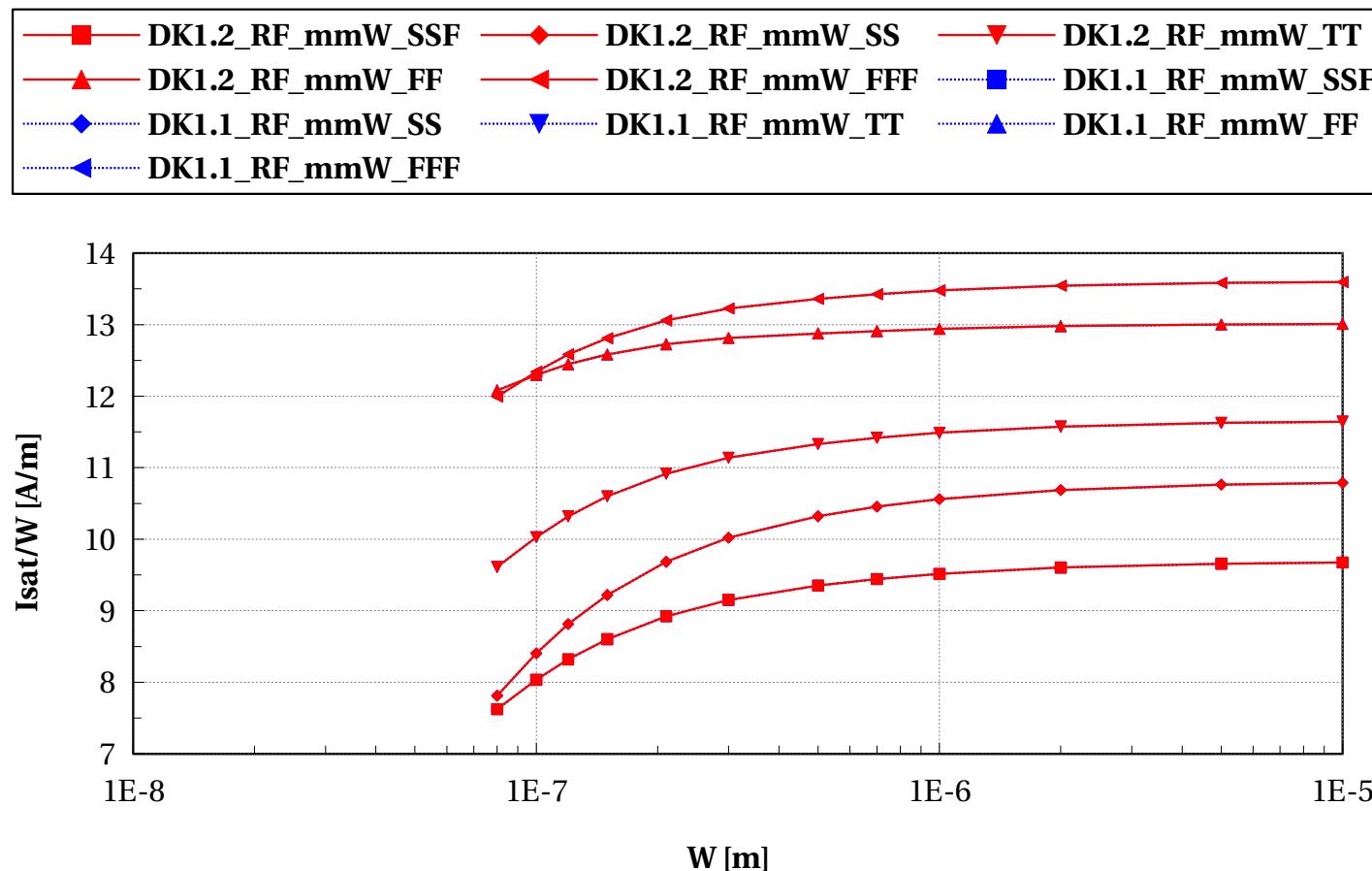
pfet_acc, $I_{sat} \cdot L/W$ [A/sq] vs W [m]

$I=1e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_la=0$ and $devType="PCELLwoWPE"$



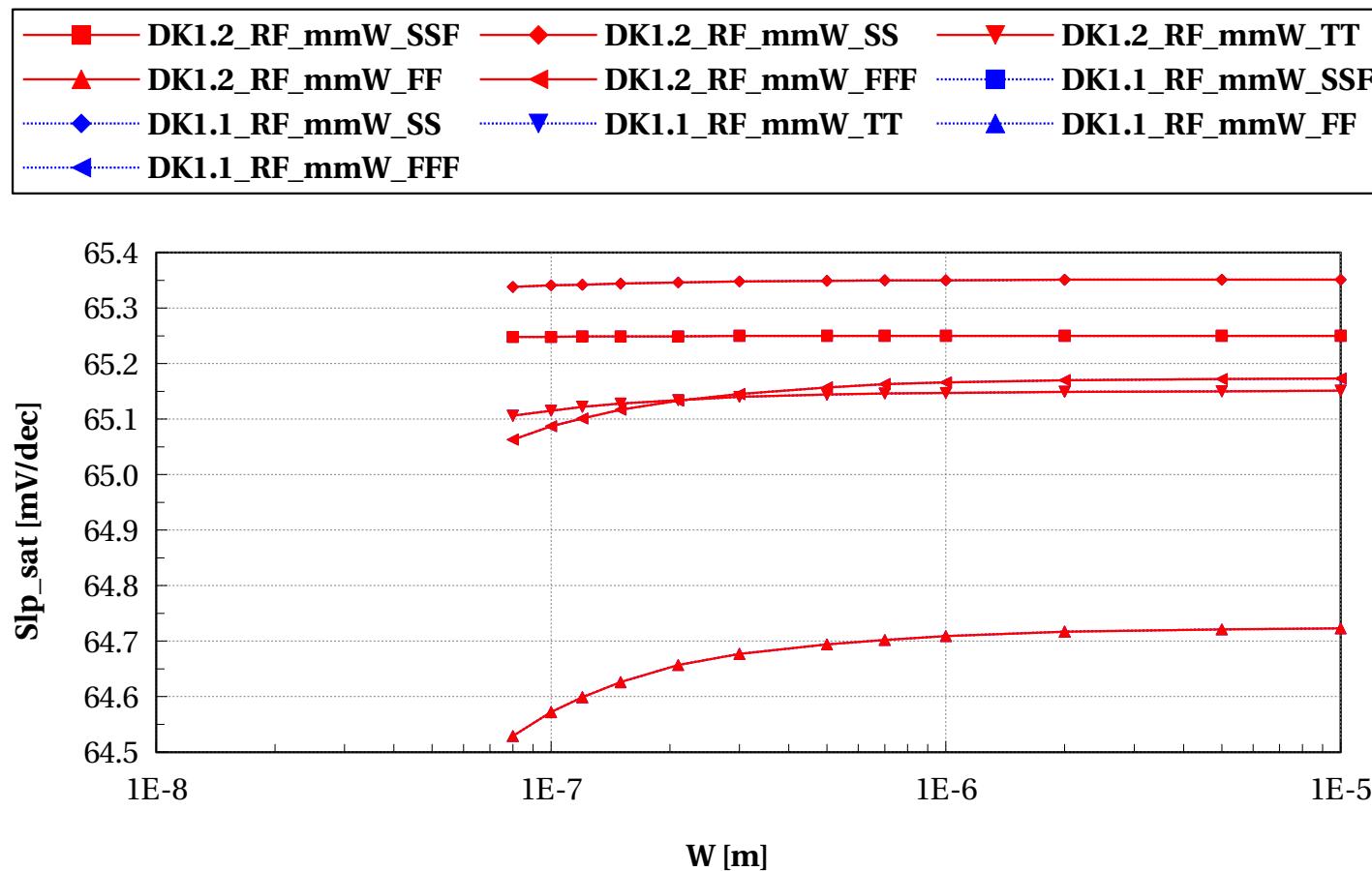
pfet_acc, Isat/W [A/m] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{bs} = 0$ and $p_la = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



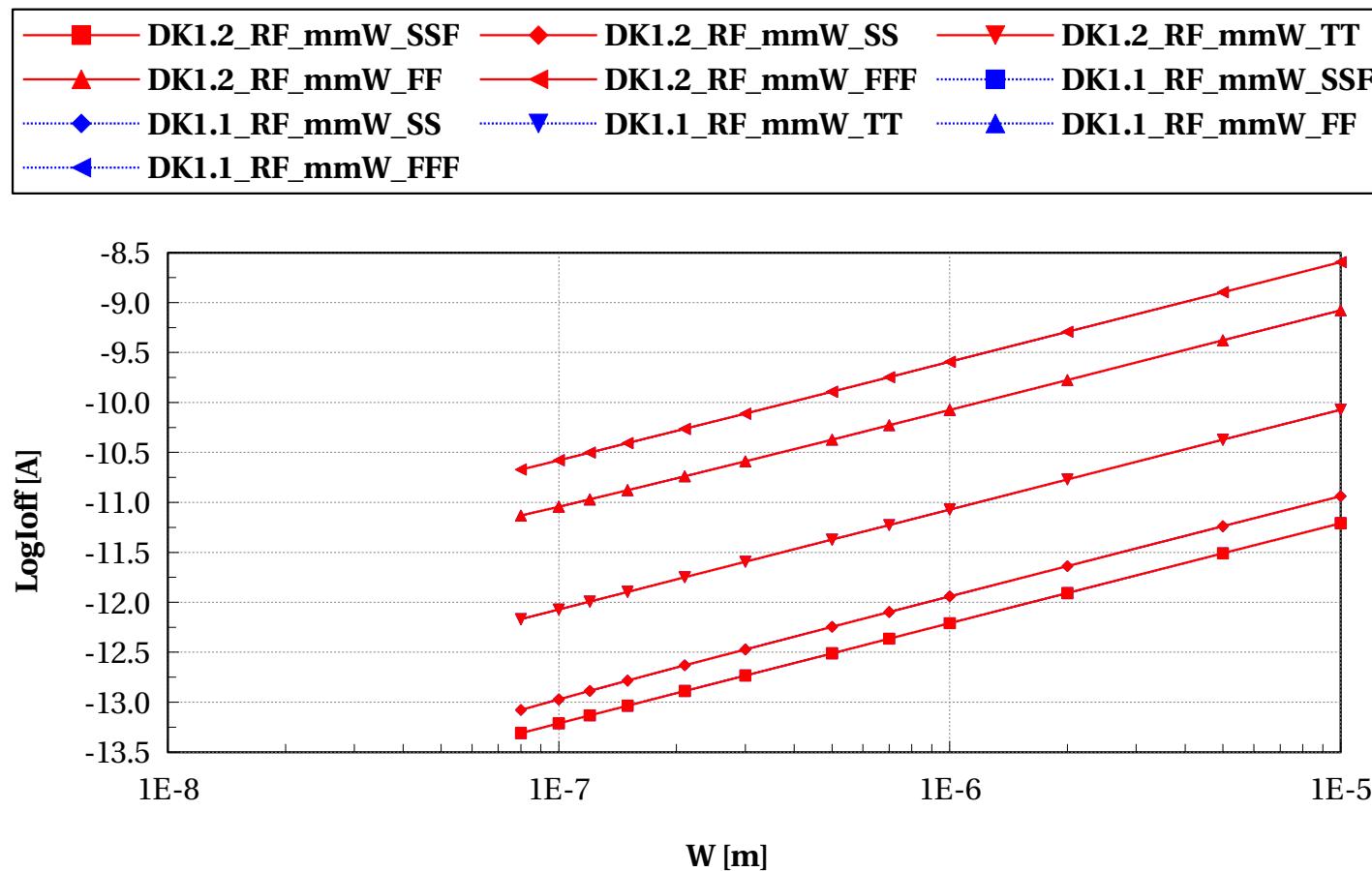
pfet_acc, Slp_sat [mV/dec] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



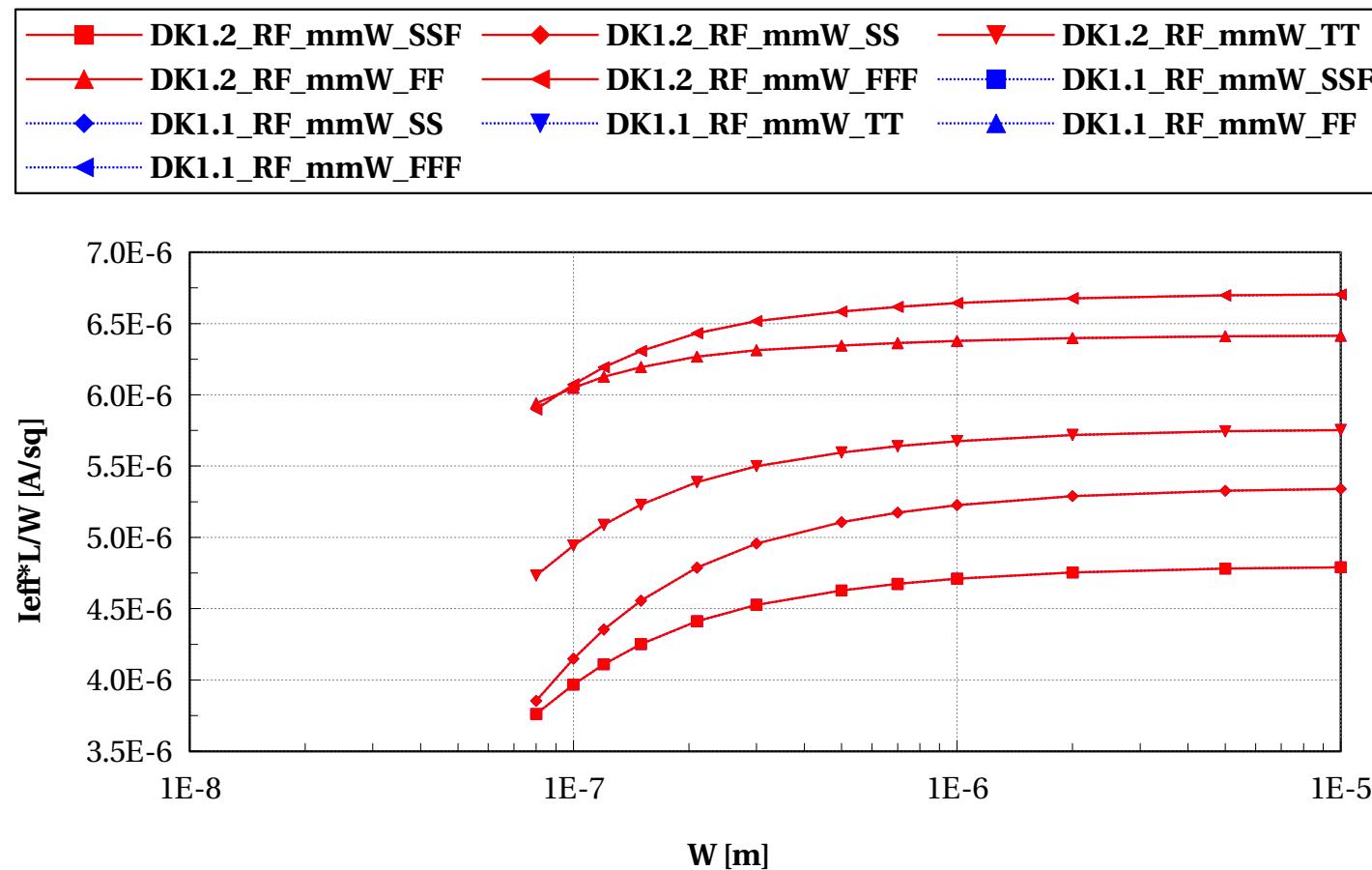
pfet_acc, LogIoff [A] vs W [m]

I==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



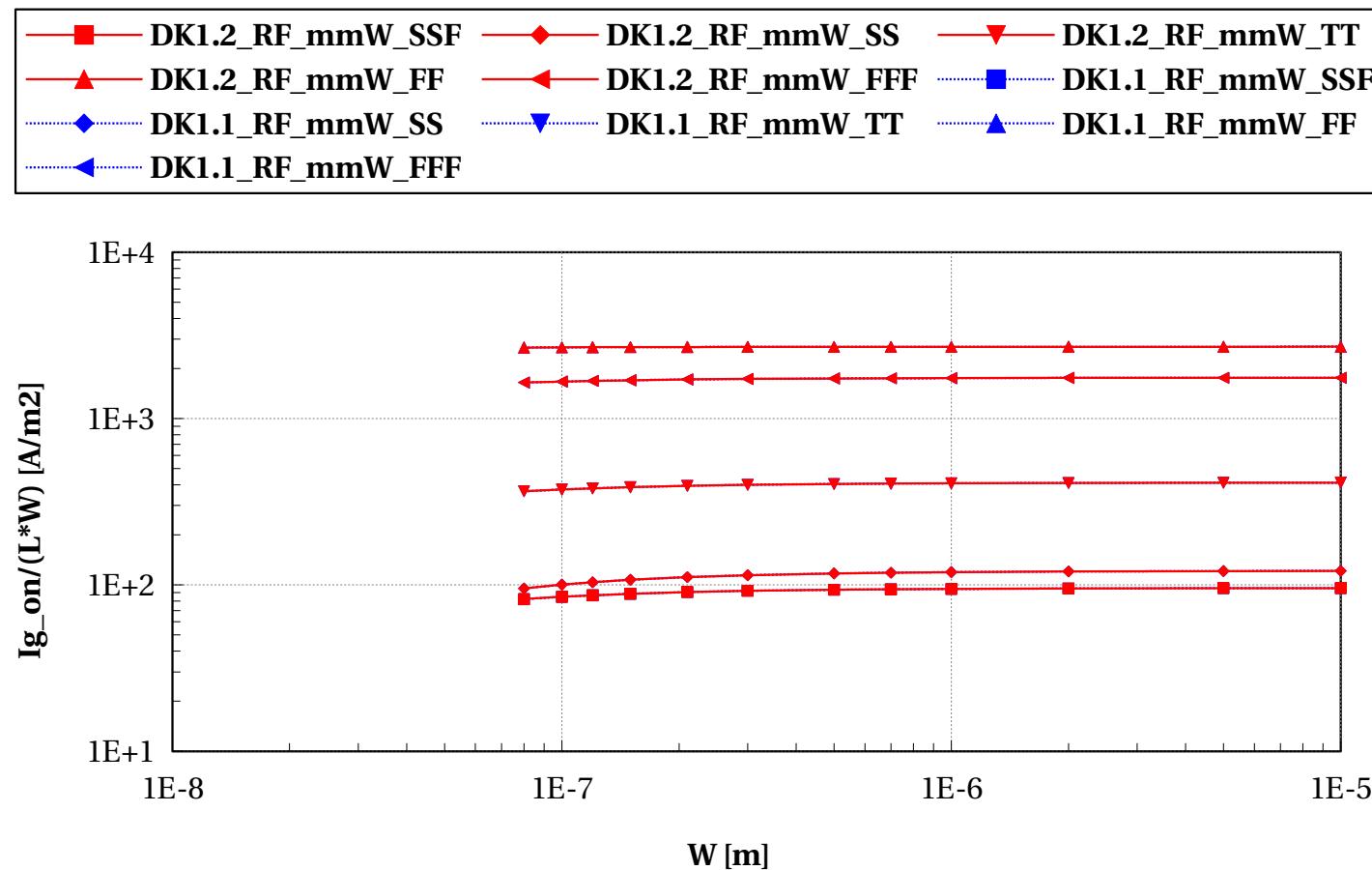
pfet_acc, $I_{eff} \cdot L/W$ [A/sq] vs W [m]

$I=1e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_la=0$ and $devType="PCELLwoWPE"$



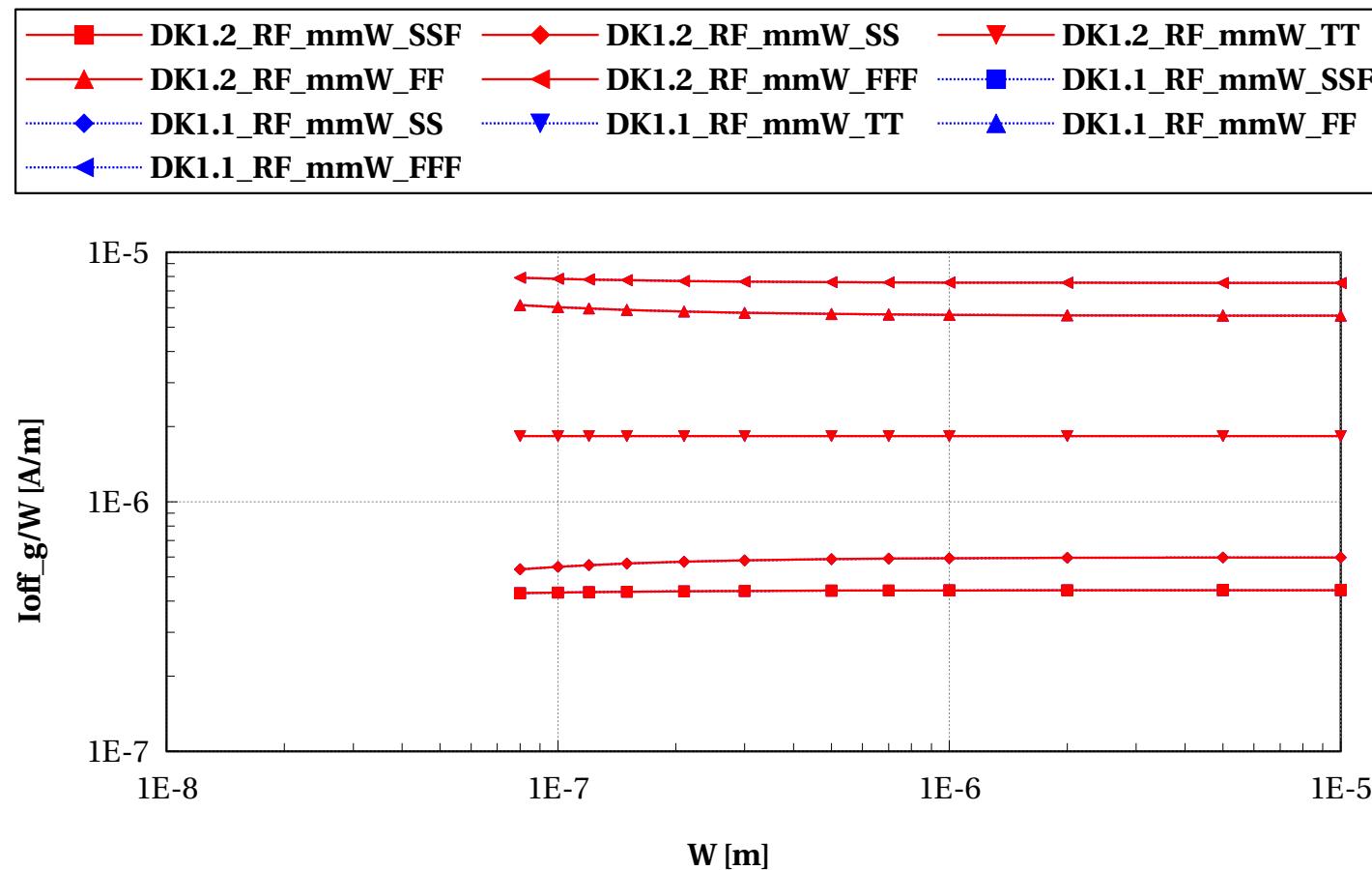
pfet_acc, Ig_on/(L*W) [A/m2] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{bs} = 0$ and $p_la = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



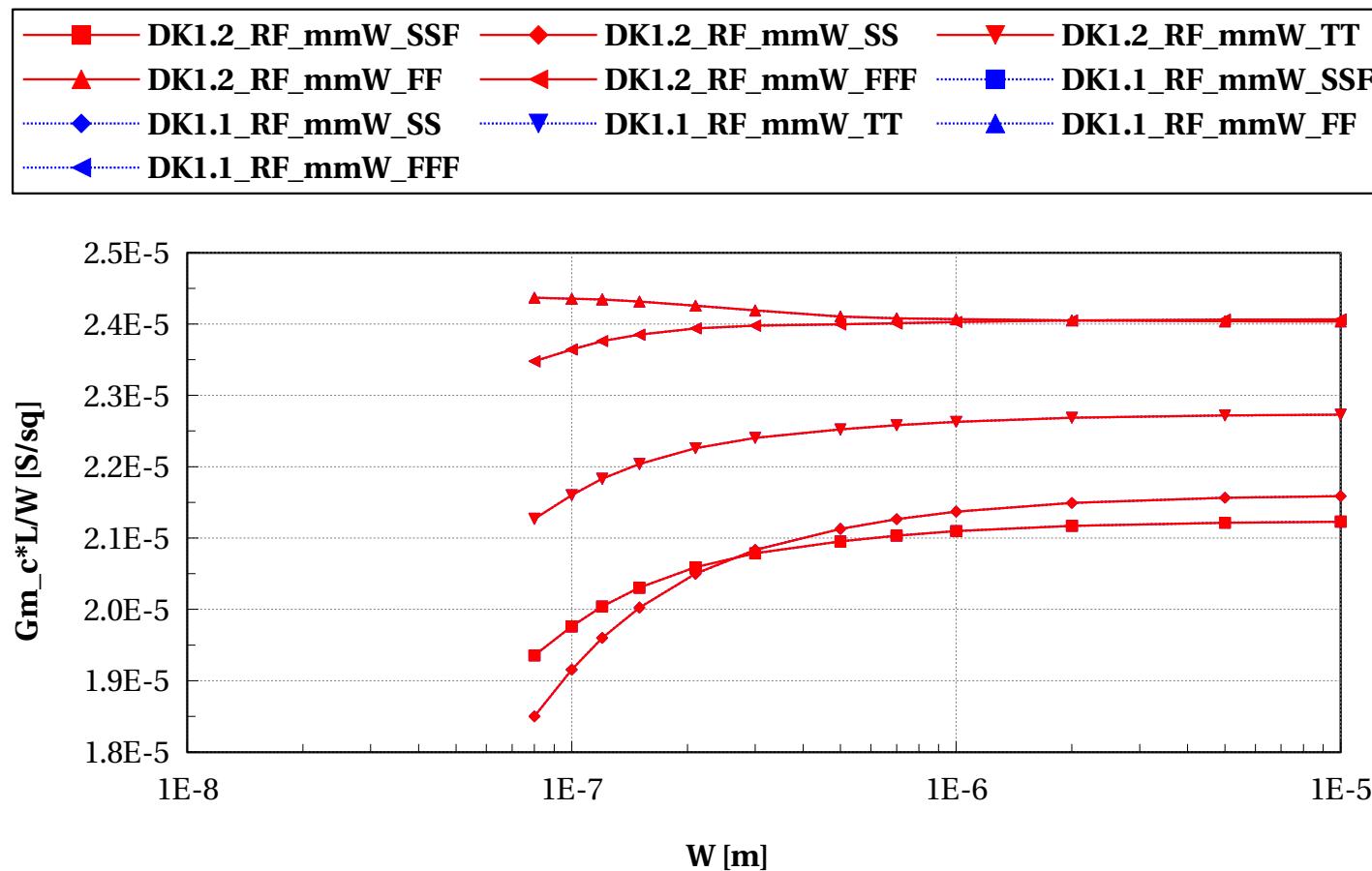
pfet_acc, Ioff_g/W [A/m] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{bs} = 0$ and $p_la = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



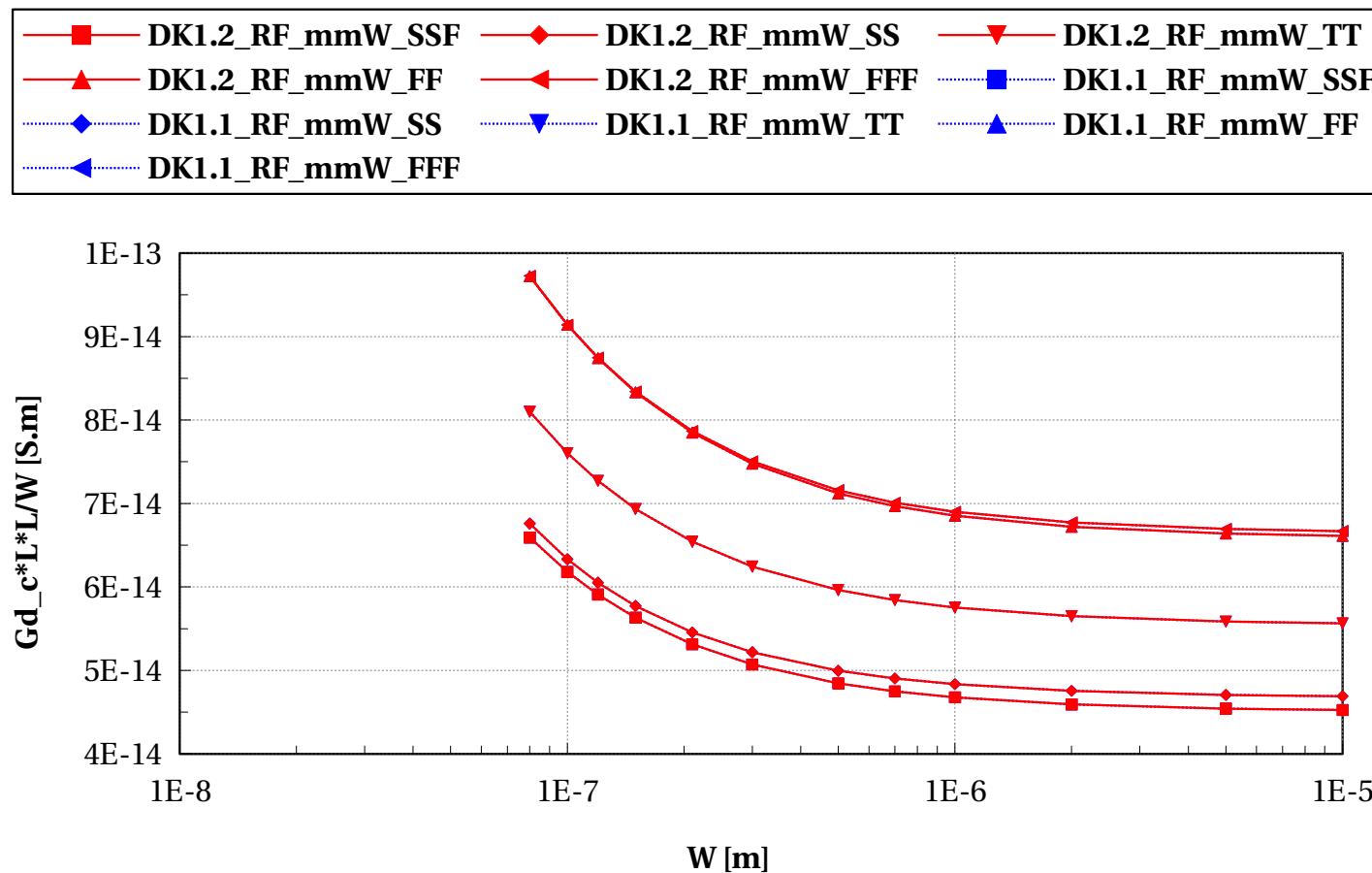
pfet_acc, Gm_c*L/W [S/sq] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



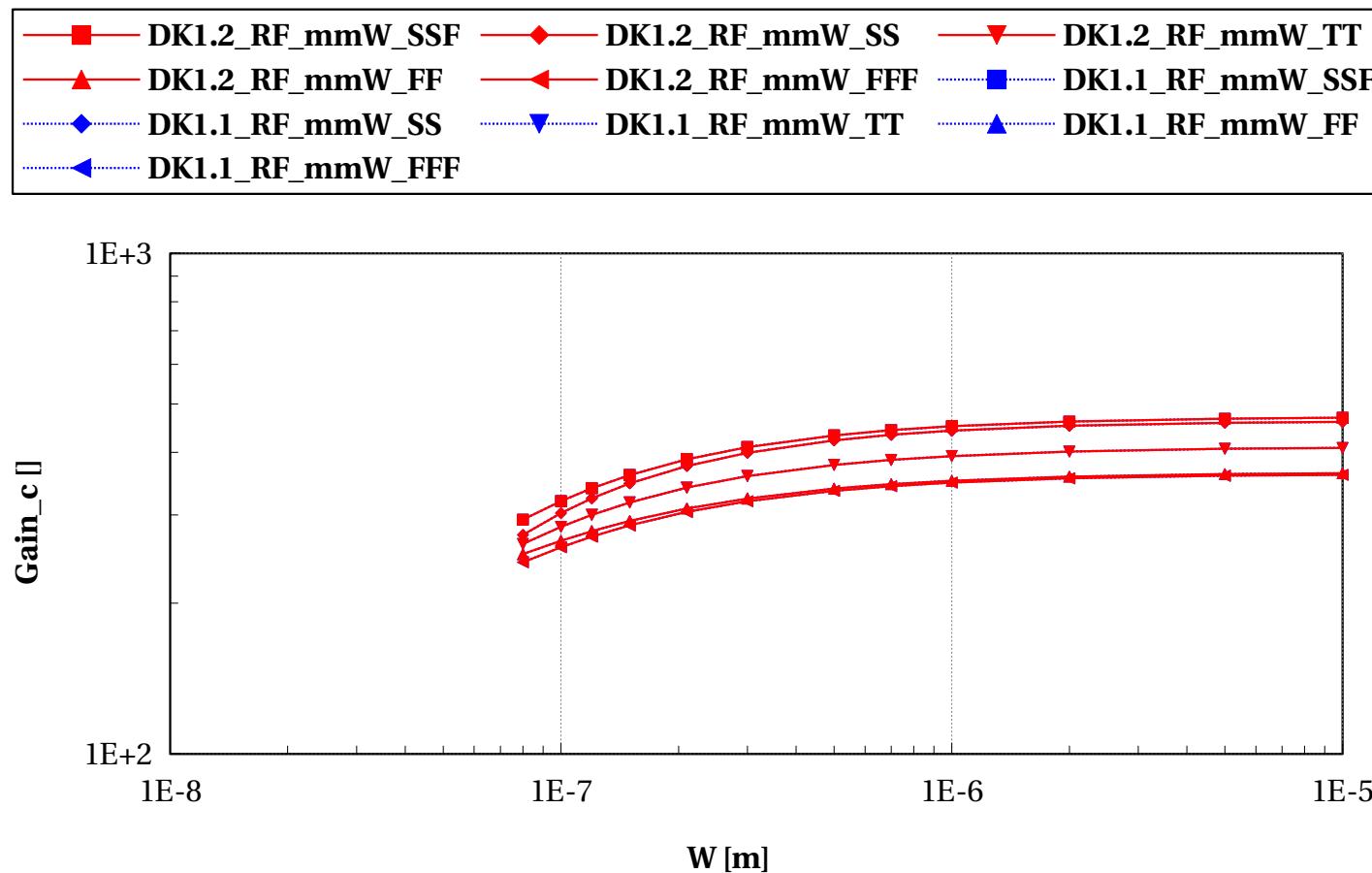
pfet_acc, $G_d \cdot c^* L^* W$ [S.m] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = "PCELLwoWPE"$



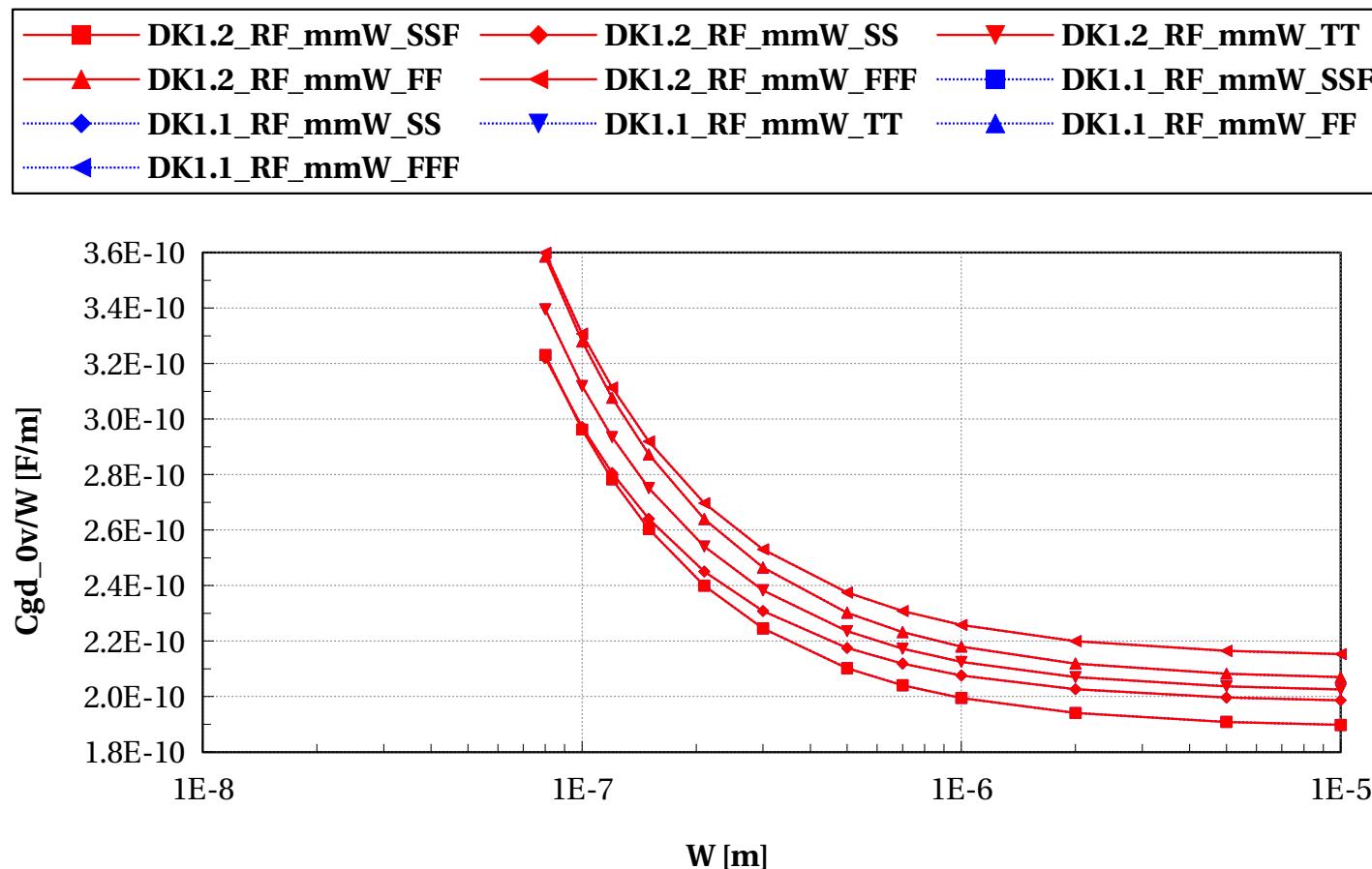
pfet_acc, Gain_c [] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



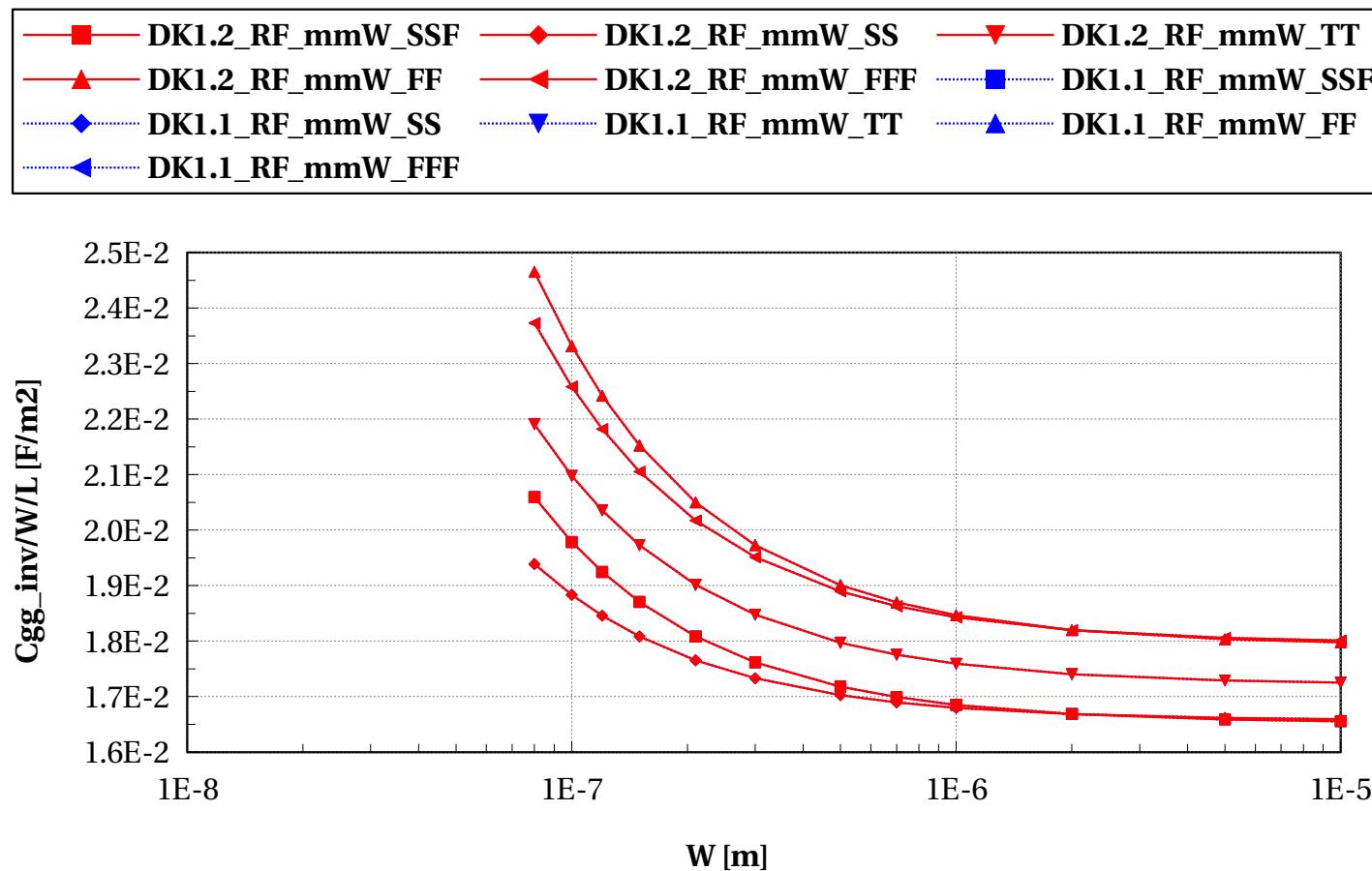
pfet_acc, Cgd_0v/W [F/m] vs W [m]

$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



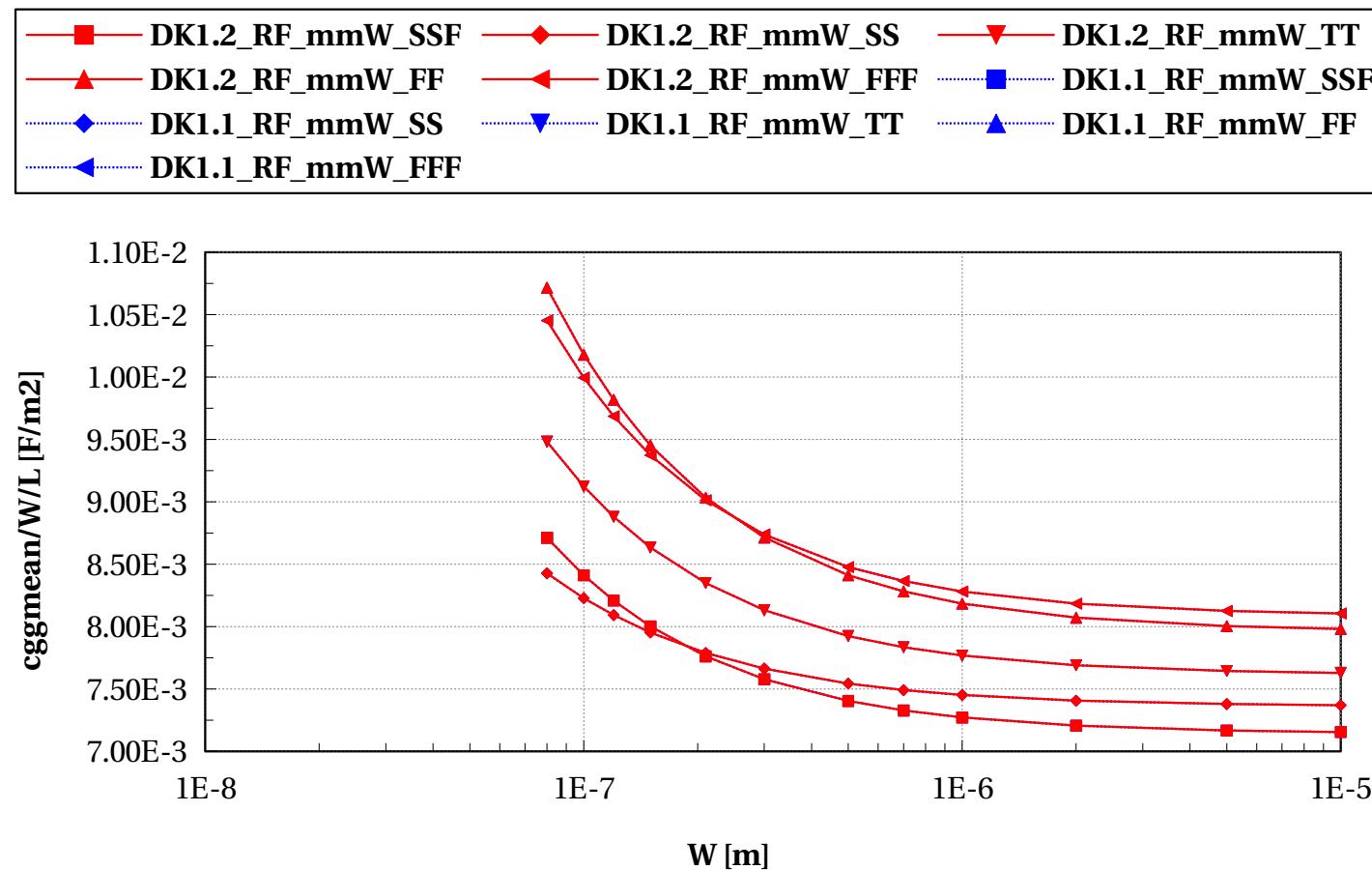
pfet_acc, Cgg_inv/W/L [F/m²] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



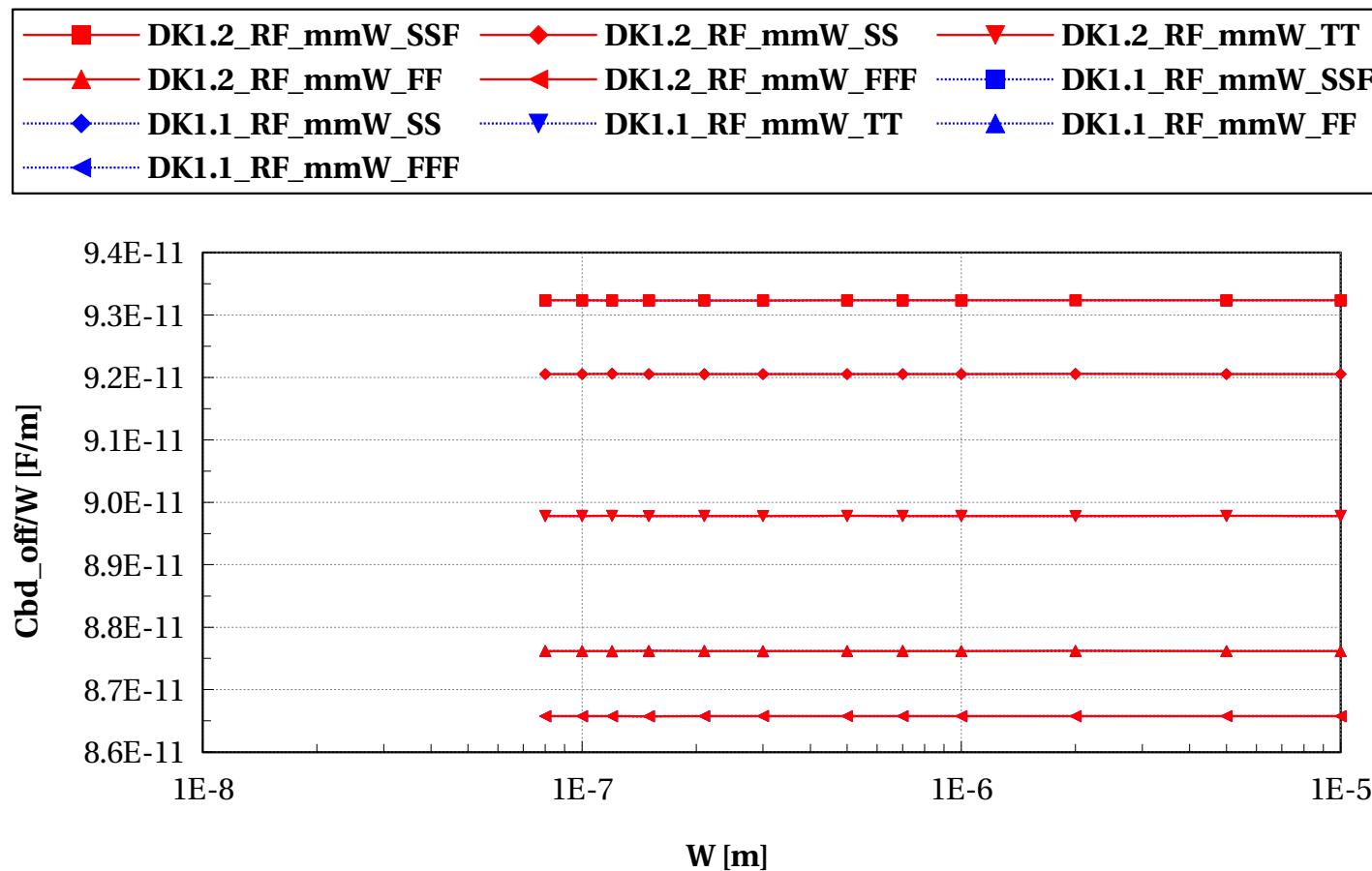
pfet_acc, cggmean/W/L [F/m²] vs W [m]

l==1e-6 and Temp==25 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



pfet_acc, Cbd_off/W [F/m] vs W [m]

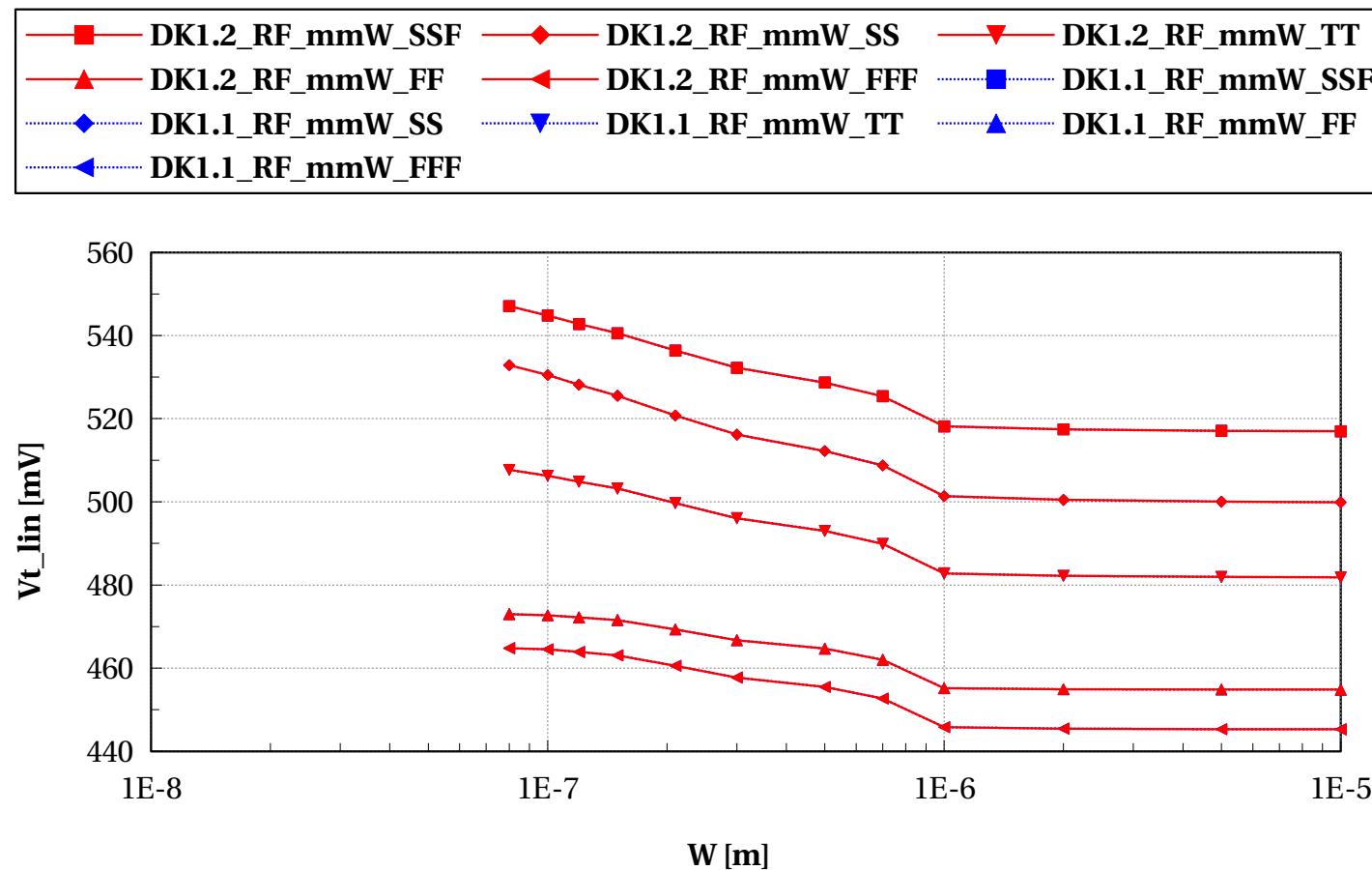
$I = 1e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



Scaling versus Width (L=30nm)

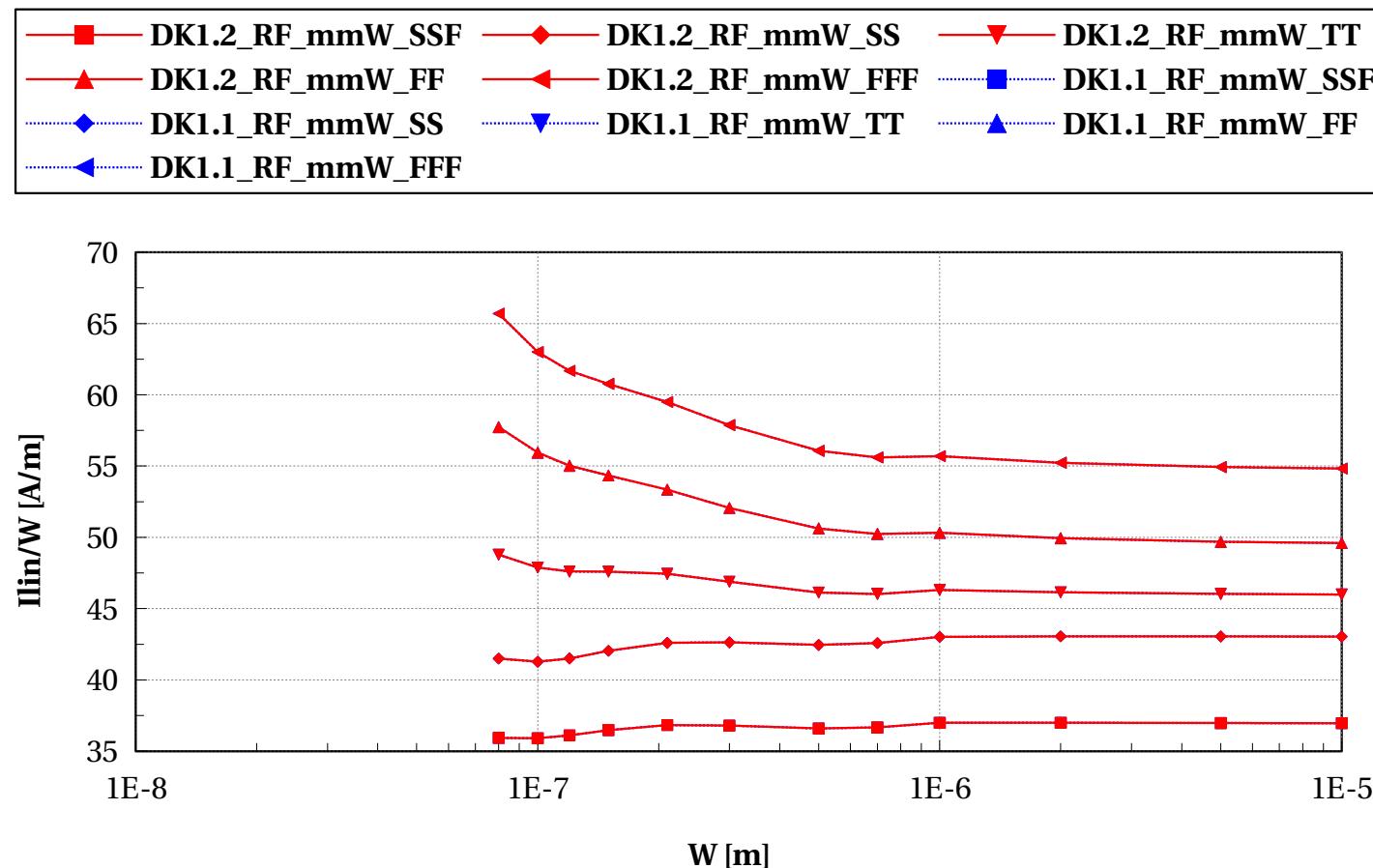
pfet_acc, Vt_lin [mV] vs W [m]

$I_{DS} = 0.030e-6$ and Temp = 25 and $V_{BS} = 0$ and $p_{LA} = 0$ and devType = "PCELLwoWPE"



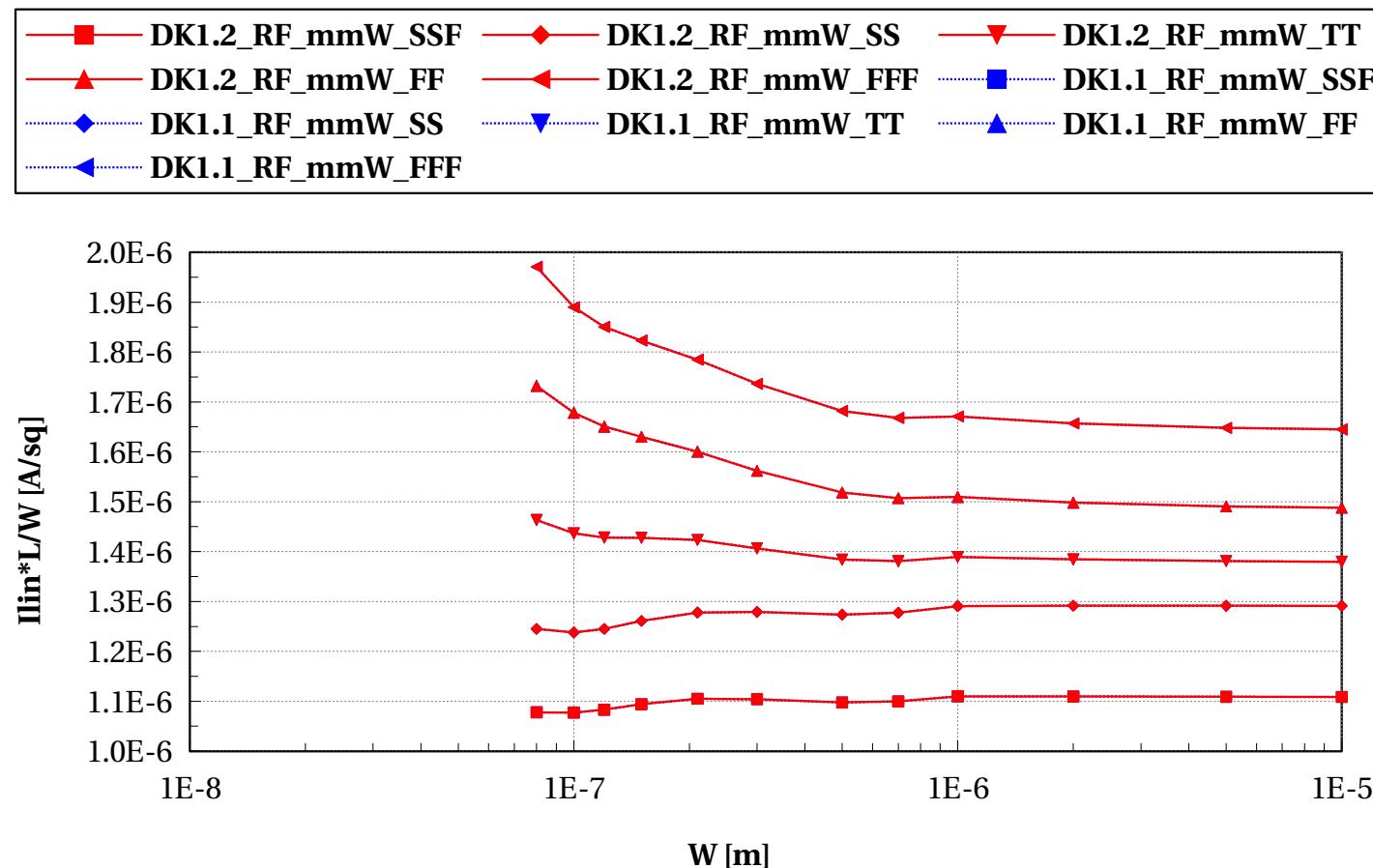
pfet_acc, Ilin/W [A/m] vs W [m]

$I_{DS} = 0.030e-6$ and $Temp = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $devType = "PCELLwoWPE"$



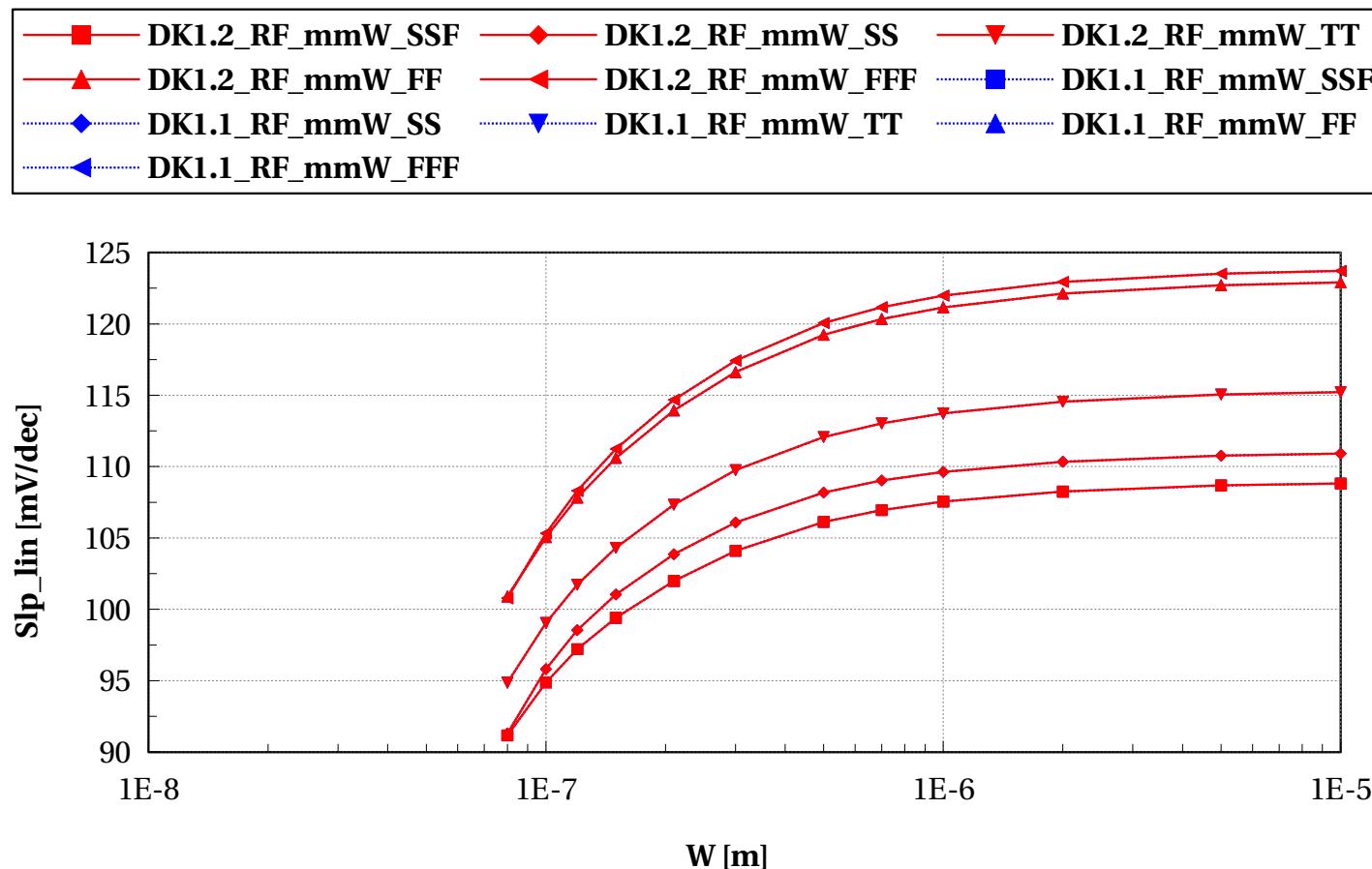
pfet_acc, $I_{lin} \cdot L/W$ [A/sq] vs W [m]

$I_{lin} = 0.030e-6$ and Temp = 25 and Vbs = 0 and p_la = 0 and devType = "PCELLwoWPE"



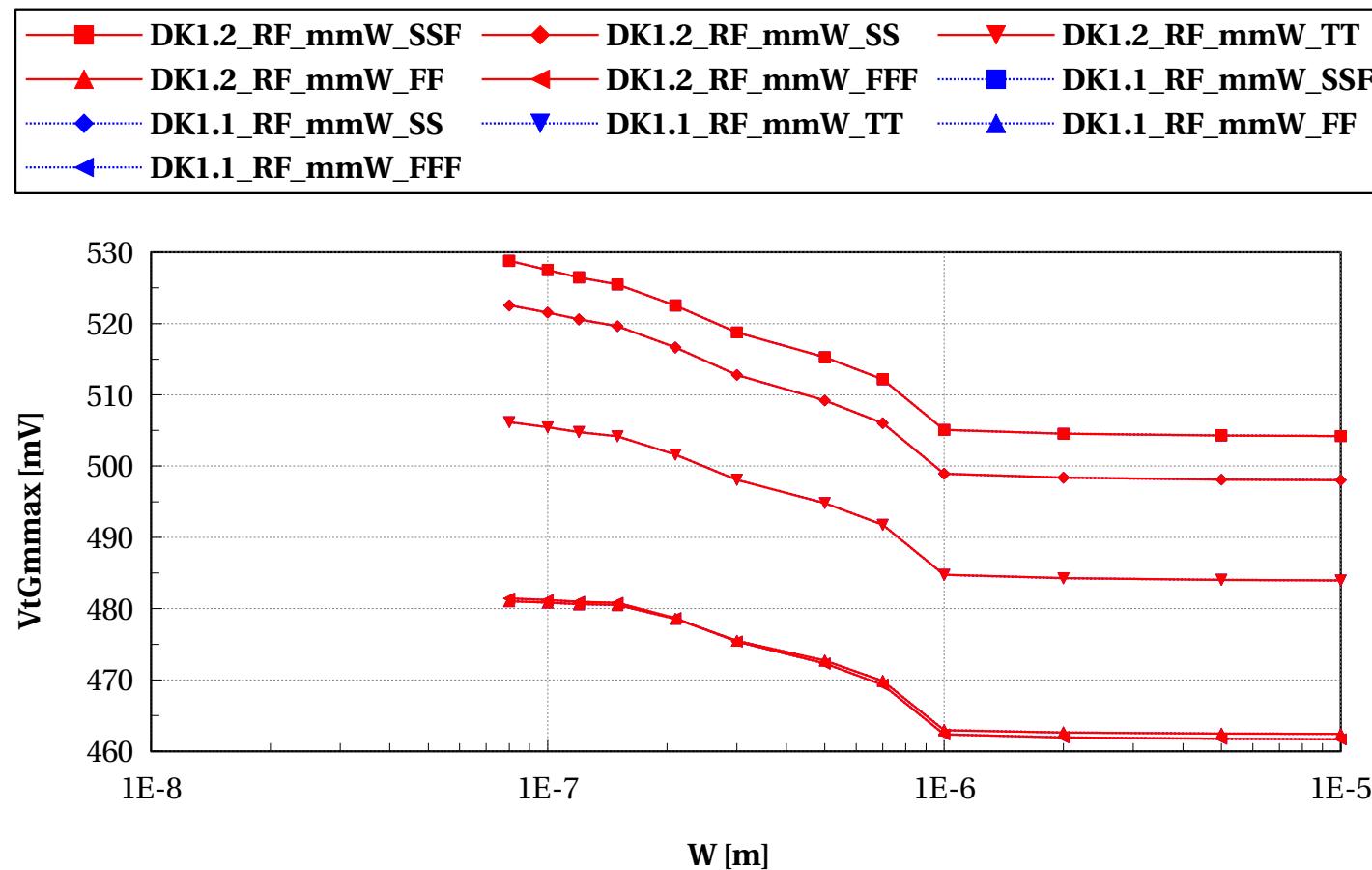
pfet_acc, Slp_lin [mV/dec] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{BS}=0$ and $p_{LA}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



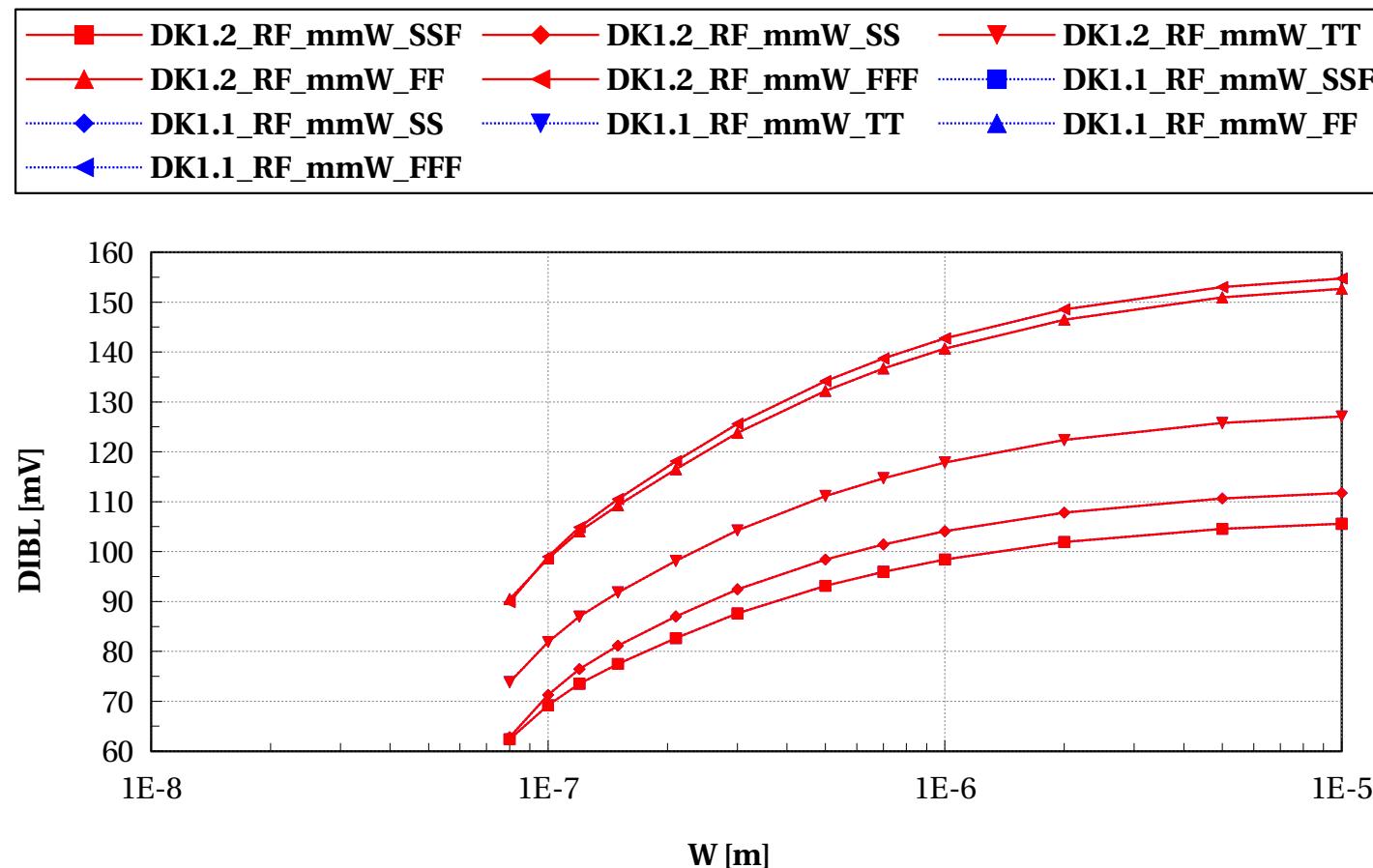
pfet_acc, VtGmmax [mV] vs W [m]

$I_{DS} = 0.030e-6$ and Temp = 25 and Vbs = 0 and p_la = 0 and devType = "PCELLwoWPE"



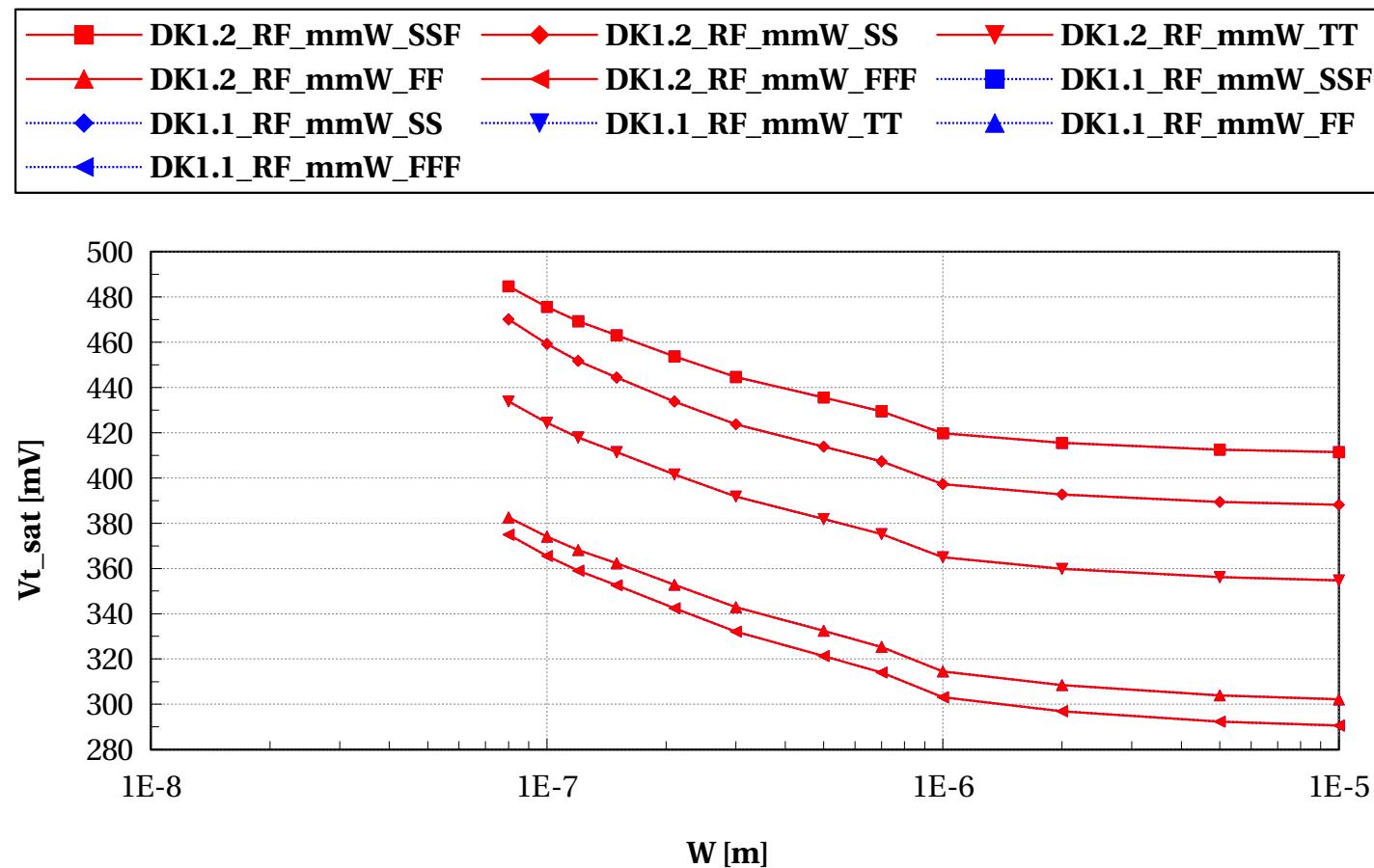
pfet_acc, DIBL [mV] vs W [m]

$I_{DS} = 0.030e-6$ and $Temp = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $devType = "PCELLwoWPE"$



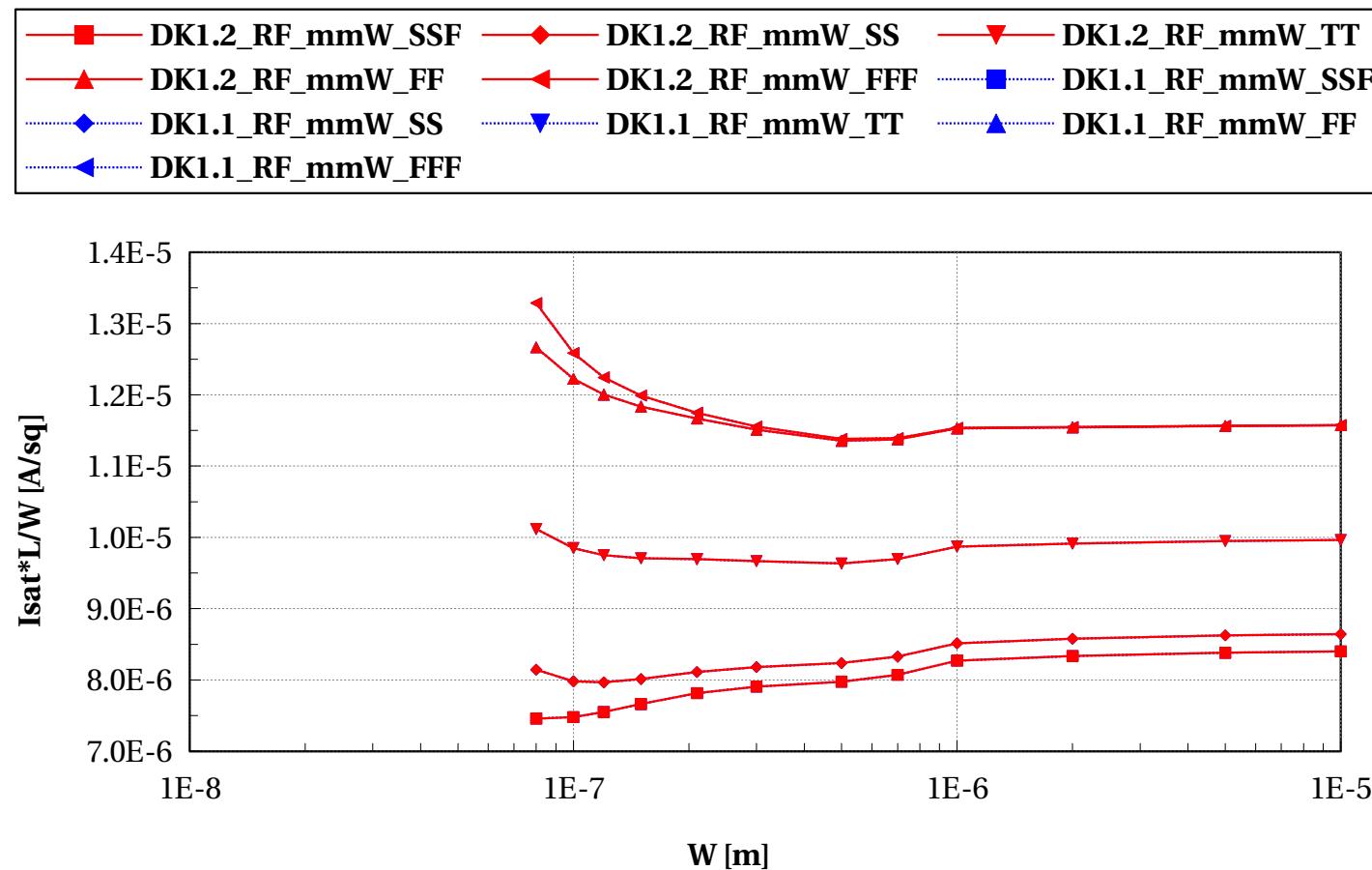
pfet_acc, Vt_sat [mV] vs W [m]

$I_{DS} = 0.030e-6$ and Temp = 25 and Vbs = 0 and p_la = 0 and devType = "PCELLwoWPE"



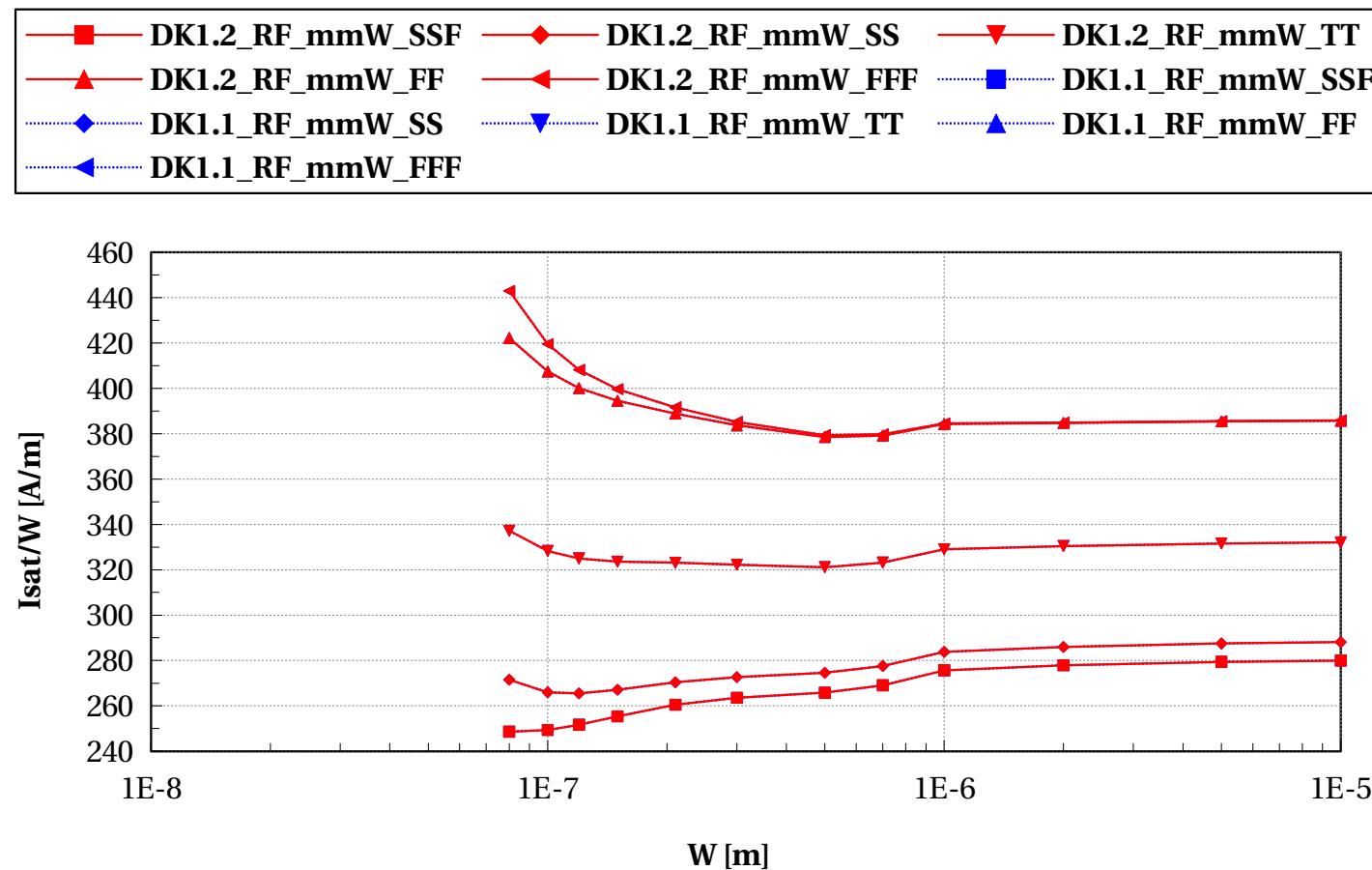
pfet_acc, $I_{sat} \cdot L/W$ [A/sq] vs W [m]

$I=0.030e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_{la}=0$ and $devType="PCELLwoWPE"$



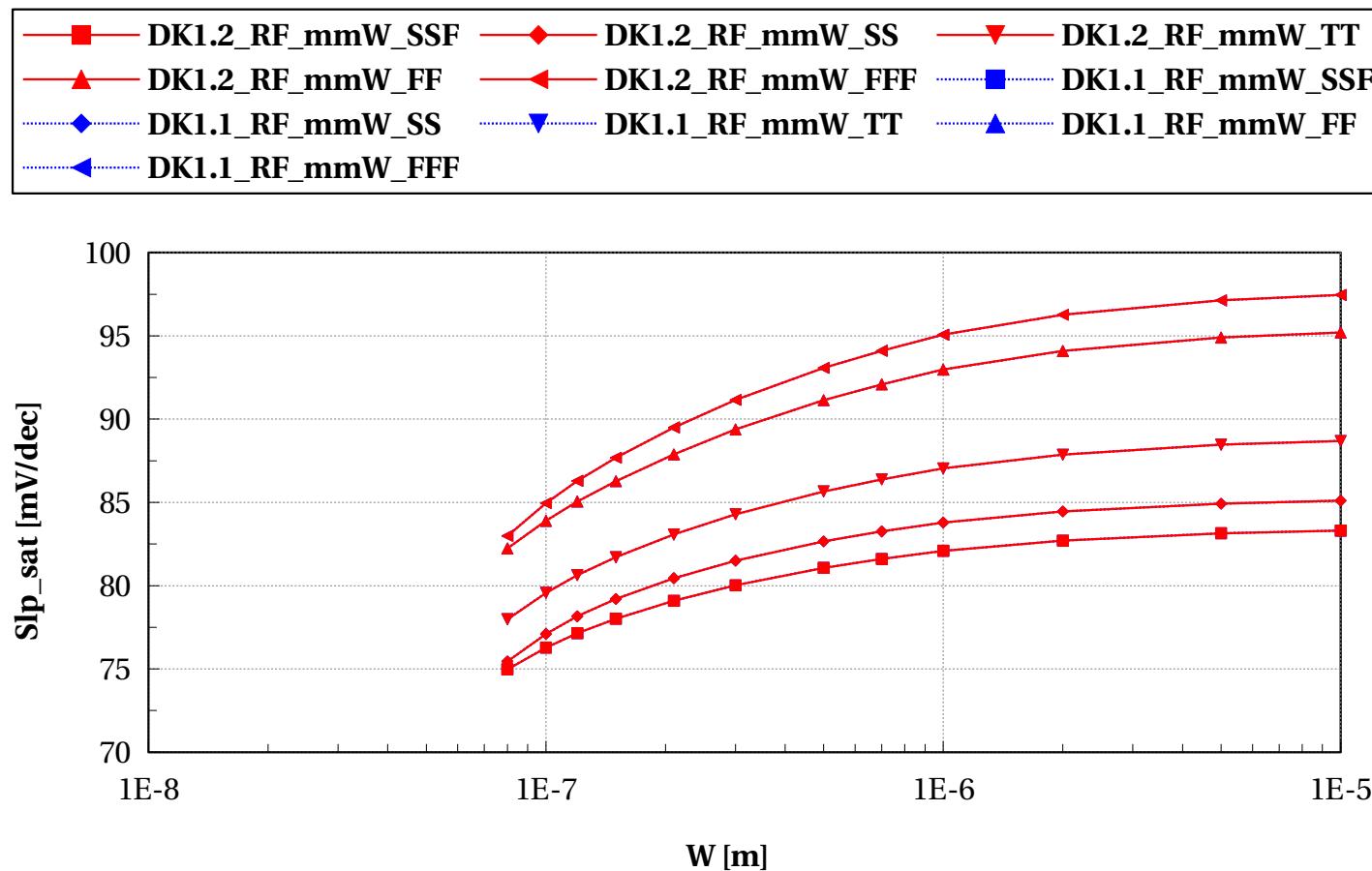
pfet_acc, Isat/W [A/m] vs W [m]

$I_l=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



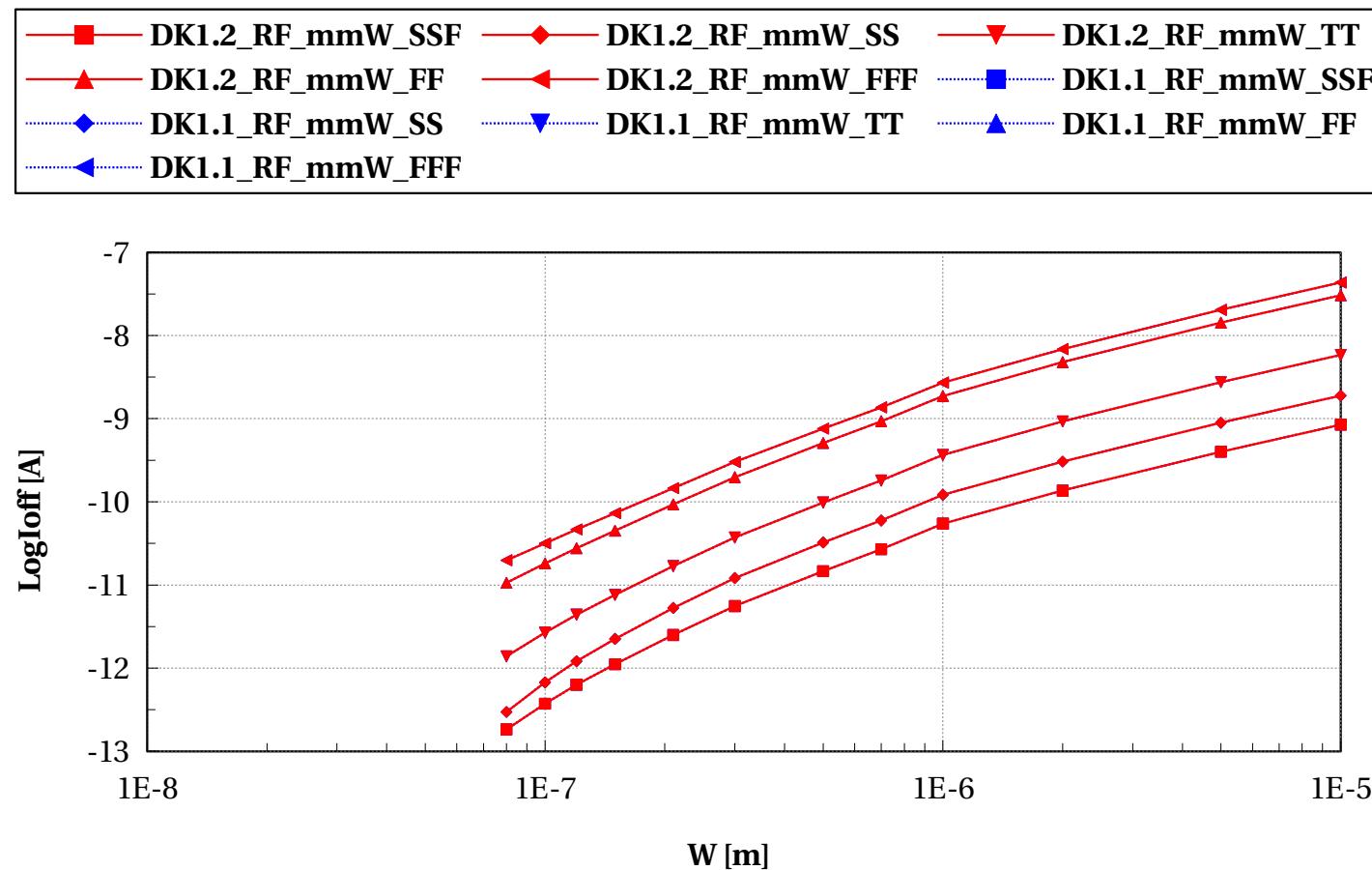
pfet_acc, Slp_sat [mV/dec] vs W [m]

$I_{DS} = 0.030e-6$ and Temp = 25 and V_{BS} = 0 and p_la = 0 and devType = "PCELLwoWPE"



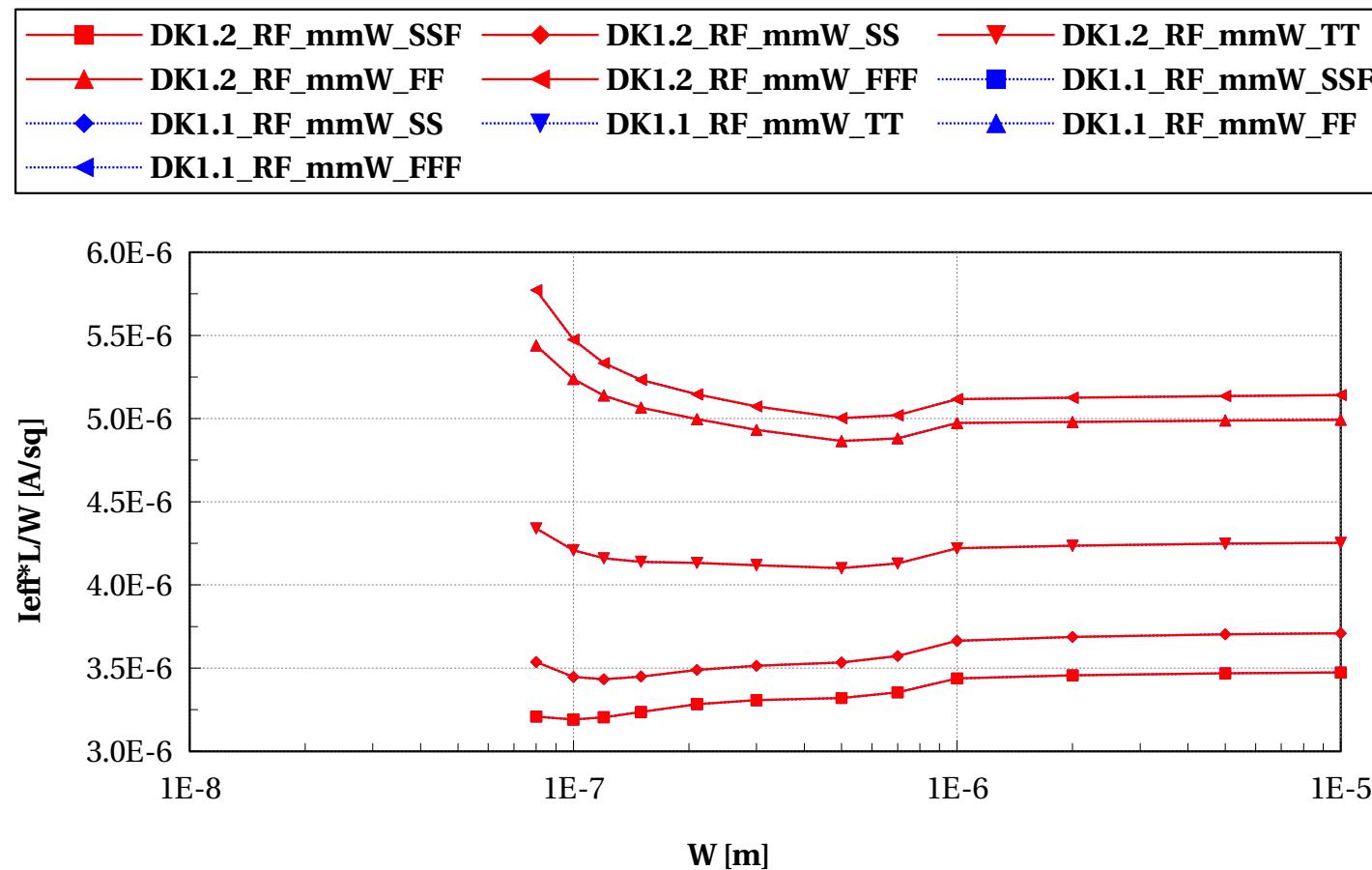
pfet_acc, LogIoff [A] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



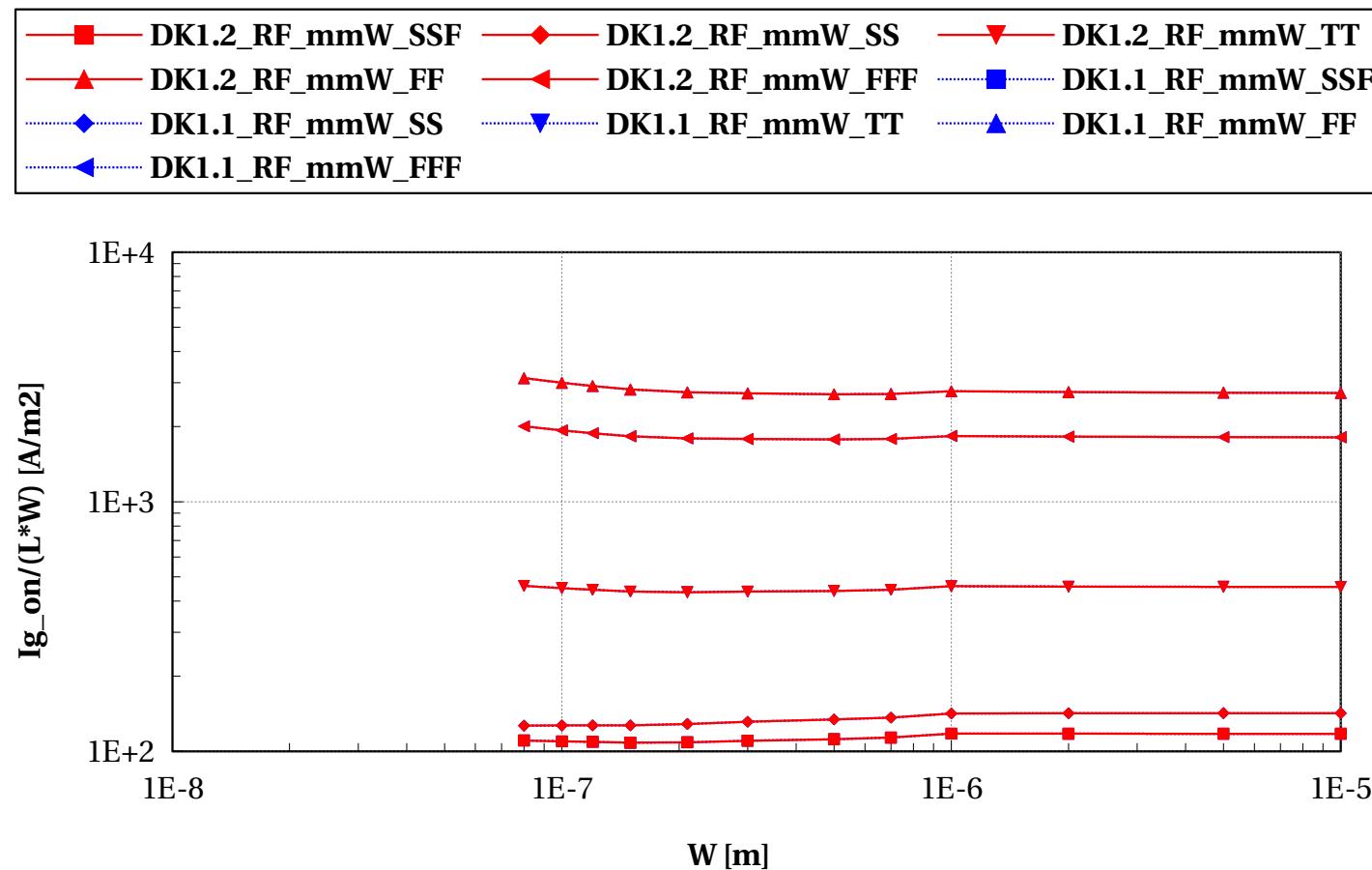
pfet_acc, $I_{eff} \cdot L/W$ [A/sq] vs W [m]

$I=0.030e-6$ and $Temp=25$ and $V_{bs}=0$ and $p_{la}=0$ and $devType="PCELLwoWPE"$



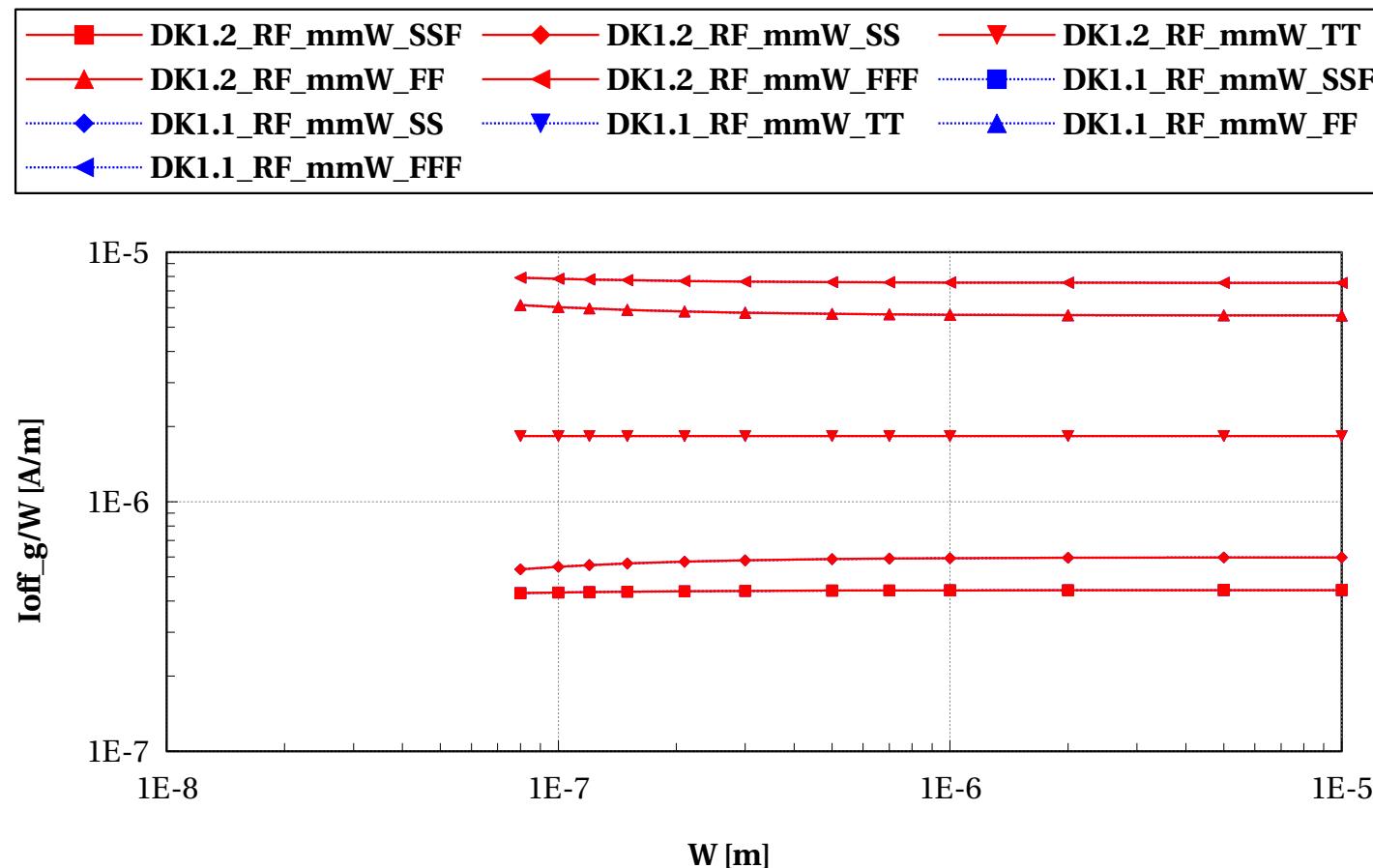
pfet_acc, Ig_on/(L*W) [A/m2] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



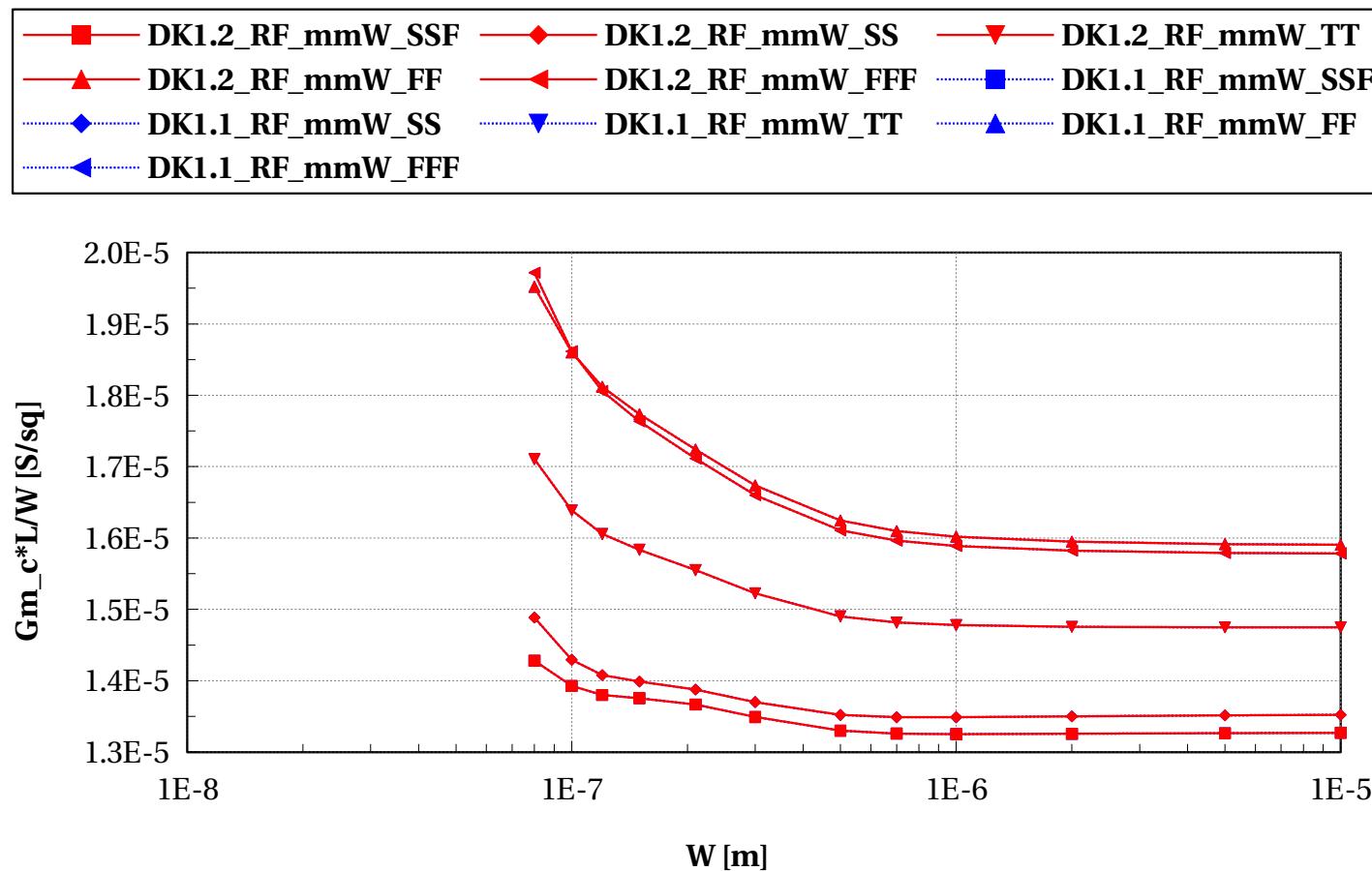
pfet_acc, Ioff_g/W [A/m] vs W [m]

$I = 0.030e-6$ and $\text{Temp} = 25$ and $V_{bs} = 0$ and $p_{la} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



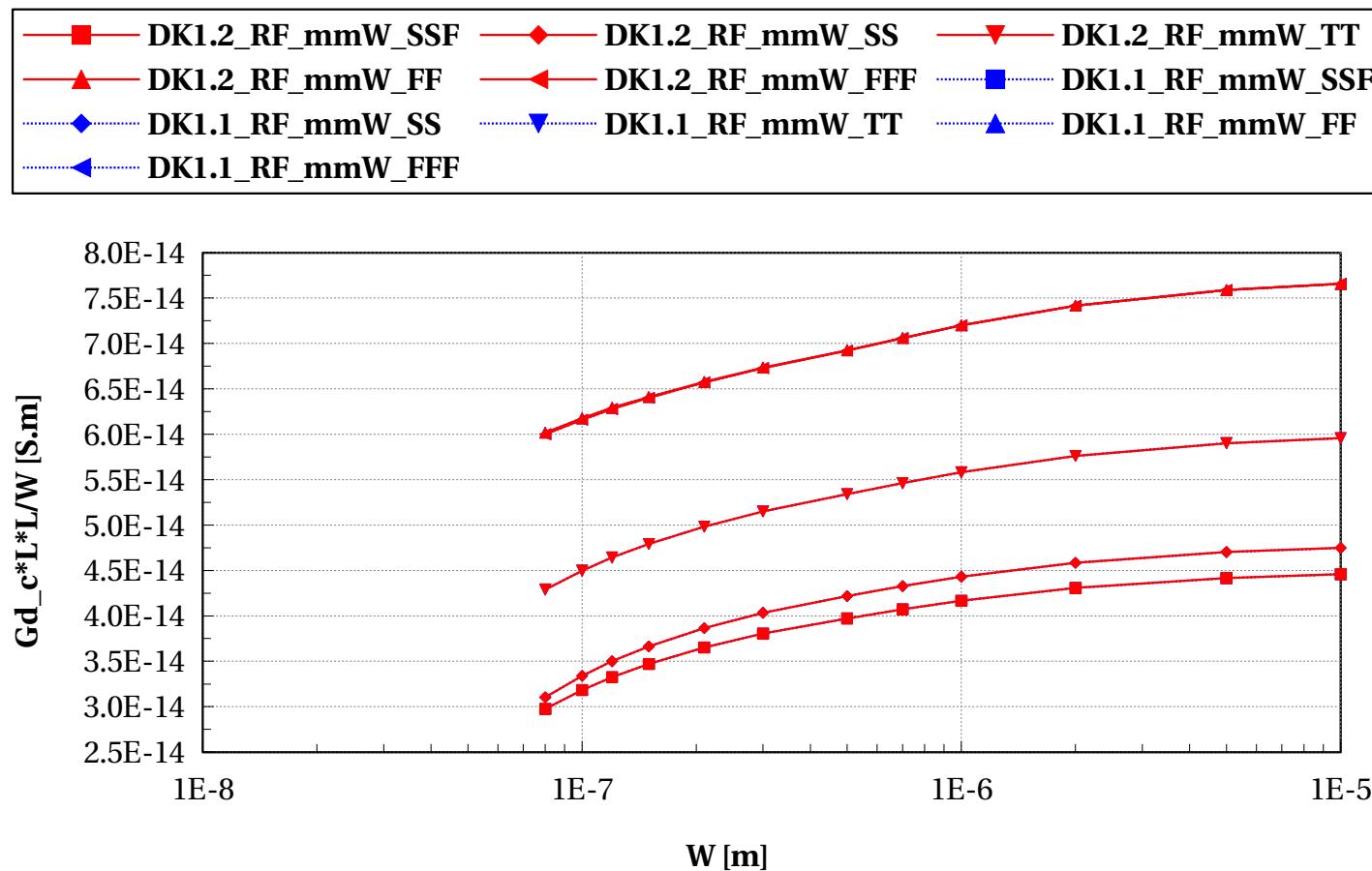
pfet_acc, Gm_c*L/W [S/sq] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



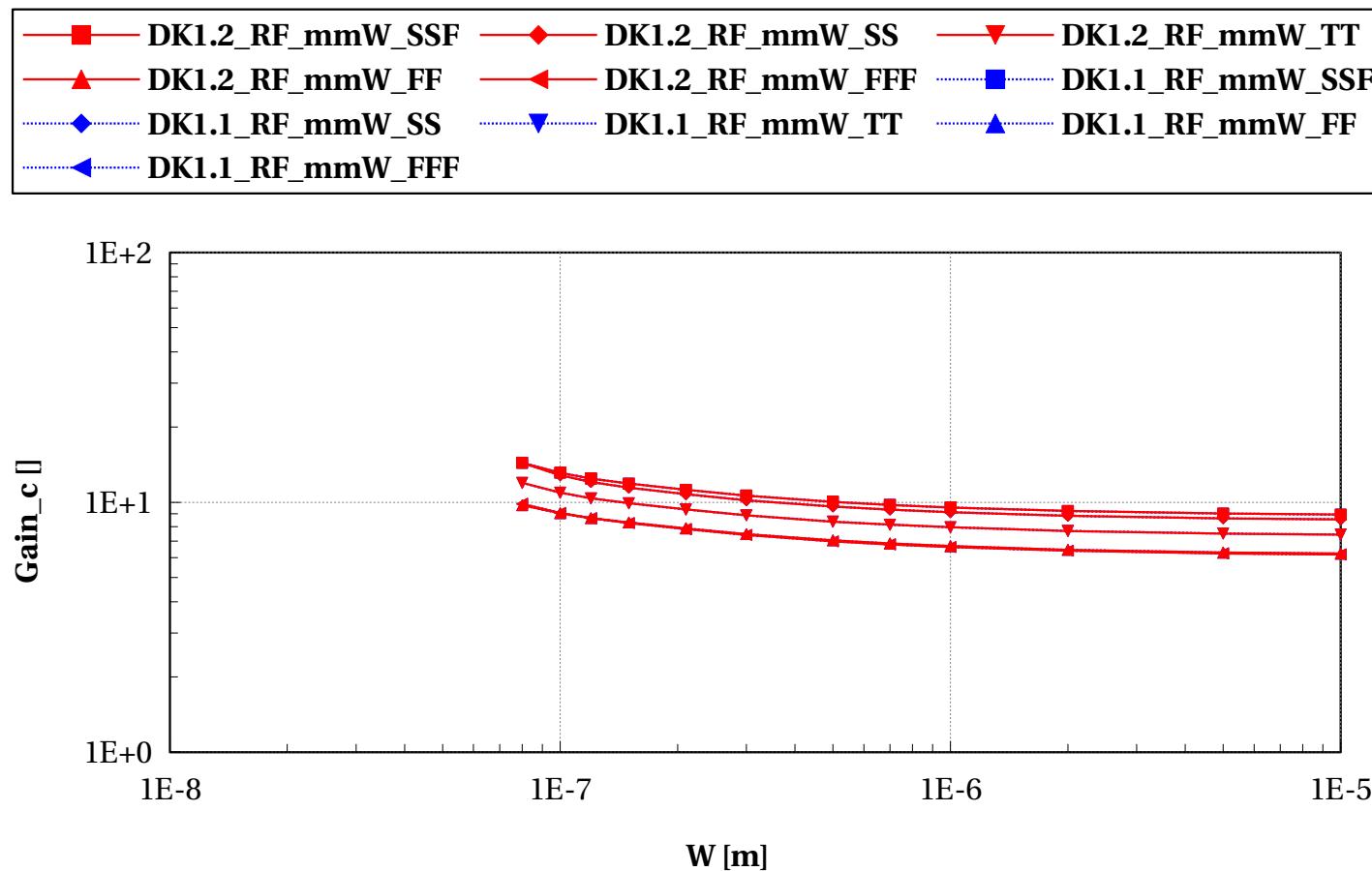
pfet_acc, $G_d \cdot c^* L^* W$ [S.m] vs W [m]

$I = 0.030e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = "PCELLwoWPE"$



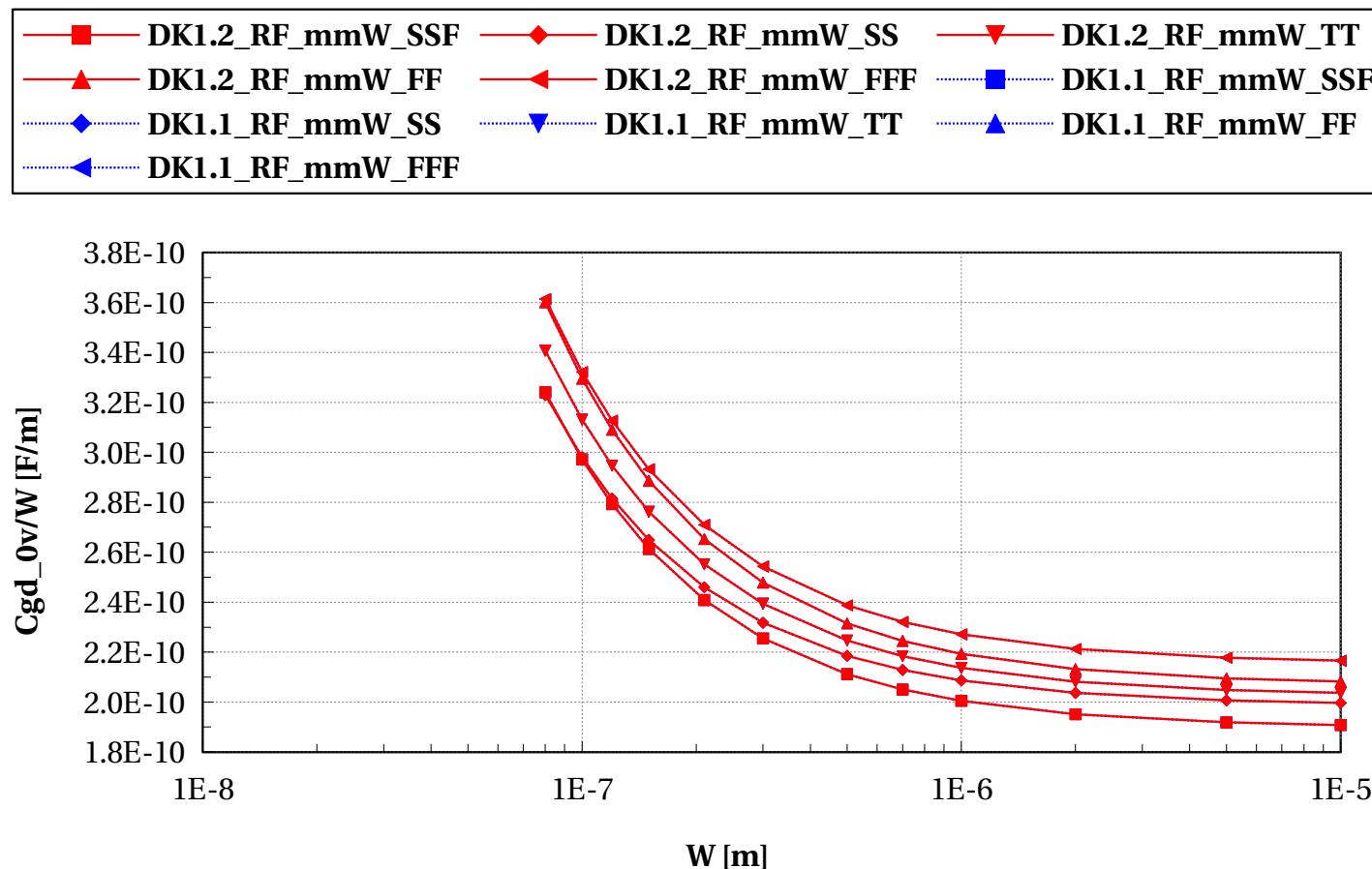
pfet_acc, Gain_c [] vs W [m]

$I_{DS} = 0.030e-6$ and $Temp = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $devType = "PCELLwoWPE"$



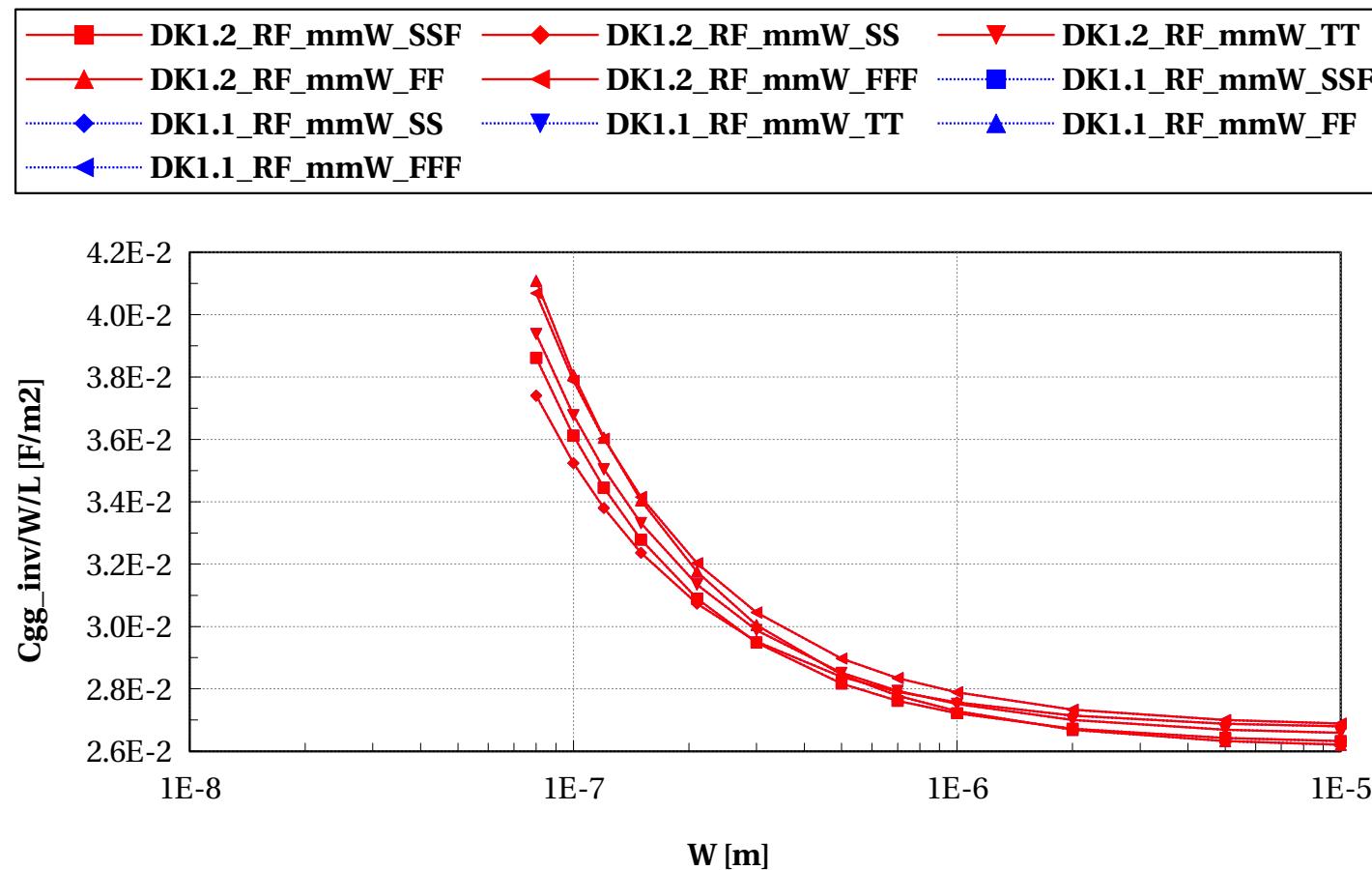
pfet_acc, Cgd_0v/W [F/m] vs W [m]

$I=0.030e-6$ and $\text{Temp}=25$ and $V_{bs}=0$ and $p_{la}=0$ and $\text{devType}=\text{"PCELLwoWPE"}$



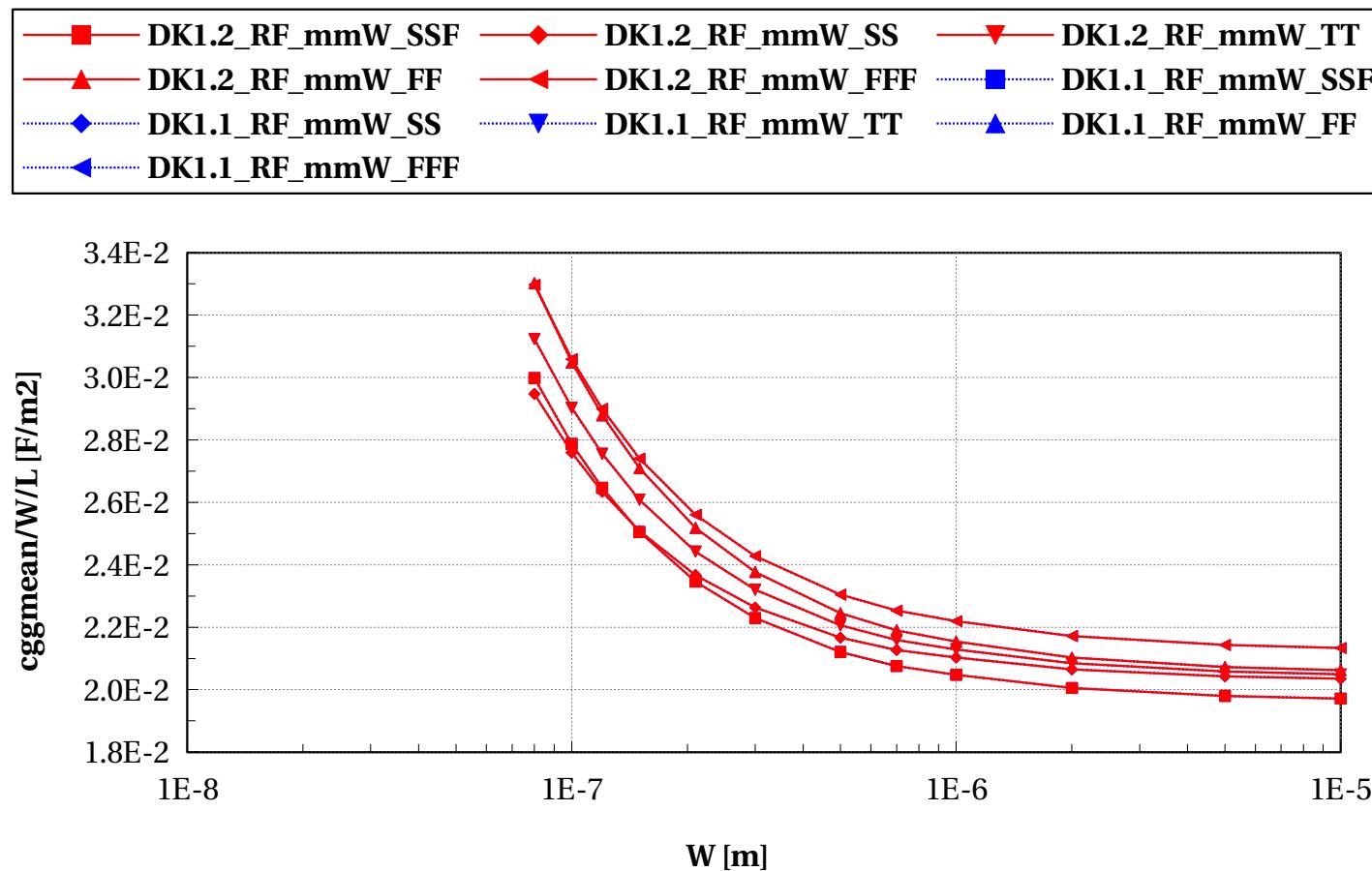
pfet_acc, Cgg_inv/W/L [F/m²] vs W [m]

$I = 0.030e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



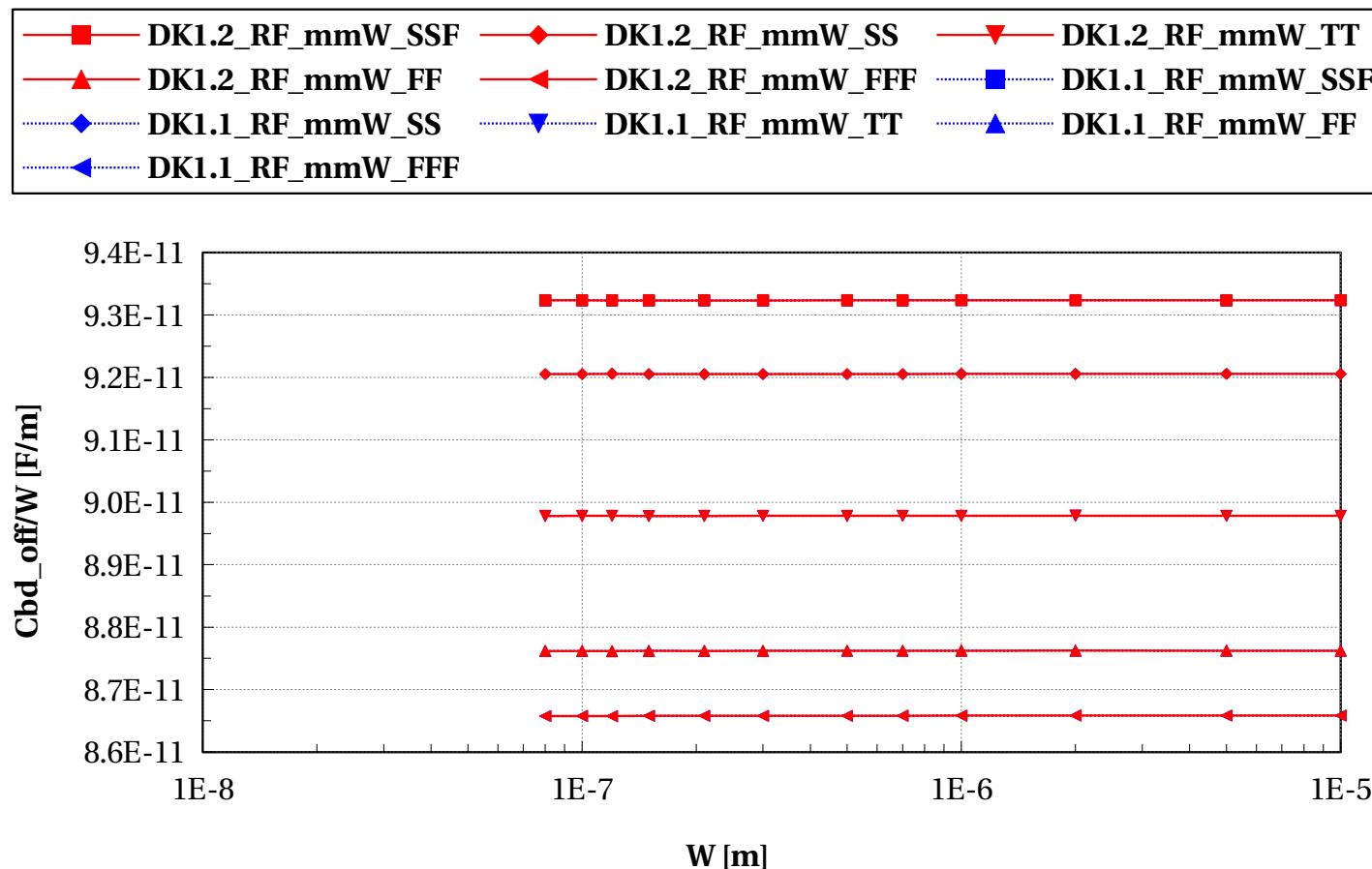
pfet_acc, cggmean/W/L [F/m²] vs W [m]

$I = 0.030e-6$ and $\text{Temp} = 25$ and $V_{BS} = 0$ and $p_{LA} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



pfet_acc, Cbd_off/W [F/m] vs W [m]

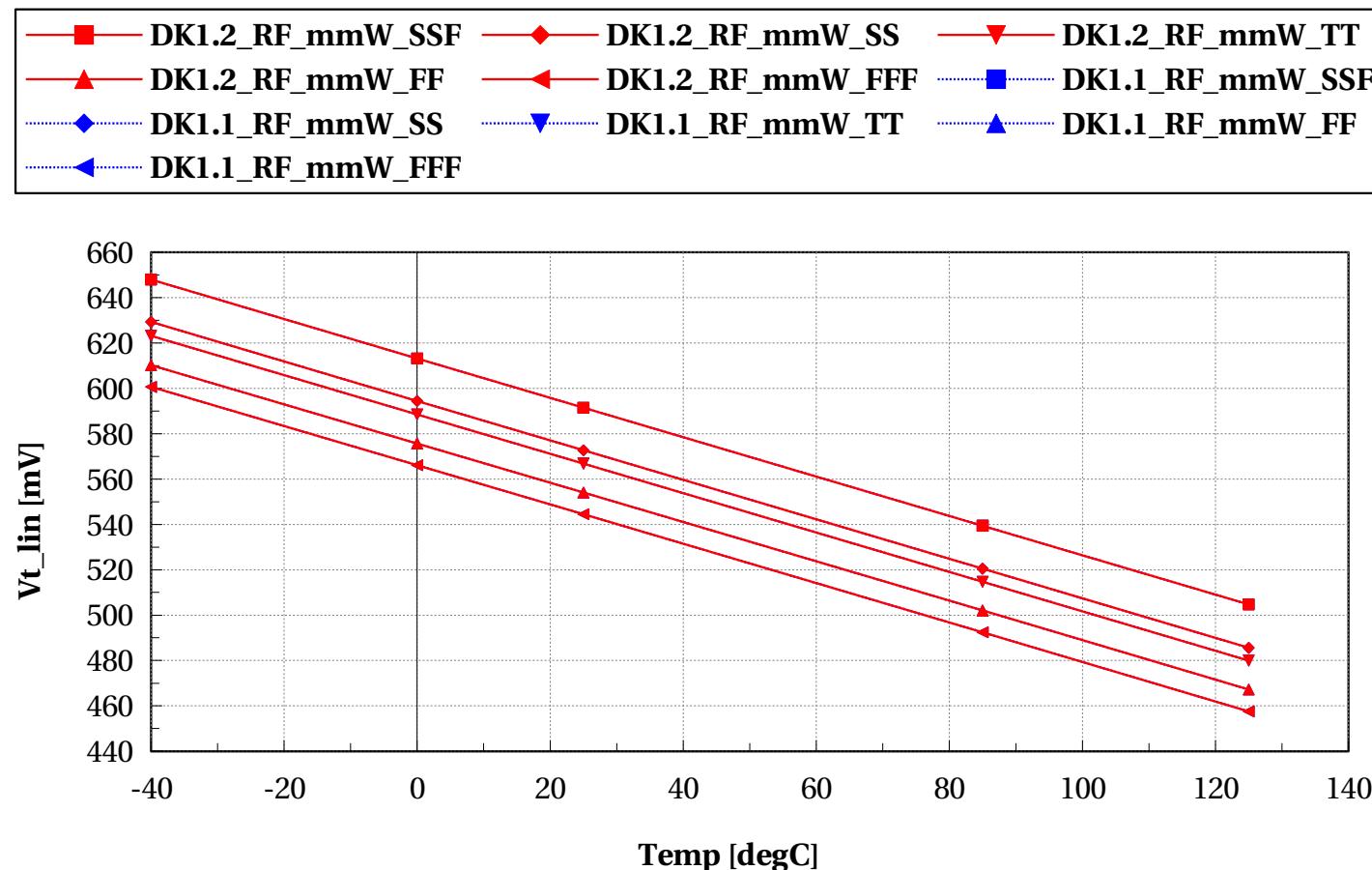
$I = 0.030e-6$ and $\text{Temp} = 25$ and $V_{bs} = 0$ and $p_{la} = 0$ and $\text{devType} = \text{"PCELLwoWPE"}$



Scaling versus Temp (L=1um,W=1um)

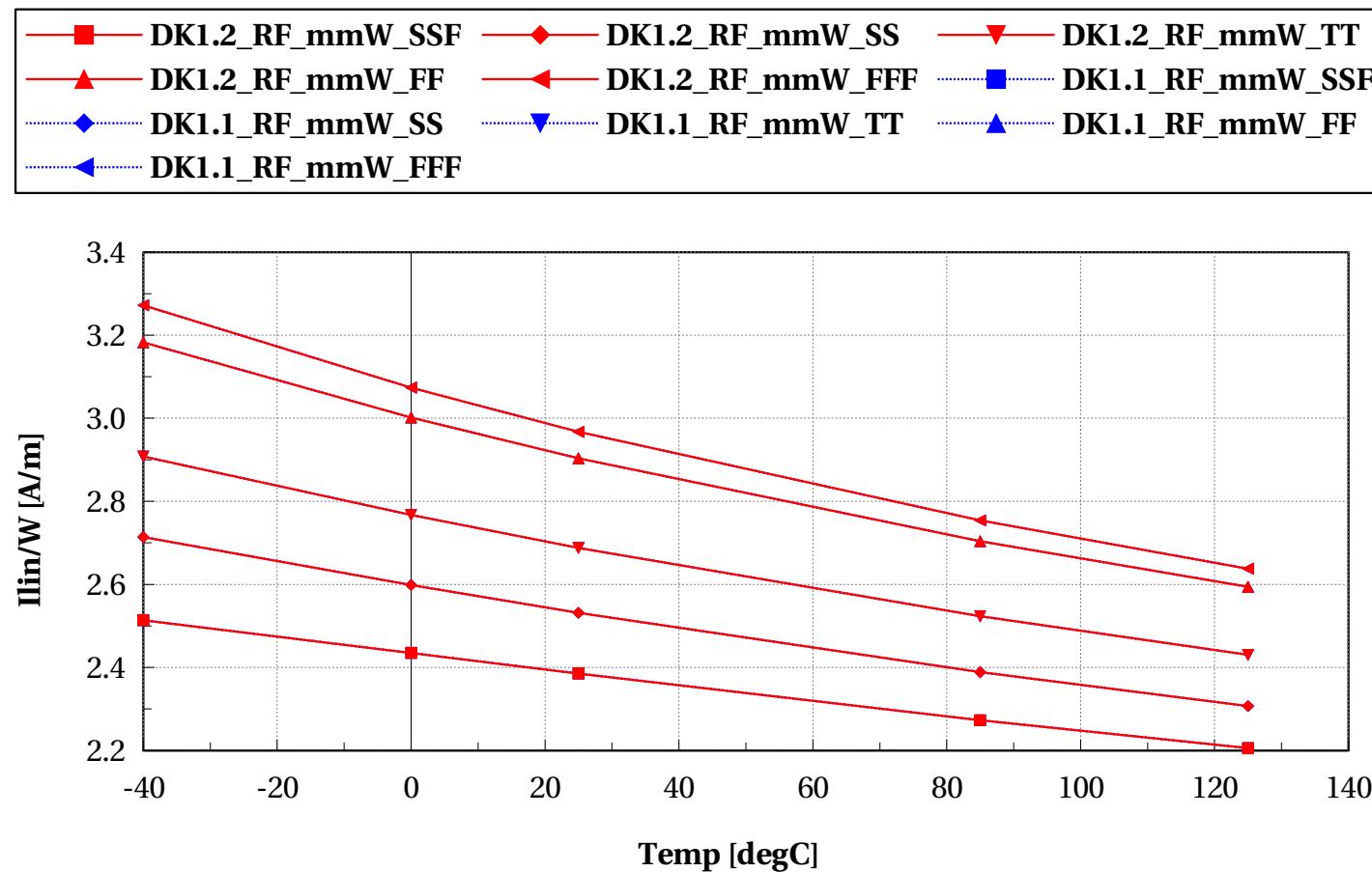
pfet_acc, Vt_lin [mV] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



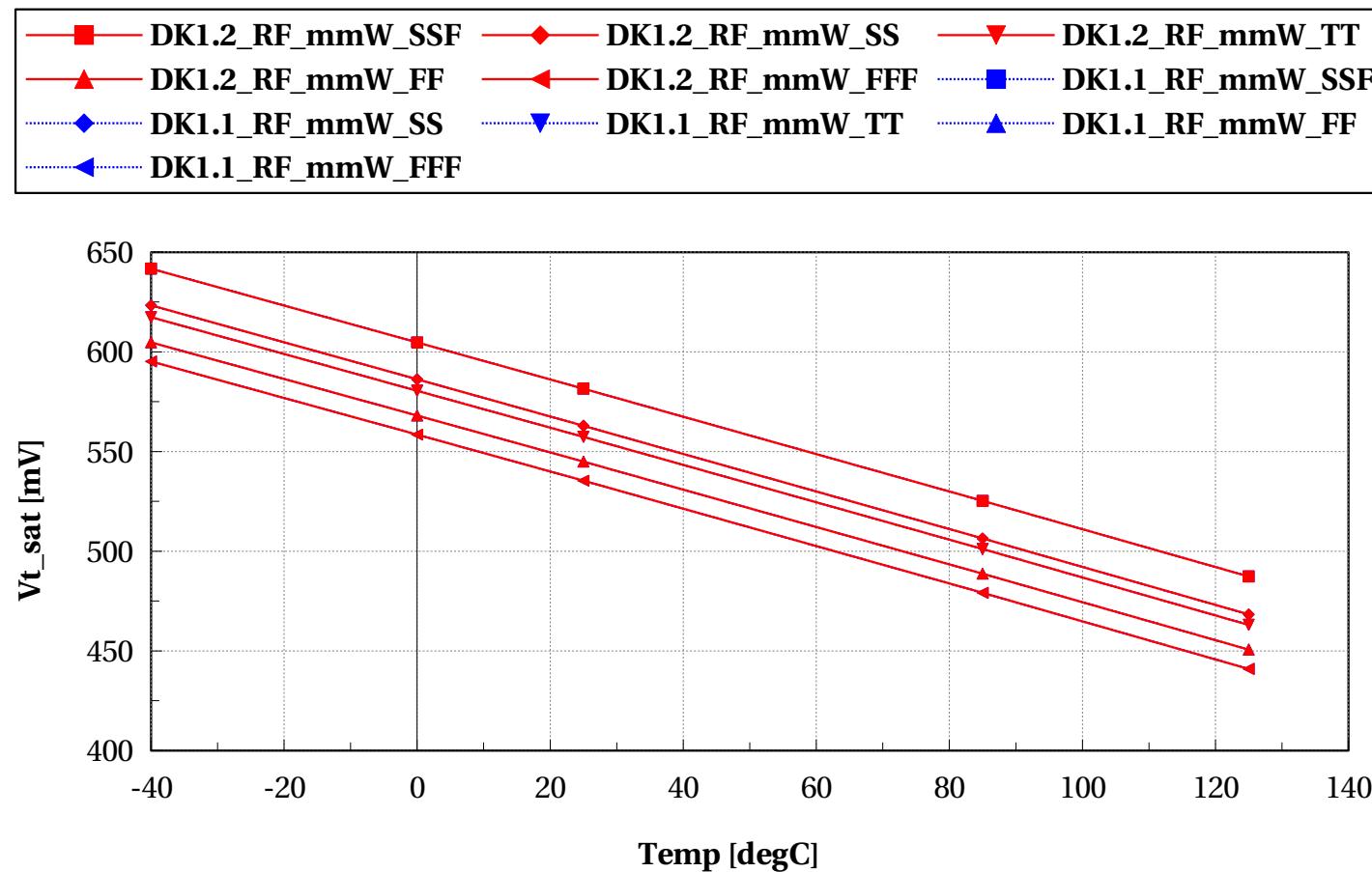
pfet_acc, Ilin/W [A/m] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



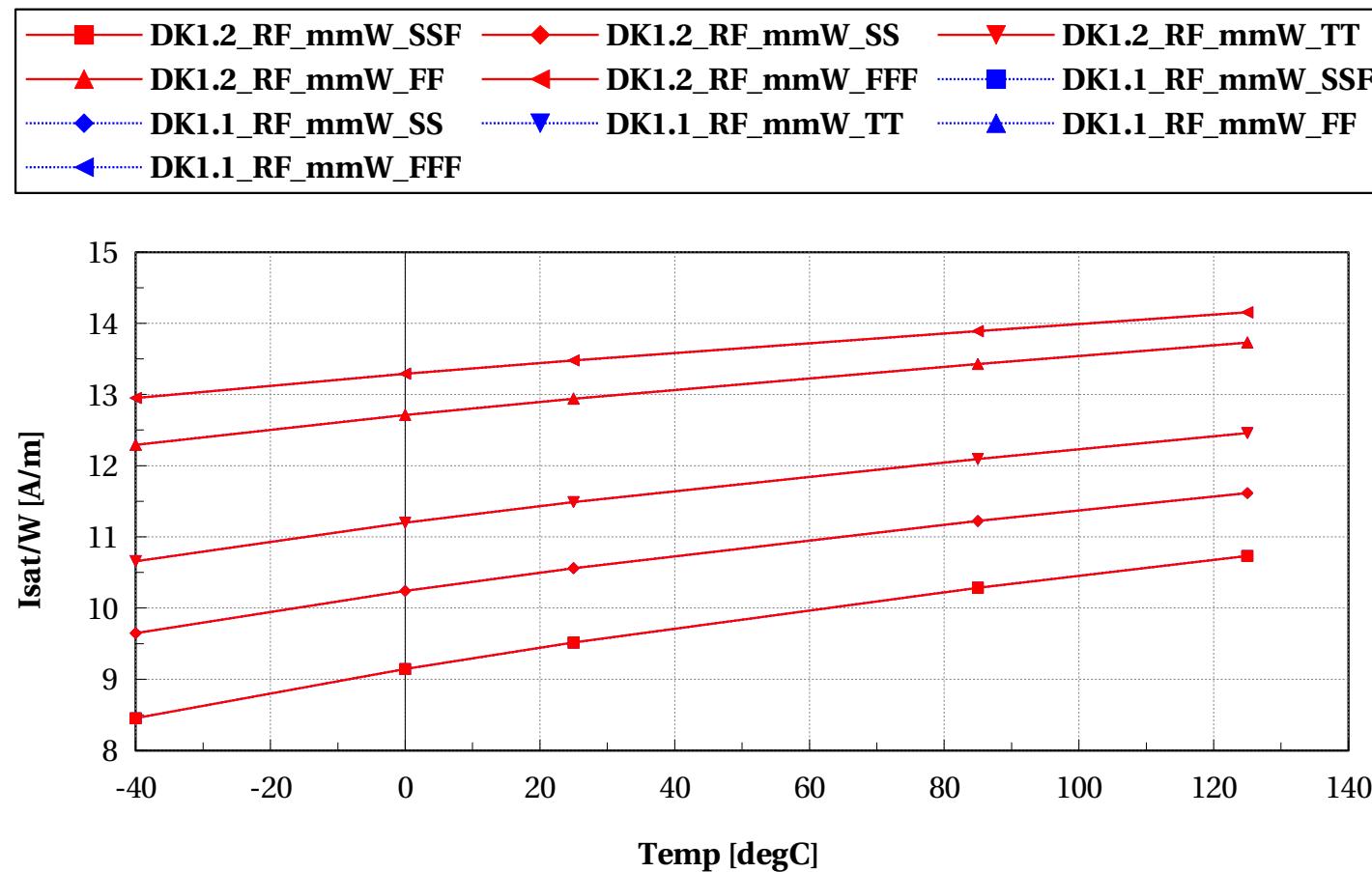
pfeat_acc, Vt_sat [mV] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



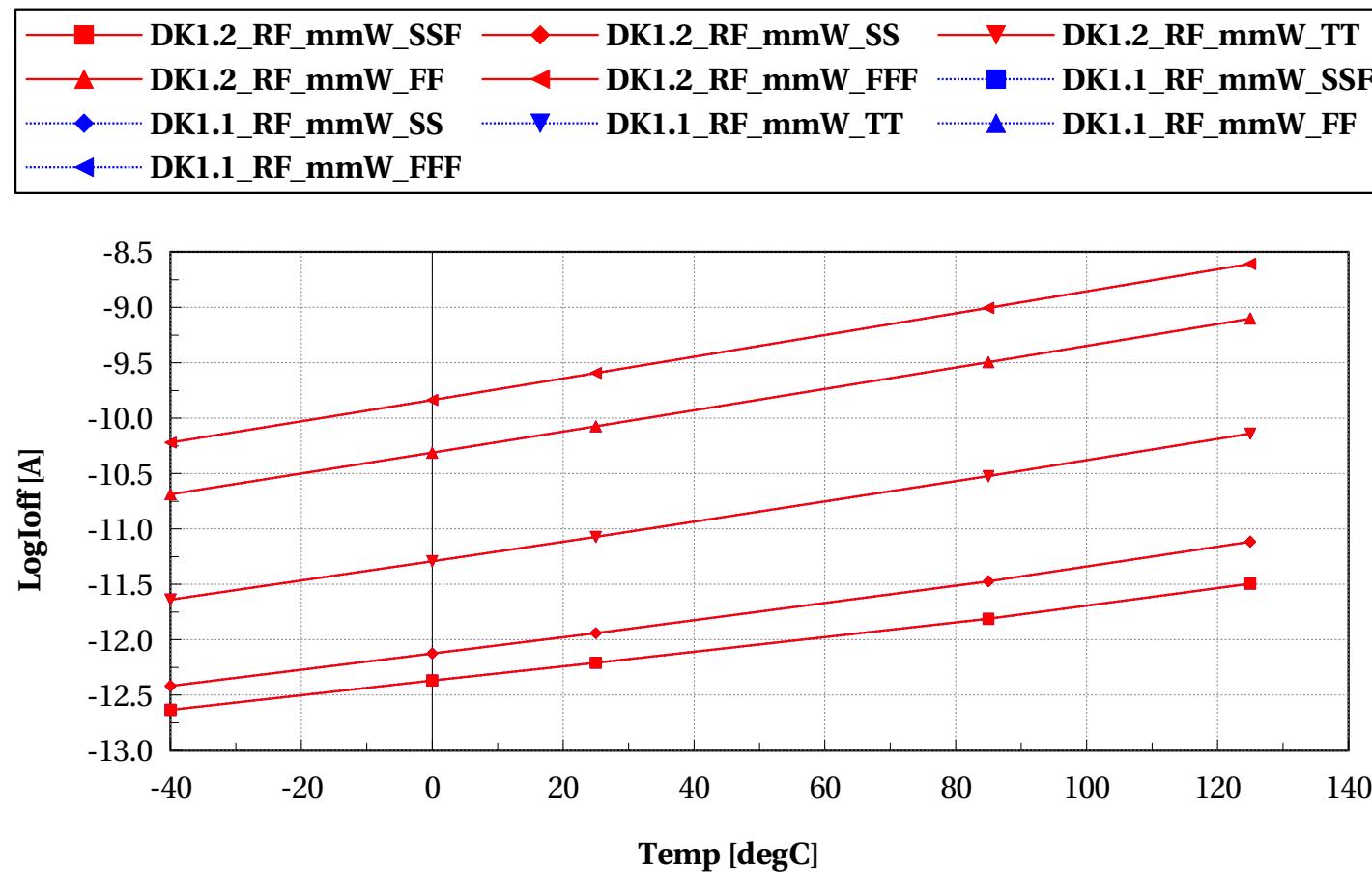
pfet_acc, Isat/W [A/m] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



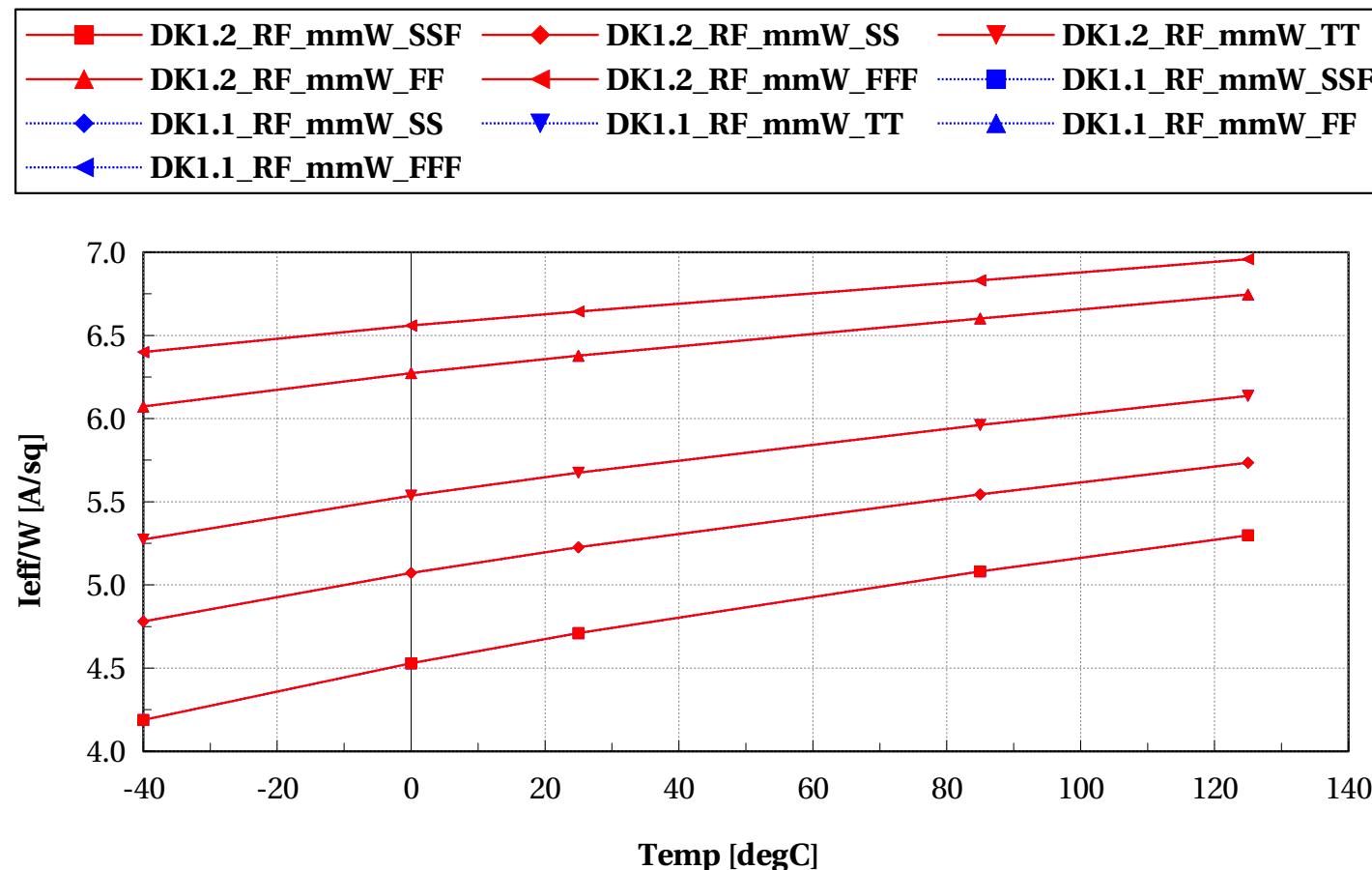
pfet_acc, LogIoff [A] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



pfet_acc, Ieff/W [A/sq] vs Temp [degC]

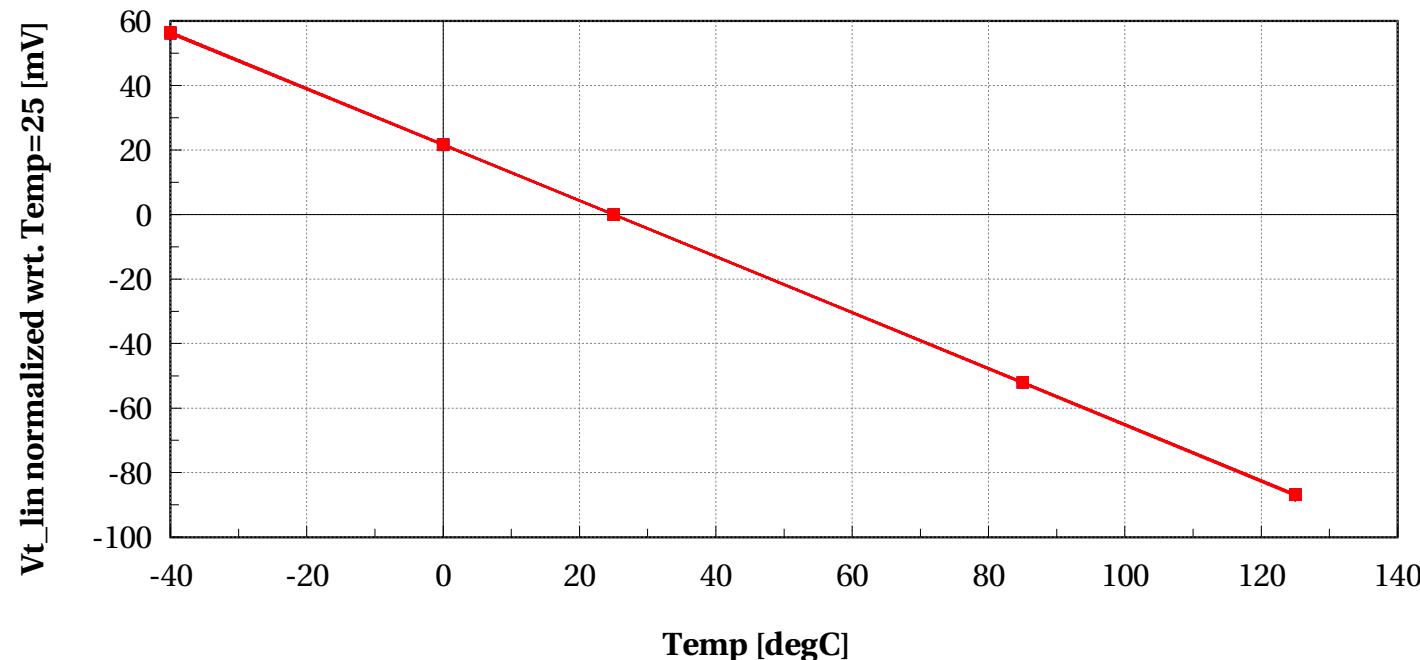
w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Scaling versus Temp normalized (L=1um,W=1um)

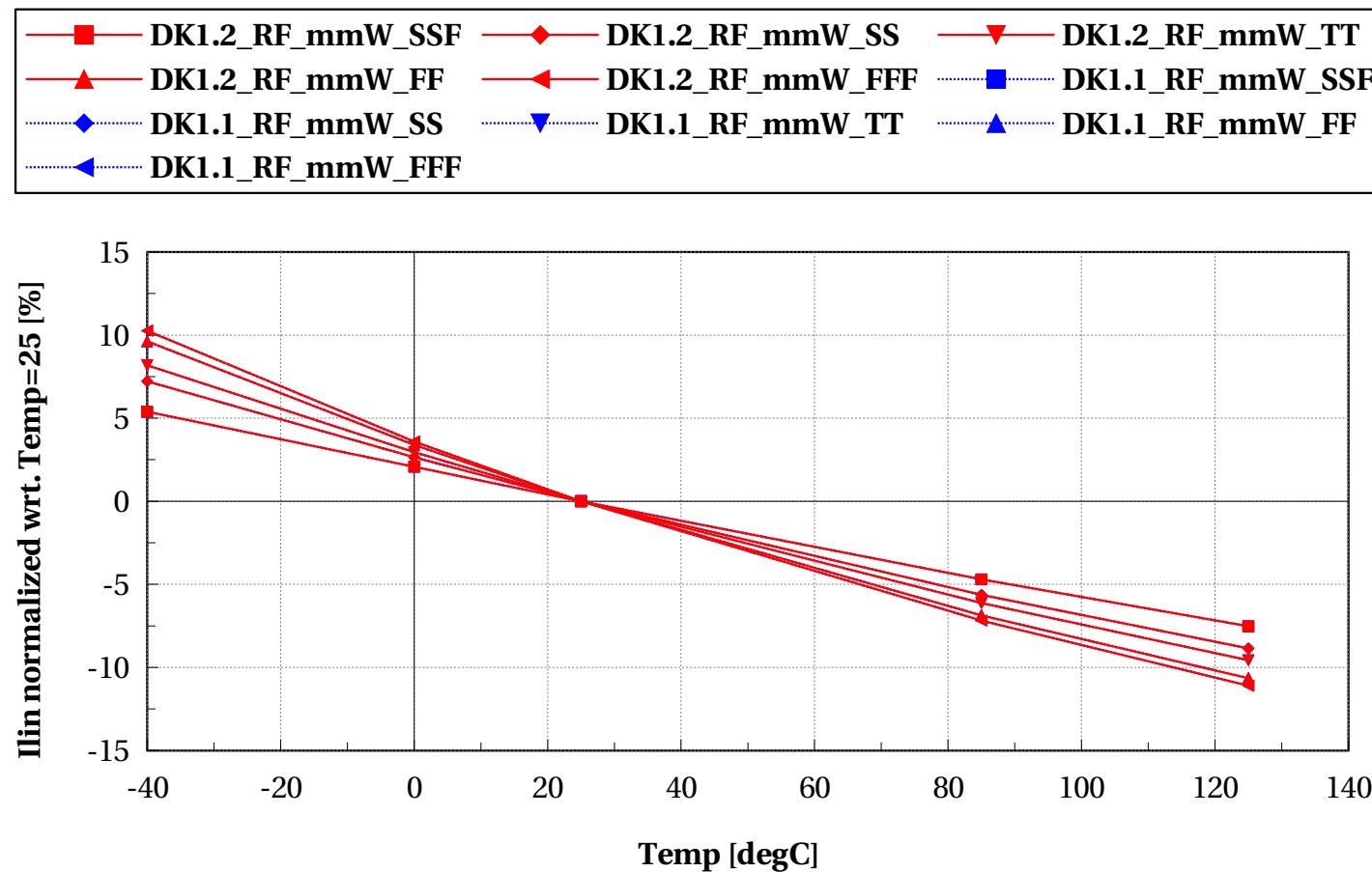
pfet_acc, Vt_lin normalized wrt. Temp=25 [mV] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



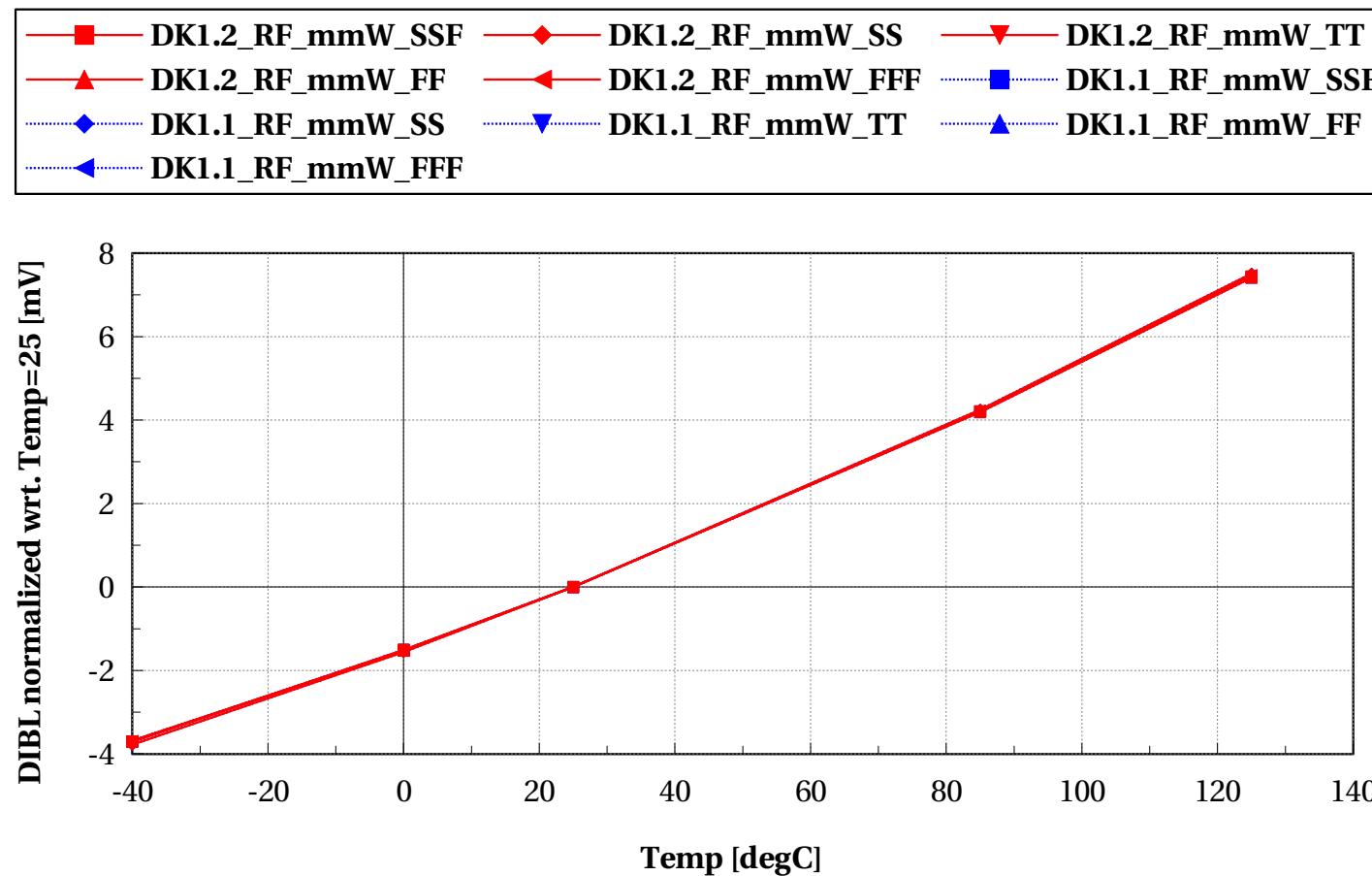
pfet_acc, Ilin normalized wrt. Temp=25 [%] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



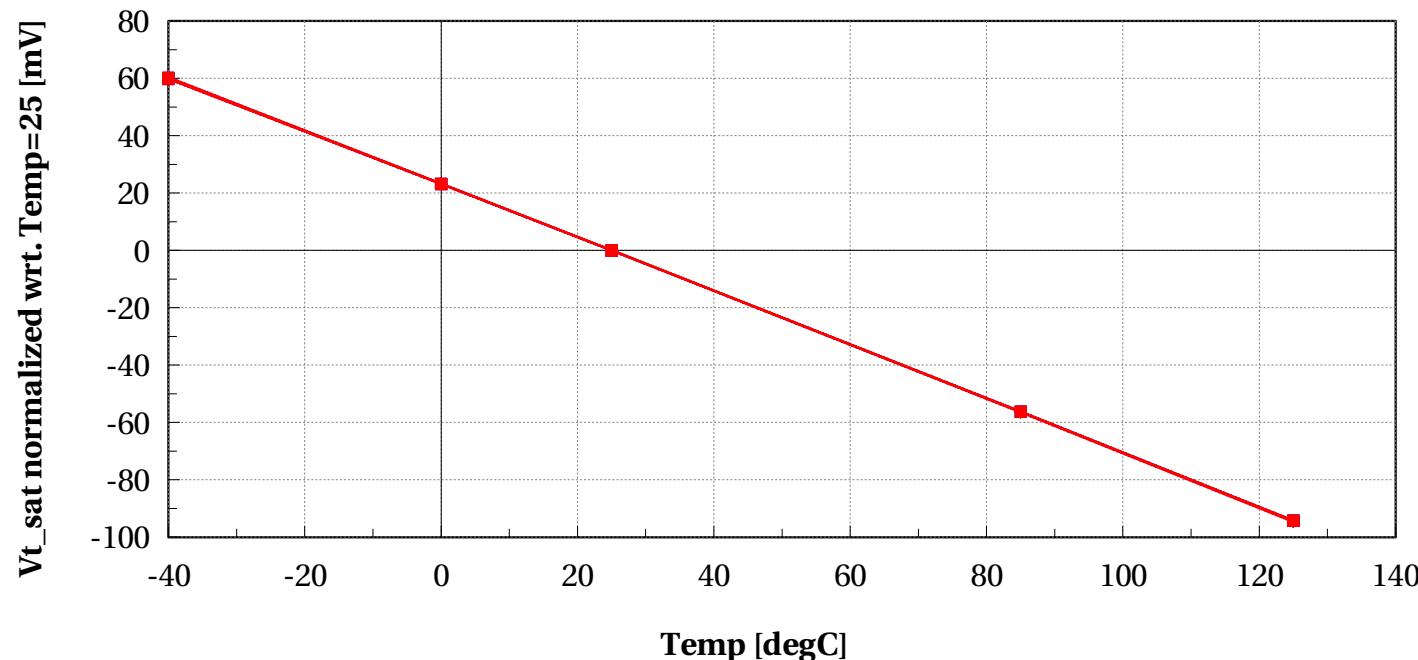
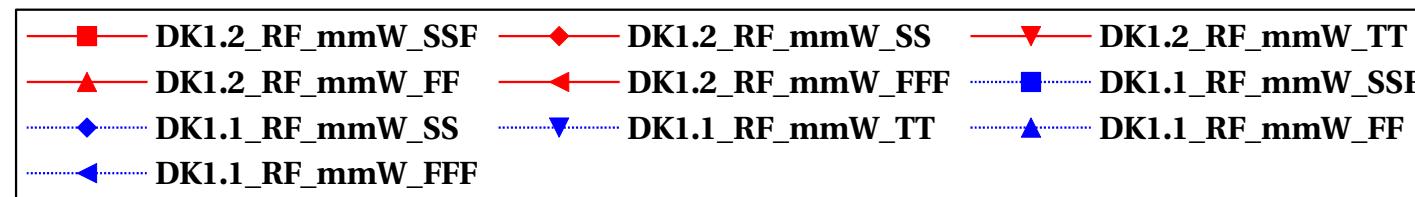
pfet_acc, DIBL normalized wrt. Temp=25 [mV] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



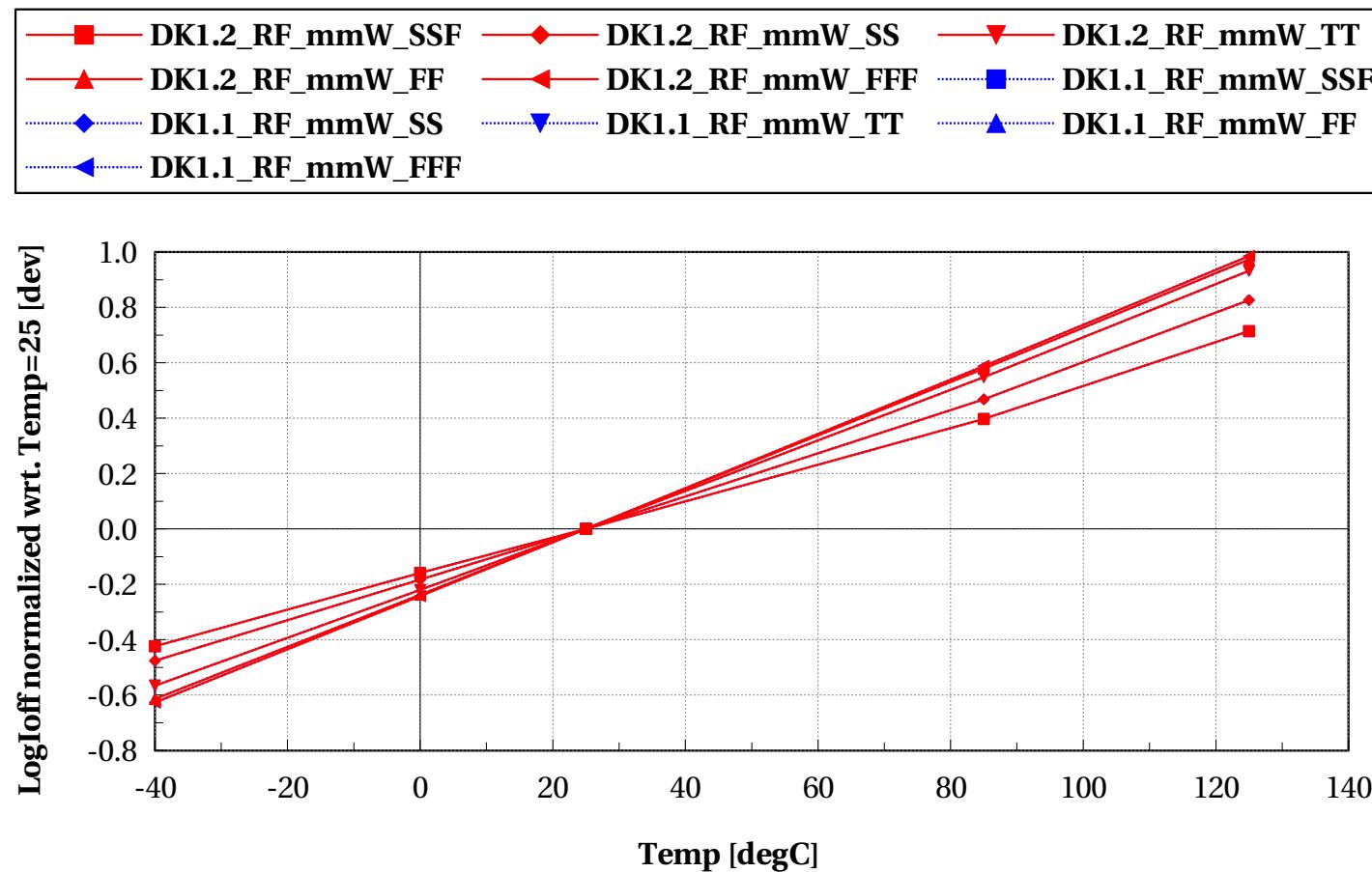
pfet_acc, Vt_sat normalized wrt. Temp=25 [mV] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



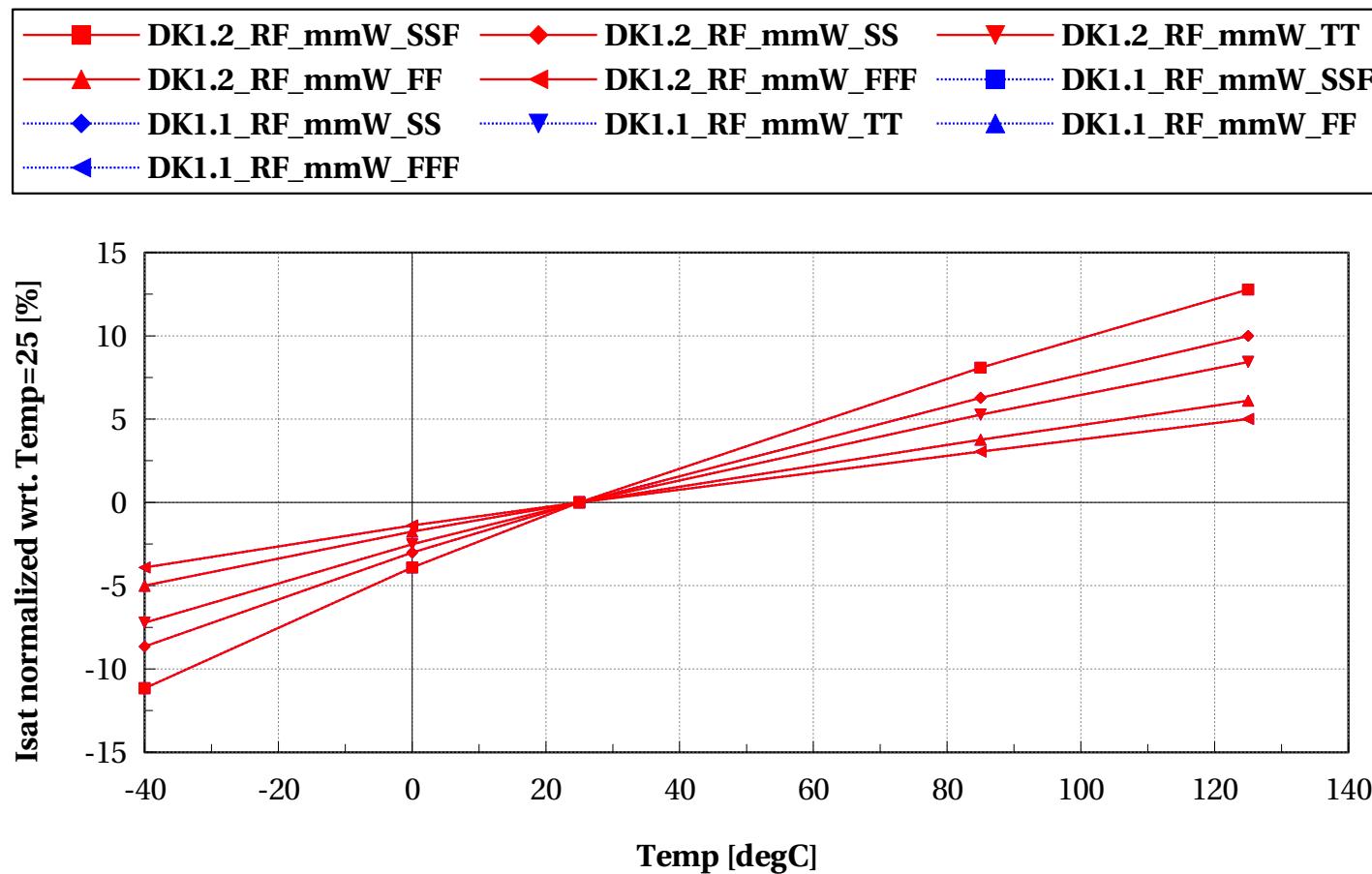
pfet_acc, LogIoff normalized wrt. Temp=25 [dev] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



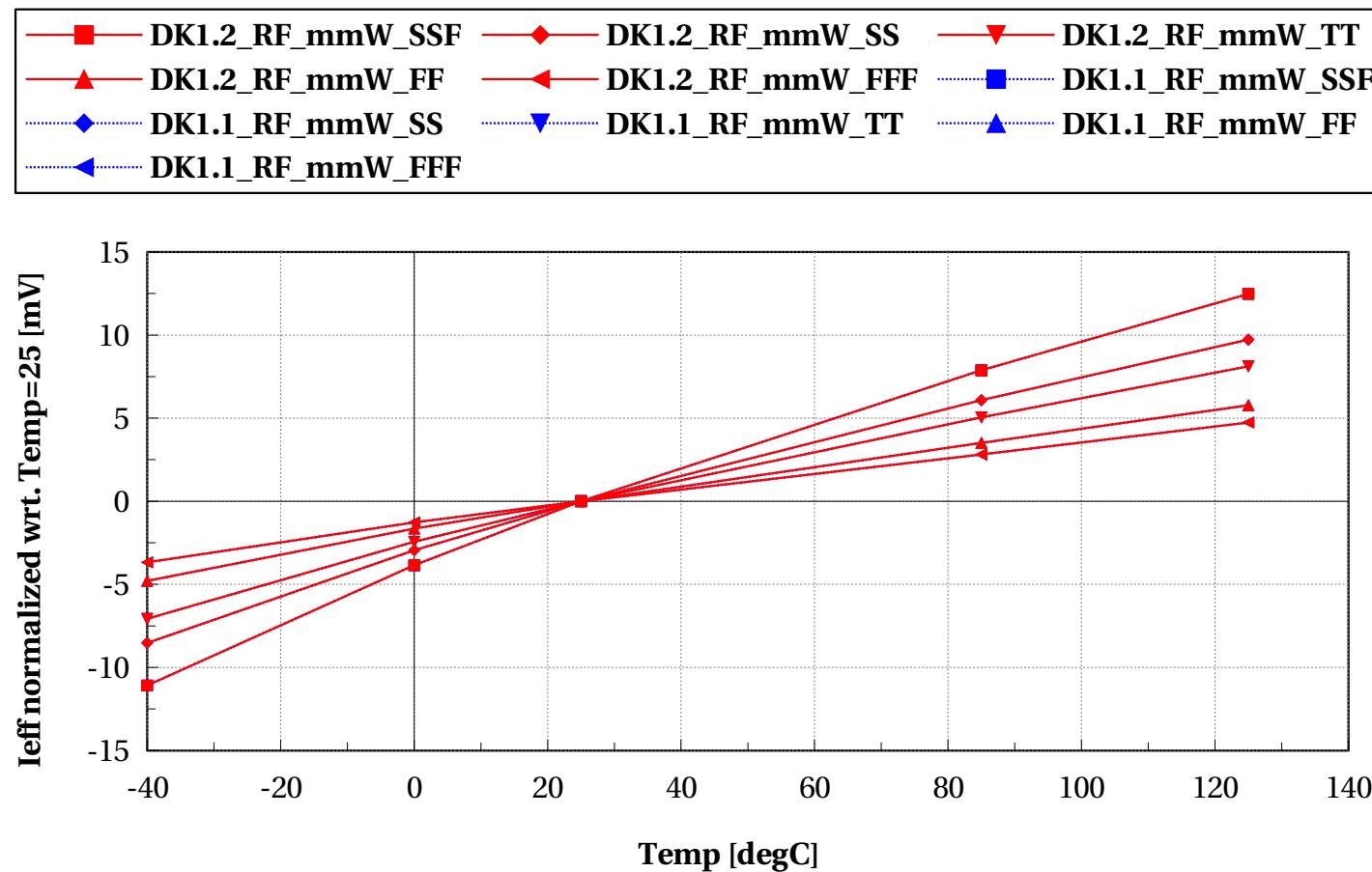
pfet_acc, Isat normalized wrt. Temp=25 [%] vs Temp [degC]

w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



pfet_acc, Ieff normalized wrt. Temp=25 [mV] vs Temp [degC]

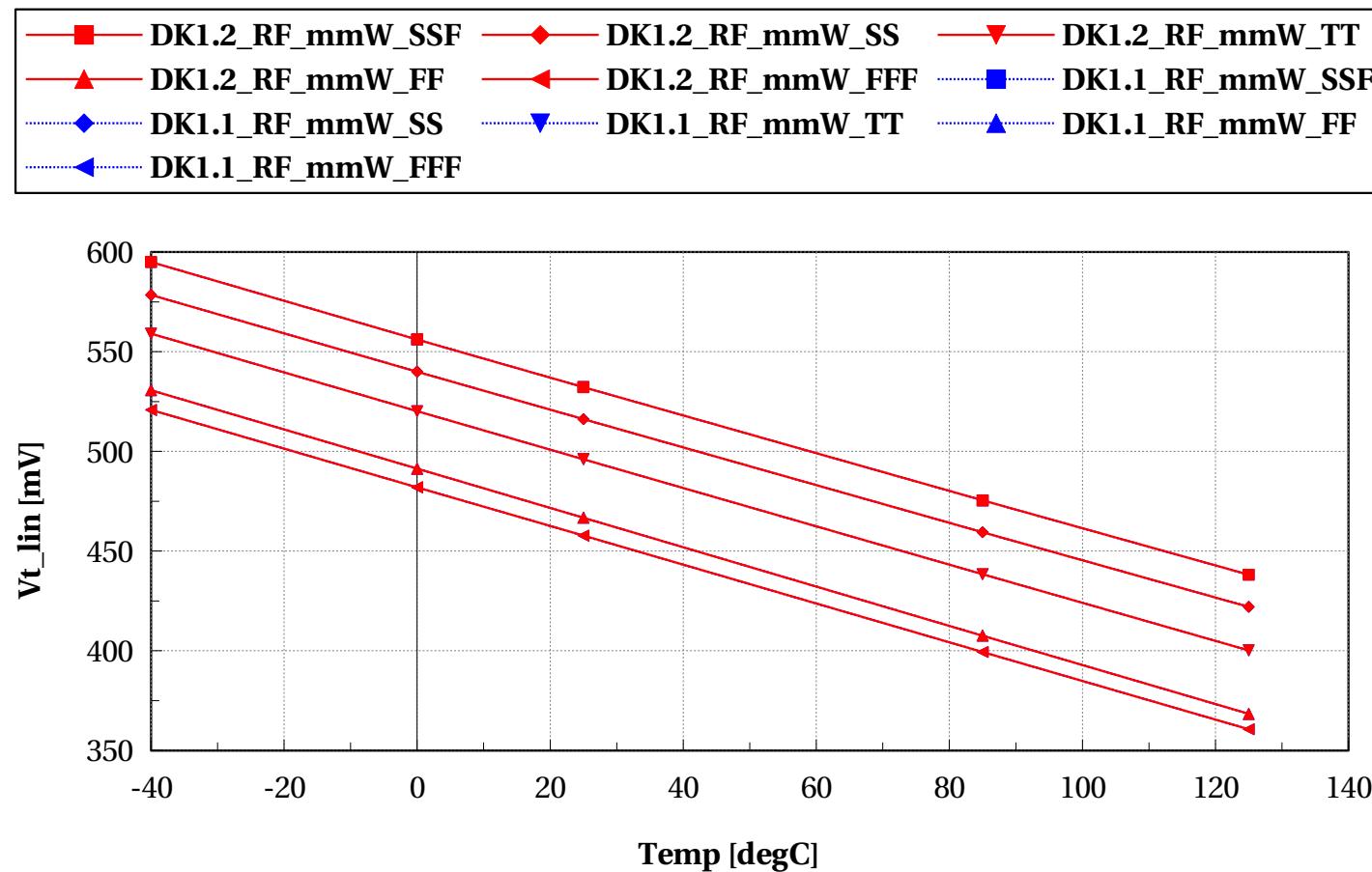
w==1e-6 and L==1e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Scaling versus Temp (L=30nm,W=300nm)

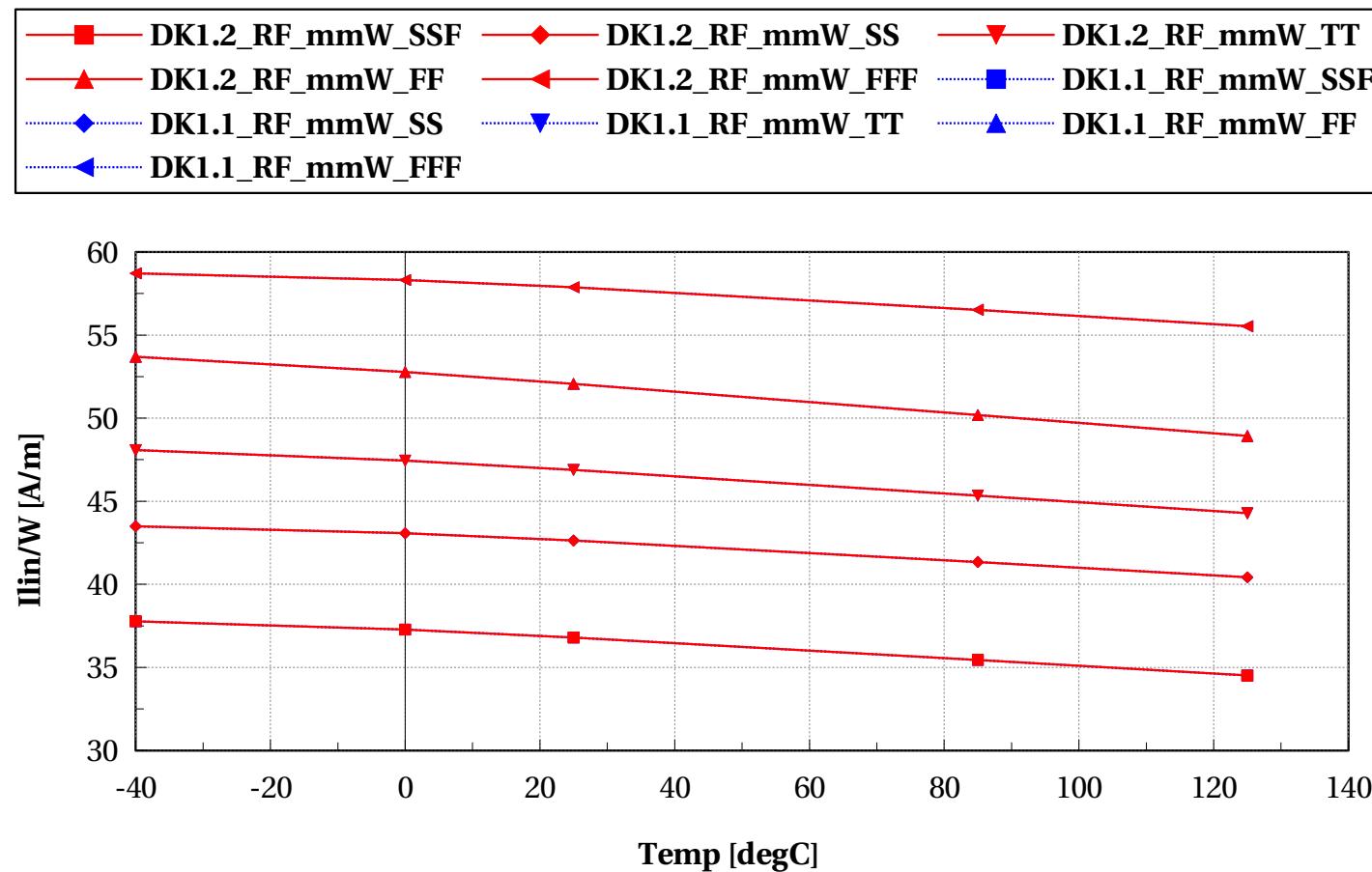
pfet_acc, Vt_lin [mV] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



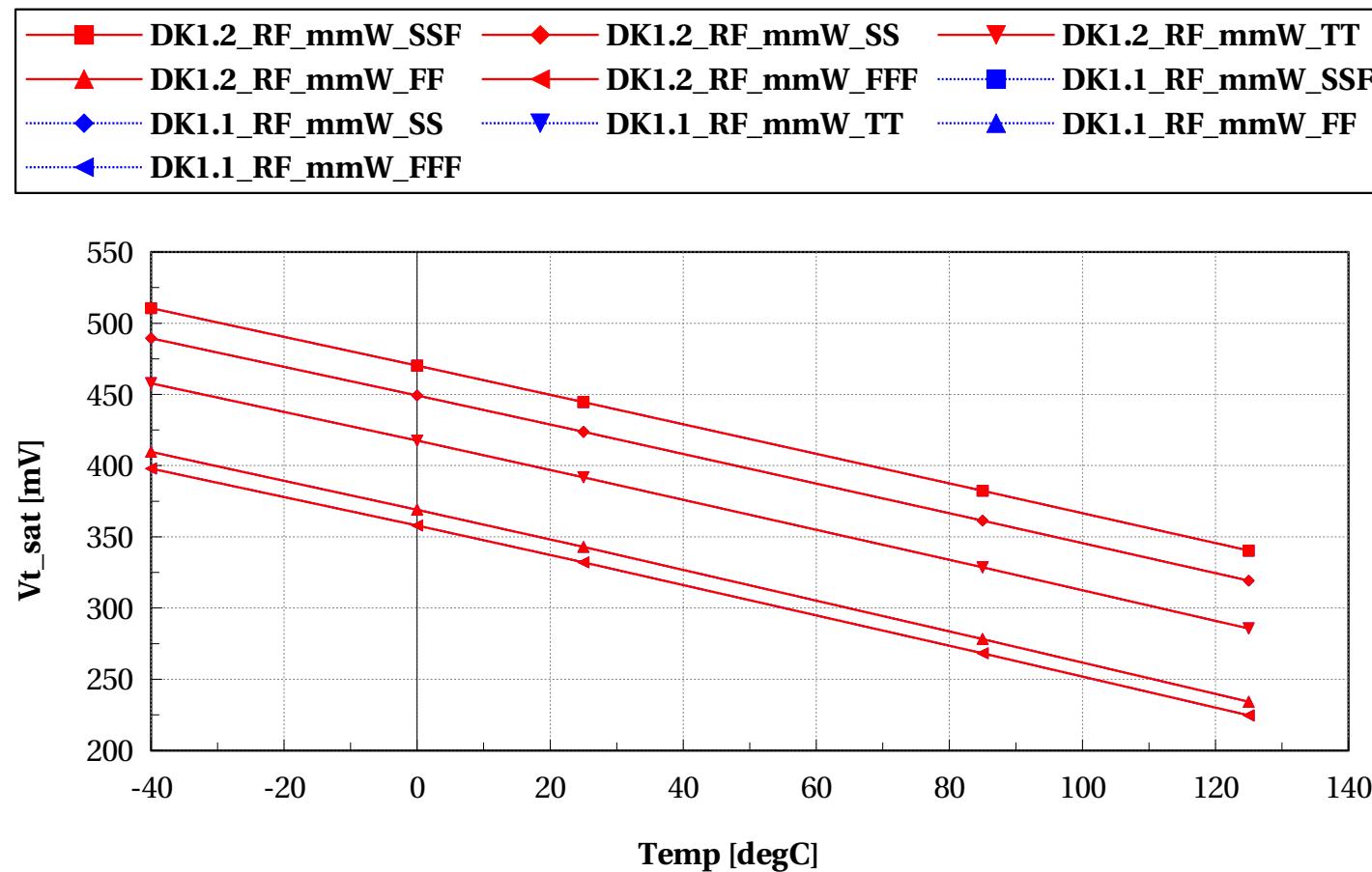
pfet_acc, Ilin/W [A/m] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



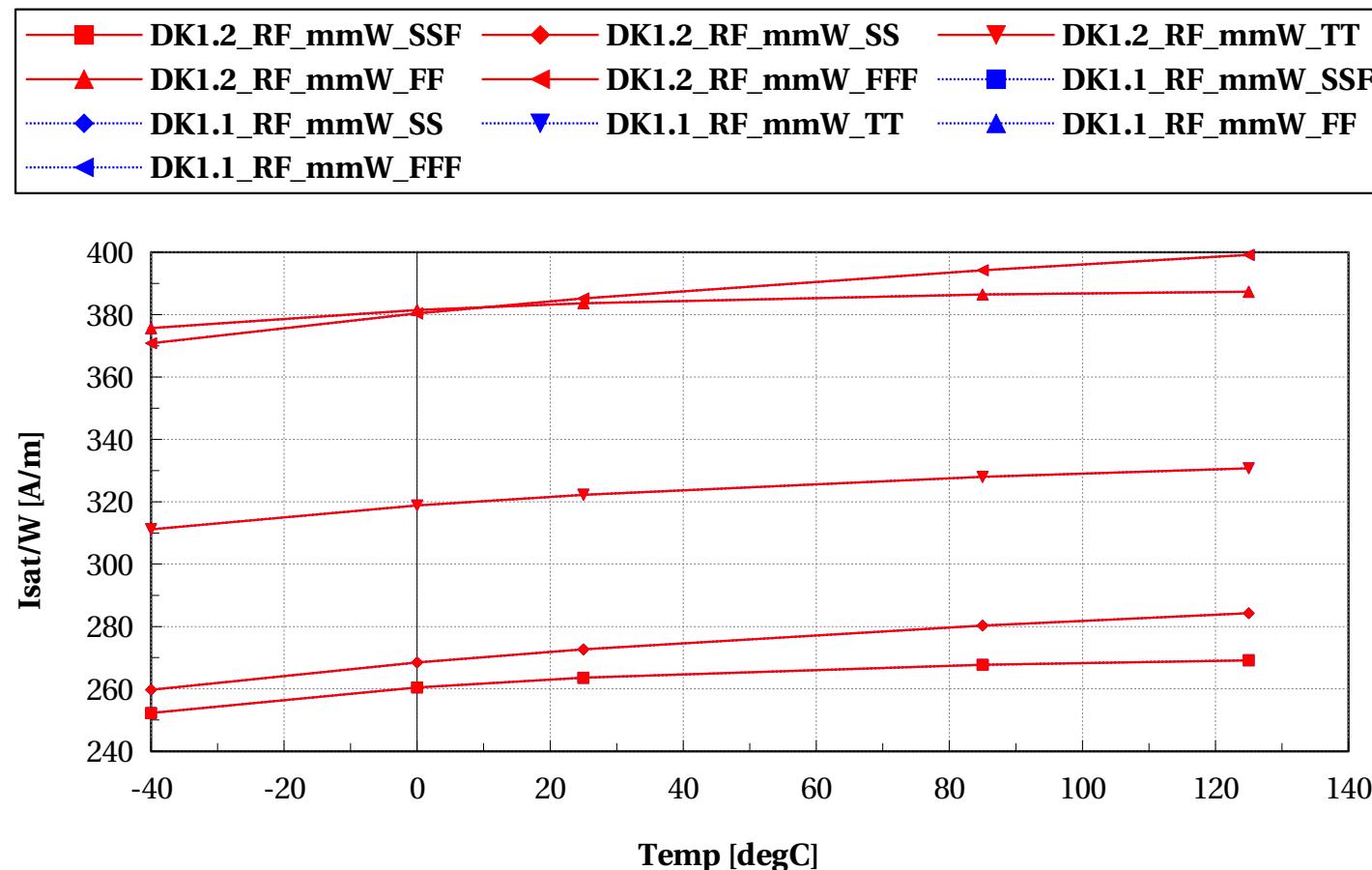
pfet_acc, Vt_sat [mV] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



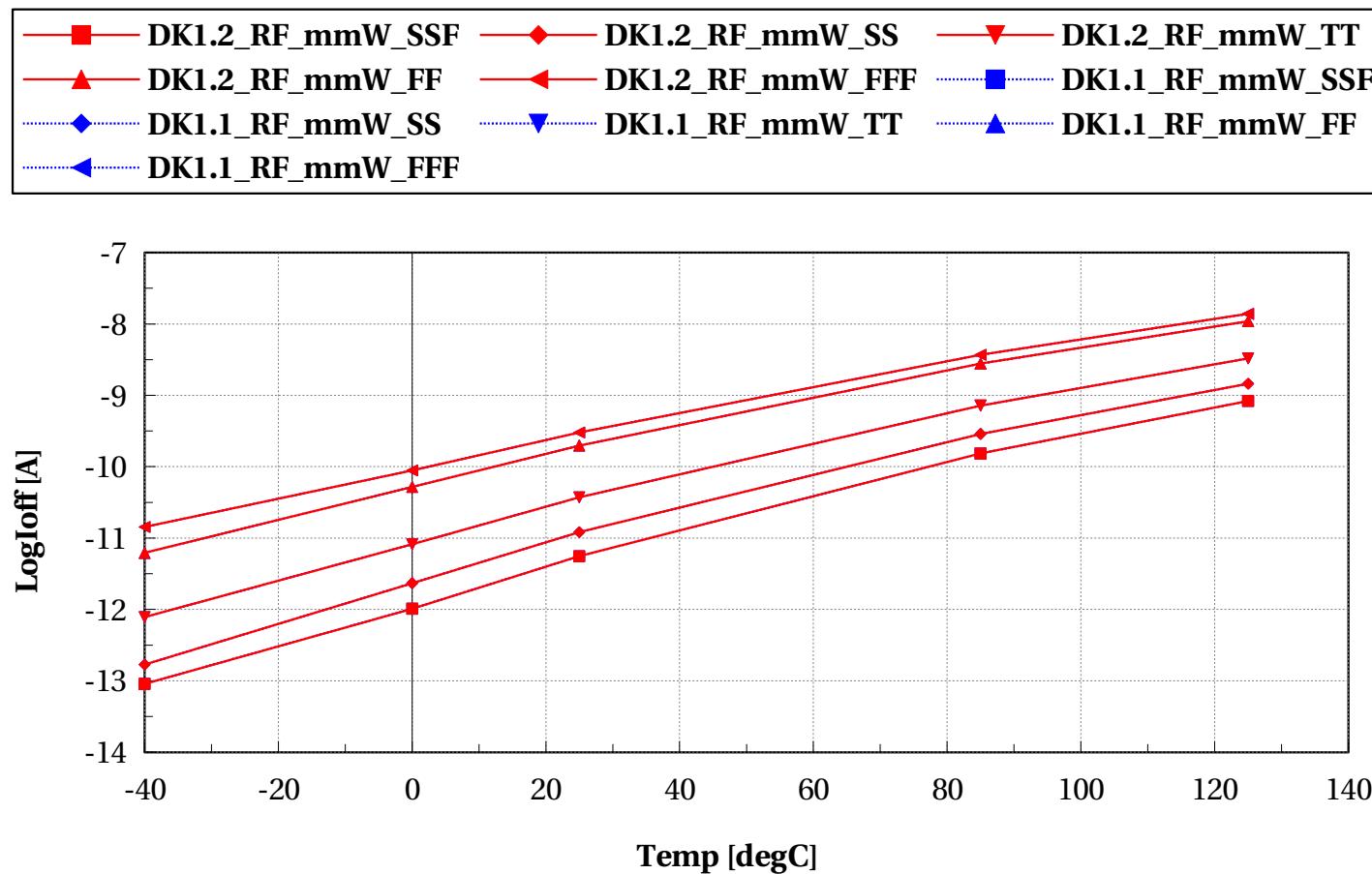
pfet_acc, Isat/W [A/m] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



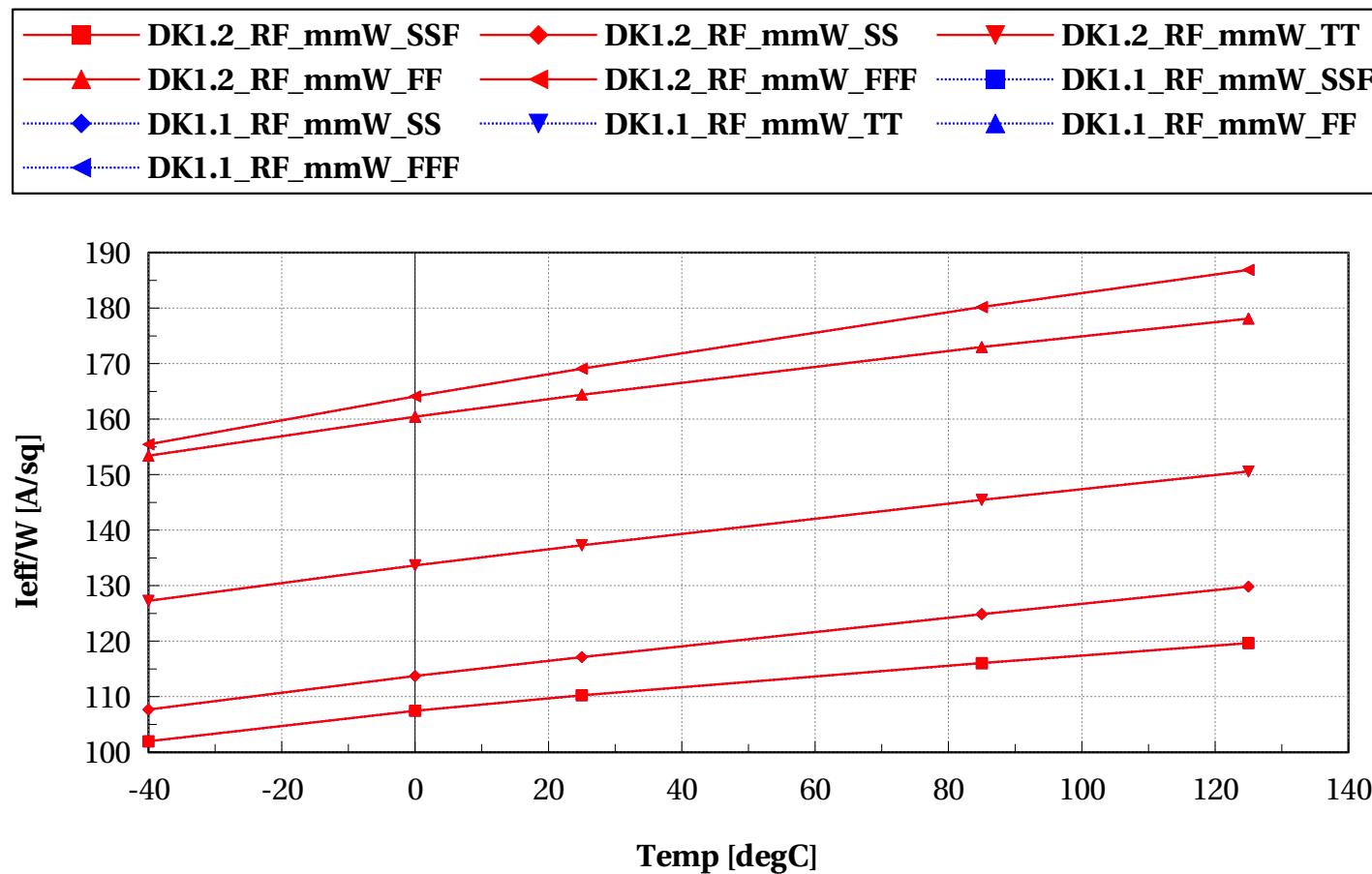
pfet_acc, LogIoff [A] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



pfet_acc, Ieff/W [A/sq] vs Temp [degC]

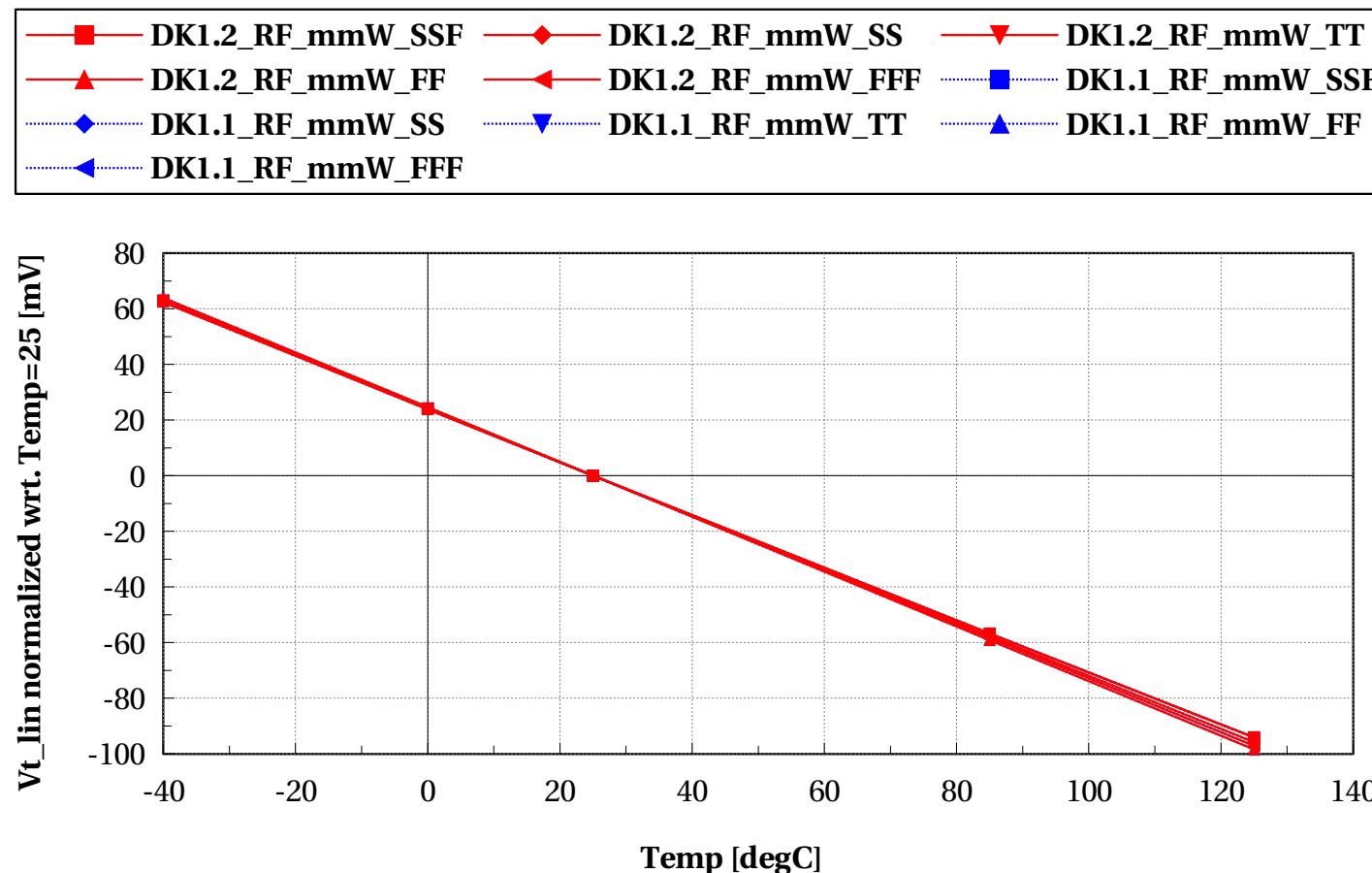
w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Scaling versus Temp normalized (L=30nm,W=300nm)

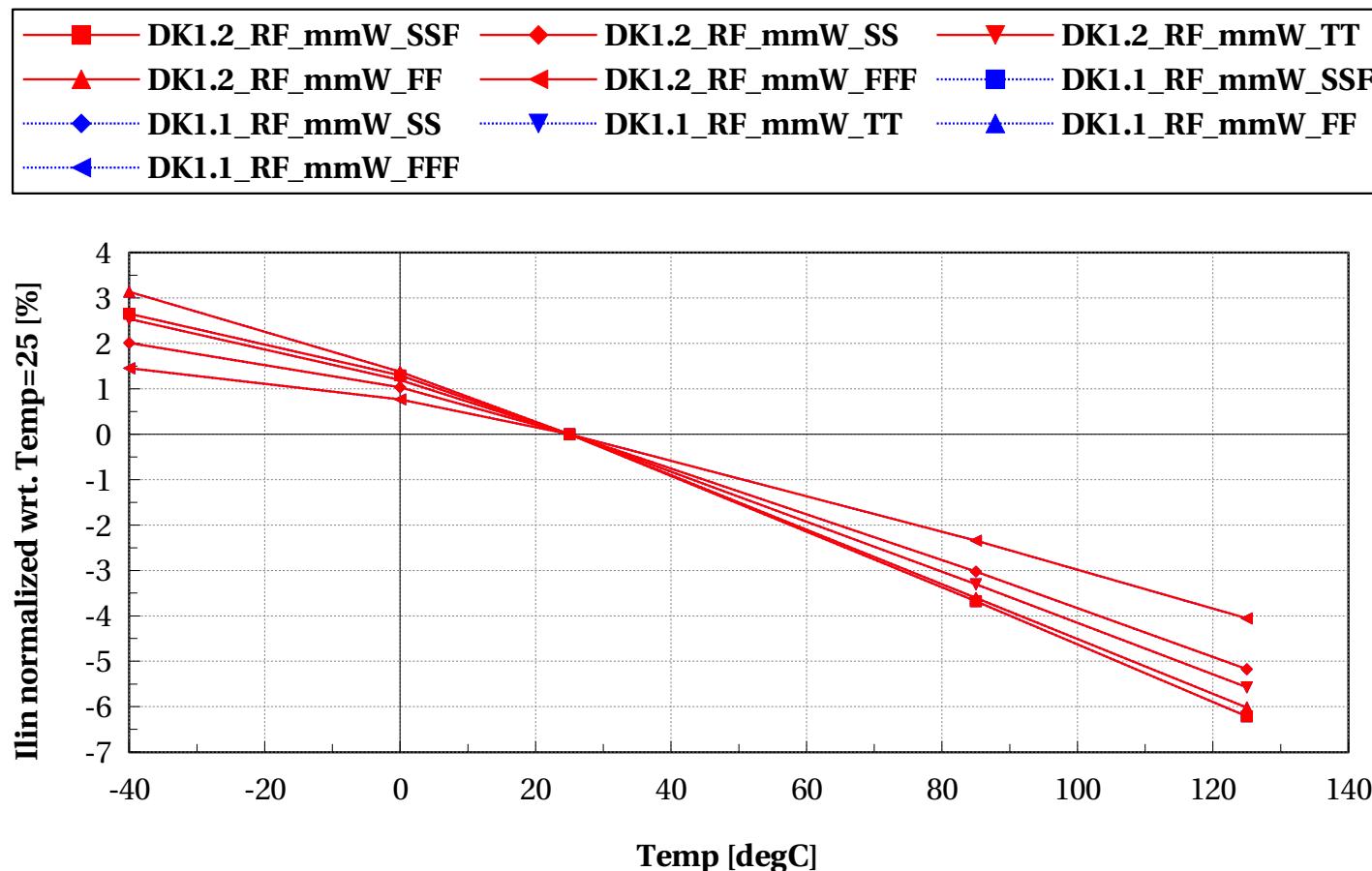
pfet_acc, Vt_lin normalized wrt. Temp=25 [mV] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



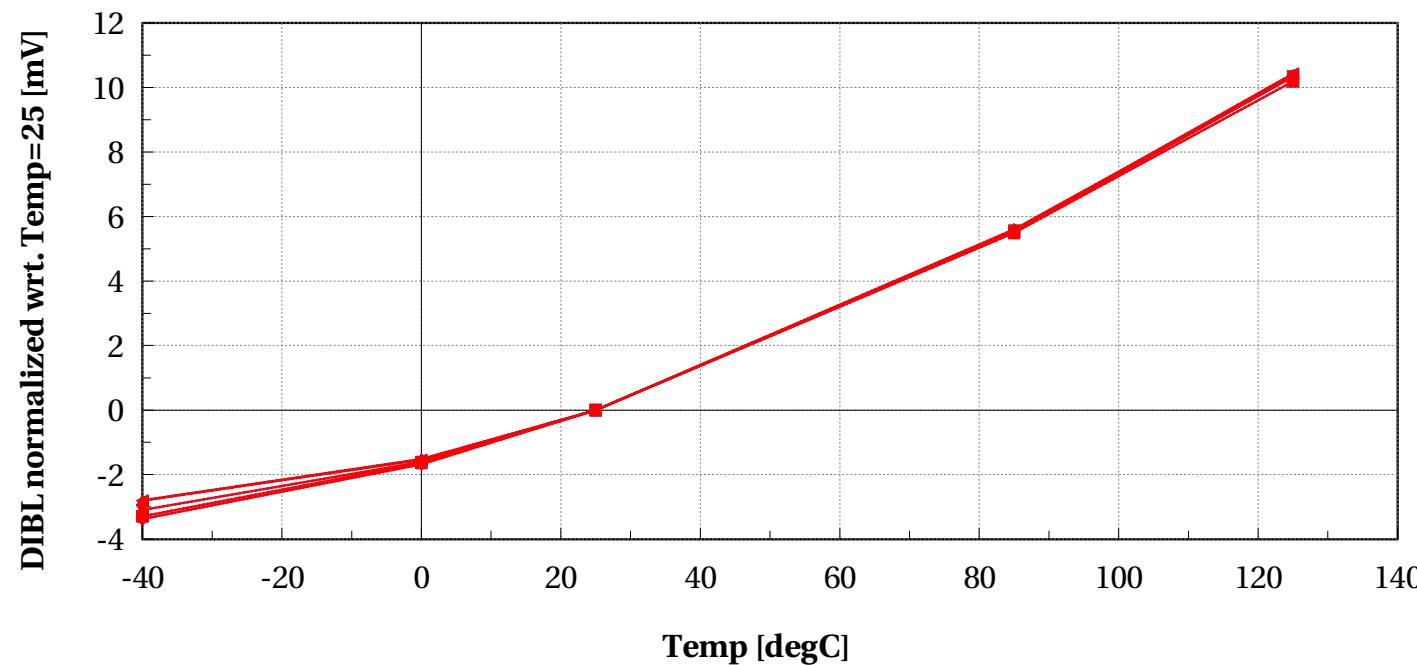
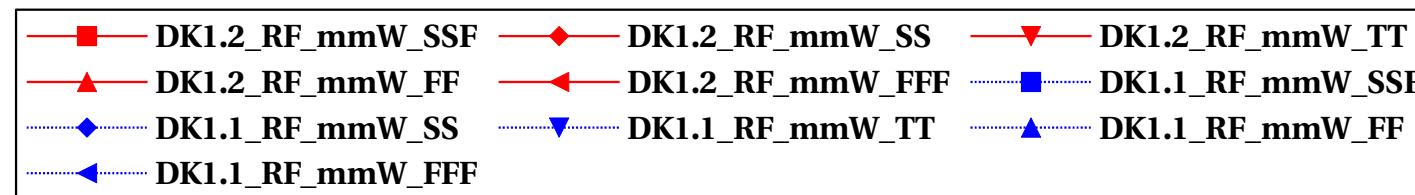
pfet_acc, Ilin normalized wrt. Temp=25 [%] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



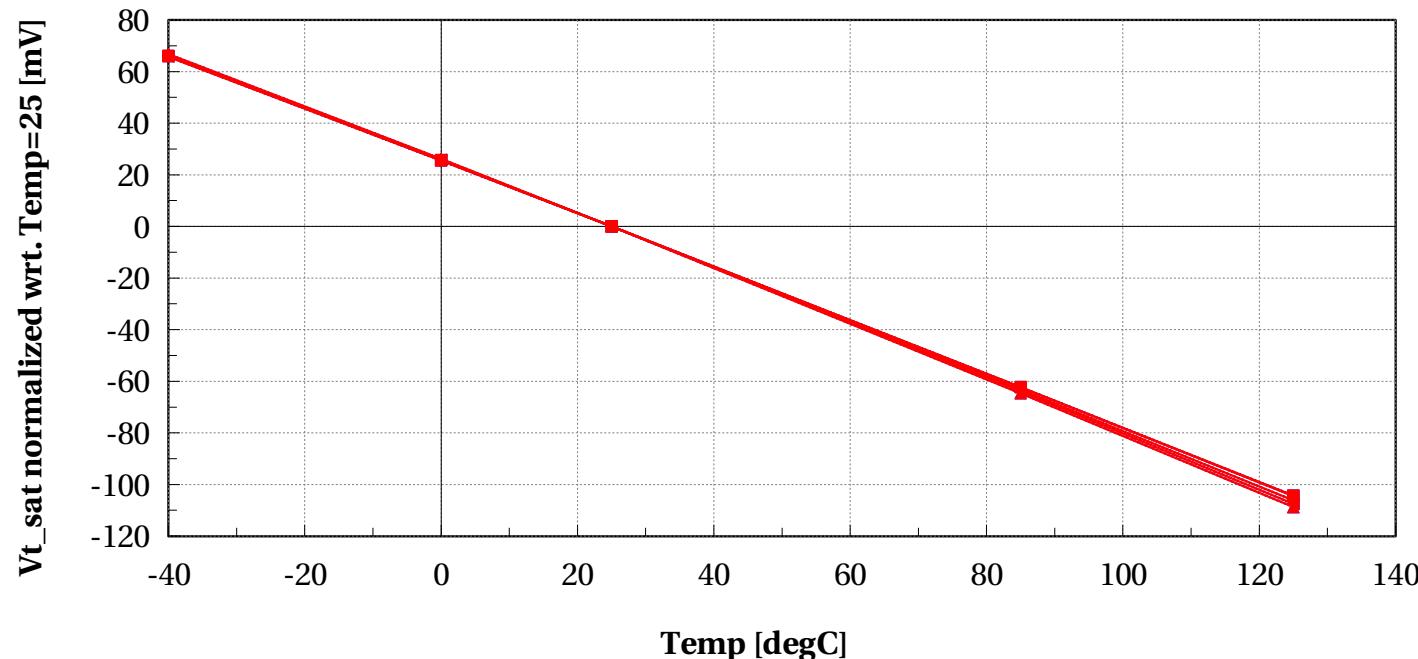
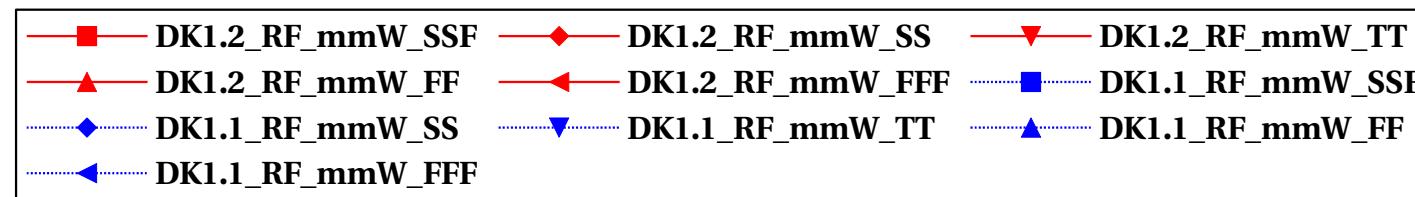
pfet_acc, DIBL normalized wrt. Temp=25 [mV] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



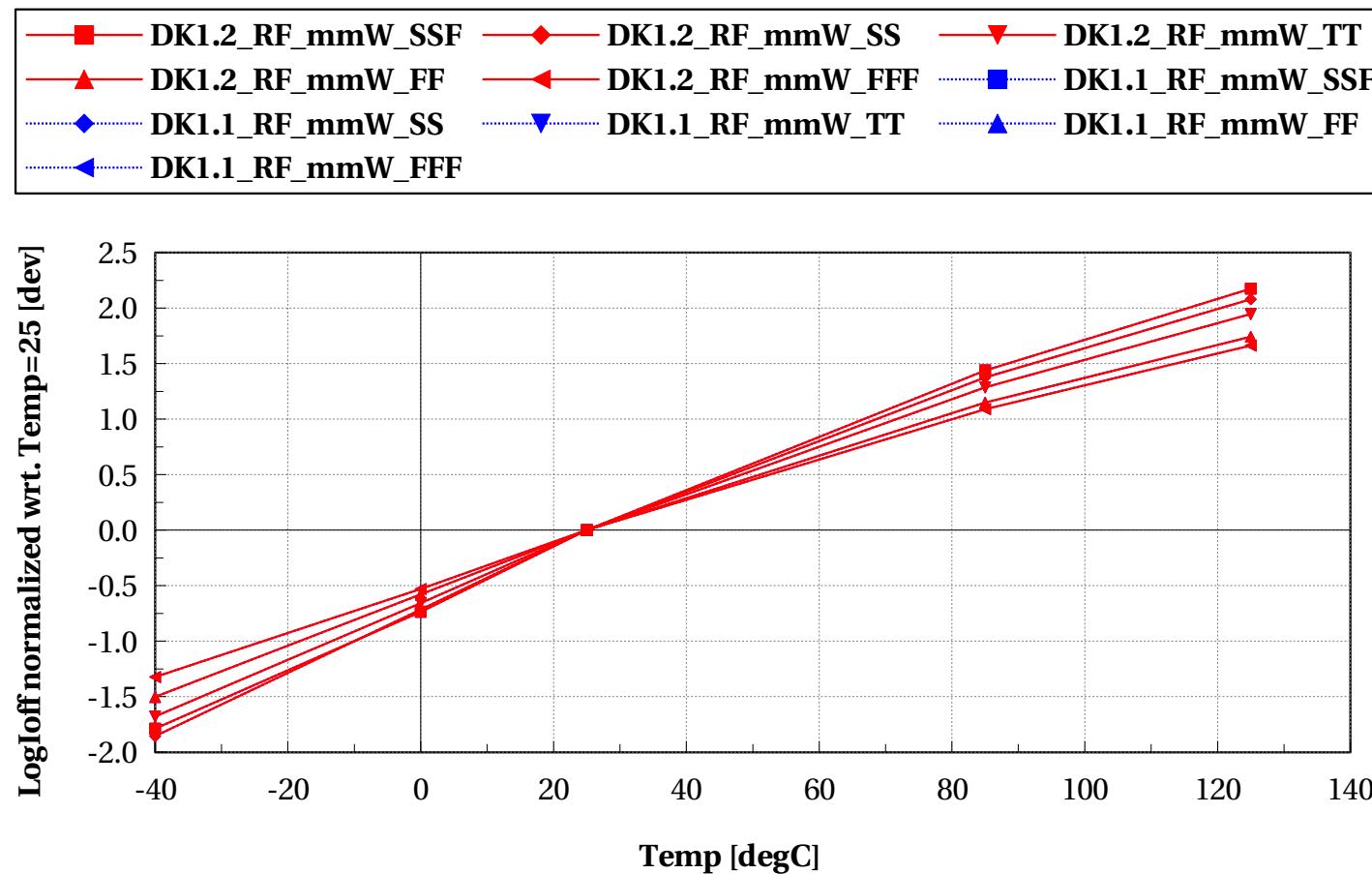
pfet_acc, Vt_sat normalized wrt. Temp=25 [mV] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



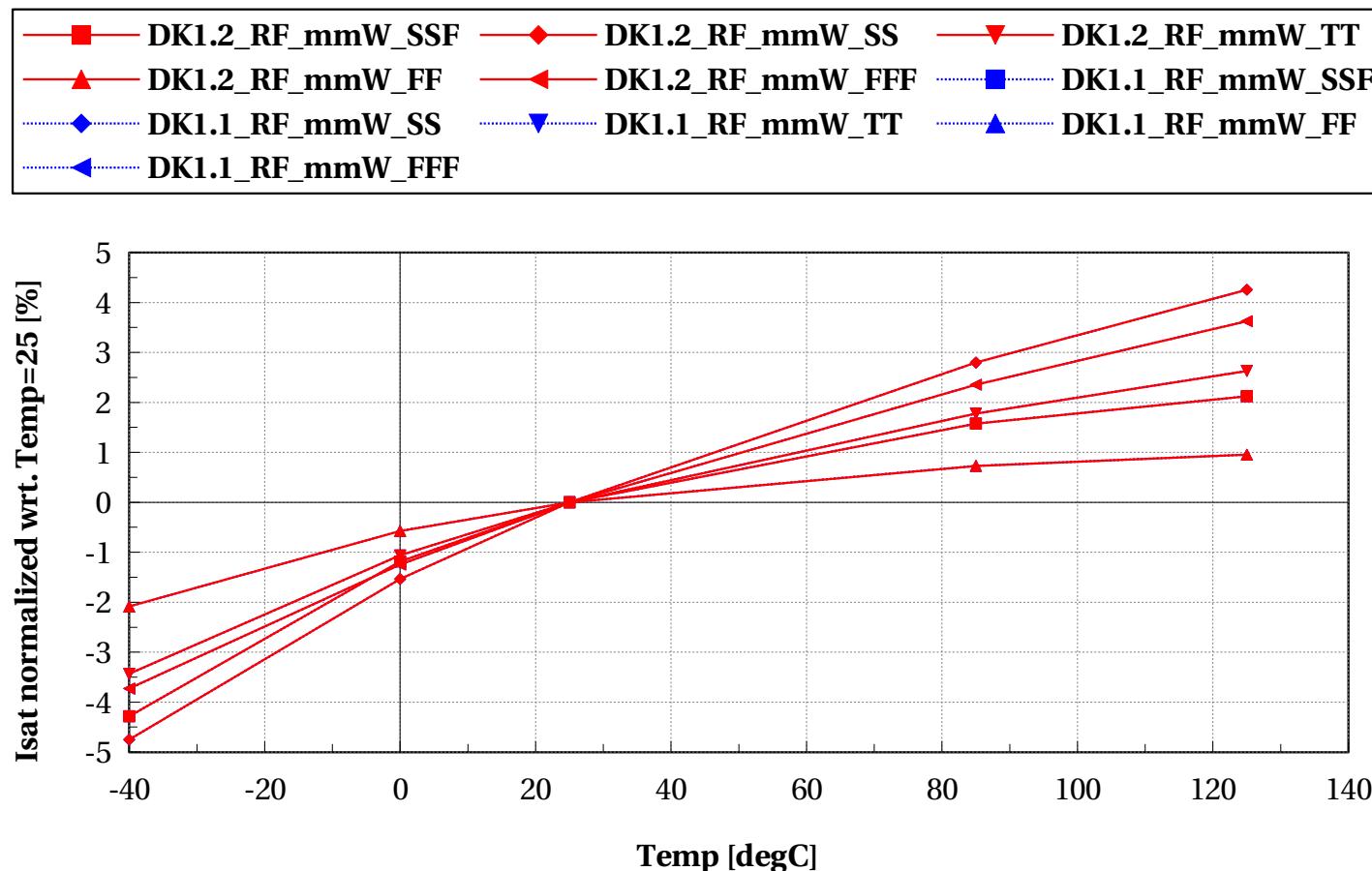
pfet_acc, LogIoff normalized wrt. Temp=25 [dev] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



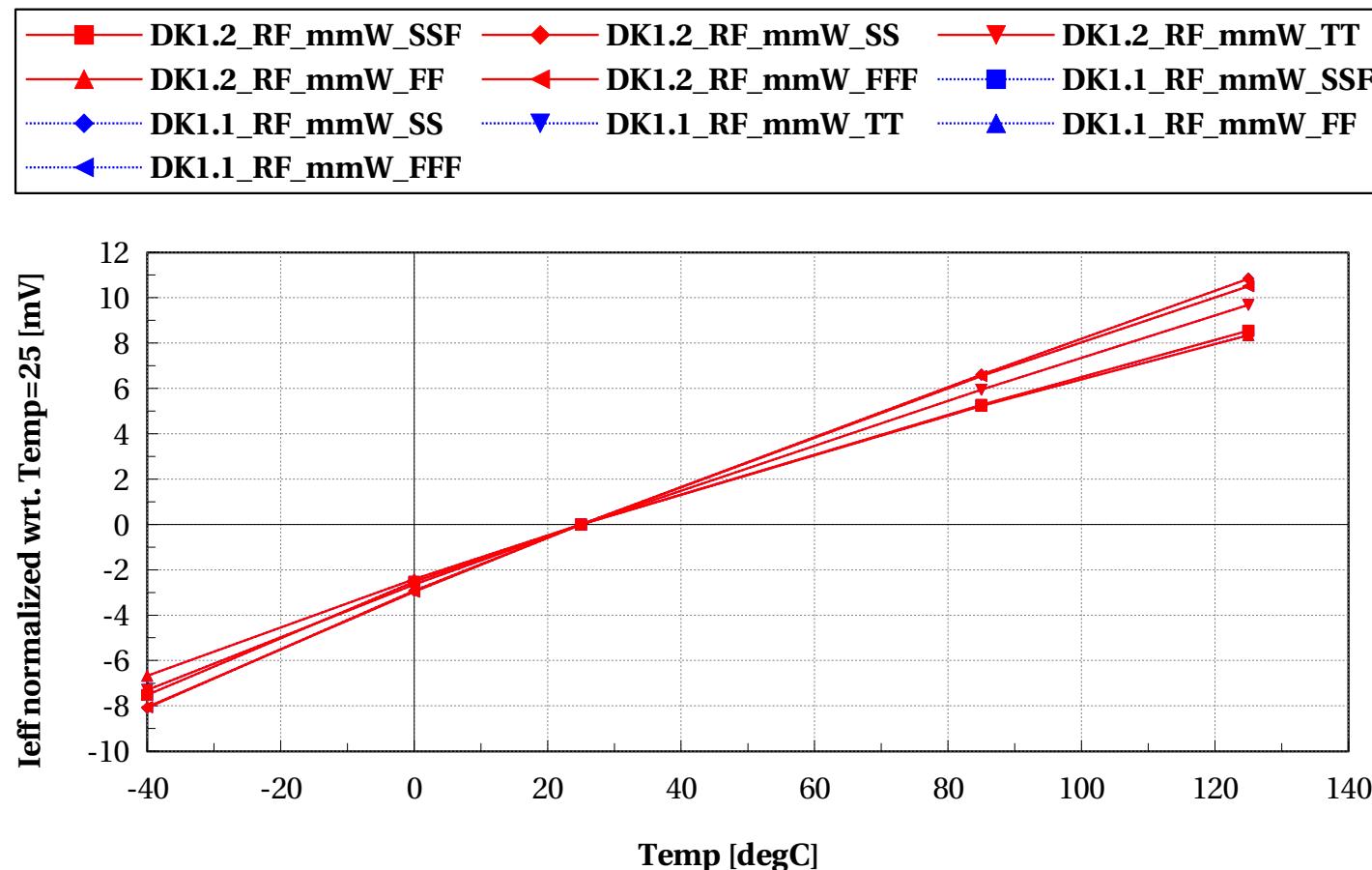
pfeat_acc, Isat normalized wrt. Temp=25 [%] vs Temp [degC]

w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



pfet_acc, Ieff normalized wrt. Temp=25 [mV] vs Temp [degC]

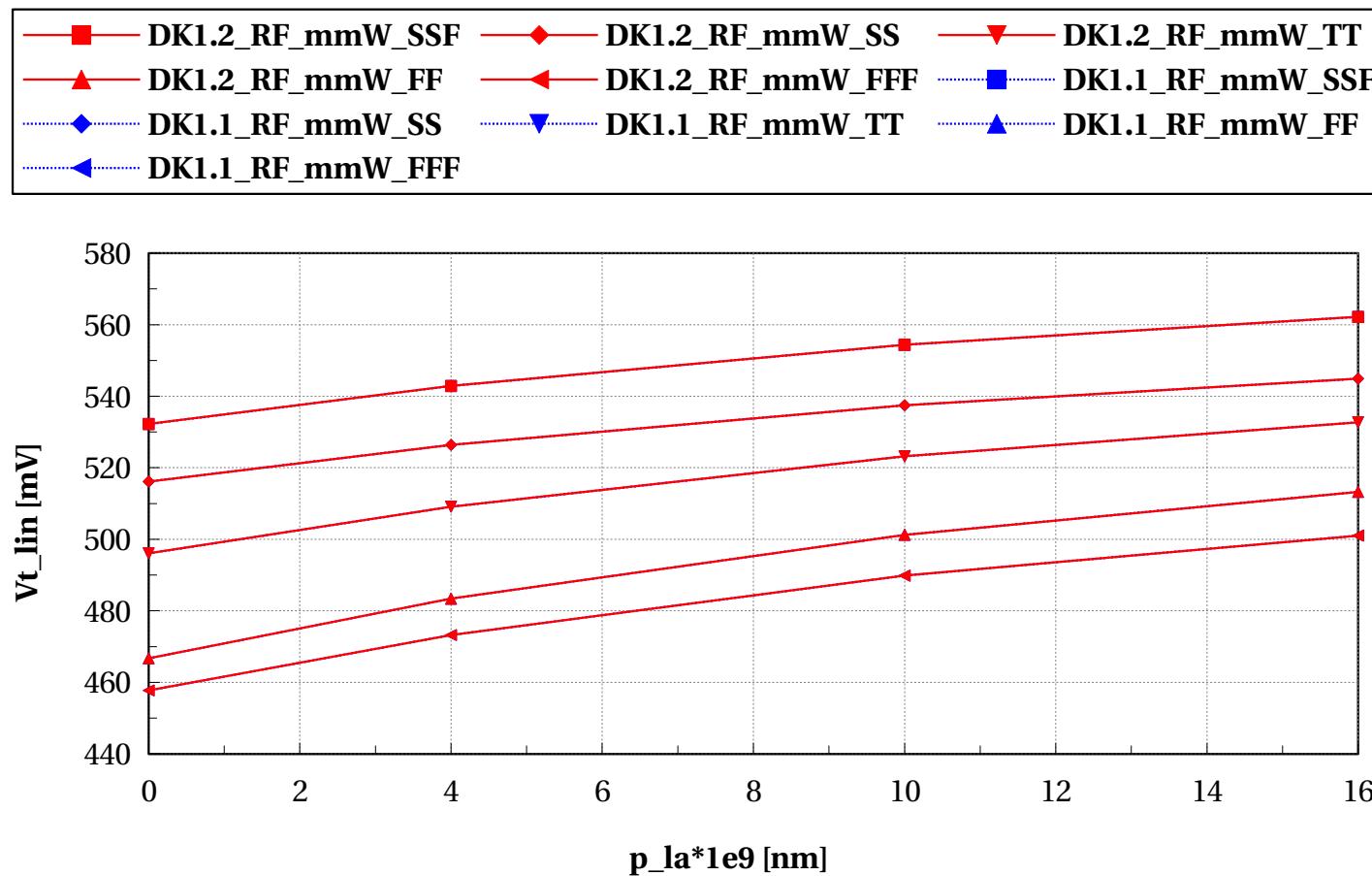
w==300e-9 and L==0.03e-6 and Vbs==0 and p_la==0 and devType=="PCELLwoWPE"



Poly bias effect (L=30nm, W=300nm)

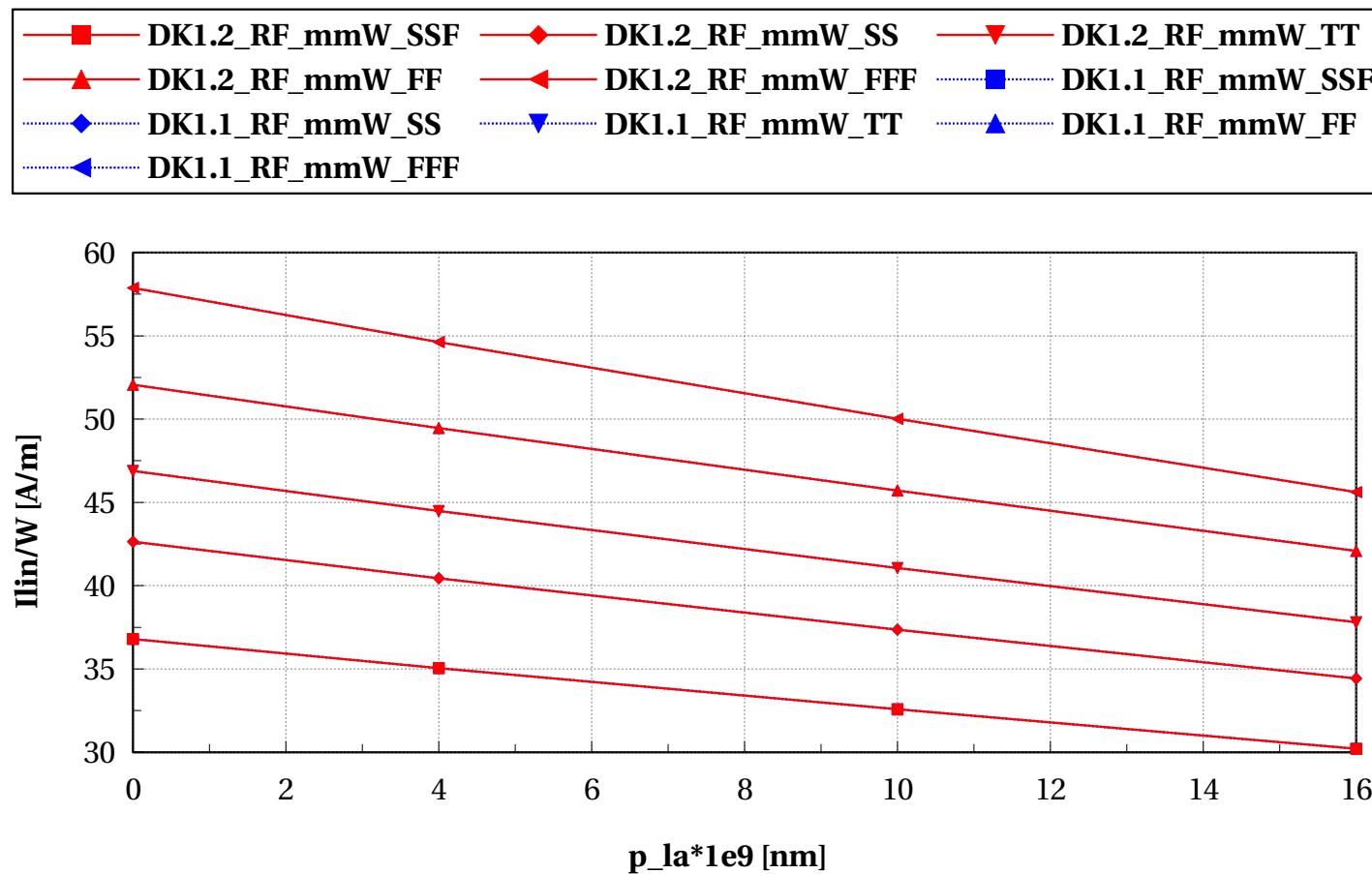
pfet_acc, Vt_lin [mV] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



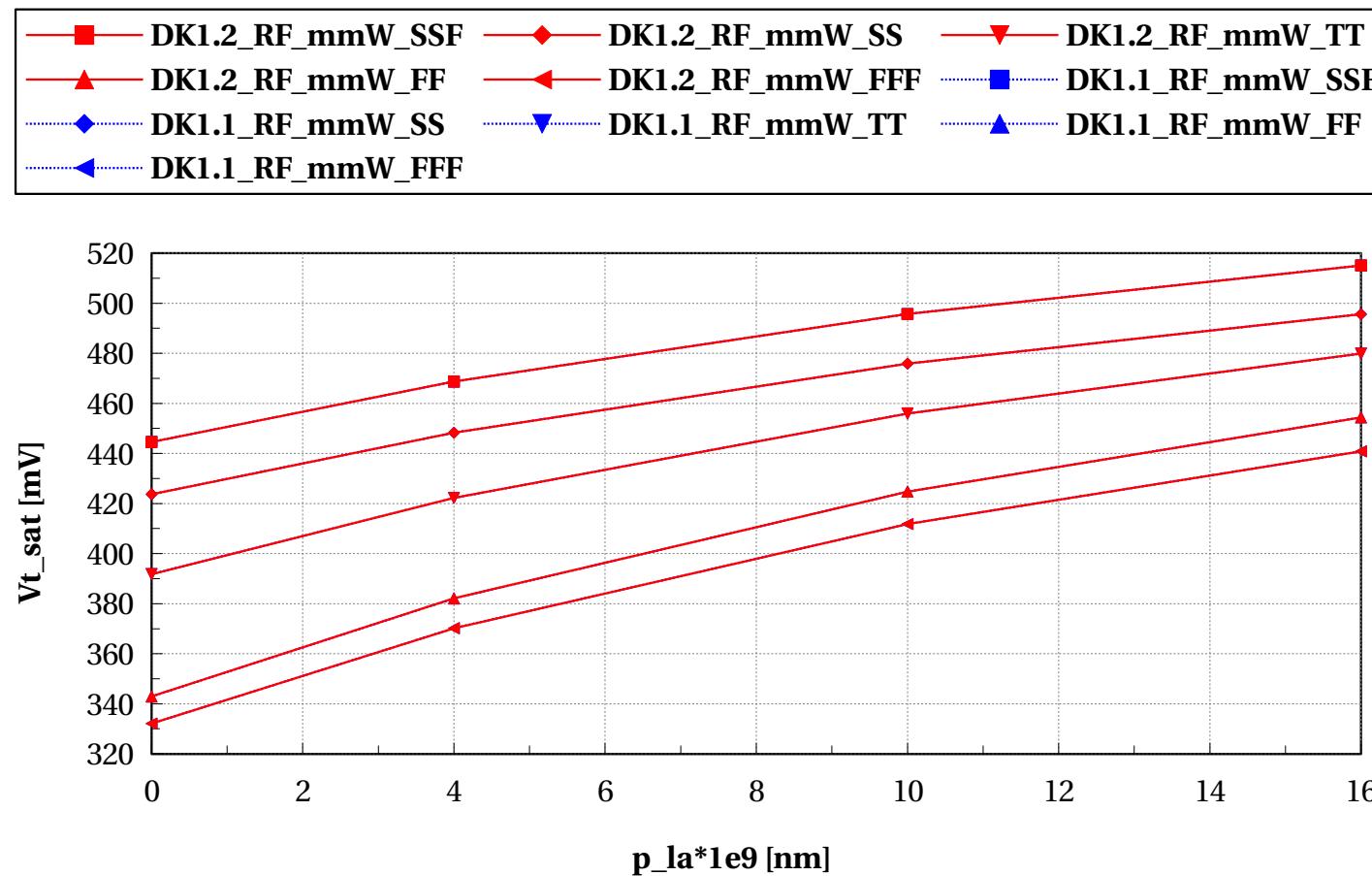
pfet_acc, Ilin/W [A/m] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



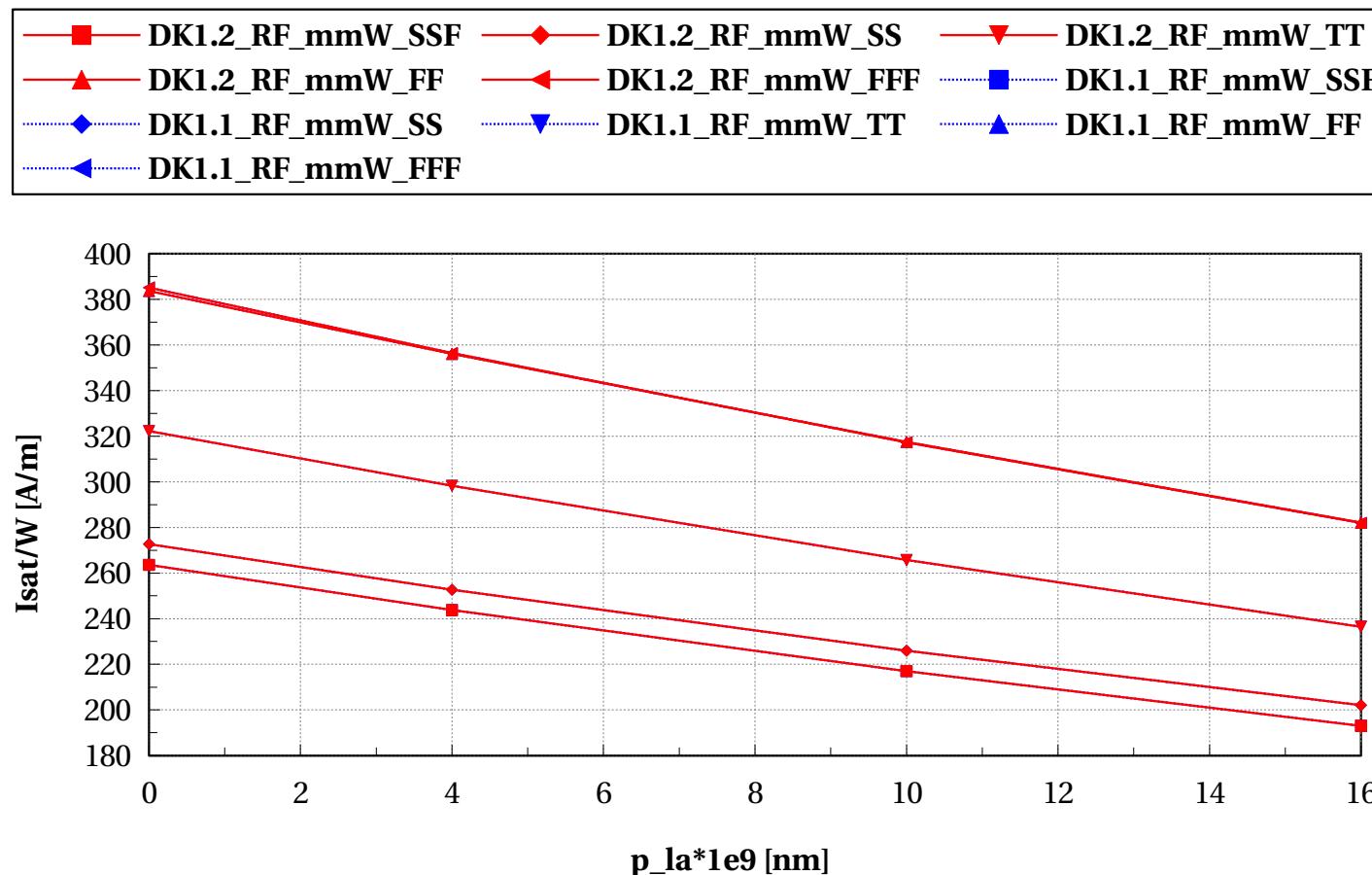
pfet_acc, Vt_sat [mV] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



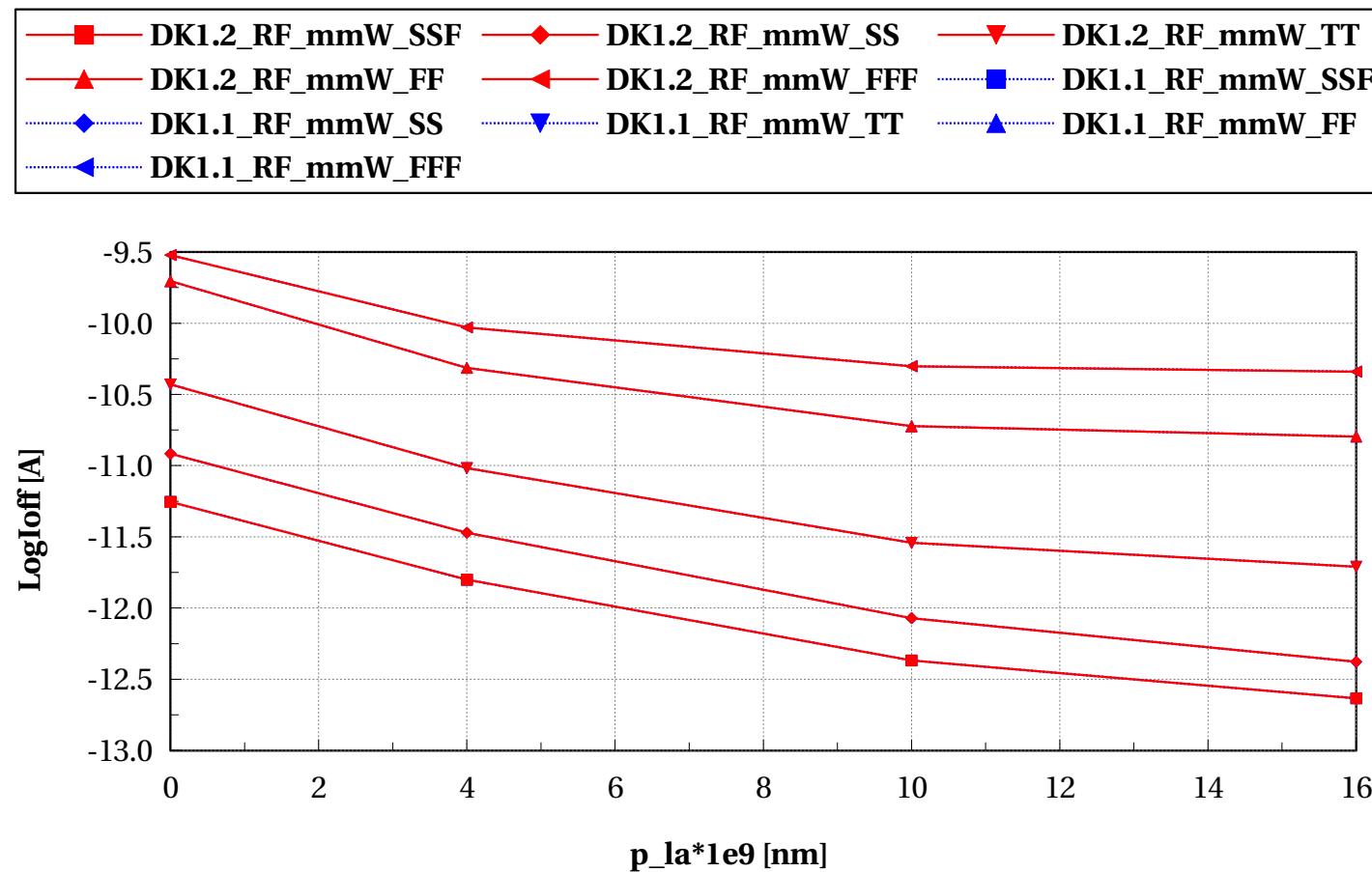
pfet_acc, Isat/W [A/m] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



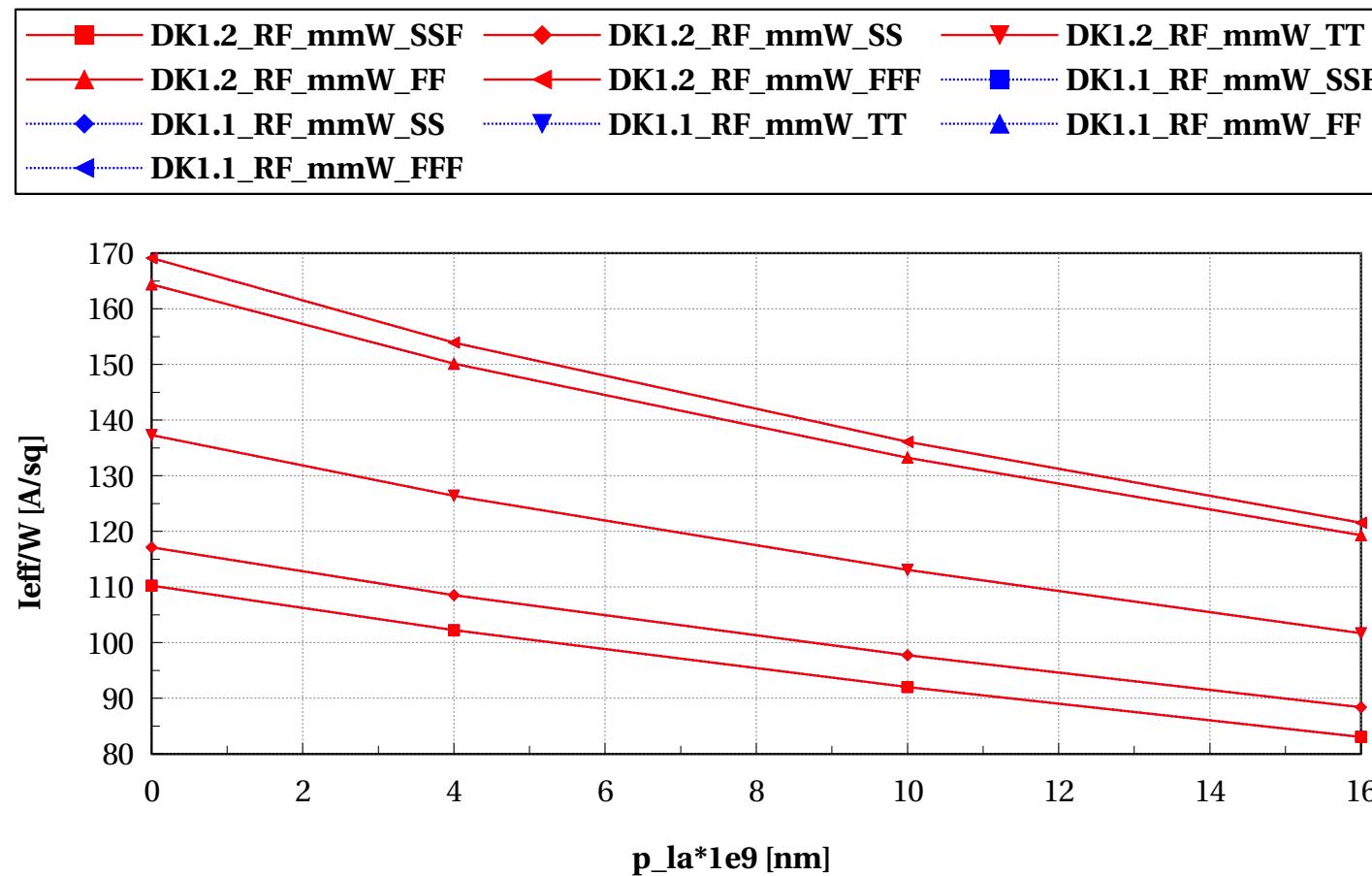
pfet_acc, LogIoff [A] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



pfet_acc, Ieff/W [A/sq] vs p_la*1e9 [nm]

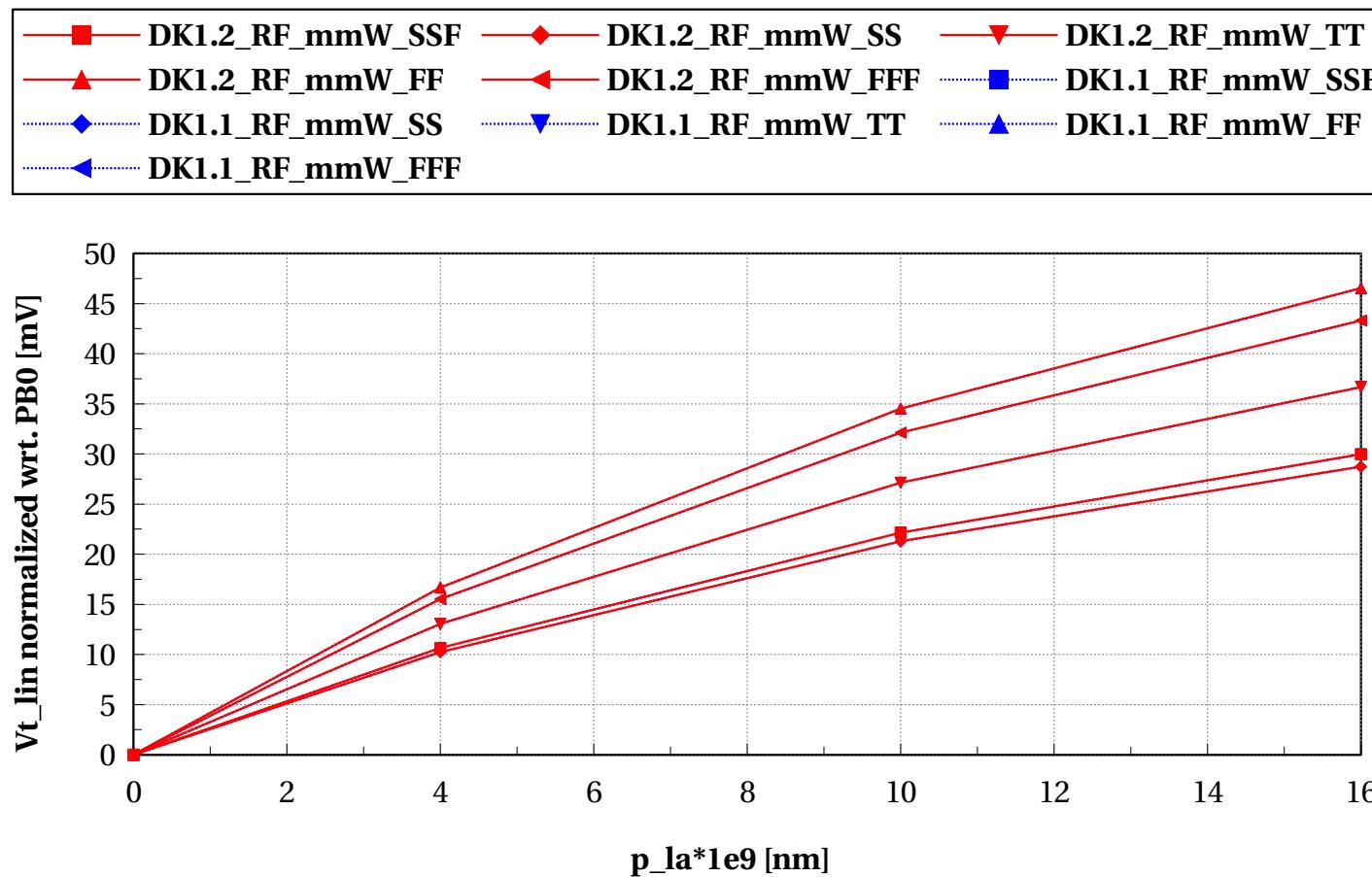
$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



Poly bias effect normalized (L=30nm,W=300nm)

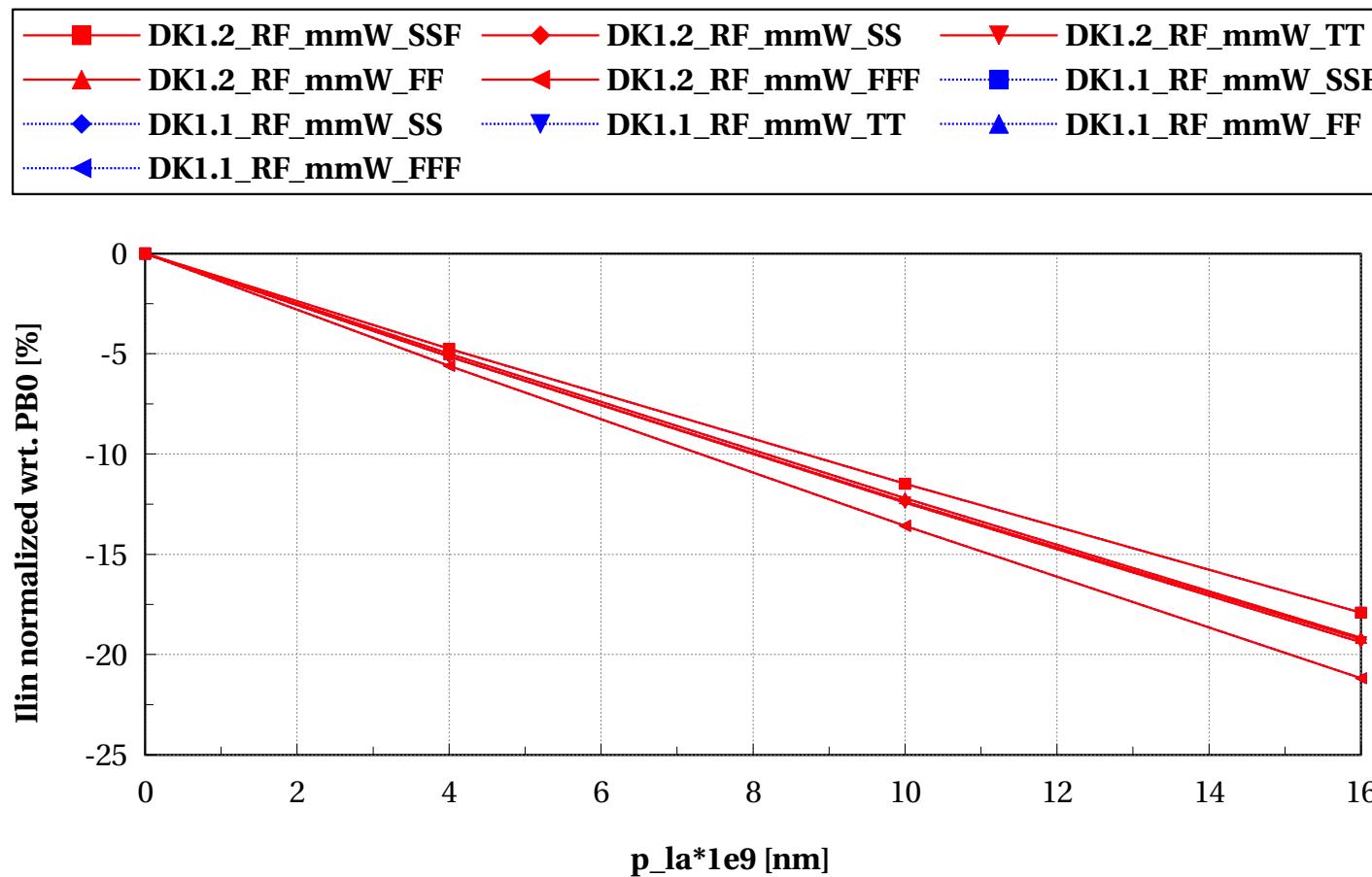
pfet_acc, Vt_lin normalized wrt. PB0 [mV] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



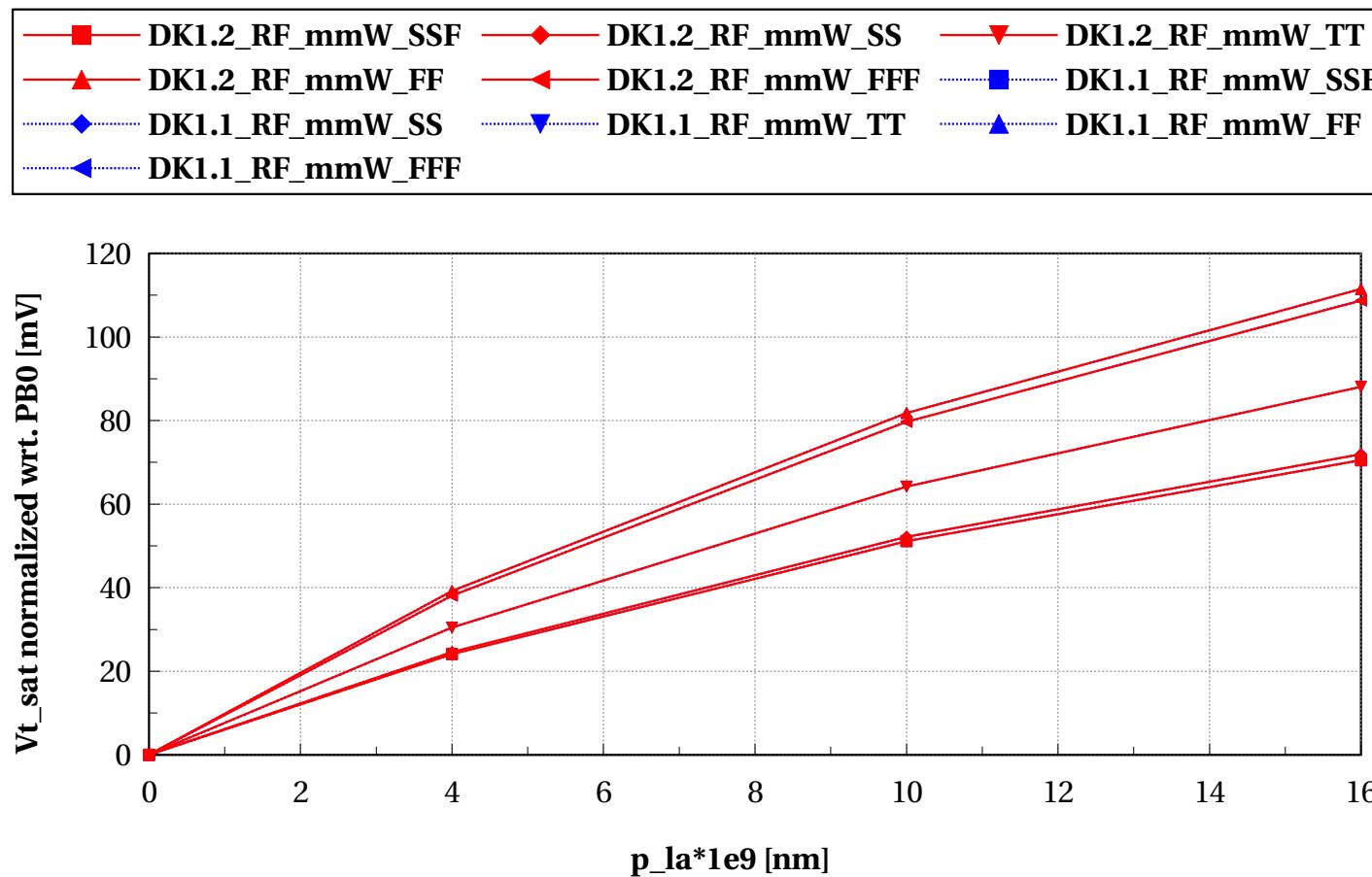
pfeat_acc, Ilin normalized wrt. PB0 [%] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



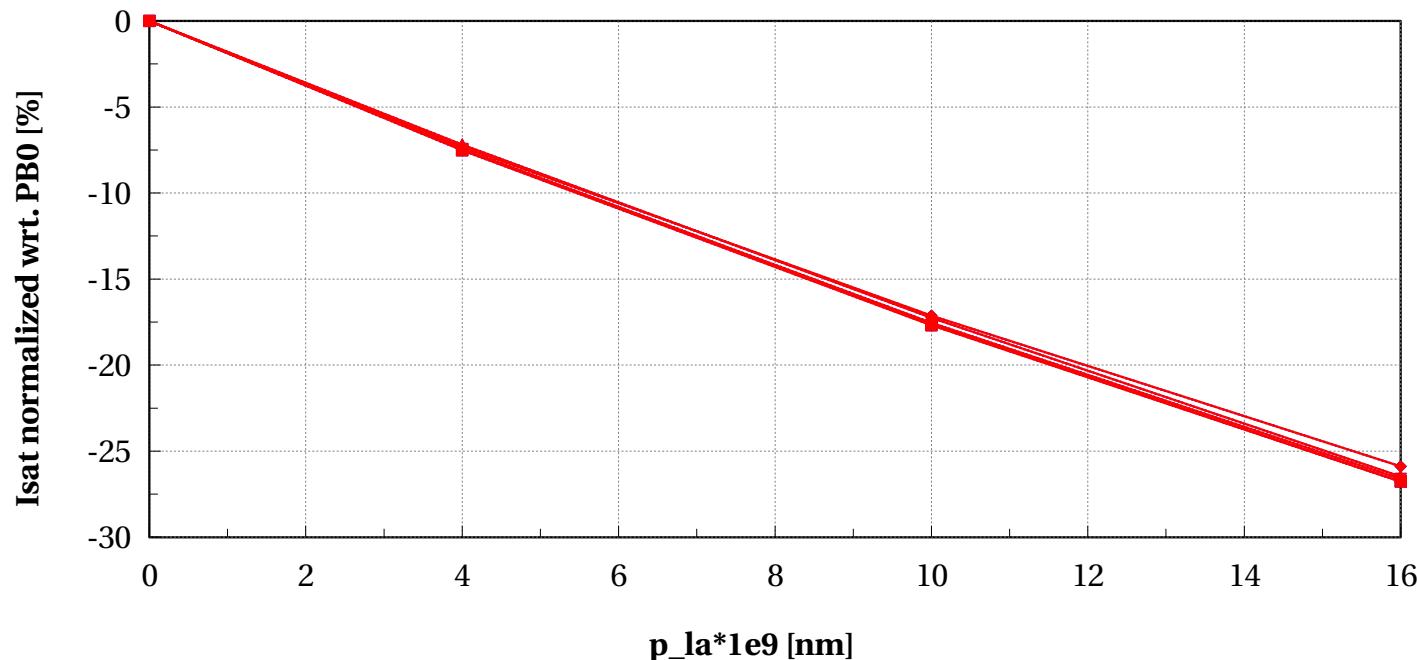
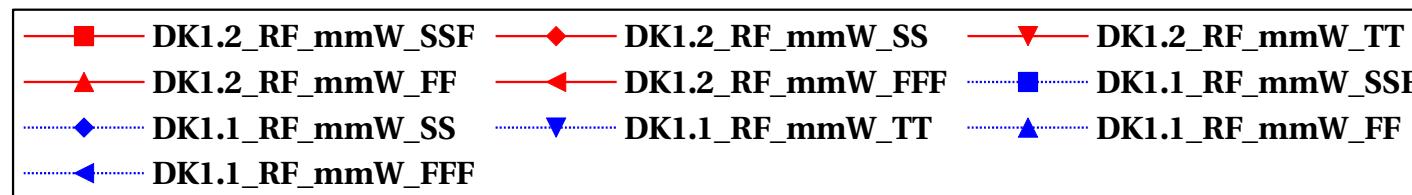
pfet_acc, Vt_sat normalized wrt. PB0 [mV] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



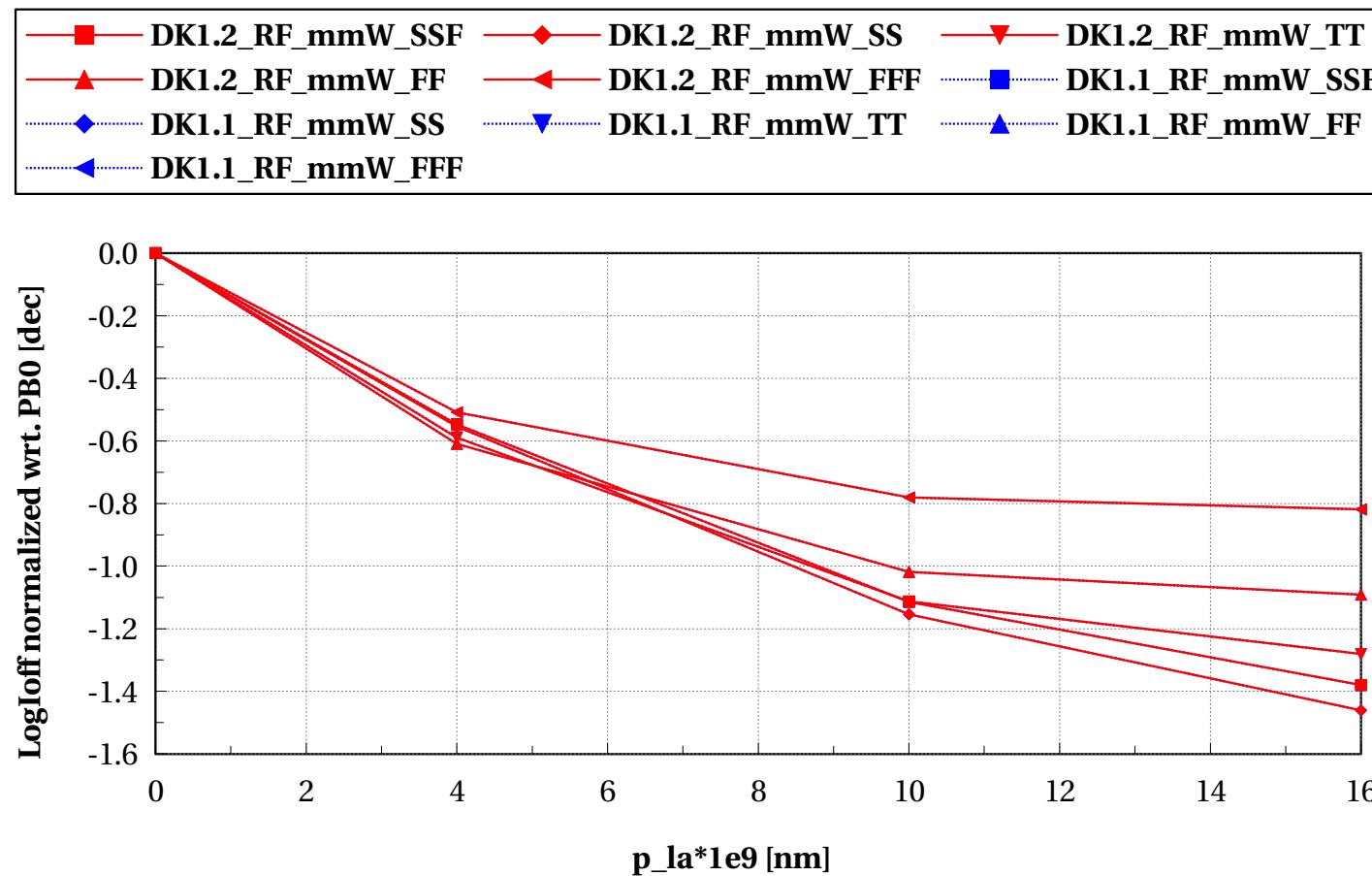
pfet_acc, Isat normalized wrt. PB0 [%] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



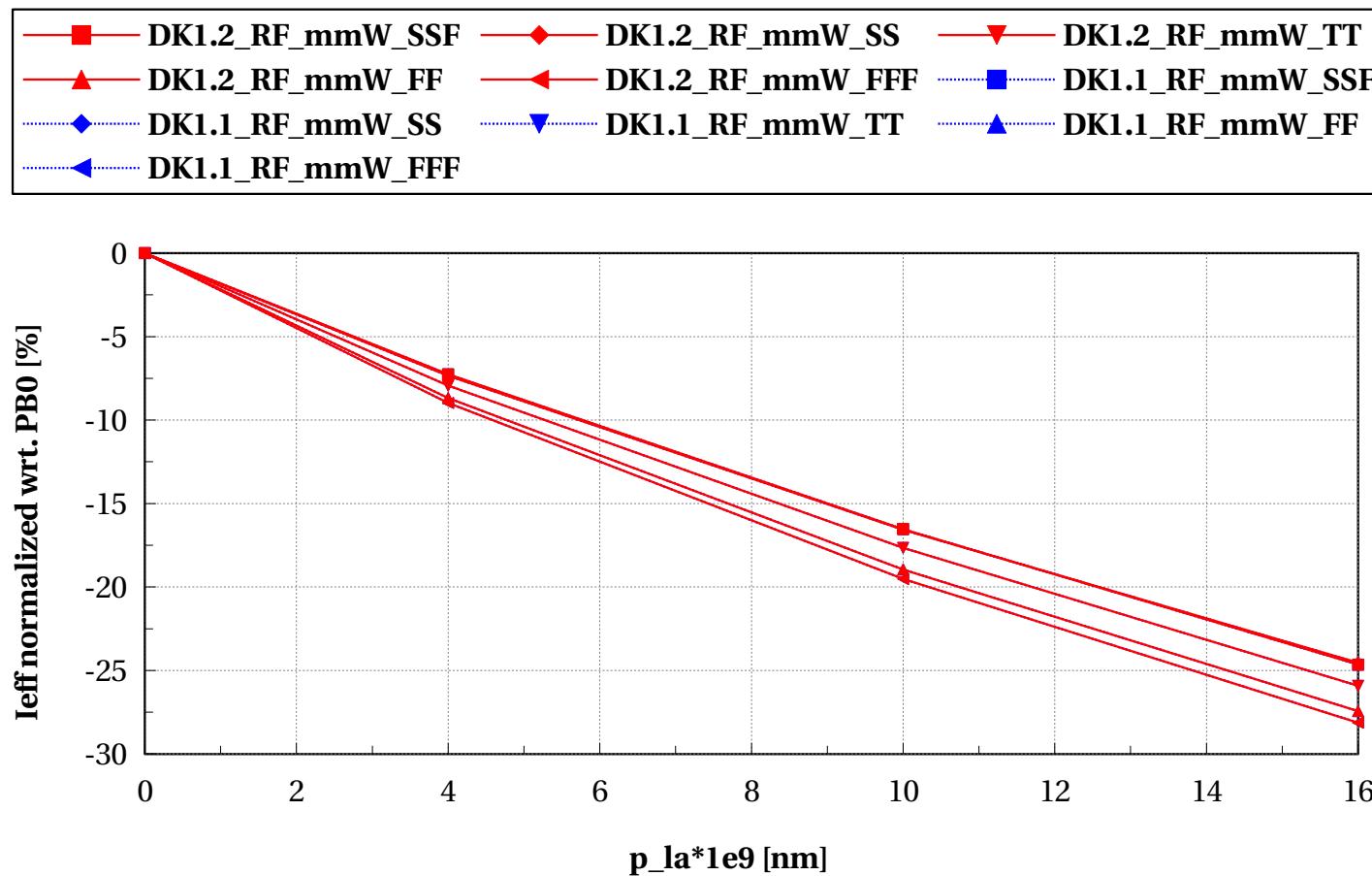
pfet_acc, LogIoff normalized wrt. PB0 [dec] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



pfet_acc, Ieff normalized wrt. PB0 [%] vs p_la*1e9 [nm]

$I = 30e-9$ and $w = 0.3e-6$ and $V_{BS} = 0$ and $Temp = 25$ and $devType = "PCELLwoWPE"$



Annex

Conditions of simulations

The simulations were done with SBenchLSF Alpha using Eldo simulator 2018.3.

- Model nfet_acc (DK1.2_RF_mmW)
 - ✓ Input Parameters
 - ✗ vds_off = vds_sat V
 - ✗ vds_cgd = 0 V
 - ✗ vds_cgg = 0 V
 - ✗ mc_sens = 0
 - ✗ vds_lin = 0.05 V
 - ✗ ivt = 300e-9 A
 - ✗ model_version = 1.2.d
 - ✗ ams_release = 2018.3
 - ✗ vgs_stop = vdd V
 - ✗ dlshrink_ivt = 0
 - ✗ sbenchlsf_release = Alpha
 - ✗ vds_sat = Vdd V
 - ✗ mc_nsigma = 3
 - ✗ shrink_ivt = 1

- ~~x~~ dlshrink_tinv = -3e-9
- ~~x~~ vgs_start = -0.5 V
- ~~x~~ plashrink_ivt = 1
- ~~x~~ ithslwi = 10e-9 A
- ~~x~~ vds_cbd = 0 V
- ~~x~~ vddmax = vdd
- ~~x~~ voffset = 0.2 V
- ~~x~~ mc_runs = 1000
- ~~x~~ vstep_ivt = 0.005 V
- ~~x~~ vgs_off = 0 V
- ~~x~~ temp = 25 °C
- ~~x~~ f_ext = 100k Hz
- ~~x~~ vbs = 0 V
- ~~x~~ vdd = 1 V
- ~~x~~ shrink_tinv = 0.9
- ~~x~~ vds_gmfd = Vdd/2 V
- ✓ Sweep Parameters
 - ~~x~~ temp = -40.0, 0.0, 25.0, 85.0, 125.0
- ✓ Extra parameters
 - ~~x~~ gflag_noisedev_rvt_cmos028fdsoi = 0
 - ~~x~~ rvt_dev = 0
- Model pfet_acc (DK1.2_RF_mmW)
 - ✓ Input Parameters
 - ~~x~~ vds_off = vds_sat V
 - ~~x~~ vds_cgd = 0 V

~~x~~ vds_cgg = 0 V
~~x~~ mc_sens = 0
~~x~~ vds_lin = 0.05 V
~~x~~ ivt = 70e-9 A
~~x~~ model_version = 1.2.d
~~x~~ ams_release = 2018.3
~~x~~ vgs_stop = vdd V
~~x~~ dlshrink_ivt = 0
~~x~~ sbenchlsf_release = Alpha
~~x~~ vds_sat = Vdd V
~~x~~ mc_nsigma = 3
~~x~~ shrink_ivt = 1
~~x~~ dlshrink_tinv = -3e-9
~~x~~ vgs_start = -0.5 V
~~x~~ plashrink_ivt = 1
~~x~~ ithslwi = 10e-9 A
~~x~~ vds_cbd = 0 V
~~x~~ vddmax = vdd
~~x~~ voffset = 0.2 V
~~x~~ mc_runs = 1000
~~x~~ vstep_ivt = 0.005 V
~~x~~ vgs_off = 0 V
~~x~~ temp = 25 °C
~~x~~ f_ext = 100k Hz
~~x~~ vbs = 0 V

- vdd = 1 V
- shrink_tinv = 0.9
- vds_gmgd = Vdd/2 V
- Sweep Parameters
 - temp = -40.0, 0.0, 25.0, 85.0, 125.0
- Extra parameters
 - gflag_noisedev_rvt_cmos028fdsoi = 0
 - rvt_dev = 0

● Model nfet_acc (DK1.1_RF_mmW)

- Input Parameters
 - vds_off = vds_sat V
 - vds_cgd = 0 V
 - vds_cgg = 0 V
 - mc_sens = 0
 - vds_lin = 0.05 V
 - ivt = 300e-9 A
 - model_version = 1.2.c
 - ams_release = 2018.3
 - vgs_stop = vdd V
 - dlshrink_ivt = 0
 - sbenchlsf_release = Alpha
 - vds_sat = Vdd V
 - mc_nsigma = 3
 - shrink_ivt = 1
 - dlshrink_tinv = -3e-9

- ~~x~~ vgs_start = -0.5 V
- ~~x~~ plashrink_ivt = 1
- ~~x~~ ithslwi = 10e-9 A
- ~~x~~ vds_cbd = 0 V
- ~~x~~ vddmax = vdd
- ~~x~~ voffset = 0.2 V
- ~~x~~ mc_runs = 1000
- ~~x~~ vstep_ivt = 0.005 V
- ~~x~~ vgs_off = 0 V
- ~~x~~ temp = 25 °C
- ~~x~~ f_ext = 100k Hz
- ~~x~~ vbs = 0 V
- ~~x~~ vdd = 1 V
- ~~x~~ shrink_tinv = 0.9
- ~~x~~ vds_gmgd = Vdd/2 V
- ✓ Sweep Parameters
 - ~~x~~ temp = -40.0, 0.0, 25.0, 85.0, 125.0
- ✓ Extra parameters
 - ~~x~~ gflag_noisedev_rvt_cmos028fdsoi = 0
 - ~~x~~ rvt_dev = 0
- Model pfet_acc (DK1.1_RF_mmW)
 - ✓ Input Parameters
 - ~~x~~ vds_off = vds_sat V
 - ~~x~~ vds_cgd = 0 V
 - ~~x~~ vds_cgg = 0 V

x mc_sens = 0
x vds_lin = 0.05 V
x ivt = 70e-9 A
x model_version = 1.2.c
x ams_release = 2018.3
x vgs_stop = vdd V
x dlshrink_ivt = 0
x sbenchlsf_release = Alpha
x vds_sat = Vdd V
x mc_nsigma = 3
x shrink_ivt = 1
x dlshrink_tinv = -3e-9
x vgs_start = -0.5 V
x plashrink_ivt = 1
x ithslwi = 10e-9 A
x vds_cbd = 0 V
x vddmax = vdd
x voffset = 0.2 V
x mc_runs = 1000
x vstep_ivt = 0.005 V
x vgs_off = 0 V
x temp = 25 °C
x f_ext = 100k Hz
x vbs = 0 V
x vdd = 1 V

- ✗ shrink_tinv = 0.9
- ✗ vds_gmgd = Vdd/2 V
- ✓ Sweep Parameters
 - ✗ temp = -40.0, 0.0, 25.0, 85.0, 125.0
- ✓ Extra parameters
 - ✗ gflag_noisedev_rvt_cmos028fdsoi = 0
 - ✗ rvt_dev = 0