cmos028fdsoi Technology

EGLVTV models

DK1.2_RF_mmW

Comparison with DK1.1_RF_mmW model(s)

Please use the bookmark to navigate

General information on EGLVTV models

- Maximum supply voltage is 1.5 V.
- Validity domain is defined as follows:
  - ✔ Drawn gate length varies from 100nm to 10um.
  - ✔ Drawn transistor width varies from 0.16um to 10um.
  - ✔ Device temperature varies from -40 °C to 125 °C.

Output parameters definitions

- Model(s): eglvtvnfet_acc, eglvtvpfet_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 = 1.5V.
  - ✔ 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.
  - ✔ Ig_off : Gate current at Vds = VddV, Vgs = 0V.
  - ✔ Logioff : log10(Ioffsat).
  - ✔ Gain_c : Voltage gain defined as Gm_c / Gd_c.
  - ✔ Ieff : Average drain current (Ilow + Ihigh) / 2.
  - ✔ Ilin : Drain current at Vgs = 1.5V, Vds = 0.05V.
  - ✔ Dibl : Vt_lin - Vt_sat.
  - ✔ Ioff_s : Source current at Vgs = 0V, Vds = vds_satV.
  - ✔ Ioffsat : Drain current at Vgs = 0V, Vds = vds_satV.
  - ✔ 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.
  - ✔ Cgg_inv : Total gate capacitance at Vgs = 1.5V, Vds = 0V, f = 100kHz.
  - ✔ Isat : Drain current at Vgs = 1.5V, Vds = VddV.
  - ✔ Cgd_0v : Gate-to-Drain capacitance at Vgs = 0V, Vds = 0V, f = 100kHz.
  - ✔ Vtgmmax : Threshold voltage at Vds = 0.05 derived from Gm max method.

eglvtvnfet_acc
Electrical characteristics per geometry

eglvtvnfet_acc @ w=2e-06, l=1.0e-07, swshe=0, pre_layout_local=1, sa=1.80e-6, sb=1.80e-6, sd=1.4e-07, devtype=PT, as=3.6e-12, ad=3.6e-12, ps=7.6e-06, pd=7.6e-06, vbs=0, vdd=1.5, temp=25.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	SS	TT	FF	FFF
Vt_lin [mV]	423.4 0.0mV	414.3 0.0mV	365.4 0.0mV	319.7 0.0mV	309.8 0.0mV
Vt_sat [mV]	394.2 0.0mV	386.2 0.0mV	337.2 0.0mV	291 0.0mV	282.2 0.0mV
Isat [mA]	1.11 0.0%	1.15 0.0%	1.25 0.0%	1.34 0.0%	1.39 0.0%
Ilin [µA]	170 0.0%	186.1 0.0%	203.3 0.0%	219.7 0.0%	236 0.0%
Gm_c [mS]	0.78 0.0%	0.84 0.0%	0.89 0.0%	0.94 0.0%	1 0.0%
Gd_c [µS]	10.81 0.0%	11.4 0.0%	13.05 0.0%	14.76 0.0%	15.37 0.0%
Gain_c []	72.33 0.0%	73.29 0.0%	68.34 0.0%	63.87 0.0%	65.28 0.0%
VtGmmax [mV]	392.3 0.0mV	387.7 0.0mV	341.7 0.0mV	298.4 0.0mV	292.1 0.0mV
Cgd_0v [aF]	424.1 0.0%	446.5 0.0%	444.2 0.0%	435.9 0.0%	464.3 0.0%
Cgg_inv [fF]	2.34 0.0%	2.42 0.0%	2.42 0.0%	2.41 0.0%	2.5 0.0%
Ieff [µA]	647.4 0.0%	681.6 0.0%	766.6 0.0%	847.4 0.0%	891.2 0.0%
Ig_on [fA]	2.08e-02 0.0%	0.19 0.0%	0.21 0.0%	0.26 0.0%	2.66 0.0%
Ioffsat [pA]	36.88 0.0%	42.99 0.0%	194.3 0.0%	807.2 0.0%	982.2 0.0%
Ioff_g [aA]	-0.62 -0.0%	-1.76 -0.0%	-6.19 -0.0%	-23.46 -0.0%	-62.7 -0.0%
Ioff_s [pA]	-36.88 -0.0%	-42.99 -0.0%	-194.3 -0.0%	-807.2 -0.0%	-982.2 -0.0%

eglvtvnfet_acc @ w=2e-06, l=2.0e-06, swshe=0, pre_layout_local=1, sa=2.26e-6, sb=2.26e-6, sd=1.4e-07, devtype=PT, as=4.52e-12, ad=4.52e-12, ps=8.52e-06, pd=8.52e-06, vbs=0, vdd=1.5, temp=25.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	SS	TT	FF	FFF
Vt_lin [mV]	431.2 0.0mV	433.6 0.0mV	392.6 0.0mV	354.6 0.0mV	352.5 0.0mV
Vt_sat [mV]	420.3 0.0mV	422.8 0.0mV	382.4 0.0mV	344.9 0.0mV	342.8 0.0mV
Isat [µA]	151.8 0.0%	150 0.0%	172.8 0.0%	195.2 0.0%	196 0.0%
Ilin [µA]	15.91 0.0%	15.61 0.0%	17.28 0.0%	18.83 0.0%	18.69 0.0%
Gm_c [µS]	54.85 0.0%	54.73 0.0%	58.72 0.0%	62.46 0.0%	62.52 0.0%
Gd_c [nS]	54.19 0.0%	54.55 0.0%	62.3 0.0%	70.23 0.0%	70.44 0.0%
Gain_c []	1012 0.0%	1003 0.0%	942.5 0.0%	889.3 0.0%	887.5 0.0%
VtGmmax [mV]	438 0.0mV	438.7 0.0mV	400.1 0.0mV	364 0.0mV	361.4 0.0mV
Cgd_0v [aF]	424.1 0.0%	446.5 0.0%	444.3 0.0%	436.3 0.0%	464.8 0.0%
Cgg_inv [fF]	30.25 0.0%	31.01 0.0%	31.57 0.0%	32.22 0.0%	33.01 0.0%
Ieff [µA]	80.03 0.0%	78.98 0.0%	91.51 0.0%	104 0.0%	104.2 0.0%
Ig_on [fA]	0.32 0.0%	2.63 0.0%	2.8 0.0%	3.23 0.0%	30.84 0.0%
Ioffsat [pA]	0.45 0.0%	0.4 0.0%	1.36 0.0%	4.34 0.0%	4.47 0.0%
Ioff_g [fA]	-1.12e-02 -0.0%	-3.19e-02 -0.0%	-0.11 -0.0%	-0.42 -0.0%	-1.13 -0.0%
Ioff_s [pA]	-0.45 -0.0%	-0.4 -0.0%	-1.36 -0.0%	-4.34 -0.0%	-4.46 -0.0%

eglvtvpfet_acc
Electrical characteristics per geometry

eglvtvpfet_acc @ w=2e-06, l=1.0e-07, swshe=0, pre_layout_local=1, sa=1.80e-6, sb=1.80e-6, sd=1.4e-07, devtype=PT, as=3.6e-12, ad=3.6e-12, ps=7.6e-06, pd=7.6e-06, vbs=1.5, vdd=1.5, temp=25.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	SS	TT	FF	FFF
Vt_lin [mV]	403.5 0.0mV	358.4 0.0mV	336.8 0.0mV	314.8 0.0mV	271.6 0.0mV
Vt_sat [mV]	369.3 0.0mV	325.9 0.0mV	303.7 0.0mV	281 0.0mV	238.4 0.0mV
Isat [µA]	454.1 0.0%	514.8 0.0%	552.4 0.0%	586 0.0%	642 0.0%
Ilin [µA]	43.81 0.0%	53.44 0.0%	57.19 0.0%	60.82 0.0%	71.02 0.0%
Gm_c [µS]	204.5 0.0%	232.8 0.0%	249.6 0.0%	266.1 0.0%	292.1 0.0%
Gd_c [µS]	4.34 0.0%	4.88 0.0%	5.66 0.0%	6.52 0.0%	7.12 0.0%
Gain_c []	47.08 0.0%	47.74 0.0%	44.08 0.0%	40.78 0.0%	41.05 0.0%
VtGmmax [mV]	389 0.0mV	353.4 0.0mV	334.3 0.0mV	314.4 0.0mV	277.7 0.0mV
Cgd_0v [aF]	364.2 0.0%	382.7 0.0%	384.1 0.0%	382 0.0%	406.3 0.0%
Cgg_inv [fF]	2.01 0.0%	2.07 0.0%	2.06 0.0%	2.05 0.0%	2.12 0.0%
Ieff [µA]	231.9 0.0%	277.3 0.0%	302.2 0.0%	326.2 0.0%	373.1 0.0%
Ig_on [aA]	1.99 0.0%	7.94 0.0%	20.9 0.0%	64.27 0.0%	219.5 0.0%
Ioffsat [nA]	2.48e-02 0.0%	8.79e-02 0.0%	0.17 0.0%	0.34 0.0%	1.2 0.0%
Ioff_g [aA]	-5.44 -0.0%	-17.71 -0.0%	-48.21 -0.0%	-147.6 -0.0%	-426.2 -0.0%
Ioff_s [nA]	-2.48e-02 -0.0%	-8.79e-02 -0.0%	-0.17 -0.0%	-0.34 -0.0%	-1.2 -0.0%

eglvtvpfet_acc @ w=2e-06, l=2.0e-06, swshe=0, pre_layout_local=1, sa=2.26e-6, sb=2.26e-6, sd=1.4e-07, devtype=PT, as=4.52e-12, ad=4.52e-12, ps=8.52e-06, pd=8.52e-06, vbs=1.5, vdd=1.5, temp=25.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

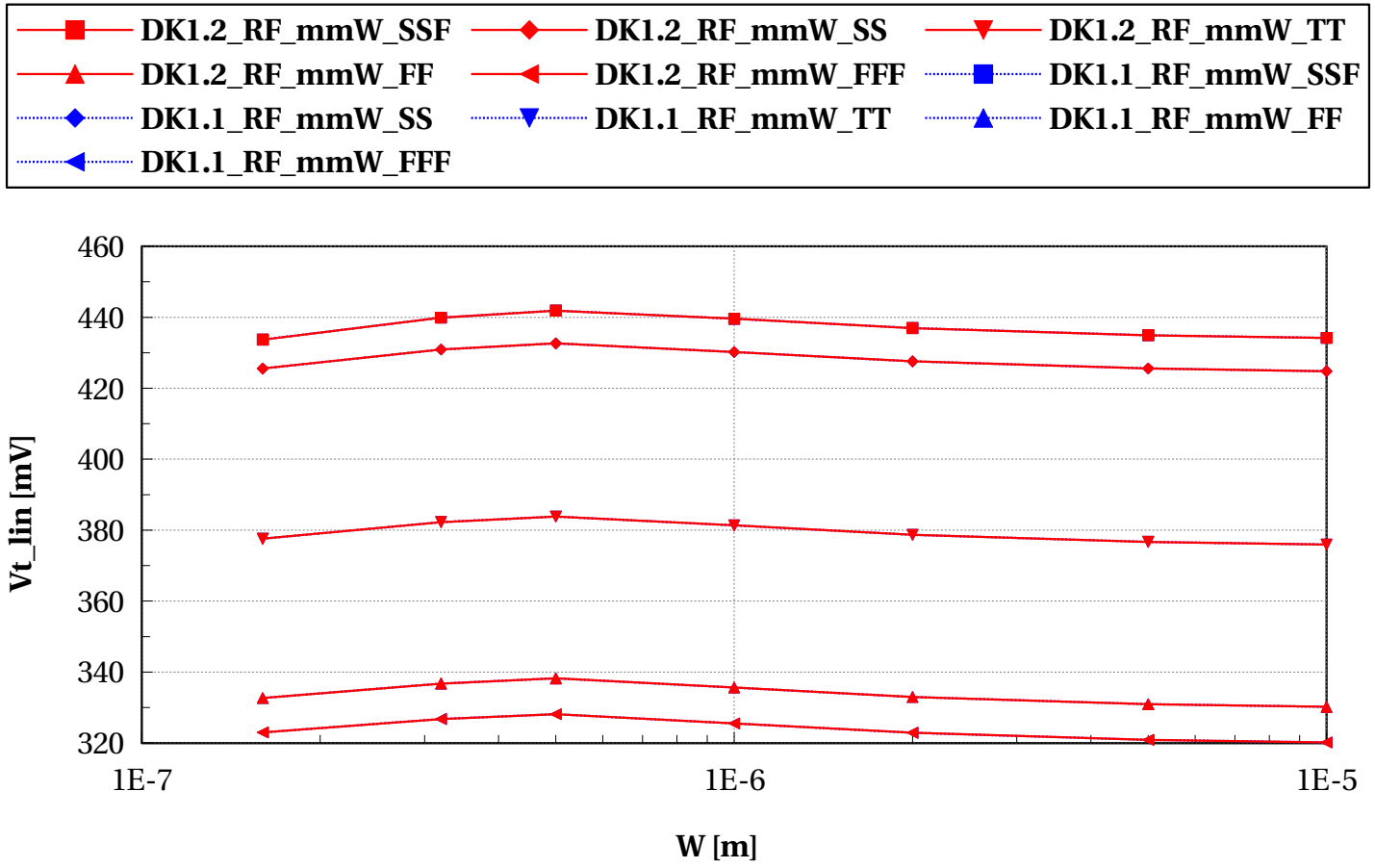
	SSF	SS	TT	FF	FFF
Vt_lin [mV]	369.2 0.0mV	338.5 0.0mV	330.8 0.0mV	324 0.0mV	291.6 0.0mV
Vt_sat [mV]	359.6 0.0mV	328.9 0.0mV	321.5 0.0mV	314.8 0.0mV	282.4 0.0mV
Isat [µA]	54.12 0.0%	56.39 0.0%	59.95 0.0%	63.23 0.0%	65.98 0.0%
Ilin [µA]	5.14 0.0%	5.17 0.0%	5.44 0.0%	5.68 0.0%	5.72 0.0%
Gm_c [µS]	16.16 0.0%	16.06 0.0%	16.77 0.0%	17.42 0.0%	17.27 0.0%
Gd_c [nS]	22.53 0.0%	22.92 0.0%	26.11 0.0%	29.44 0.0%	29.73 0.0%
Gain_c []	717.5 0.0%	700.7 0.0%	642.4 0.0%	591.6 0.0%	581 0.0%
VtGmmax [mV]	410.1 0.0mV	380.3 0.0mV	375.4 0.0mV	371.1 0.0mV	340.3 0.0mV
Cgd_0v [aF]	348.8 0.0%	365.6 0.0%	365.1 0.0%	360.8 0.0%	382.6 0.0%
Cgg_inv [fF]	28.7 0.0%	29.42 0.0%	29.88 0.0%	30.43 0.0%	31.17 0.0%
Ieff [µA]	28.31 0.0%	29.63 0.0%	31.49 0.0%	33.2 0.0%	34.8 0.0%
Ig_on [aA]	2.81 0.0%	11.68 0.0%	30.29 0.0%	92.03 0.0%	327.9 0.0%
Ioffsat [pA]	0.73 0.0%	1.69 0.0%	2.17 0.0%	2.88 0.0%	6.9 0.0%
Ioff_g [fA]	-9.85e-02 -0.0%	-0.32 -0.0%	-0.87 -0.0%	-2.67 -0.0%	-7.71 -0.0%
Ioff_s [pA]	-0.73 -0.0%	-1.69 -0.0%	-2.17 -0.0%	-2.87 -0.0%	-6.89 -0.0%

eglvtvnfet_acc
Electrical characteristics scaling

Scaling versus Width (L=0.10u,Temp=25,Vbs=0V)

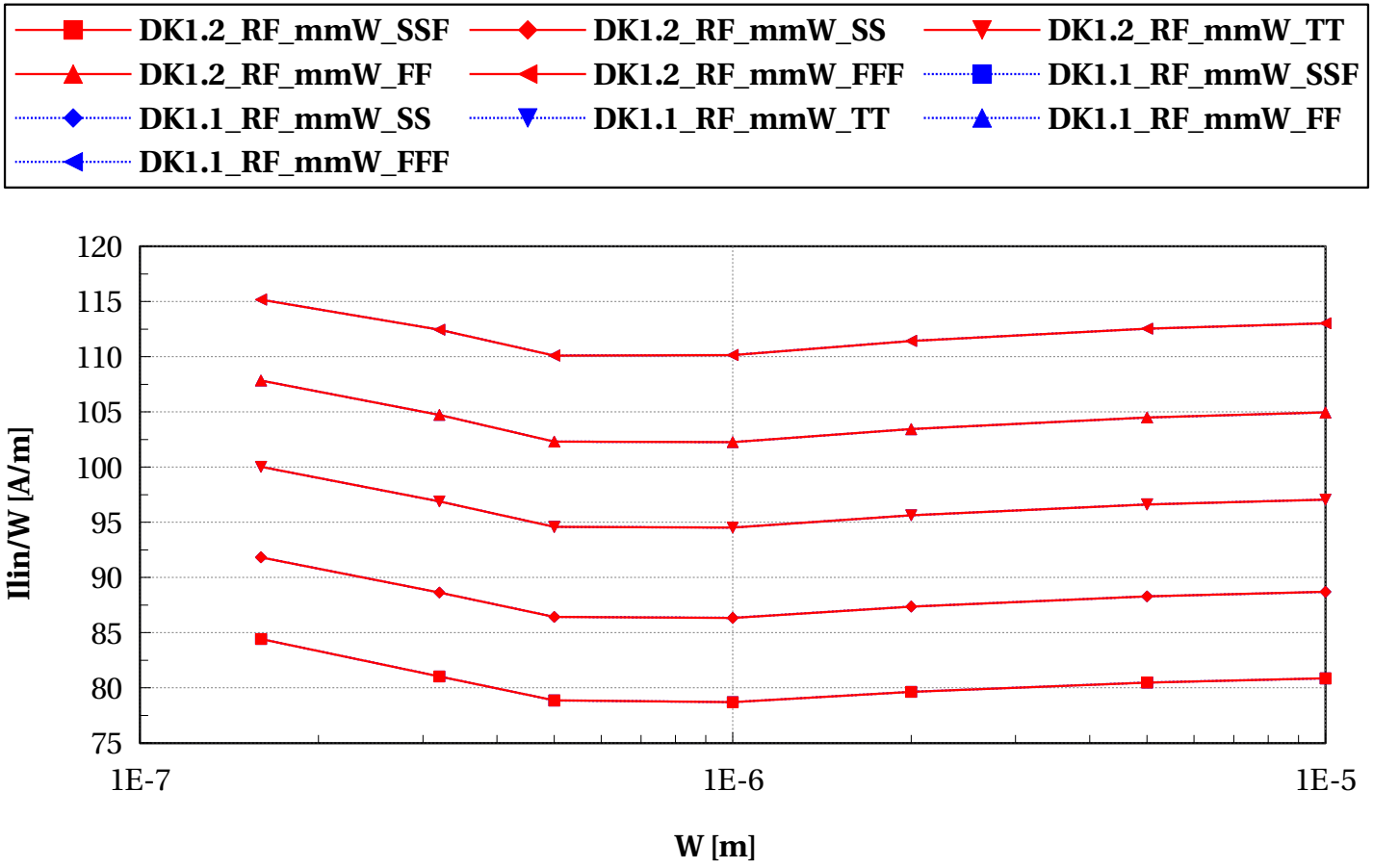
eglvtvnfet_acc, Vt_lin [mV] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



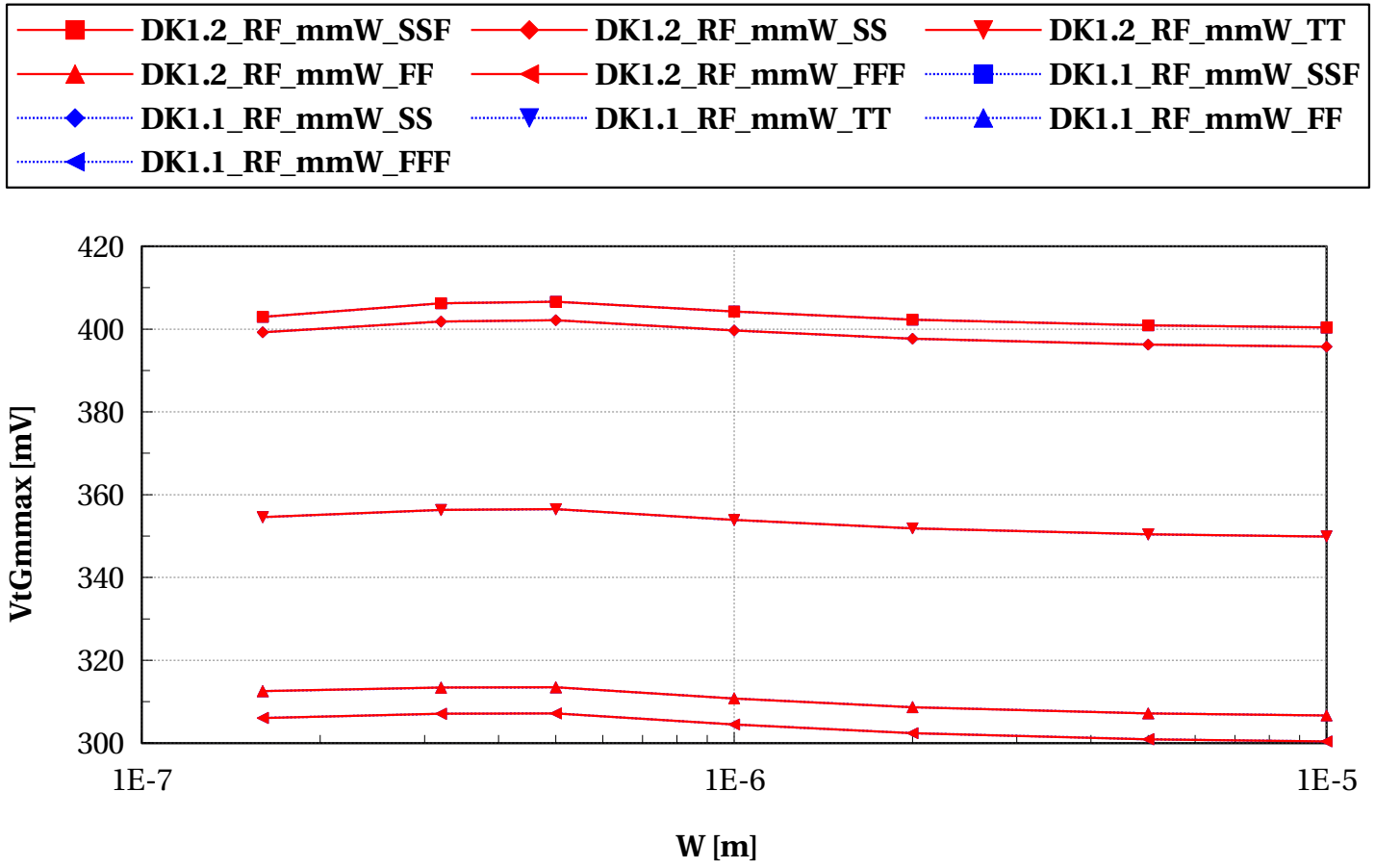
eglvtvnfet_acc, Ilin/W [A/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



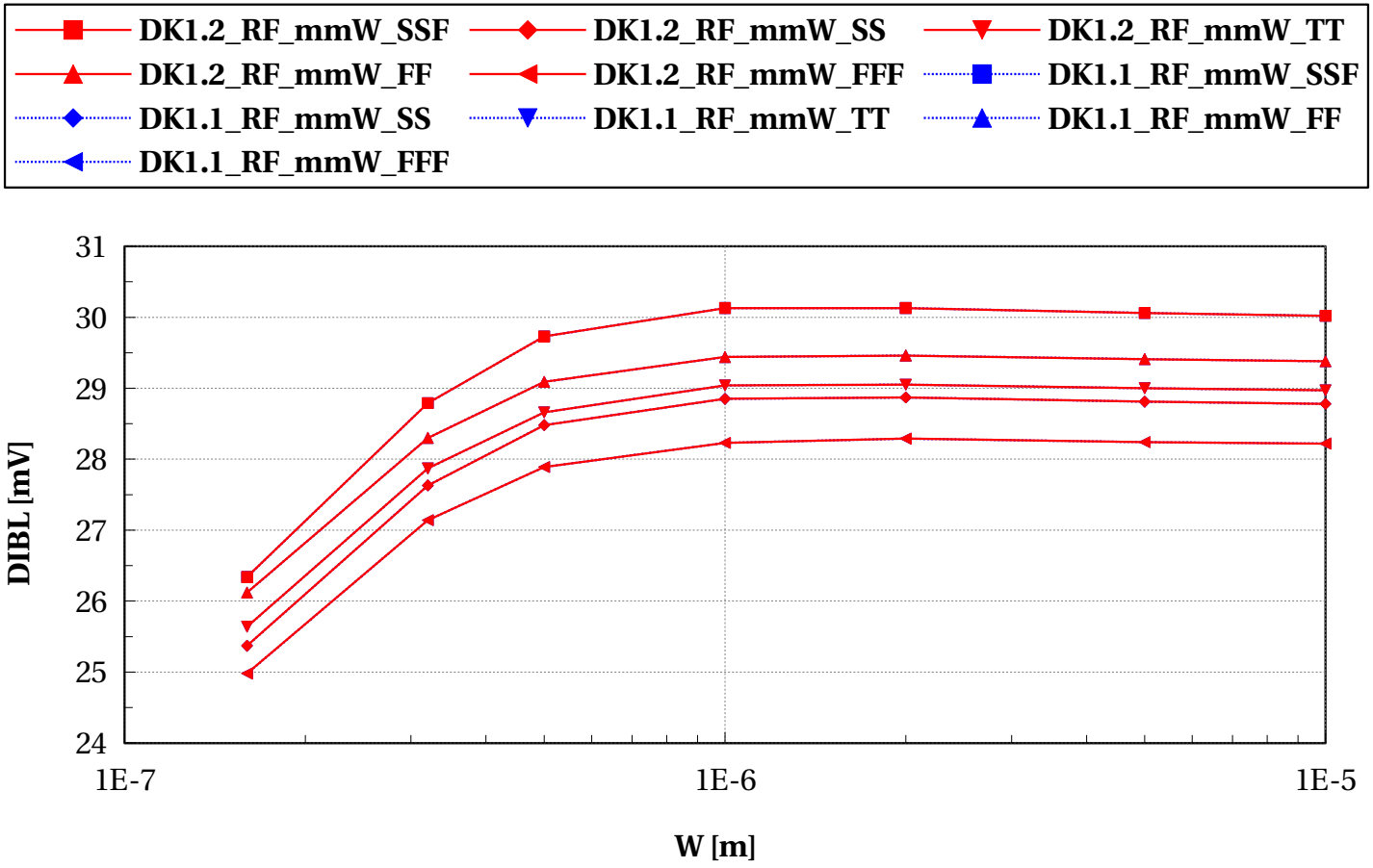
eglvtvnfet_acc, VtGmmax [mV] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



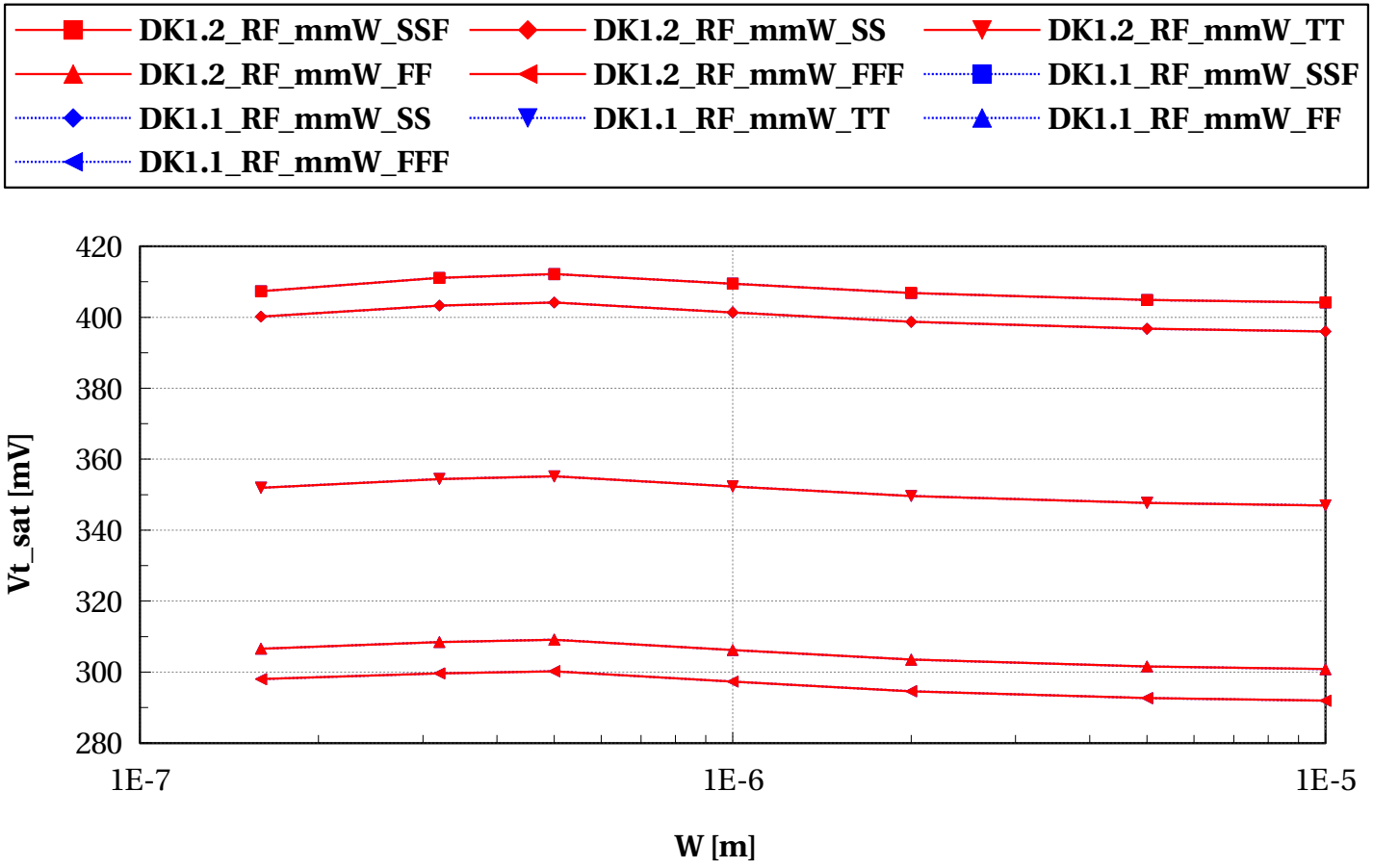
eglvtvnfet_acc, DIBL [mV] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



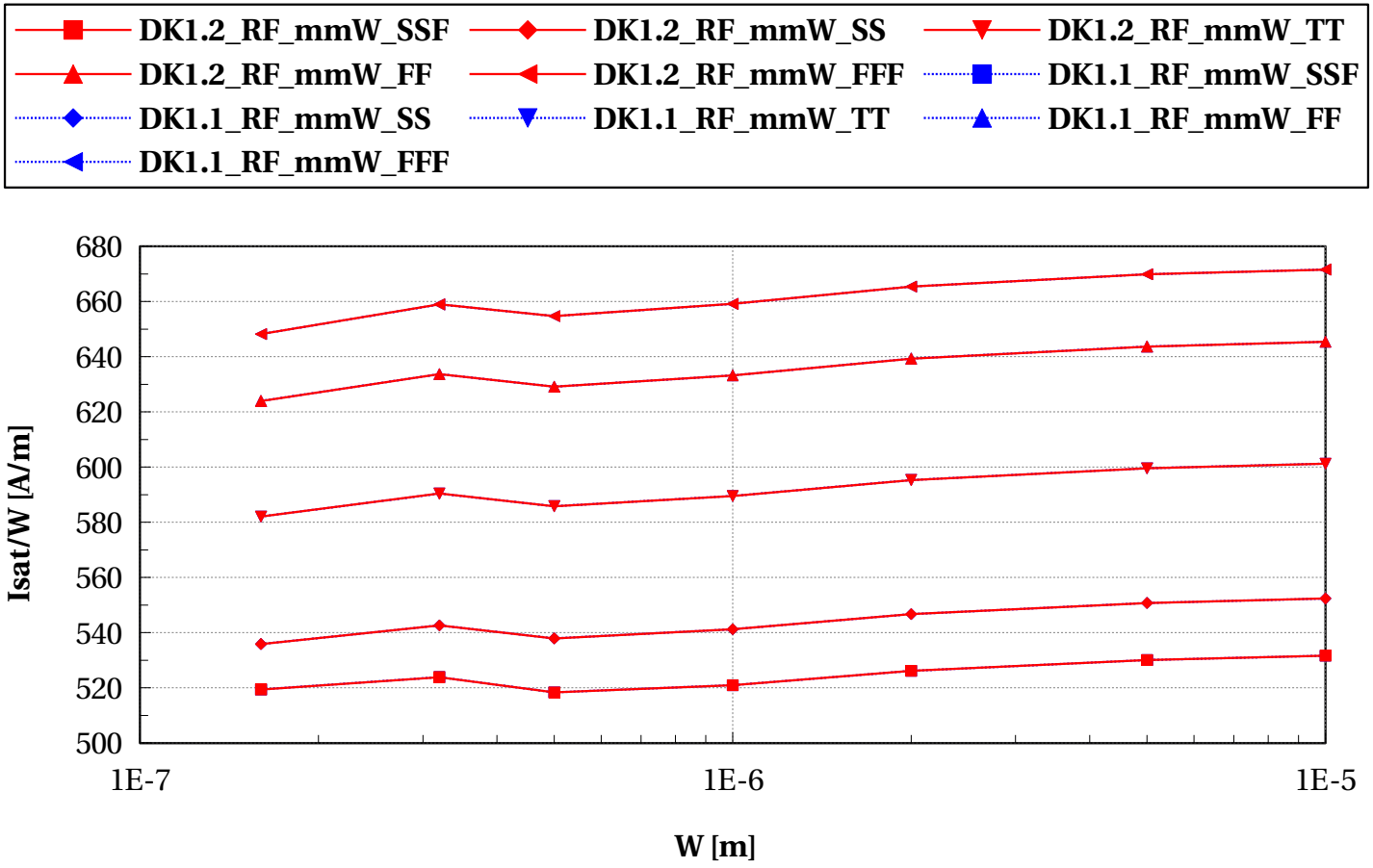
eglvtvnfet_acc, Vt_sat [mV] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



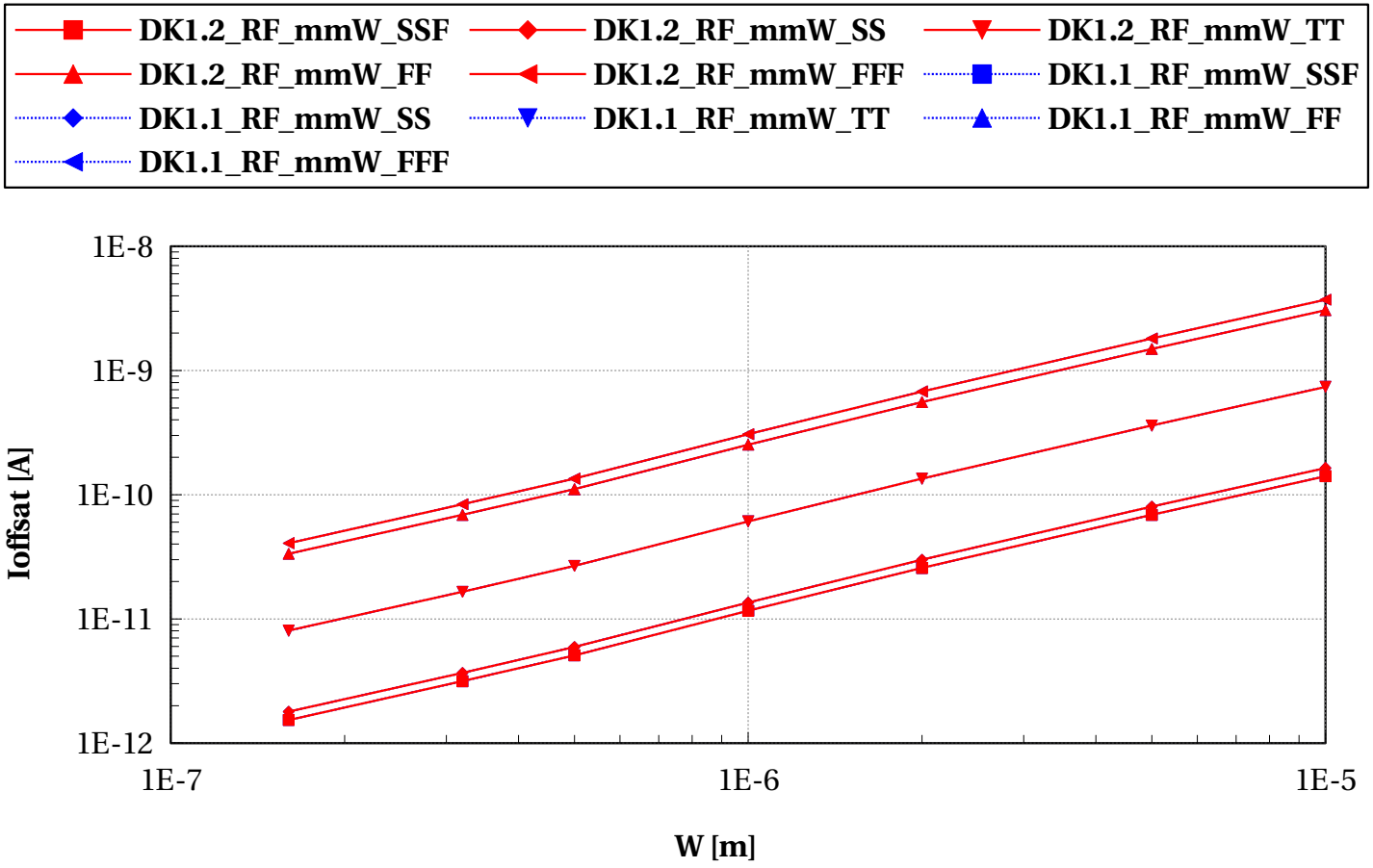
eglvtvnfet_acc, Isat/W [A/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



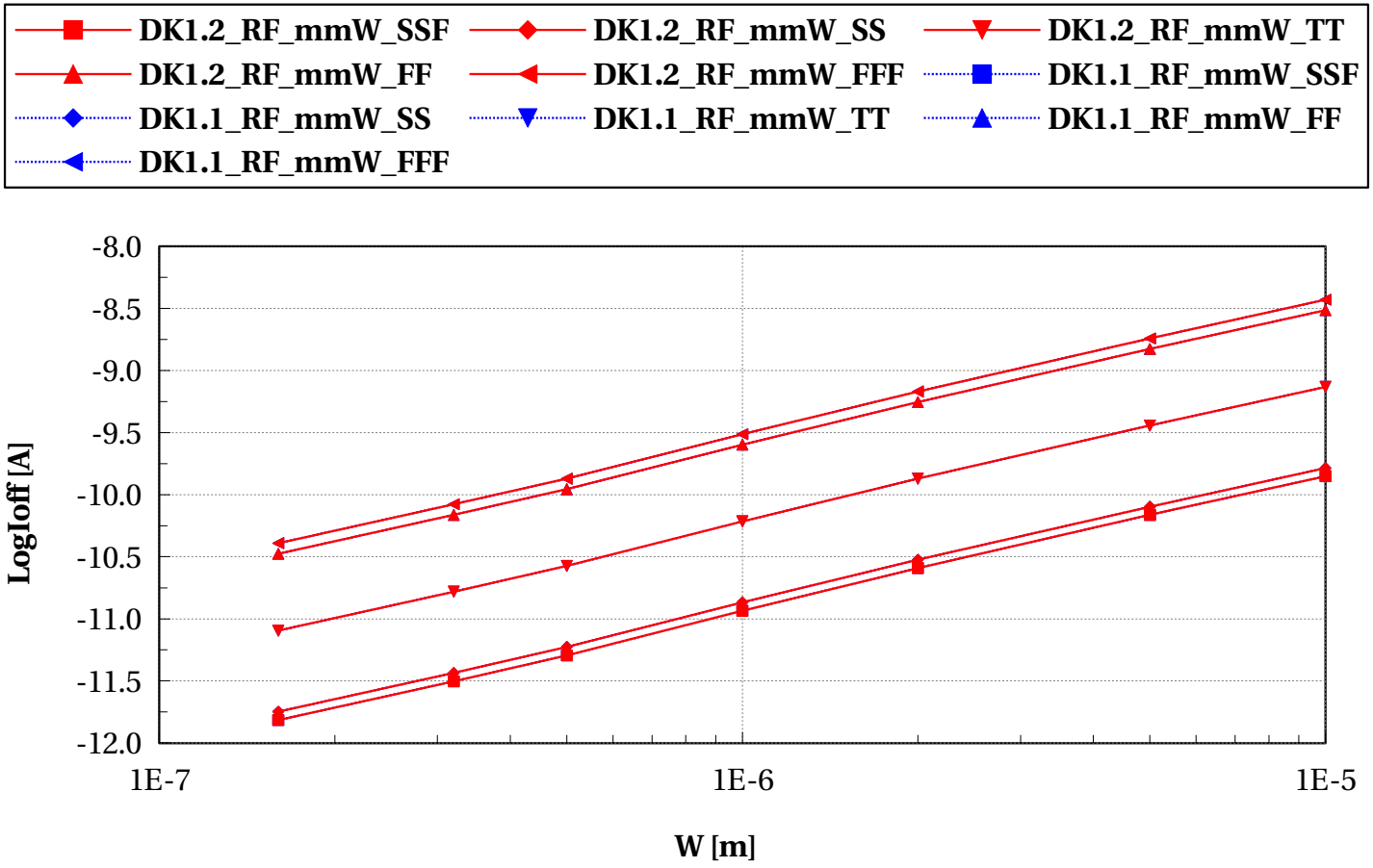
eglvtvnfet_acc, Ioffsat [A] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



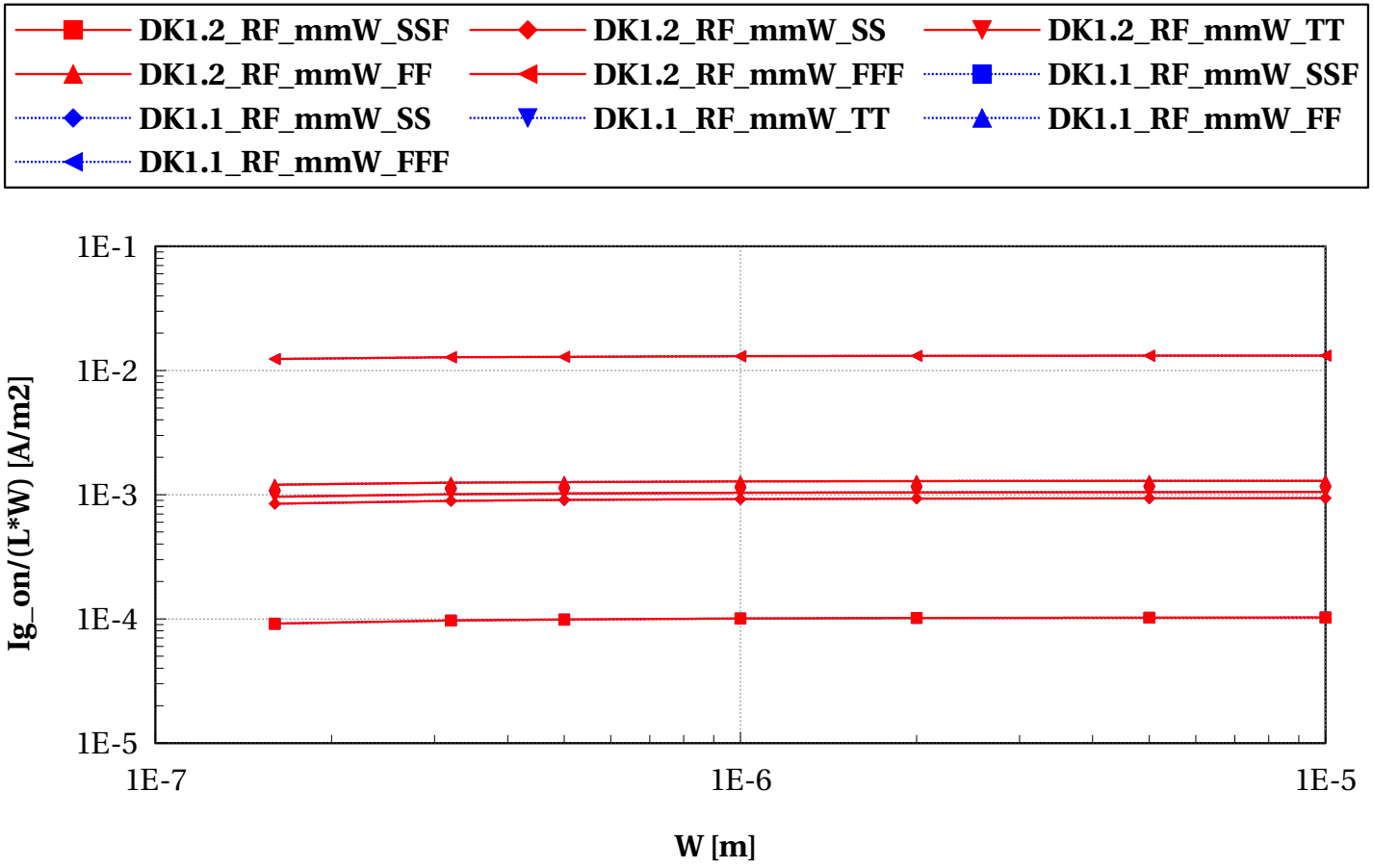
eglvtvnfet_acc, LogIoff [A] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



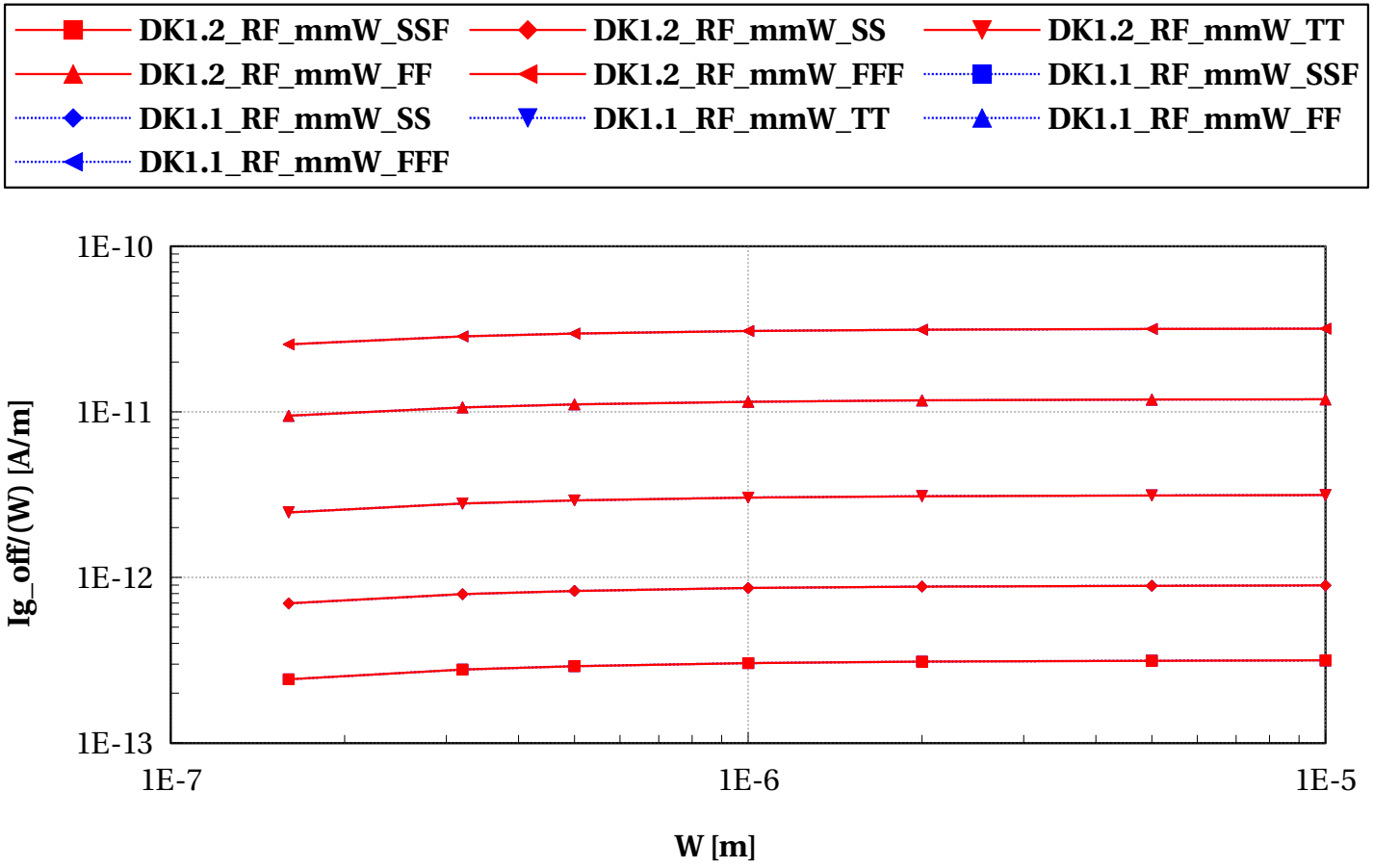
eglvtvnfet_acc, Ig_on/(L*W) [A/m2] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



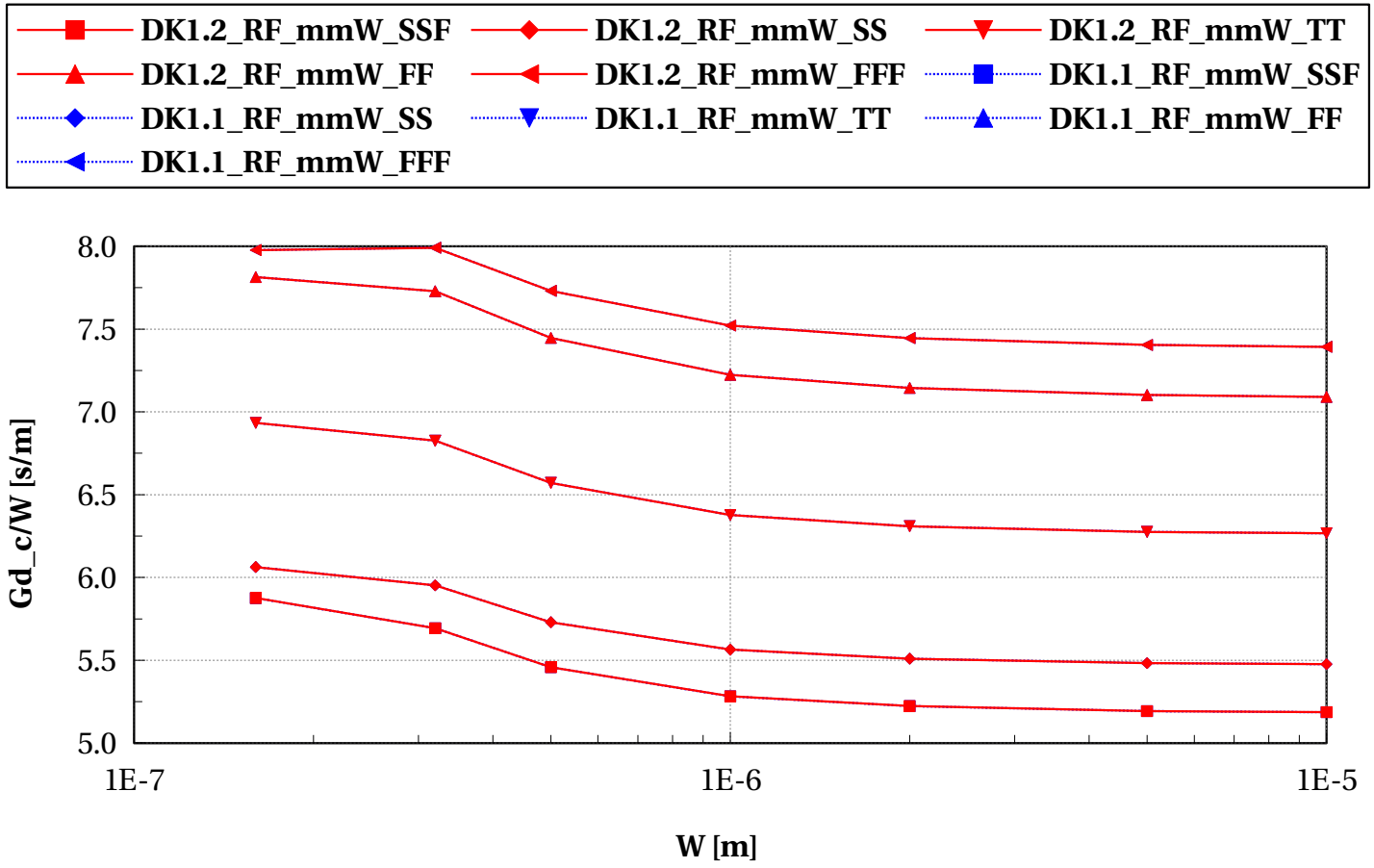
eglvtvnfet_acc, Ig_off/(W) [A/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



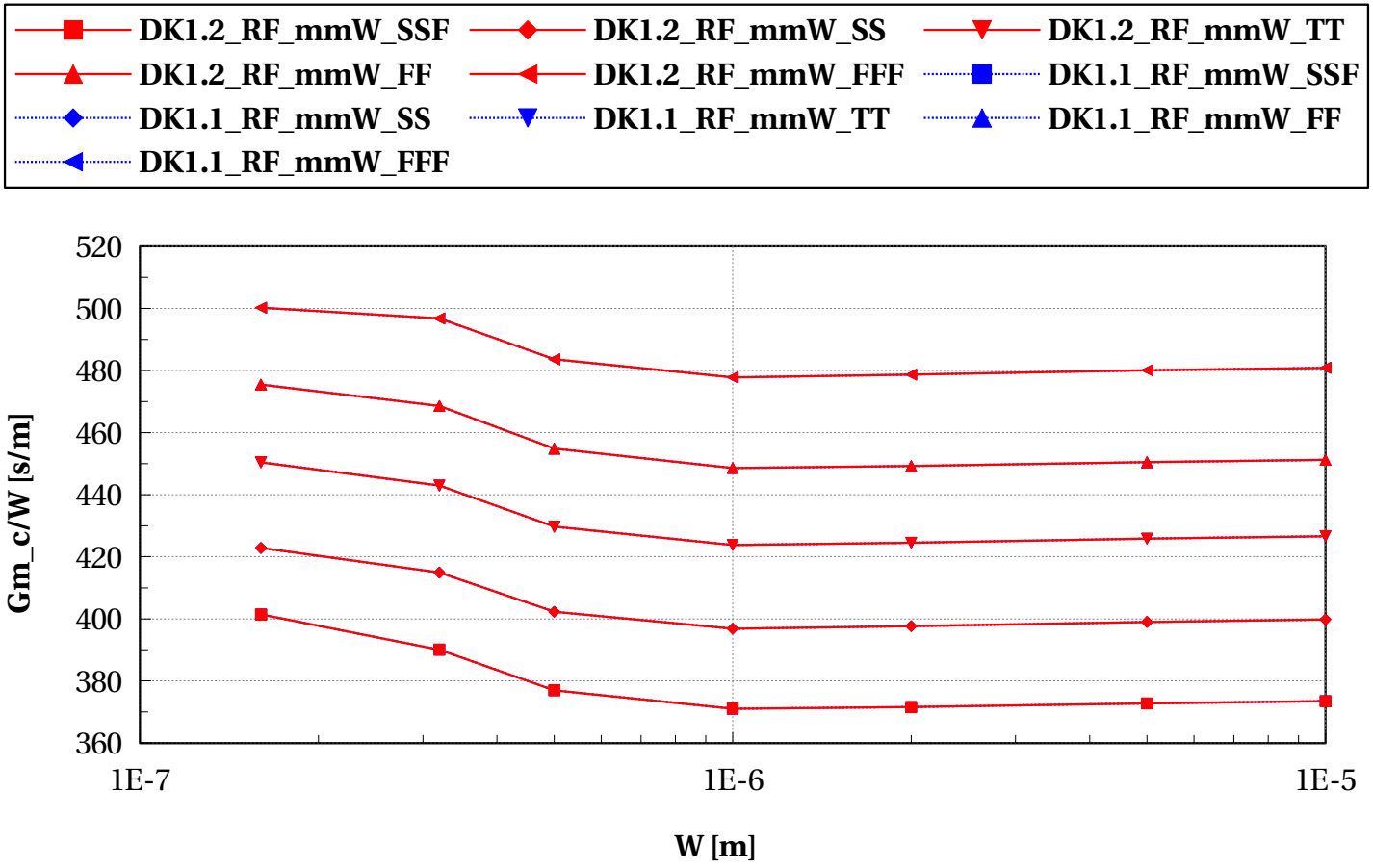
eglvtvnfet_acc, Gd_c/W [s/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



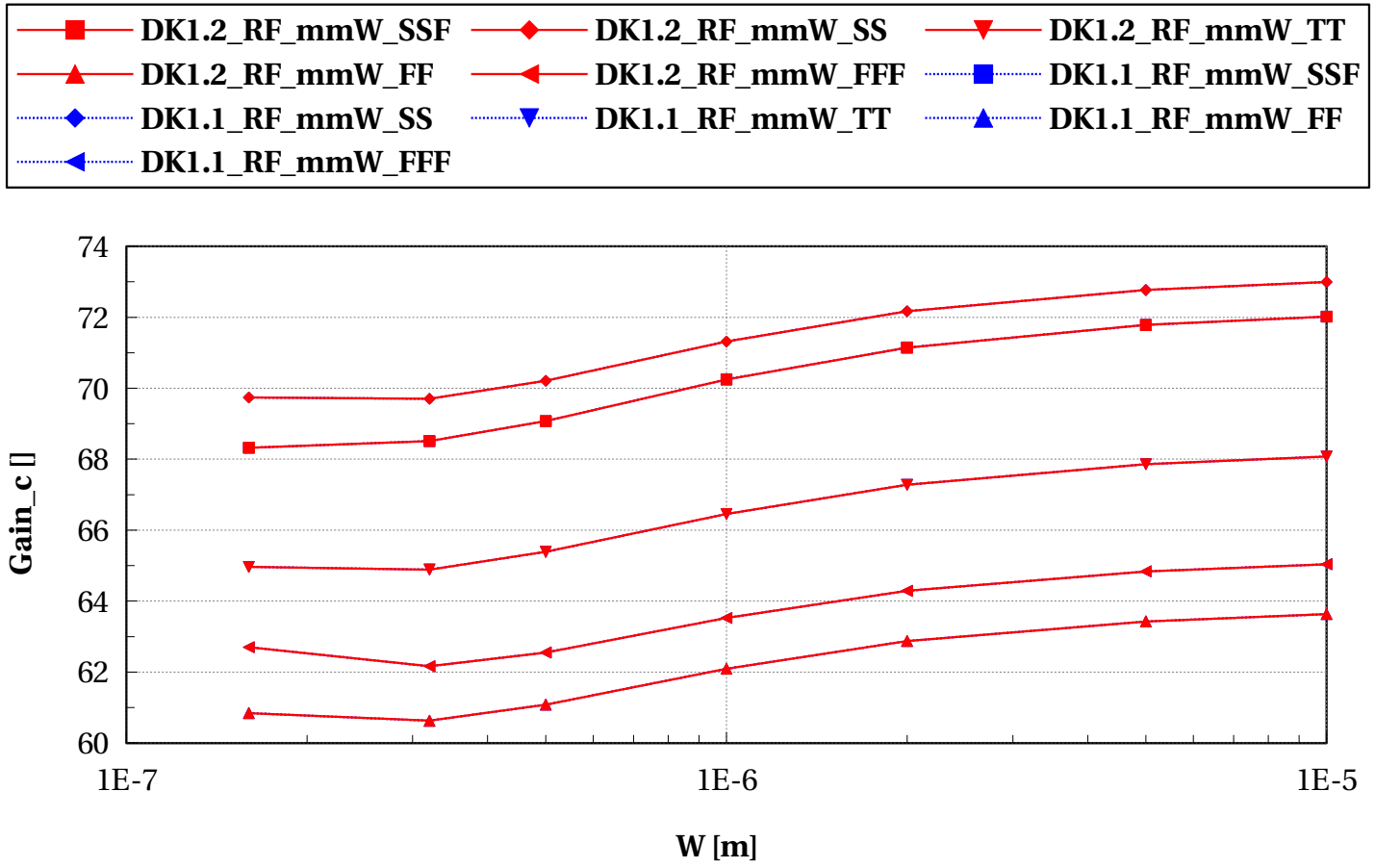
eglvtvnfet_acc, Gm_c/W [s/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



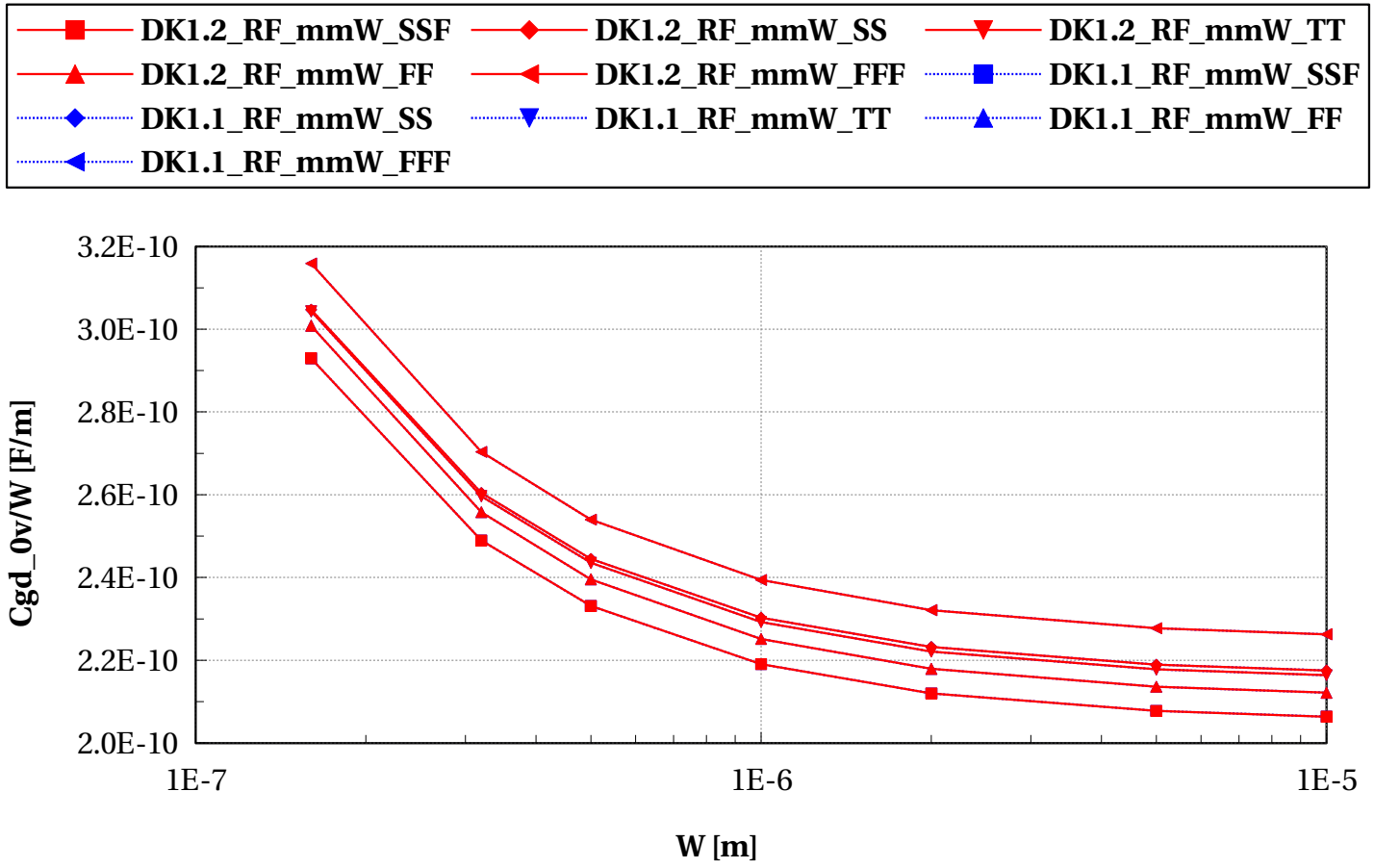
eglvtvnfet_acc, Gain_c [] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



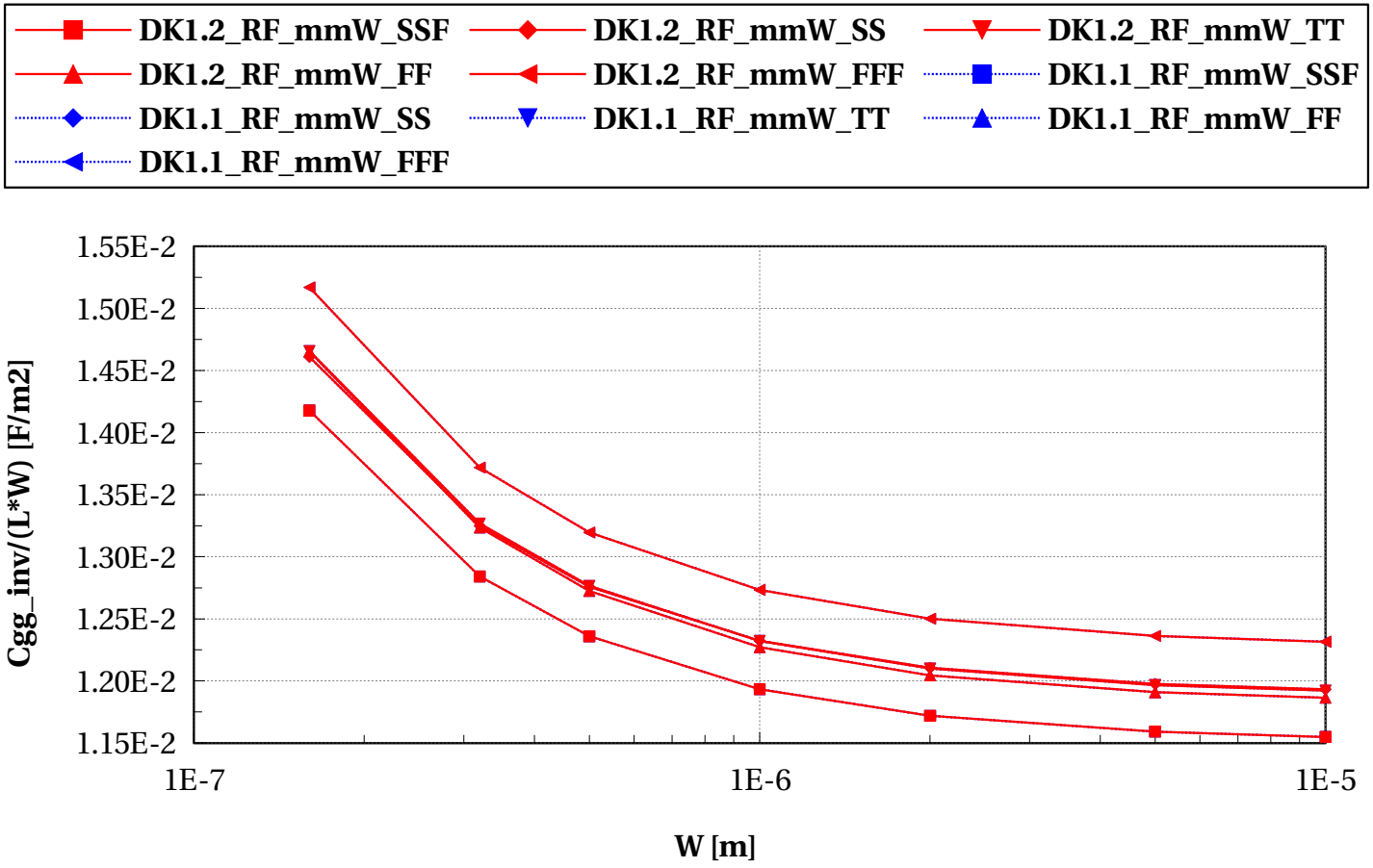
eglvtvnfet_acc, Cgd_0v/W [F/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



eglvtvnfet_acc, Cgg_inv/(L*W) [F/m2] vs W [m]

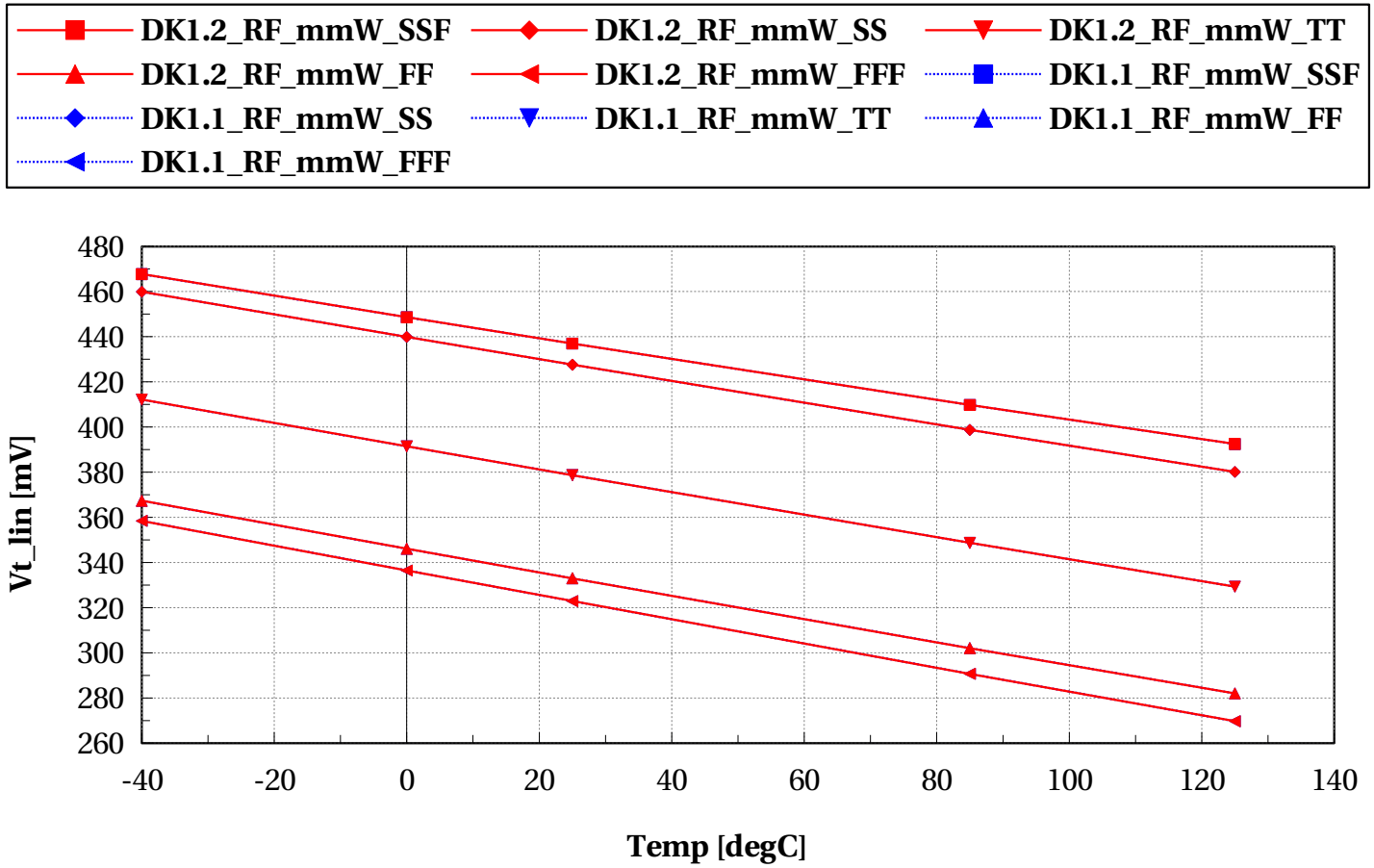
l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



Scaling versus Temp @ Vbs=0, L=0.1u

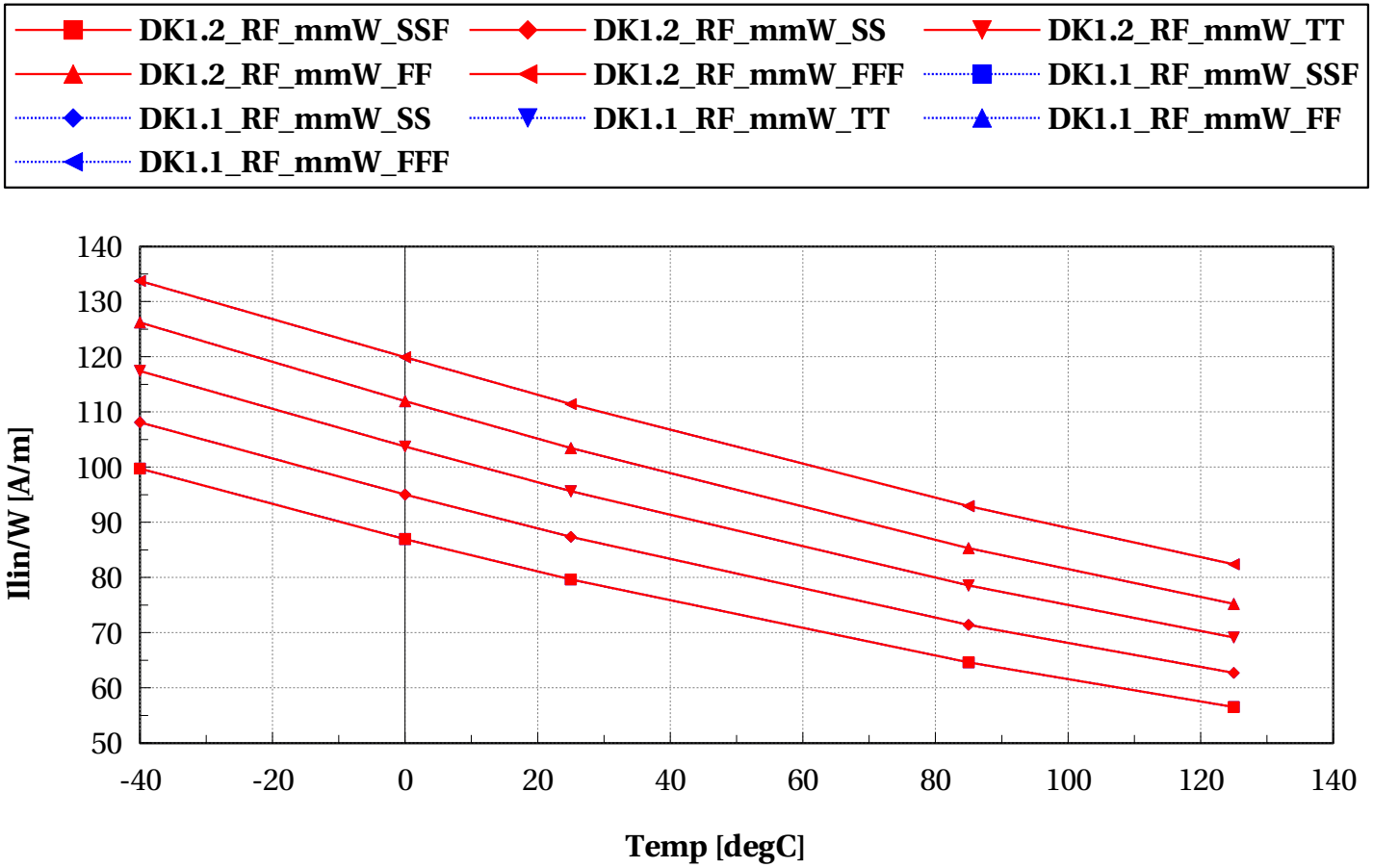
eglvtvnfet_acc, Vt_lin [mV] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



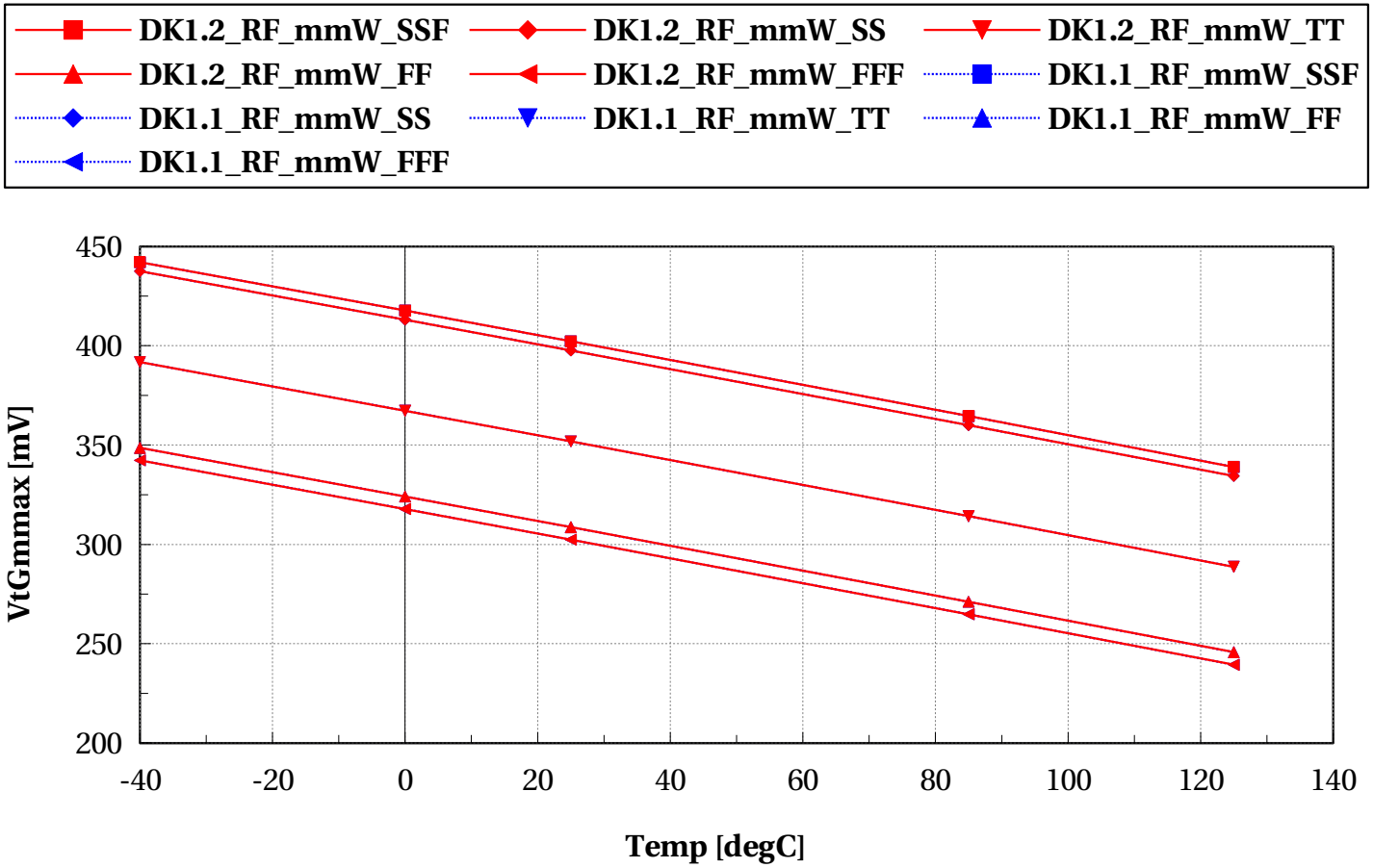
eglvtvnfet_acc, Ilin/W [A/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



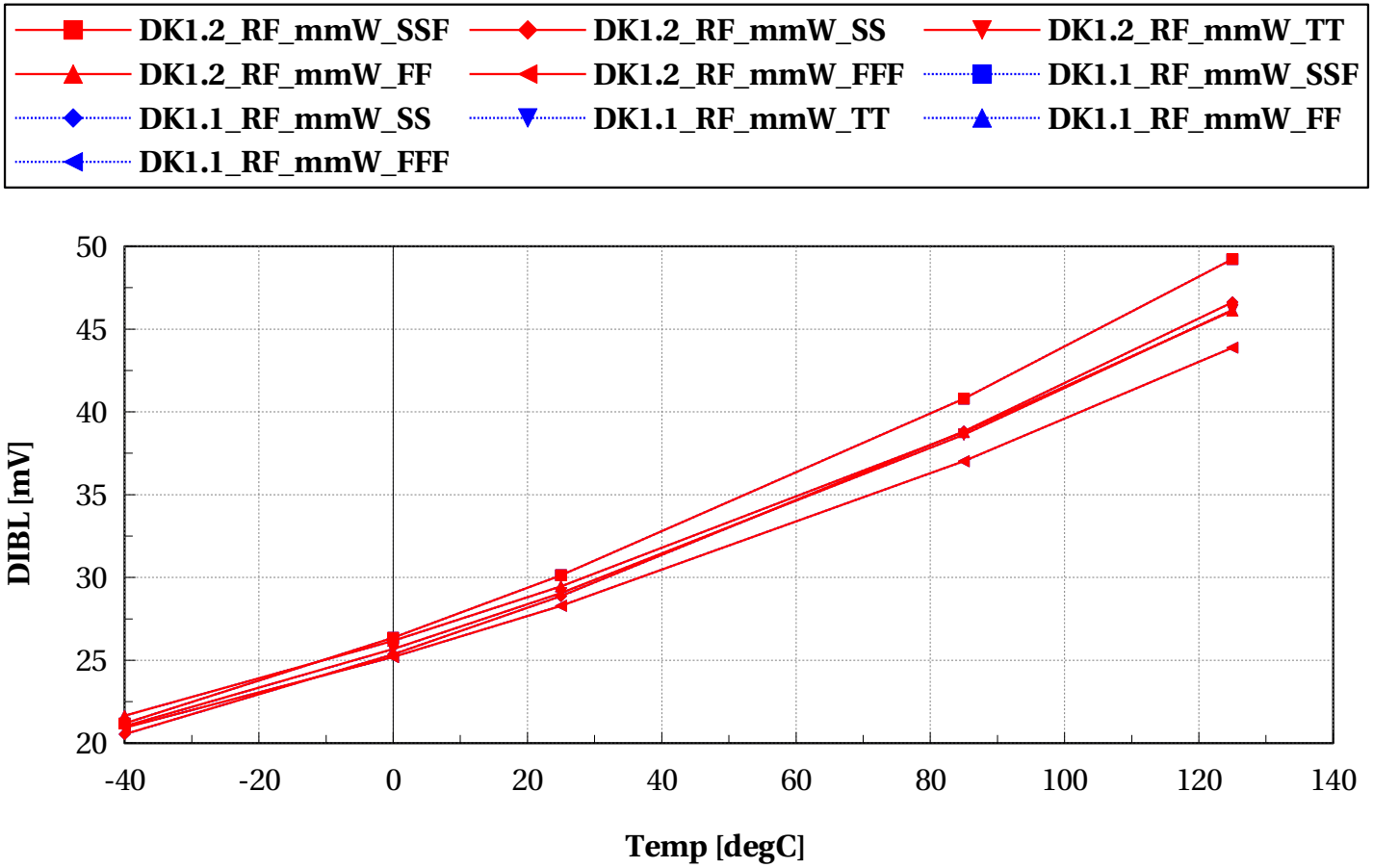
eglvtvnfet_acc, VtGmmax [mV] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



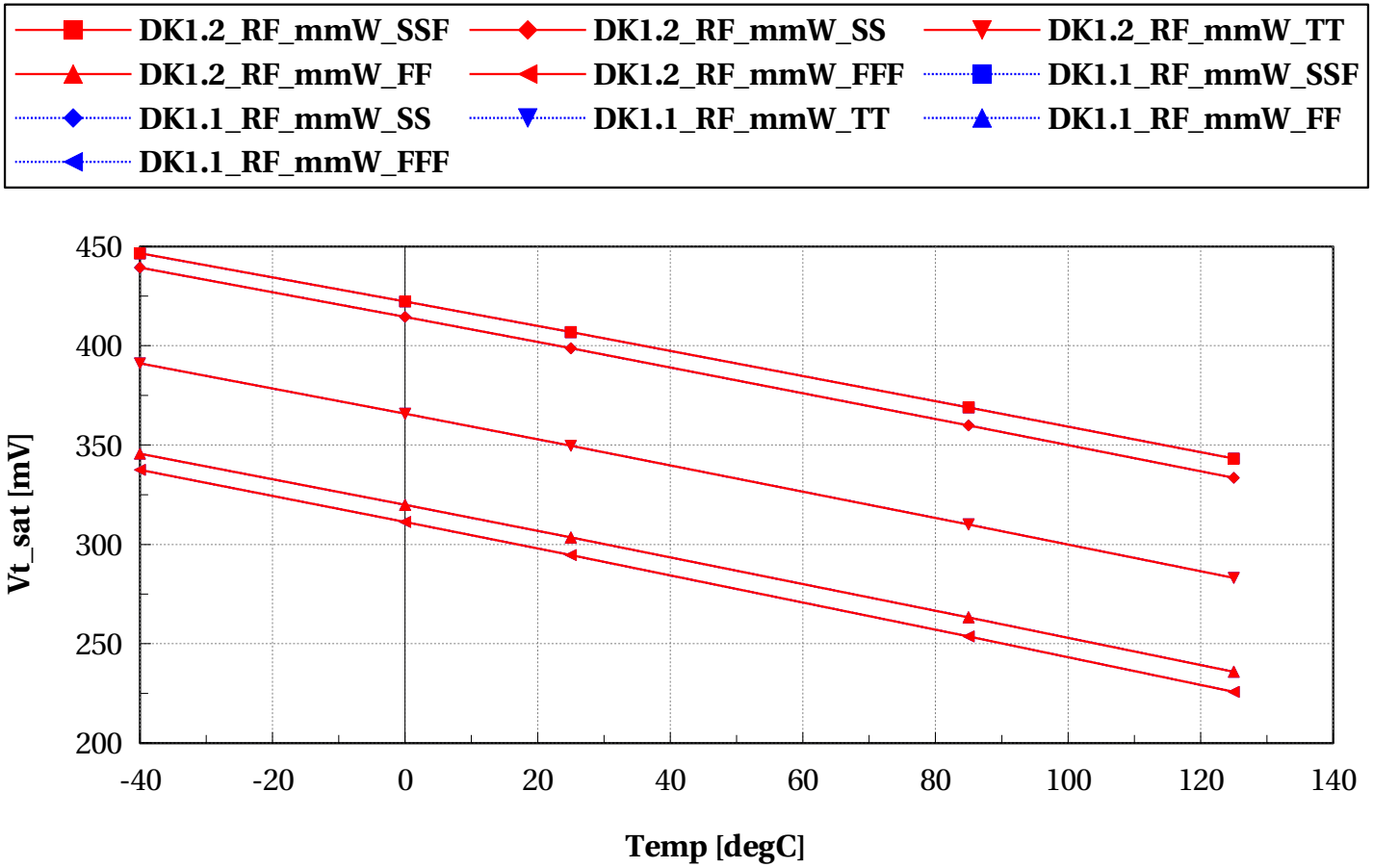
eglvtvnfet_acc, DIBL [mV] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



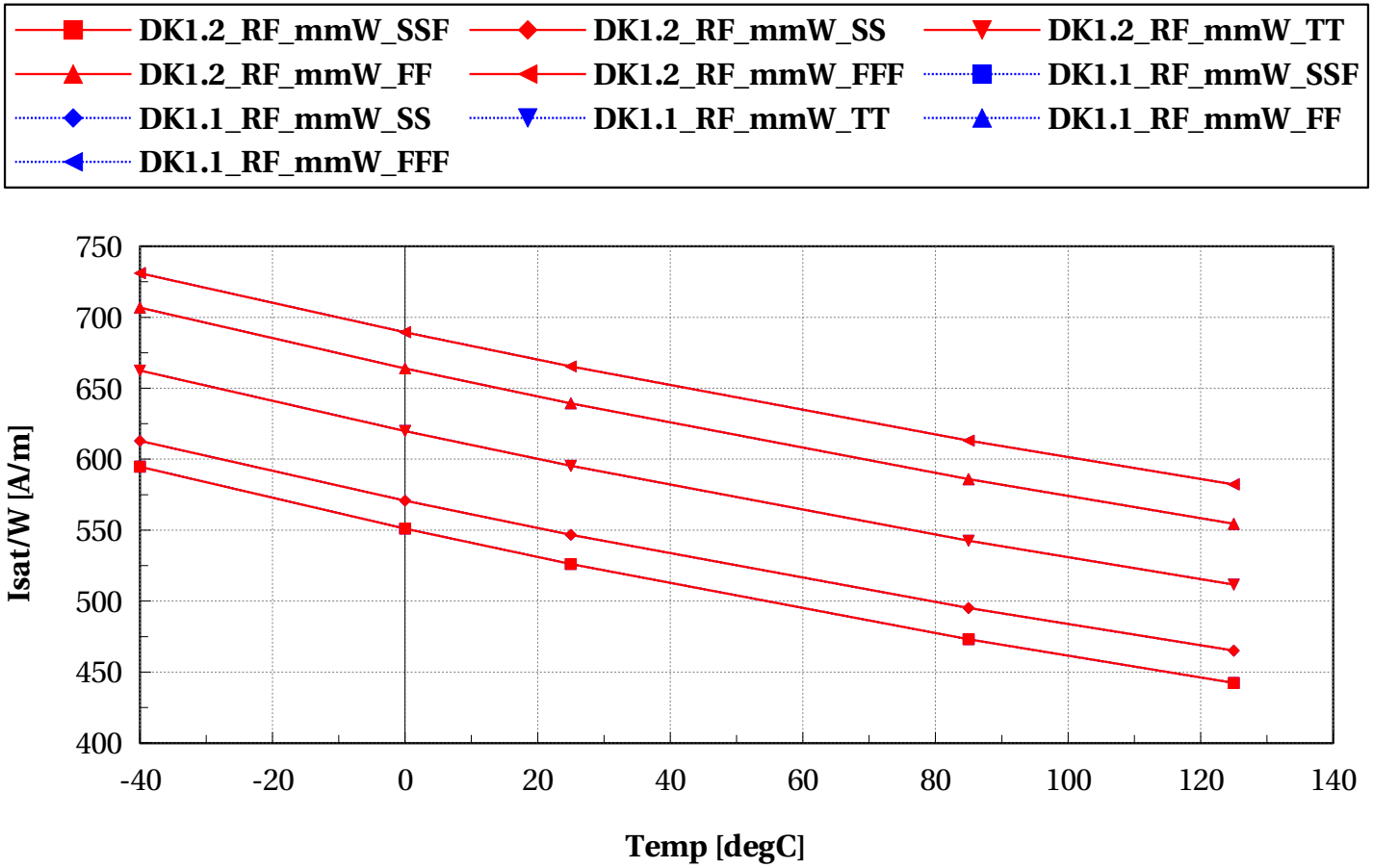
eglvtvnfet_acc, Vt_sat [mV] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



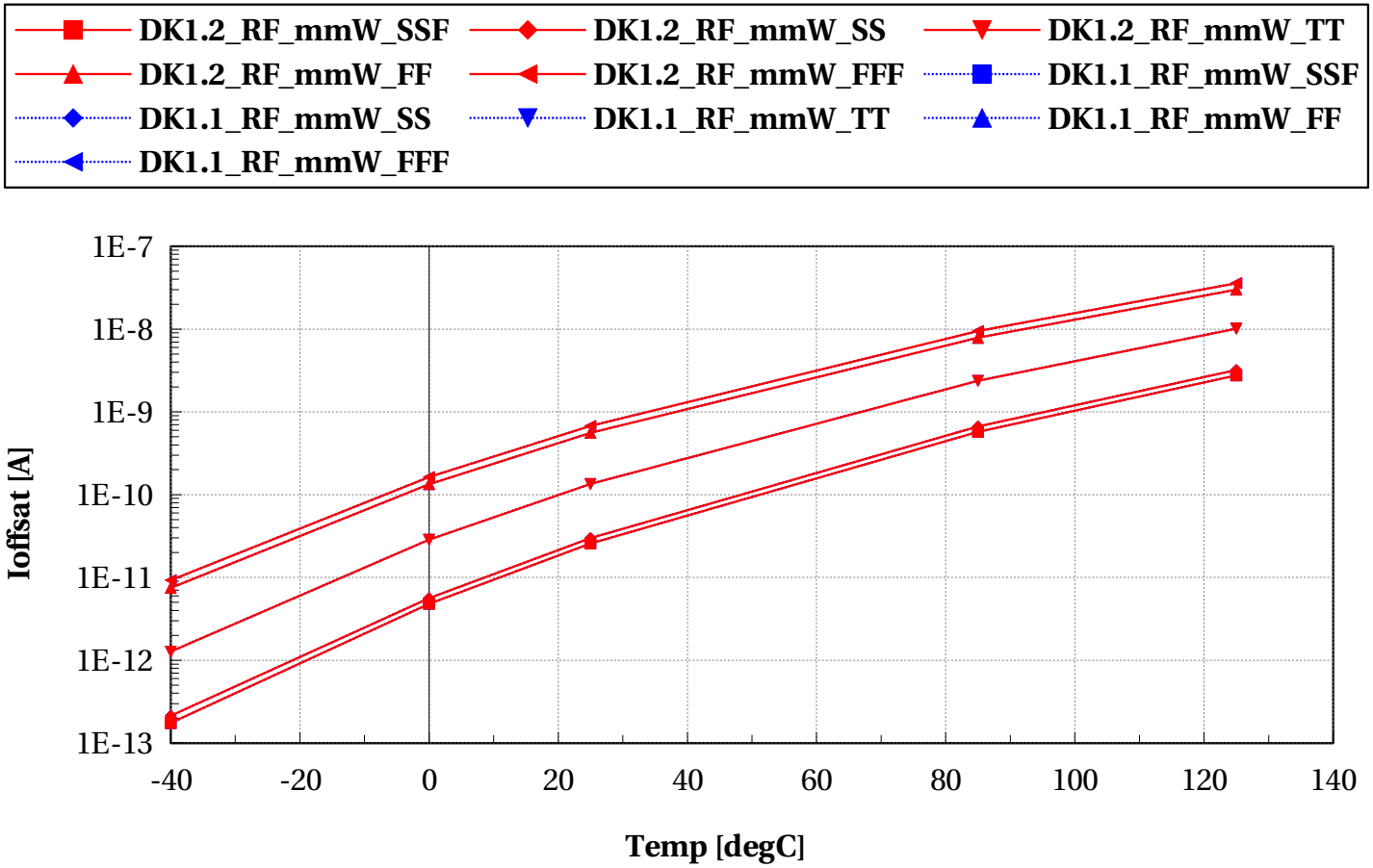
eglvtvnfet_acc, Isat/W [A/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



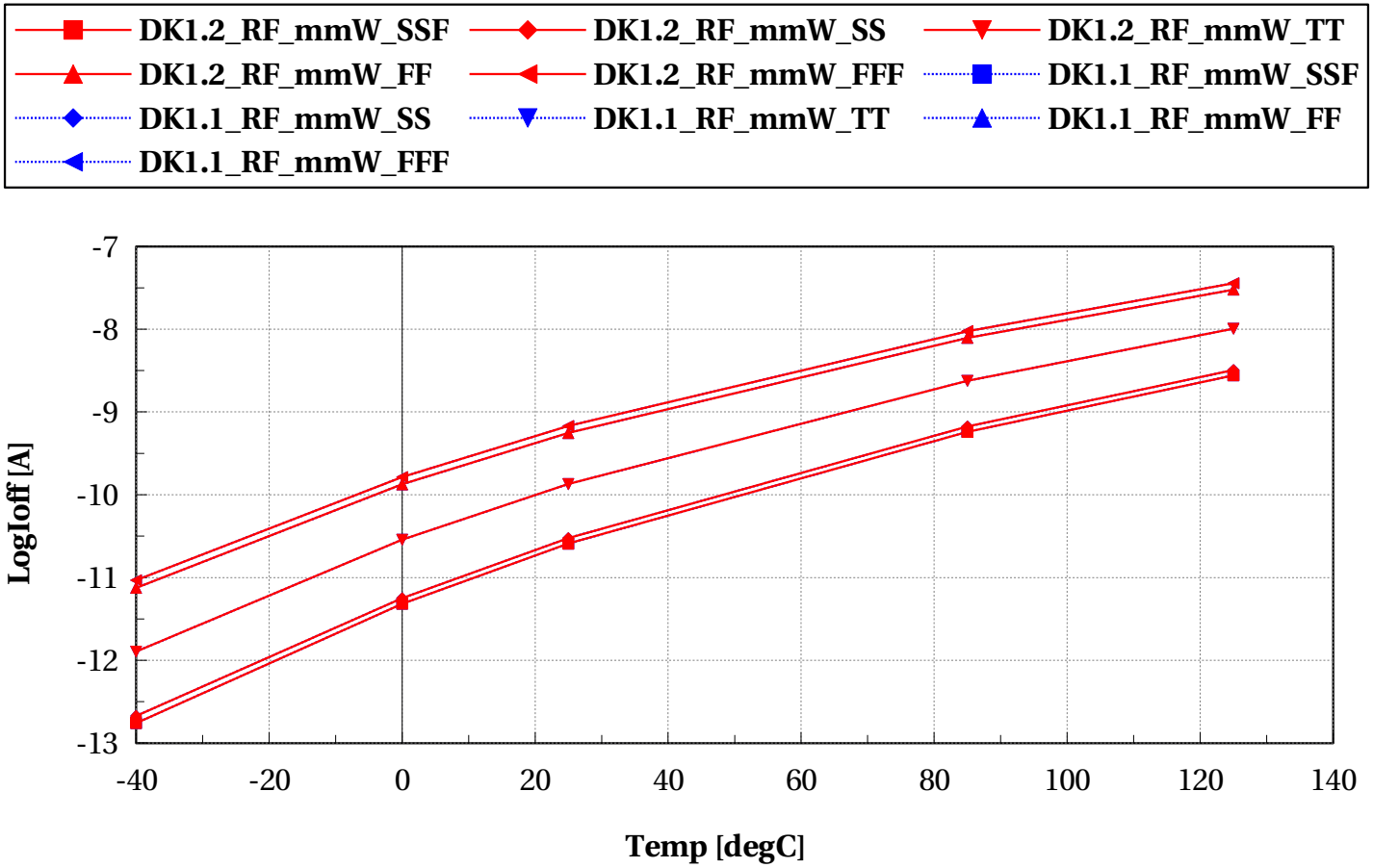
eglvtvnfet_acc, Ioffsat [A] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



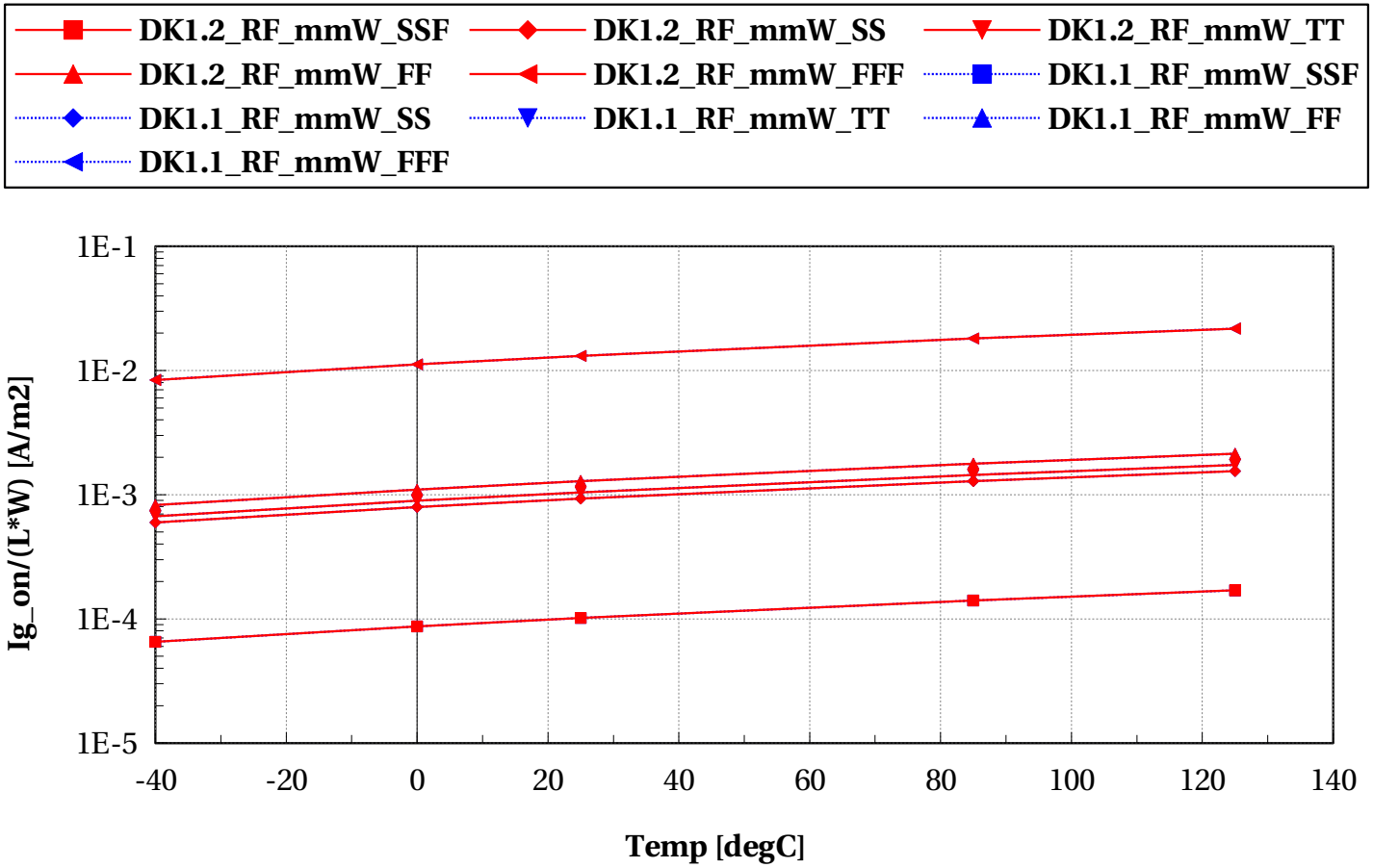
eglvtvnfet_acc, LogIoff [A] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



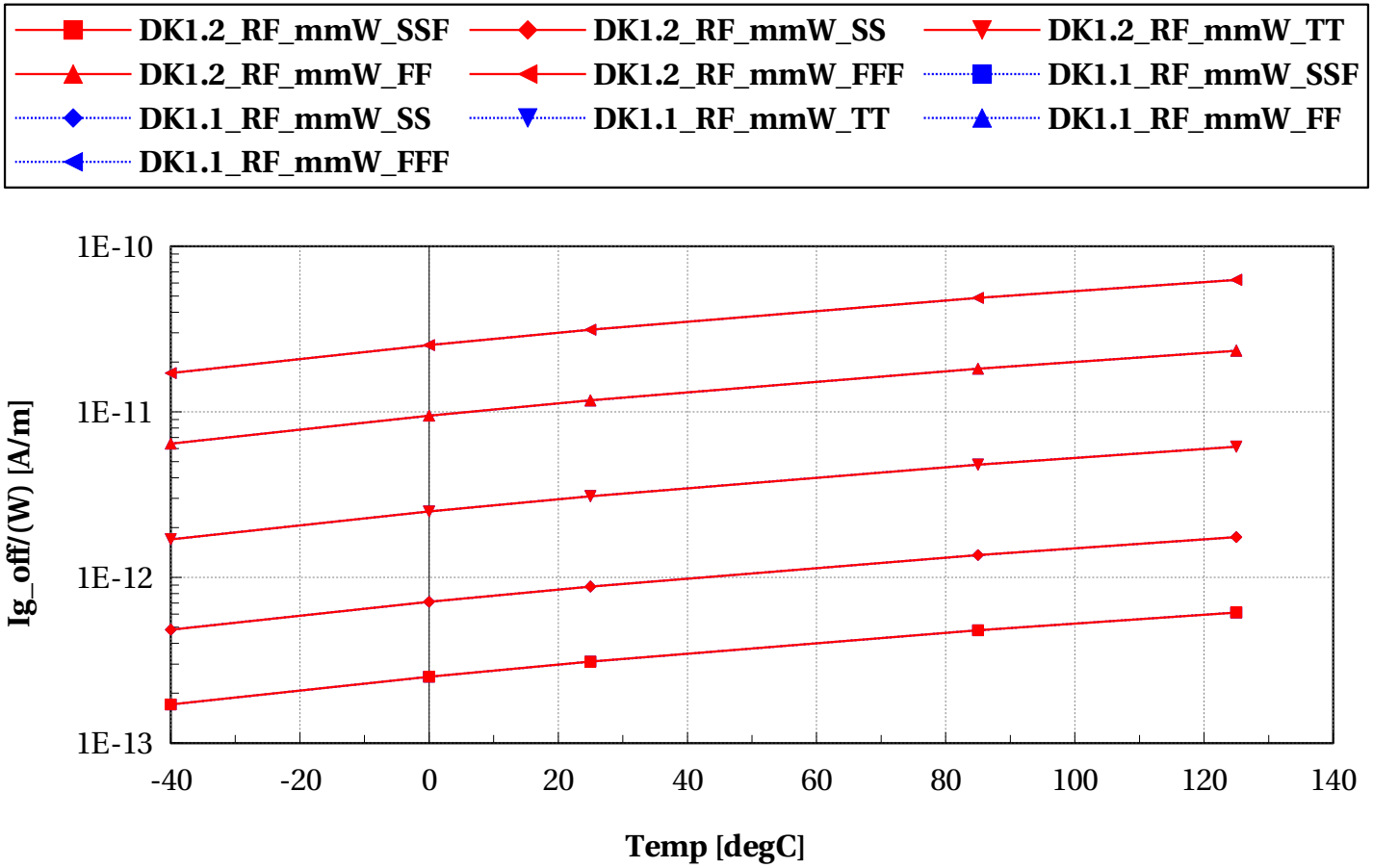
eglvtvnfet_acc, Ig_on/(L*W) [A/m2] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



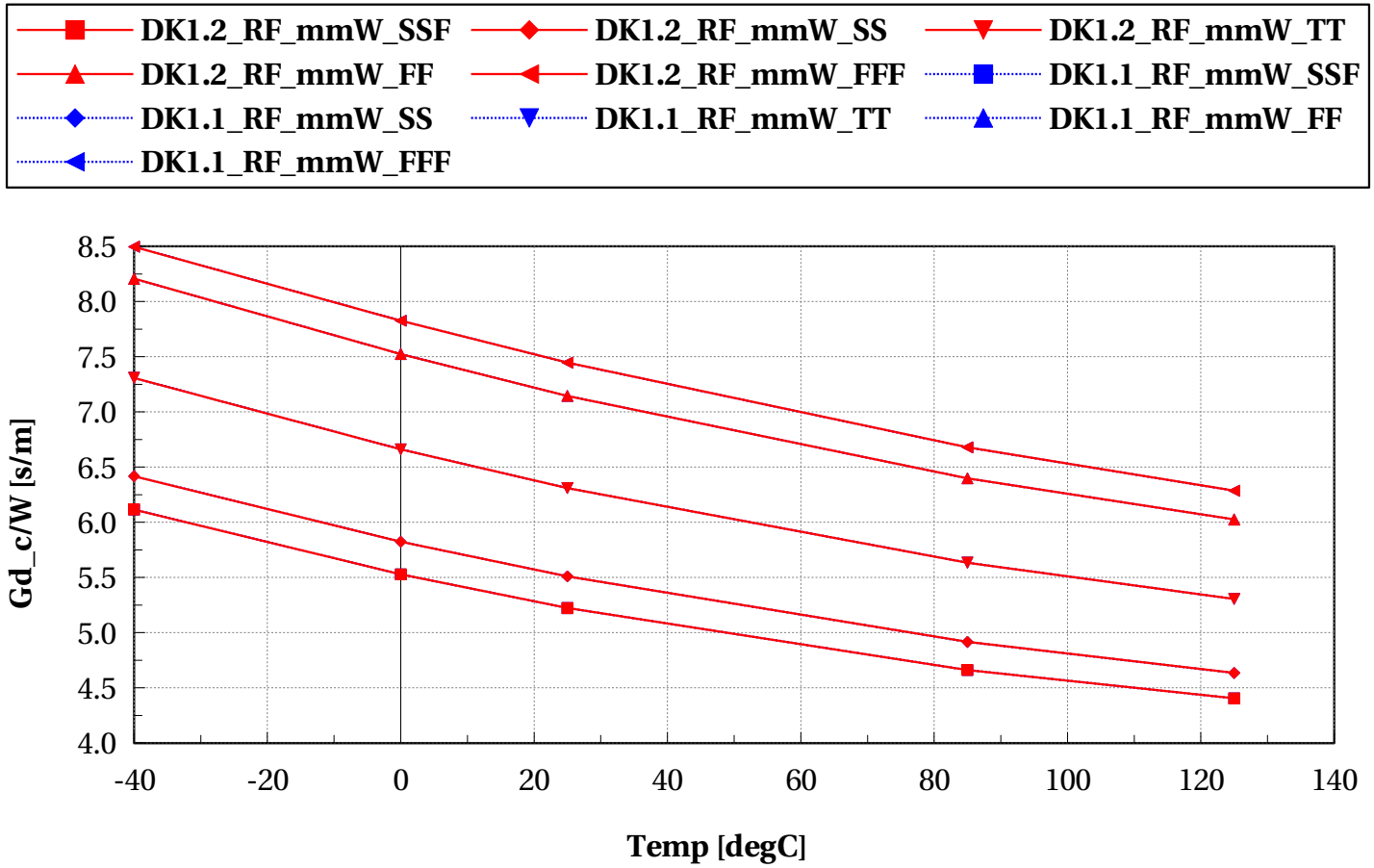
eglvtvnfet_acc, Ig_off/(W) [A/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



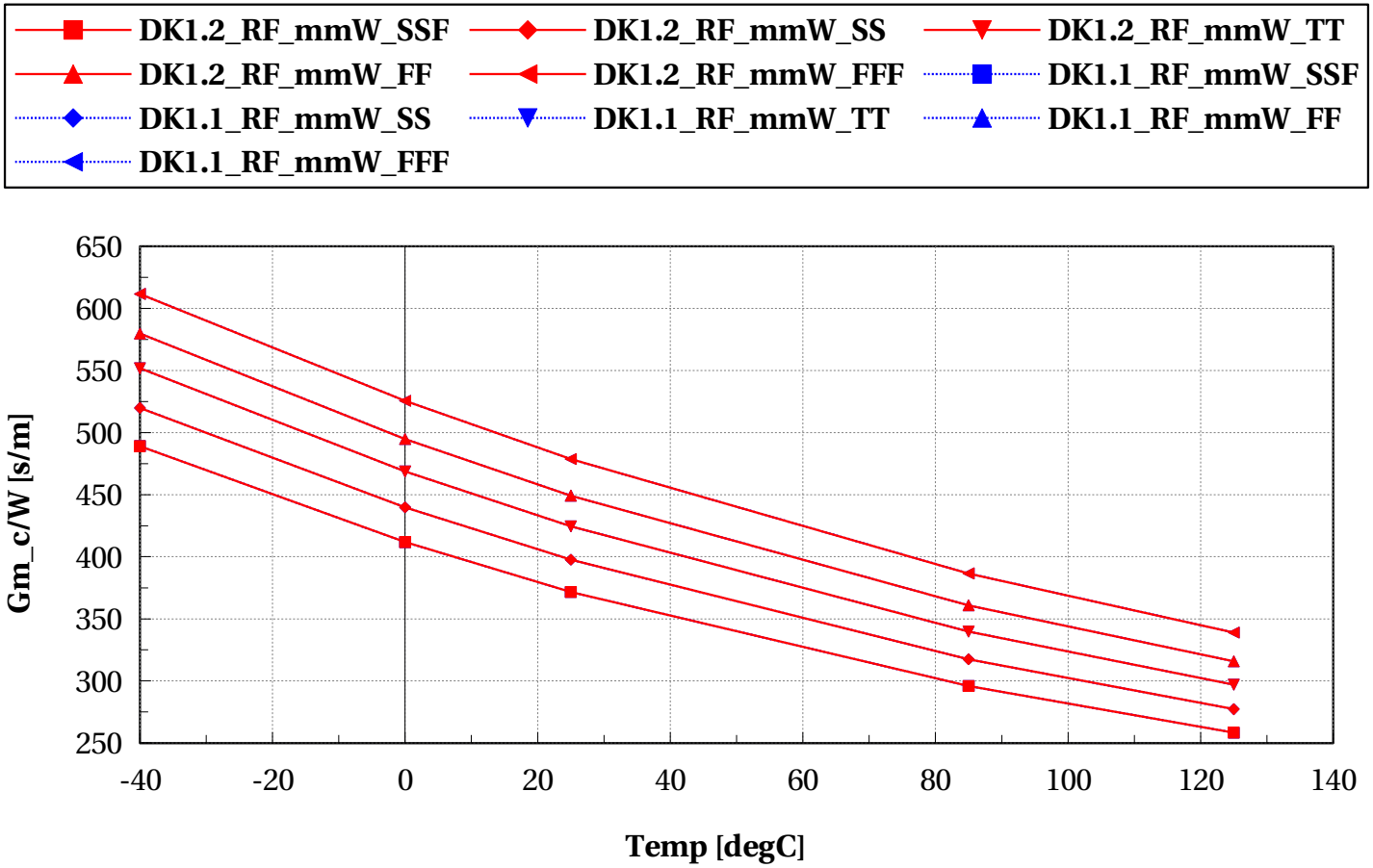
eglvtvnfet_acc, Gd_c/W [s/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



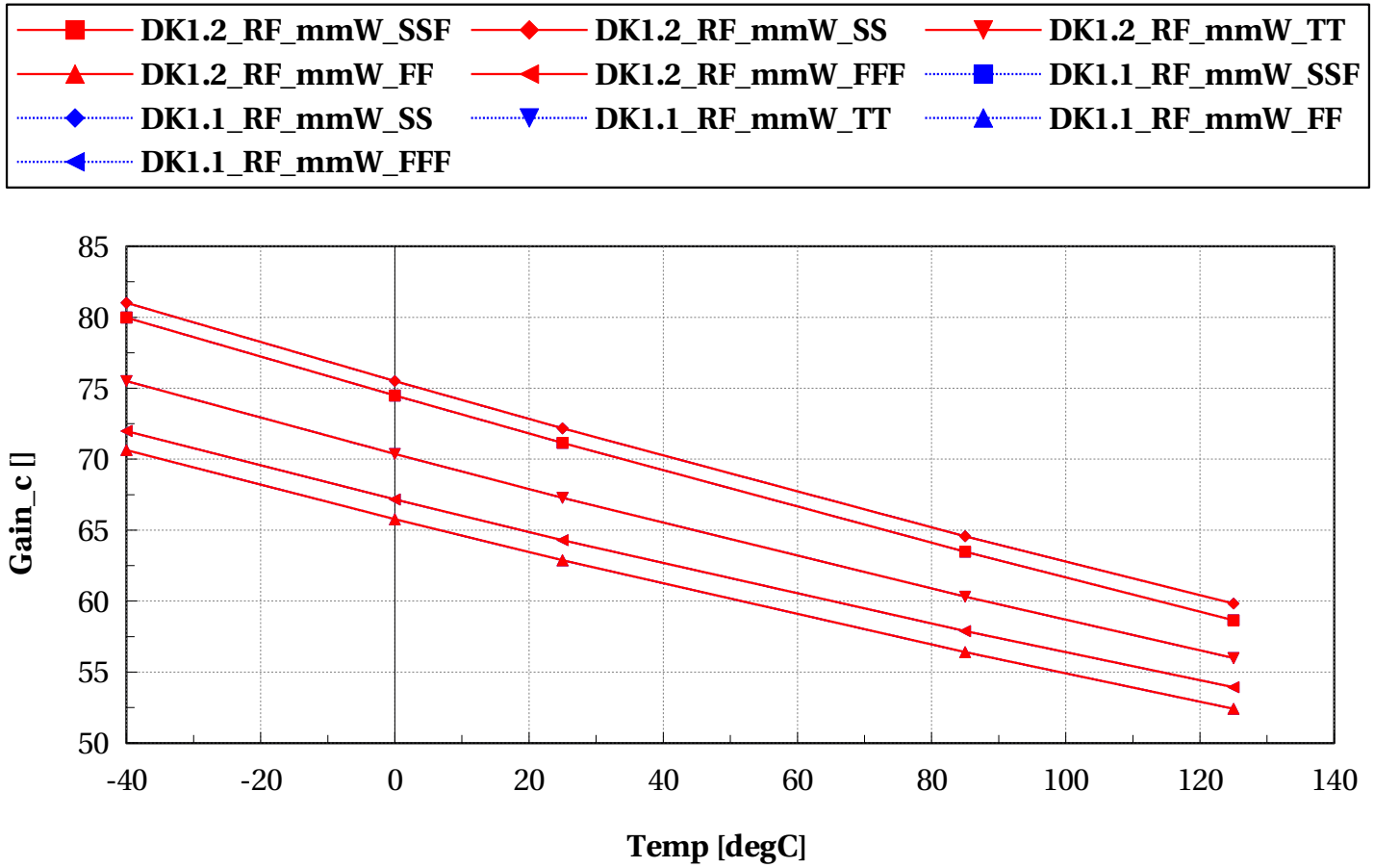
eglvtvnfet_acc, Gm_c/W [s/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



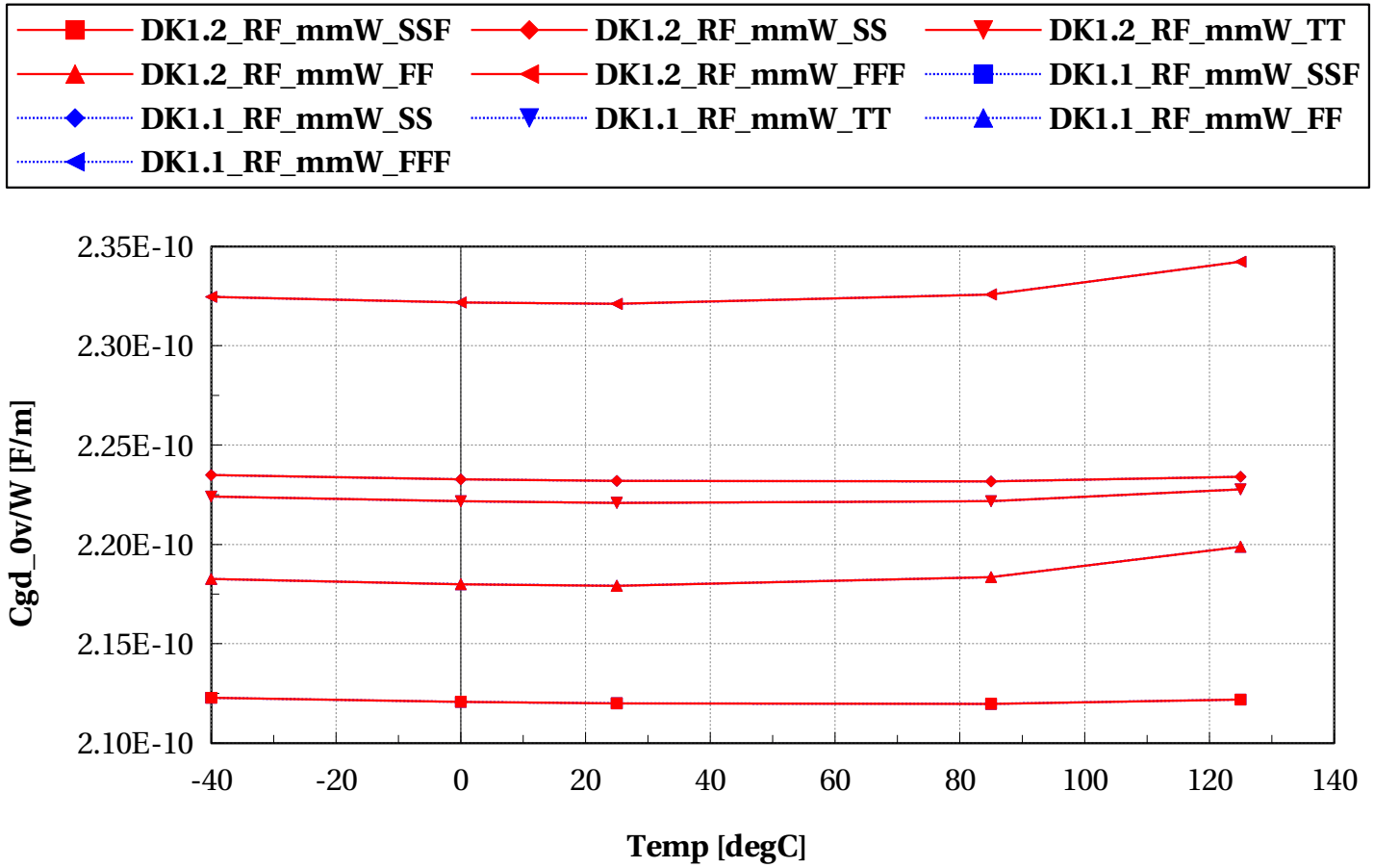
eglvtvnfet_acc, Gain_c [] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



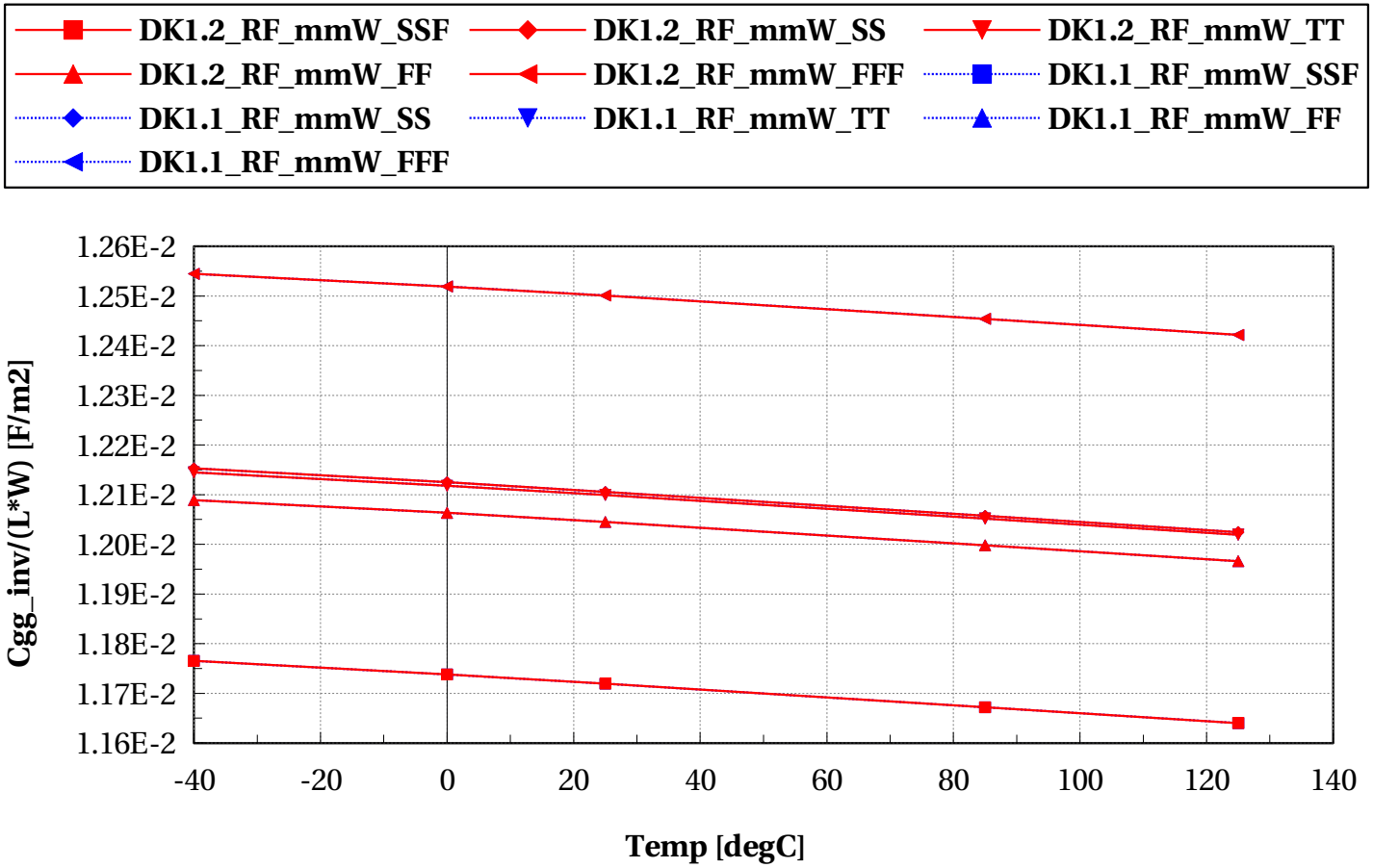
eglvtvnfet_acc, Cgd_0v/W [F/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



eglvtvnfet_acc, Cgg_inv/(L*W) [F/m2] vs Temp [degC]

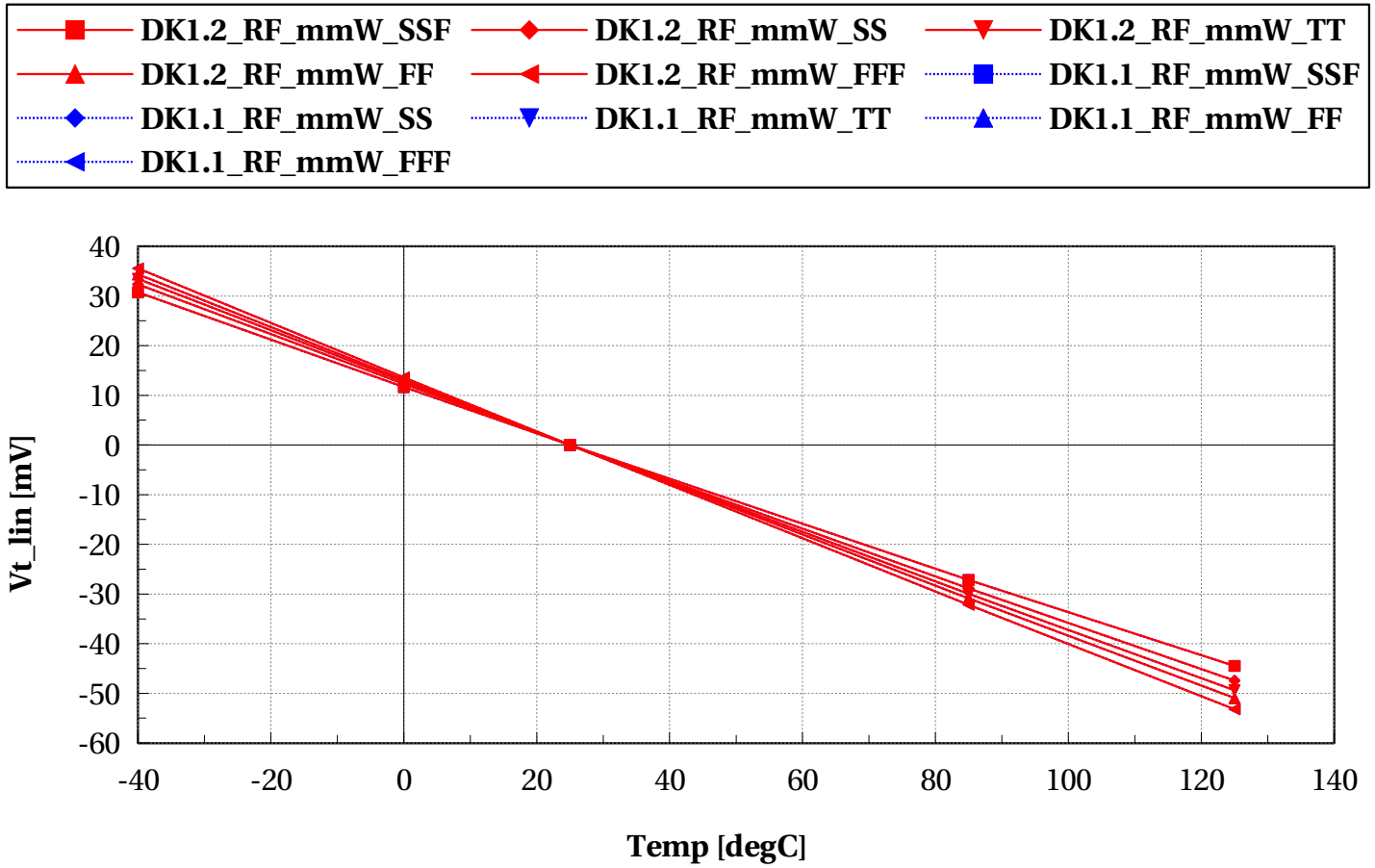
Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



Normalized scaling versus Temp @ Vbs=0, L=0.1u

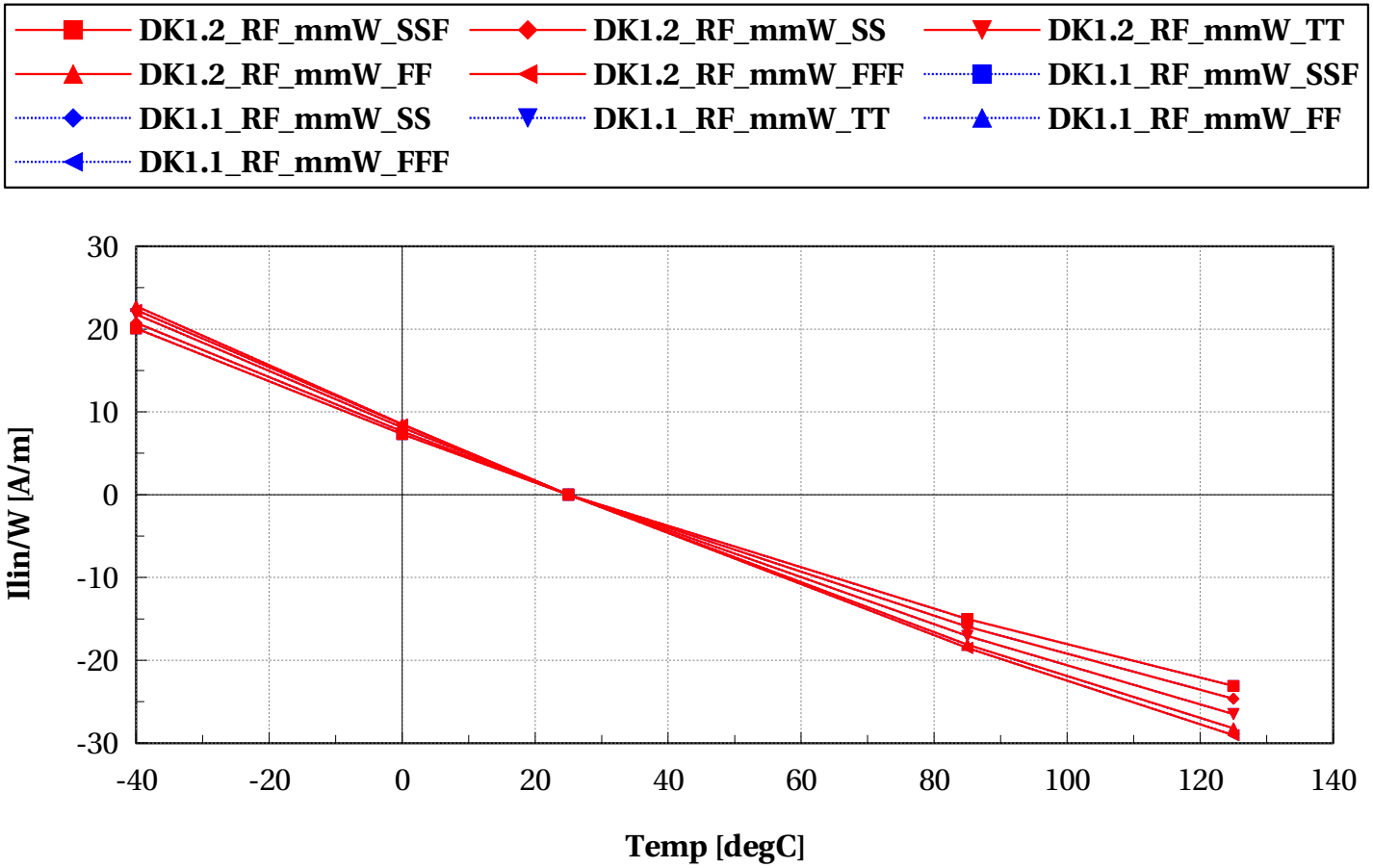
eglvtvnfet_acc, Vt_lin [mV] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



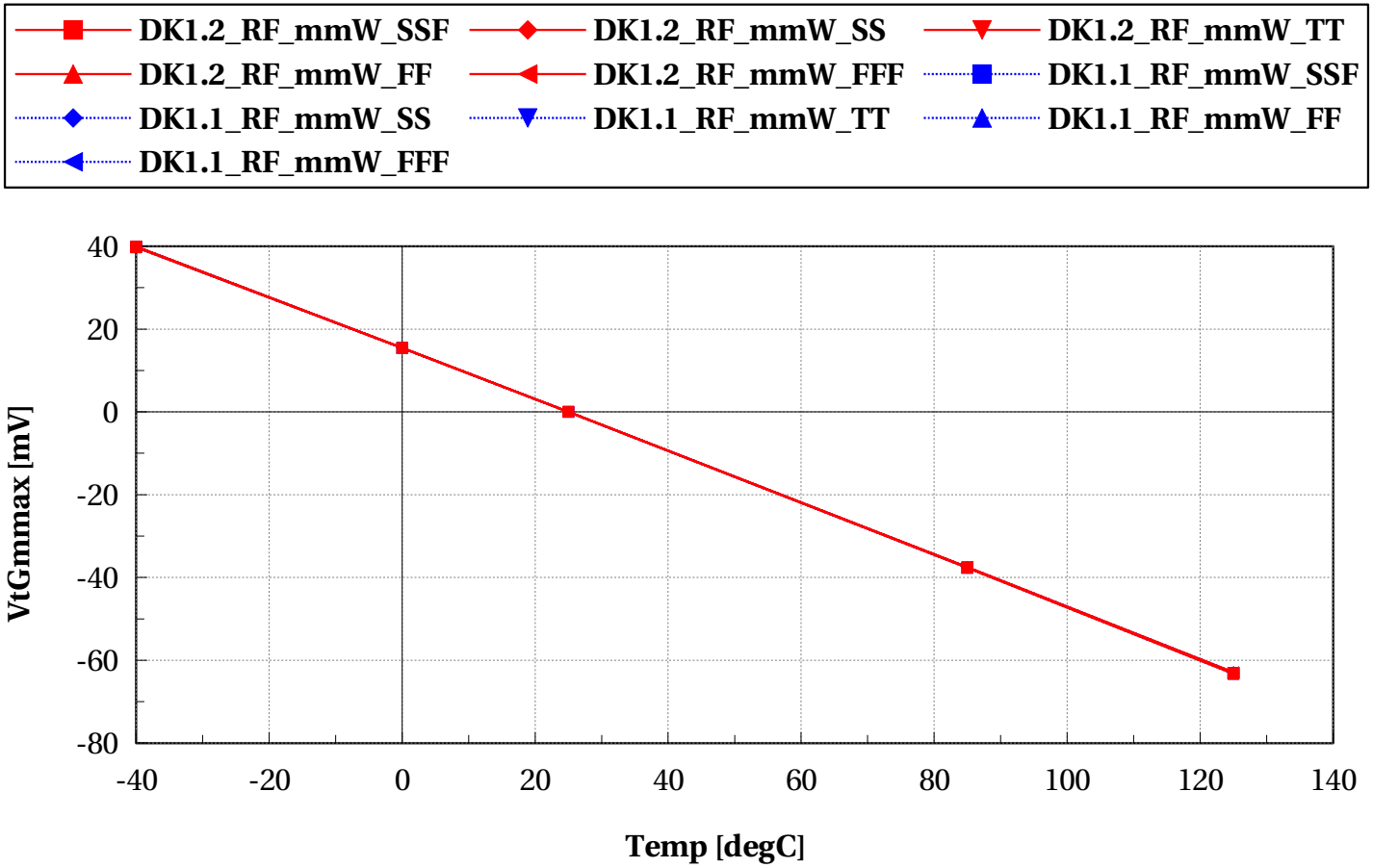
eglvtvnfet_acc, Ilin/W [A/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



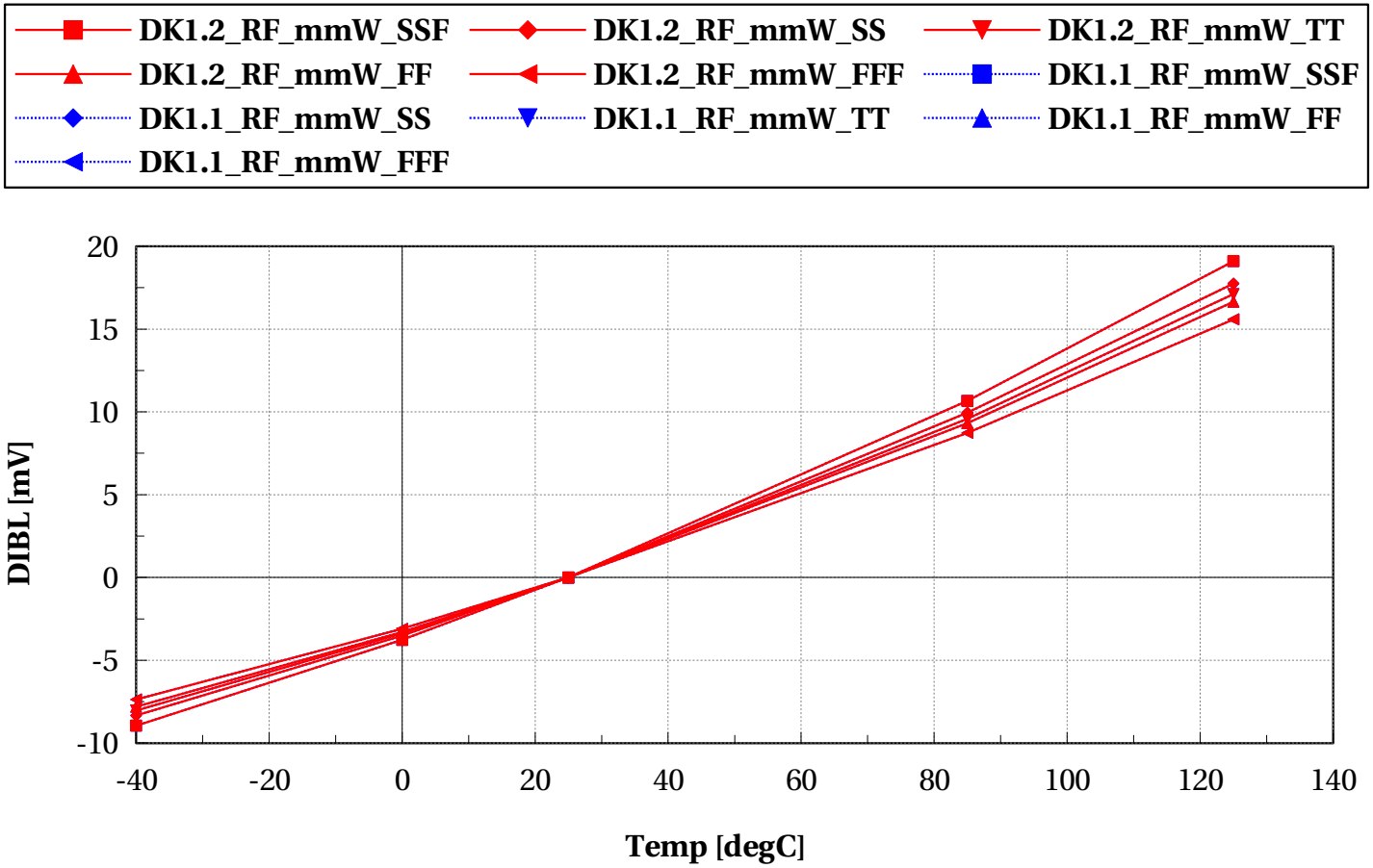
eglvtvnfet_acc, VtGmmax [mV] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



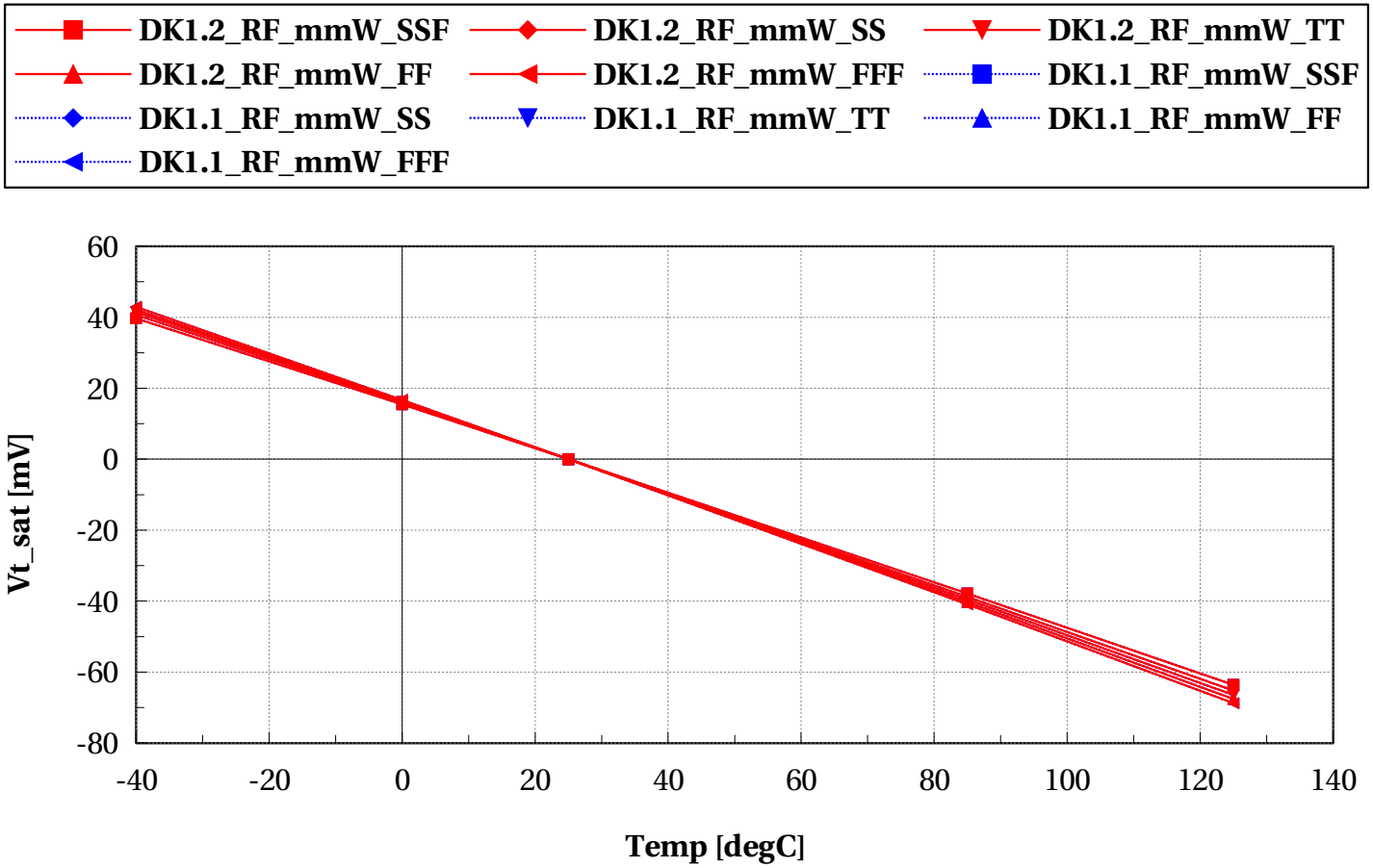
eglvtvnfet_acc, DIBL [mV] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



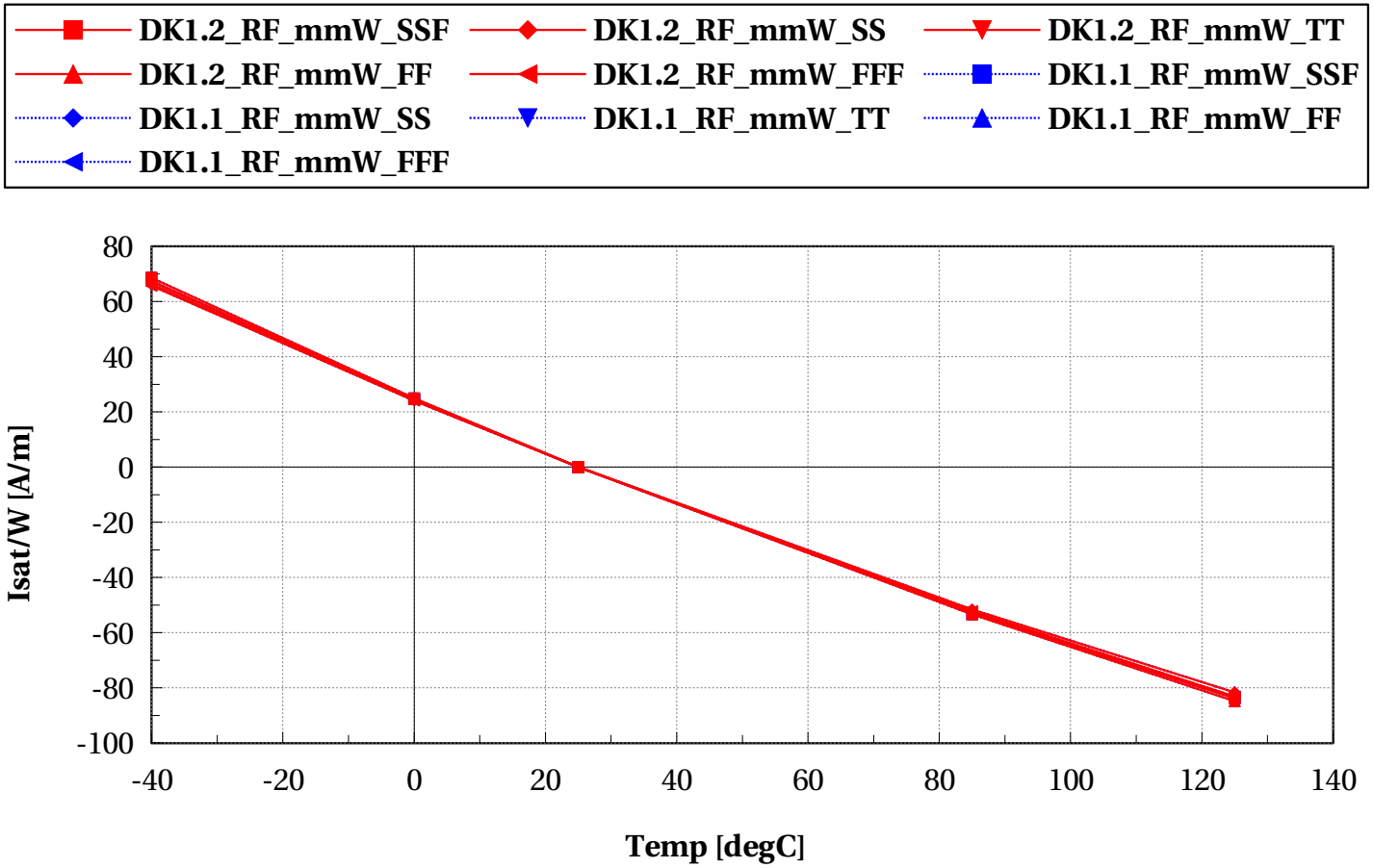
eglvtvnfet_acc, Vt_sat [mV] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



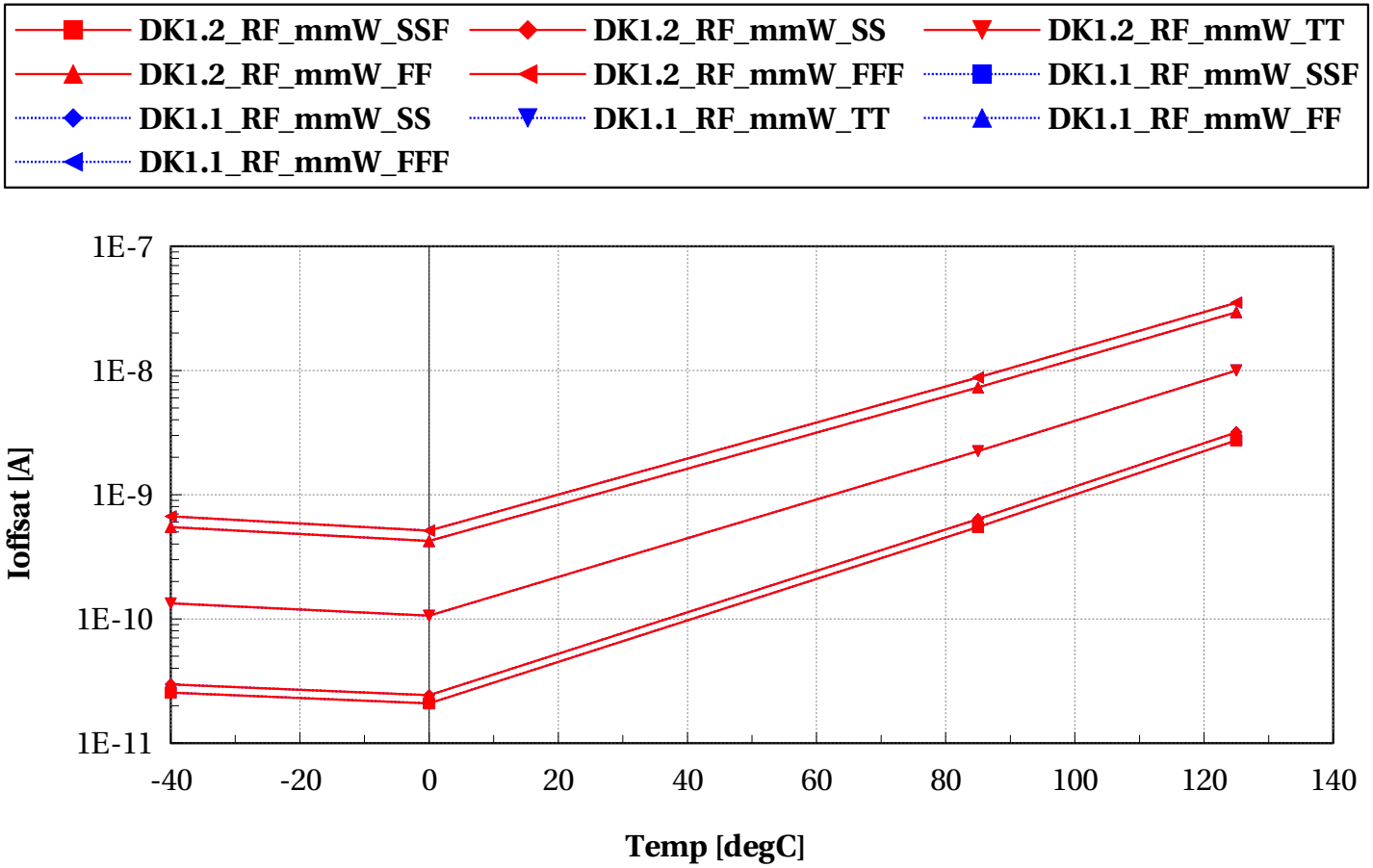
eglvtvnfet_acc, Isat/W [A/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



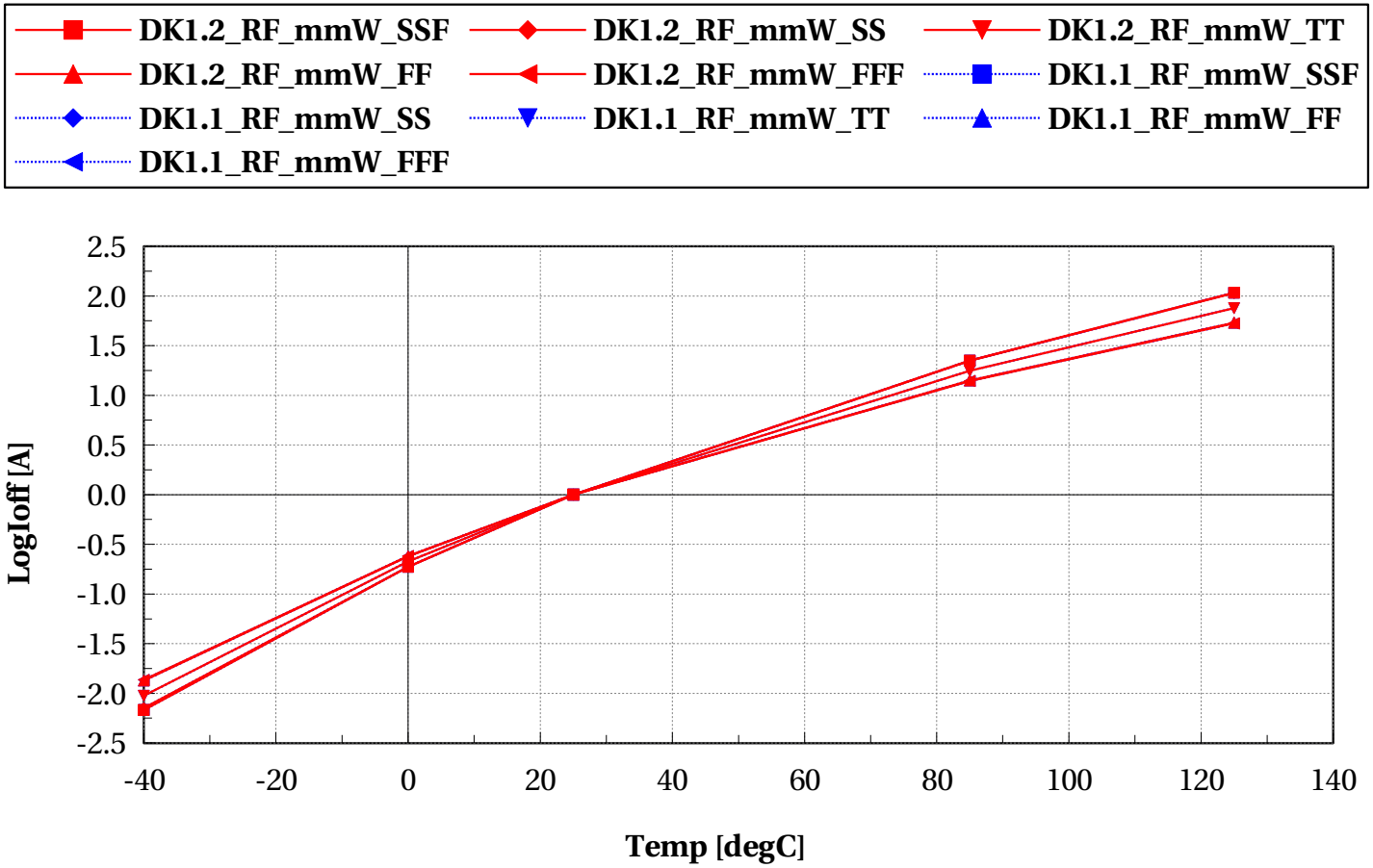
eglvtvnfet_acc, Ioffsat [A] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



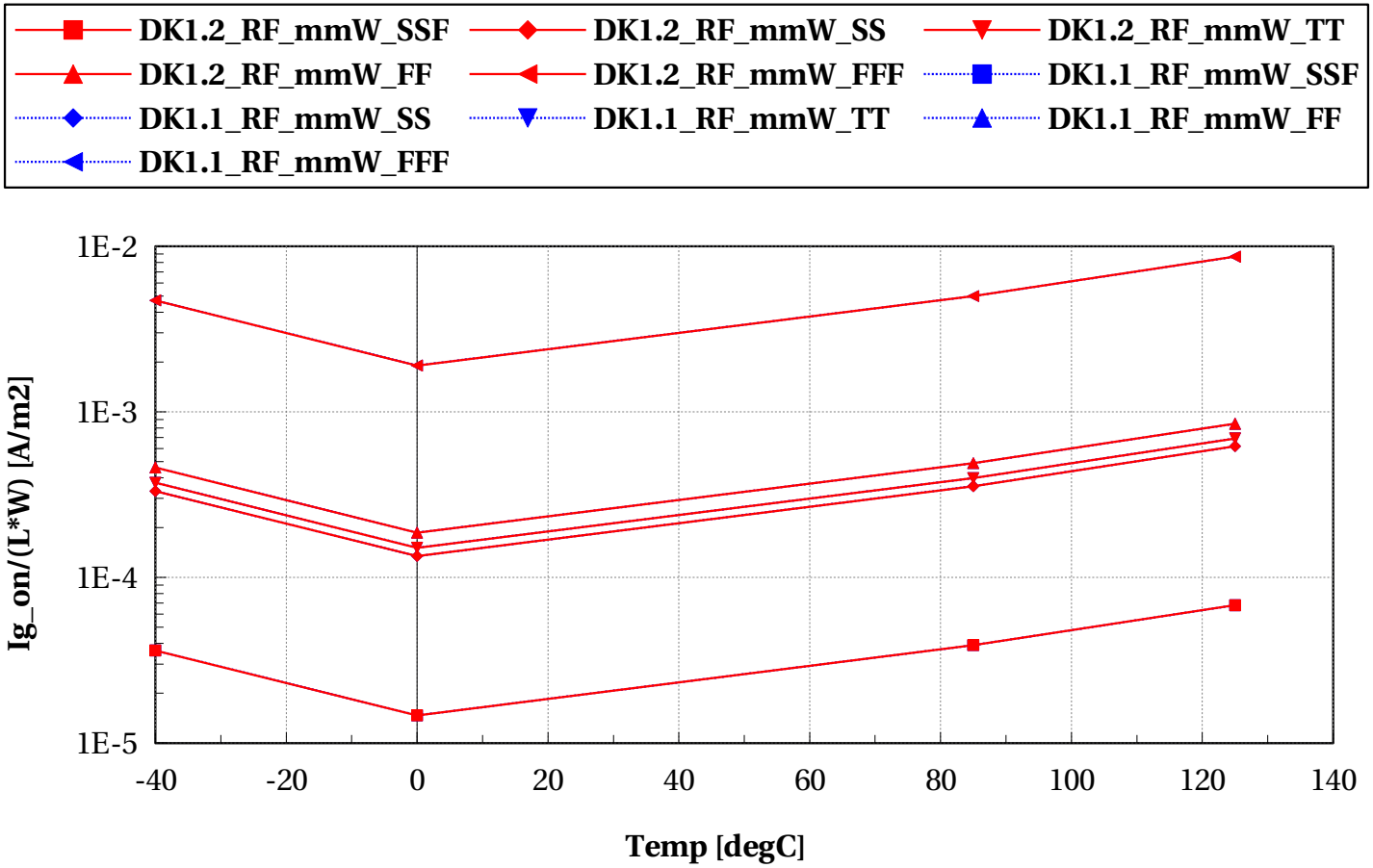
eglvtvnfet_acc, LogIoff [A] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



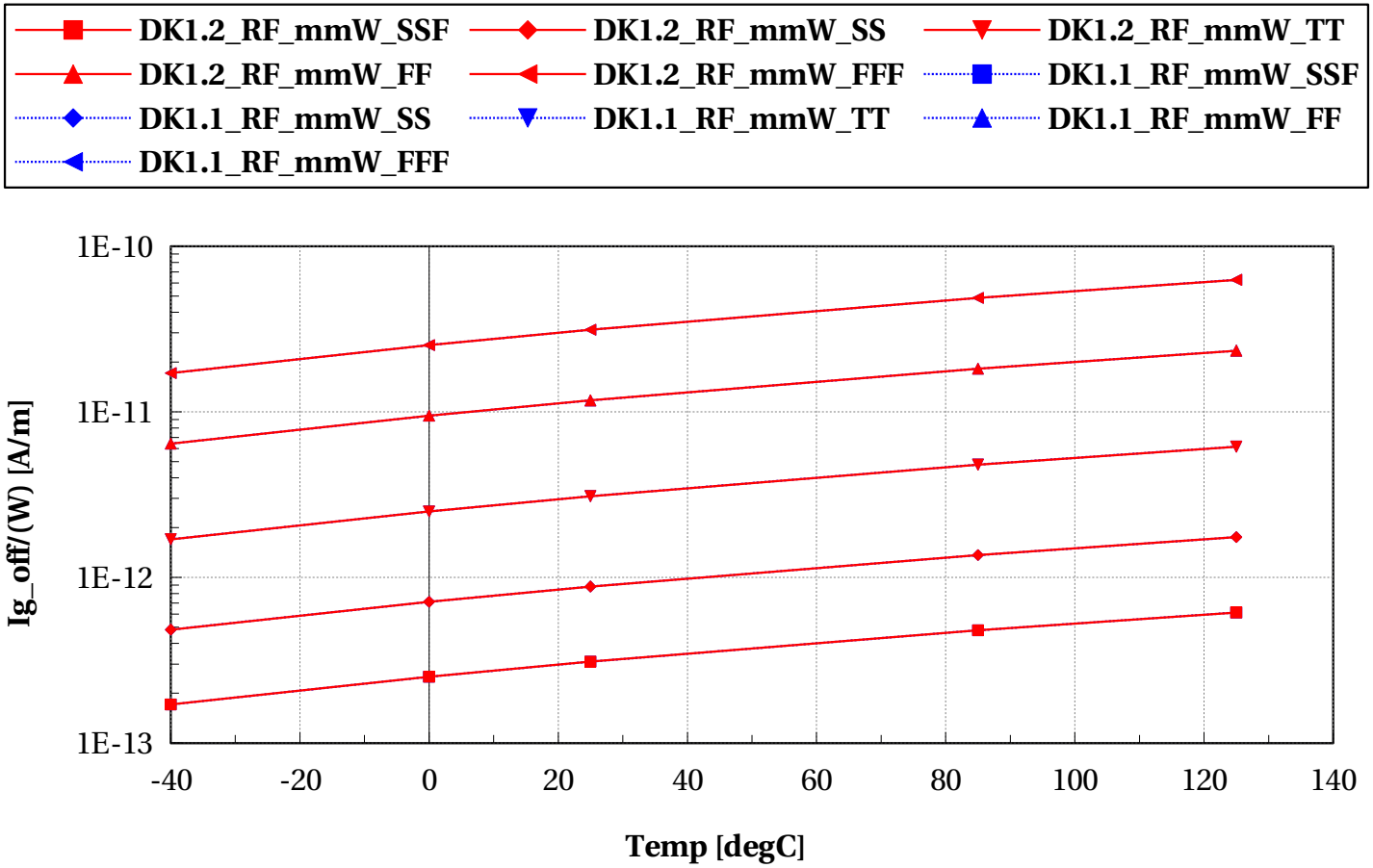
eglvtvnfet_acc, Ig_on/(L*W) [A/m2] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



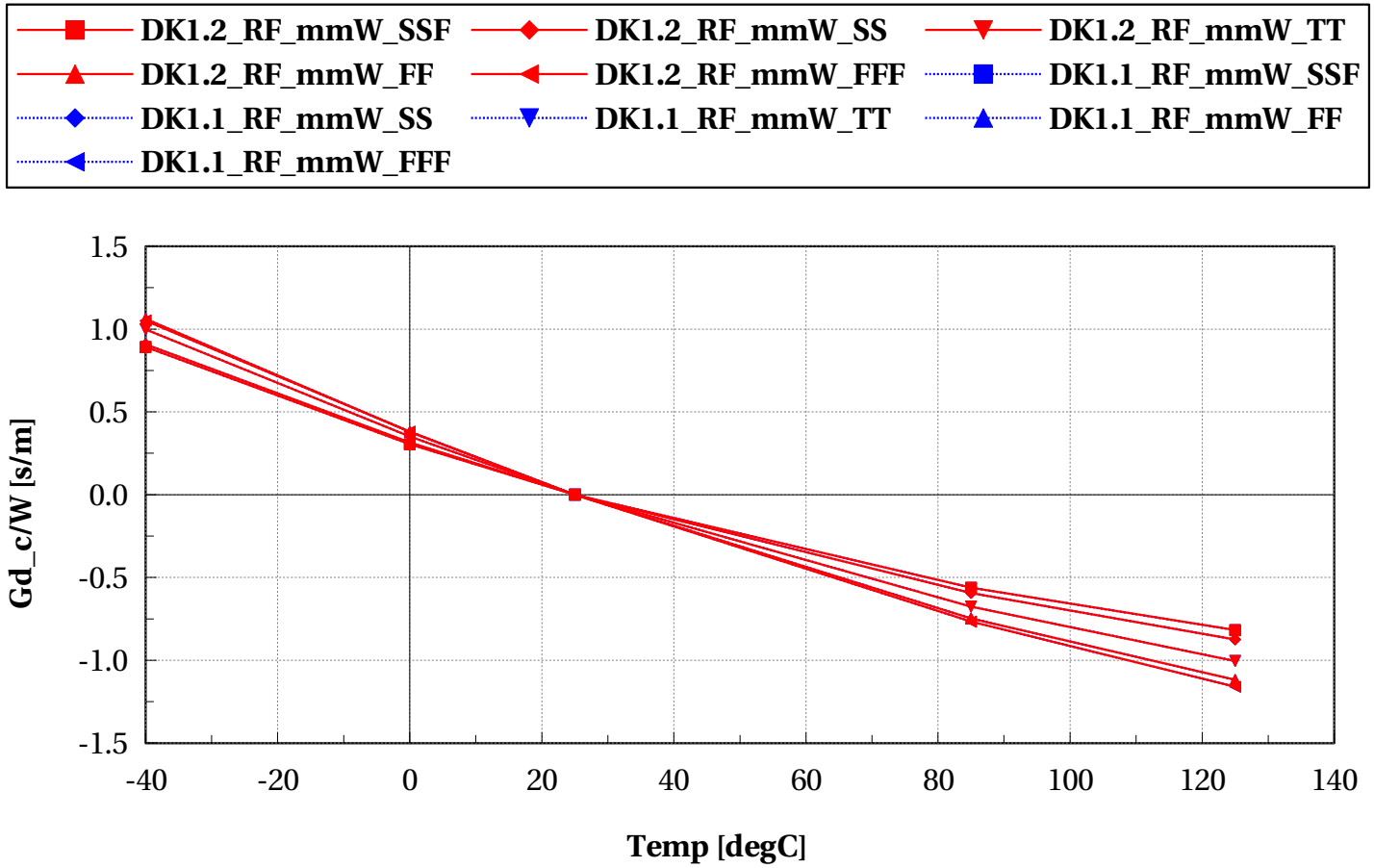
eglvtvnfet_acc, Ig_off/(W) [A/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



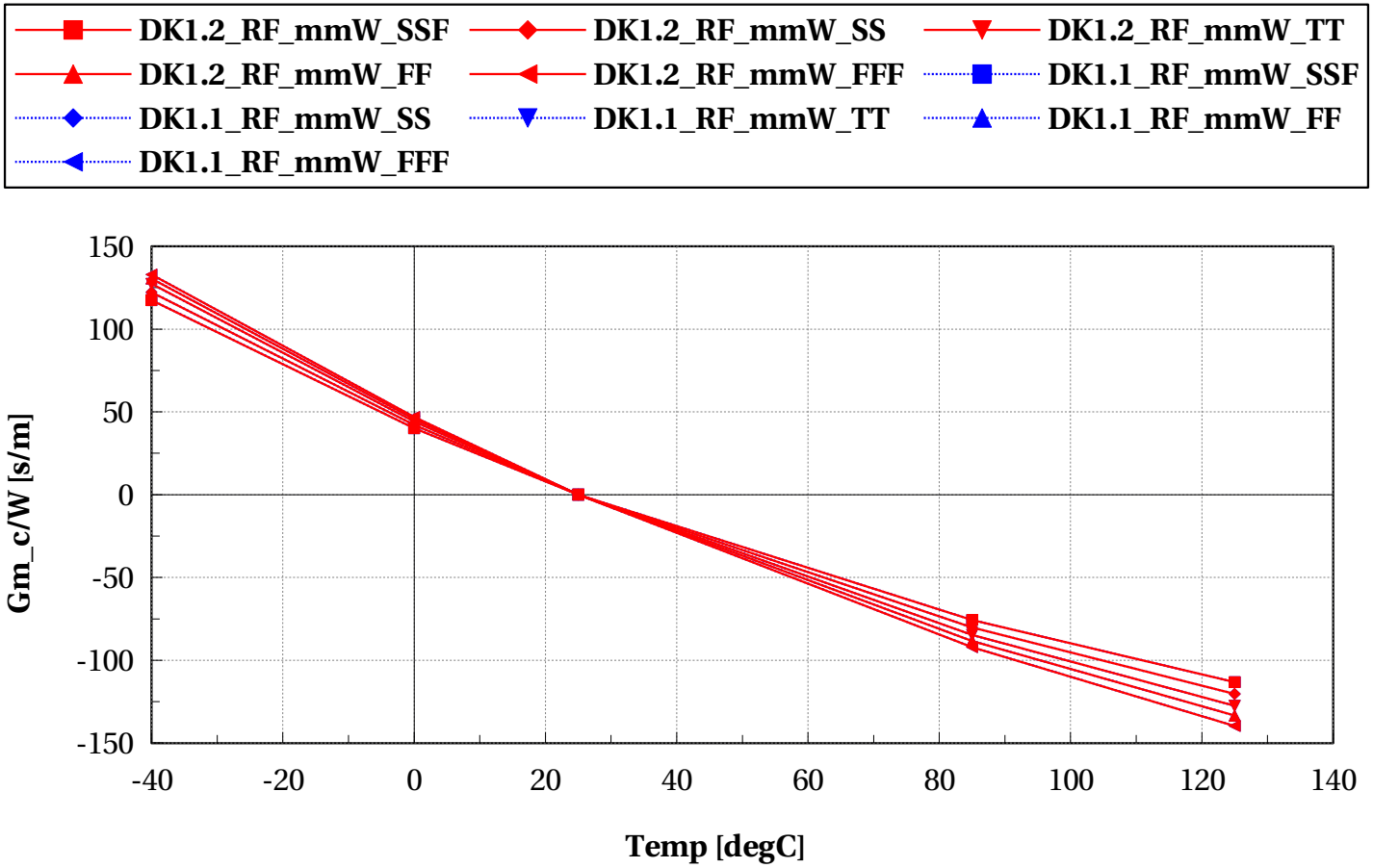
eglvtvnfet_acc, Gd_c/W [s/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



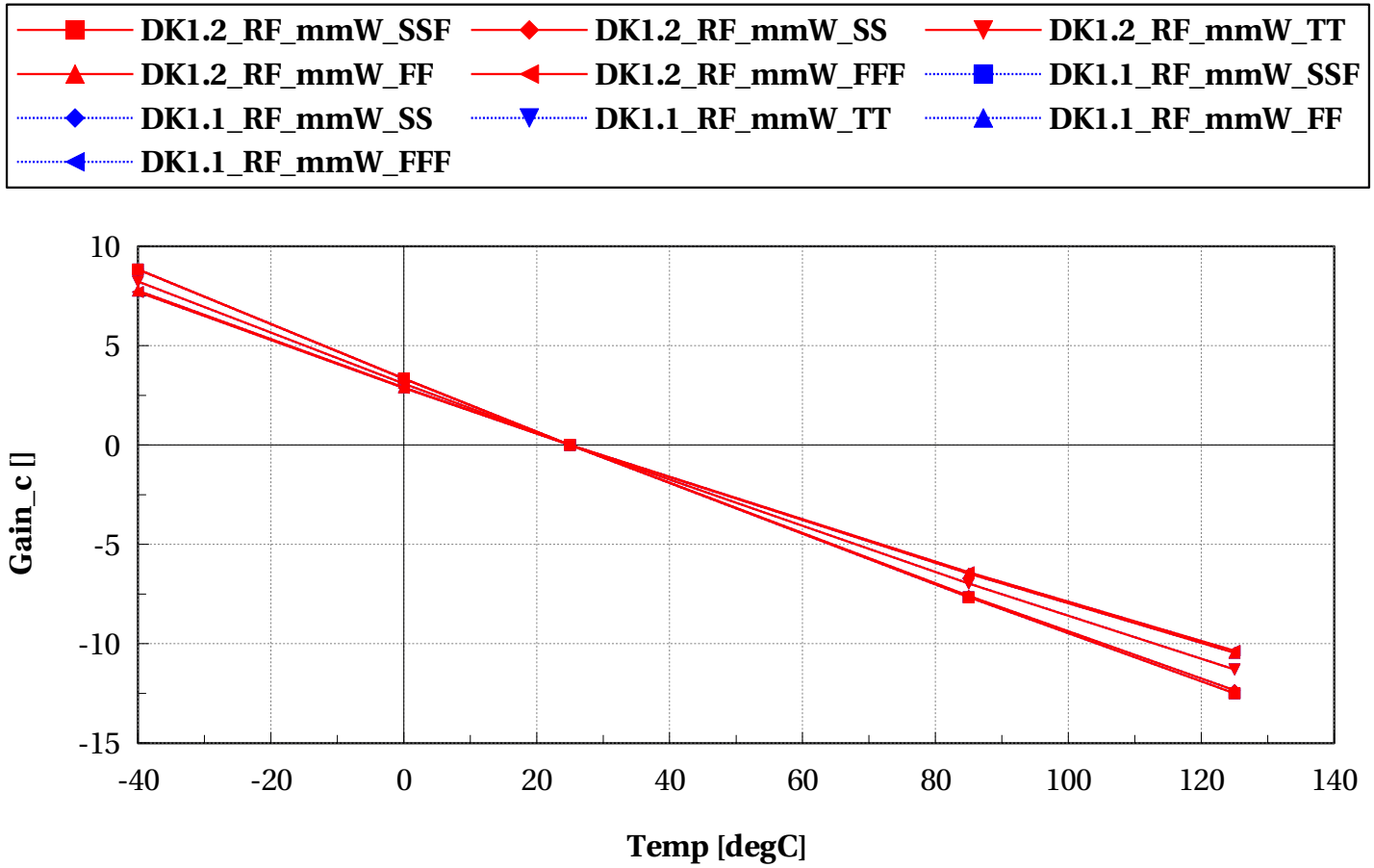
eglvtvnfet_acc, Gm_c/W [s/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



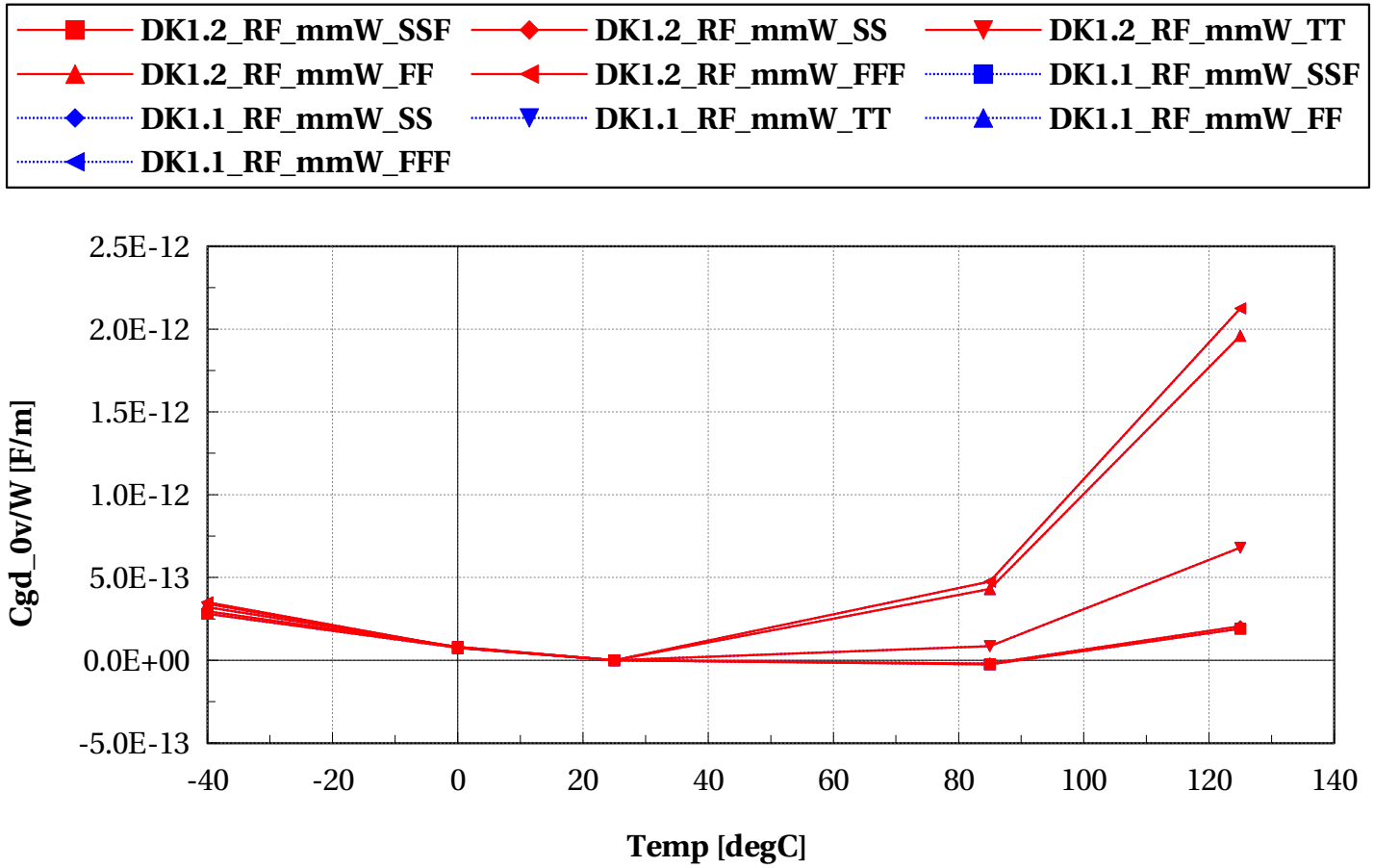
eglvtvnfet_acc, Gain_c [] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



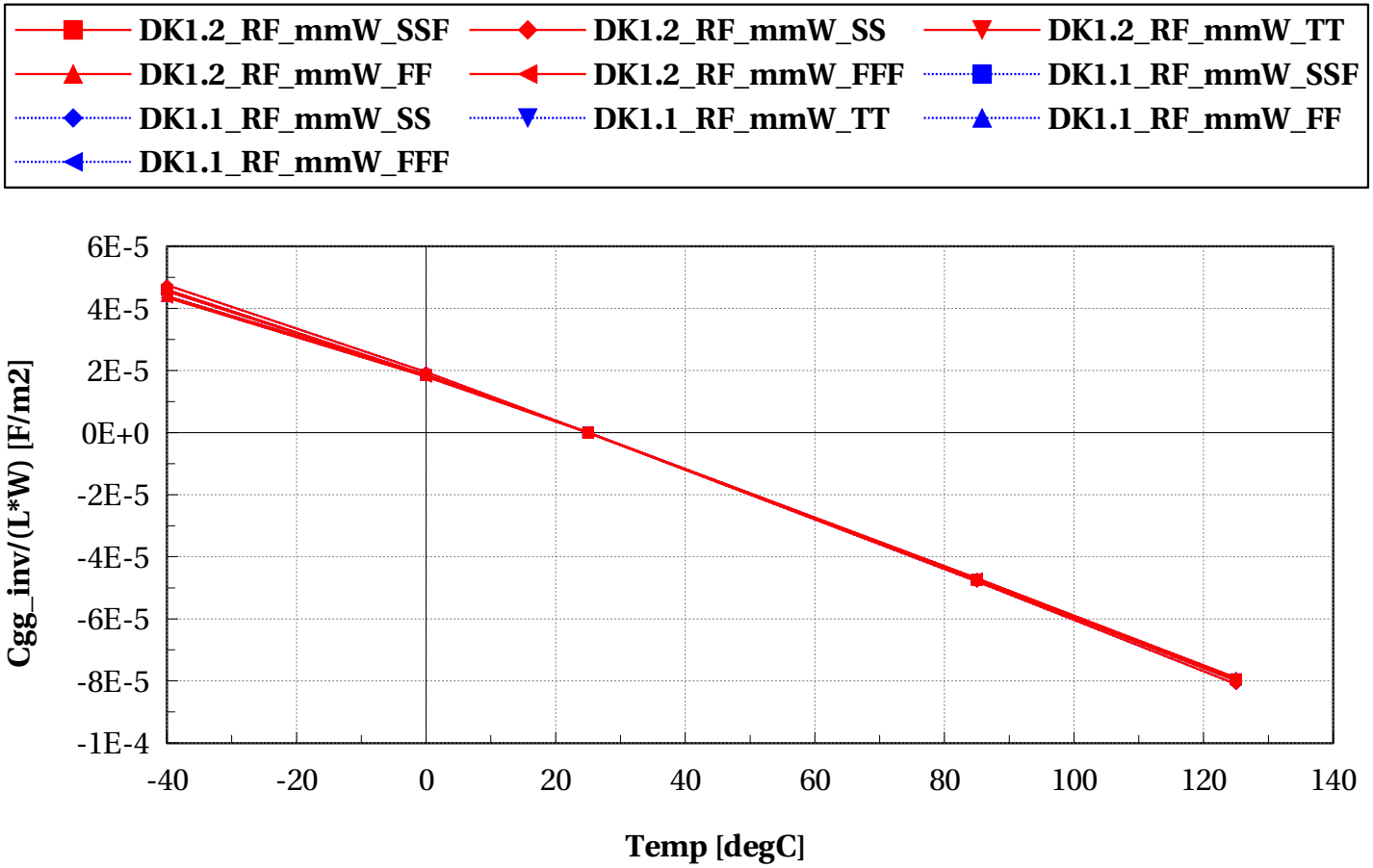
eglvtvnfet_acc, Cgd_0v/W [F/m] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"



eglvtvnfet_acc, Cgg_inv/(L*W) [F/m2] vs Temp [degC]

Vbs==0 and l==0.10e-6 and w==2e-6 and devType=="PCELLwoWPE"

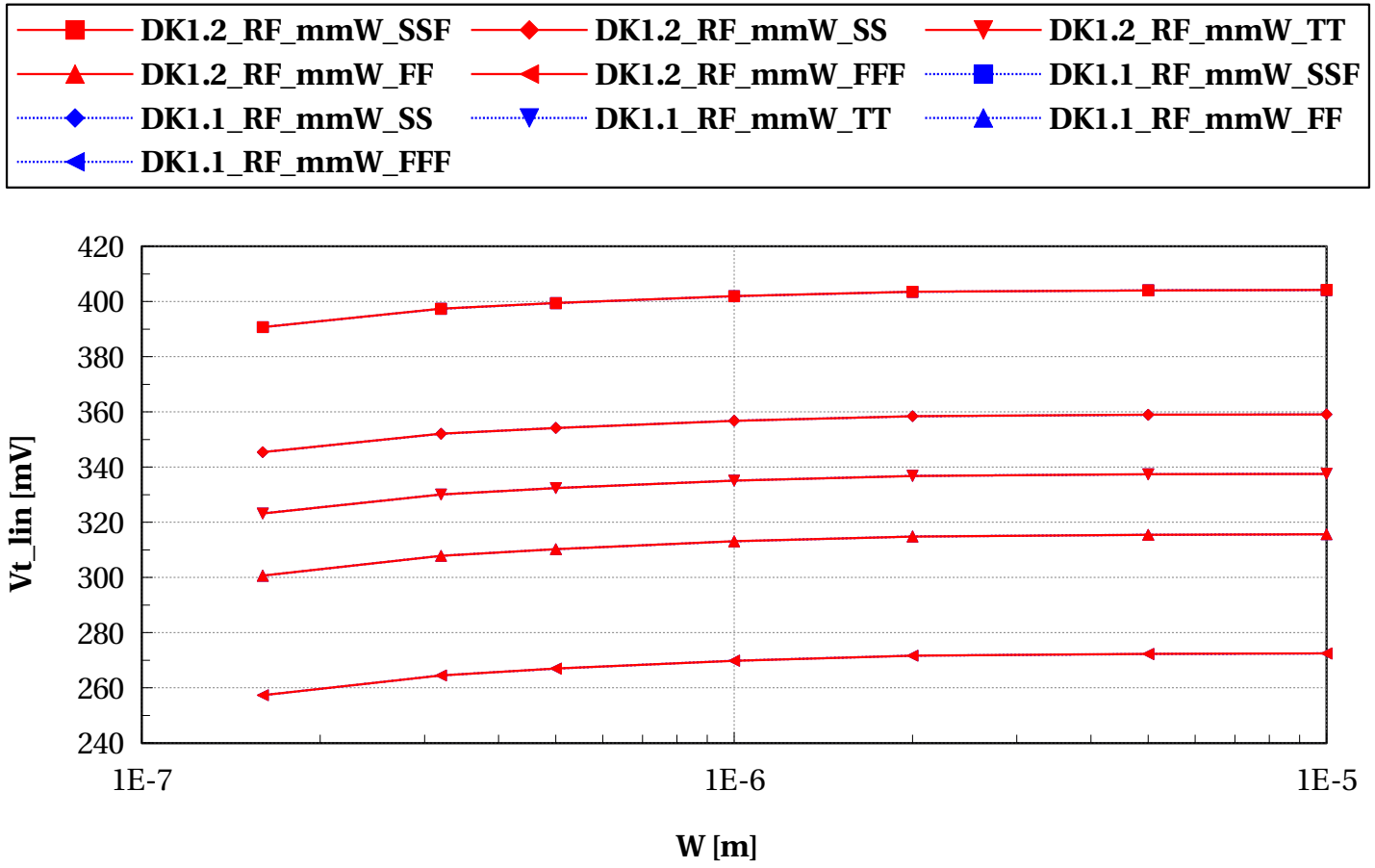


eglvtvpfet_acc
Electrical characteristics scaling

Scaling versus Width (L=0.10u,Temp=25,Vbs=0V)

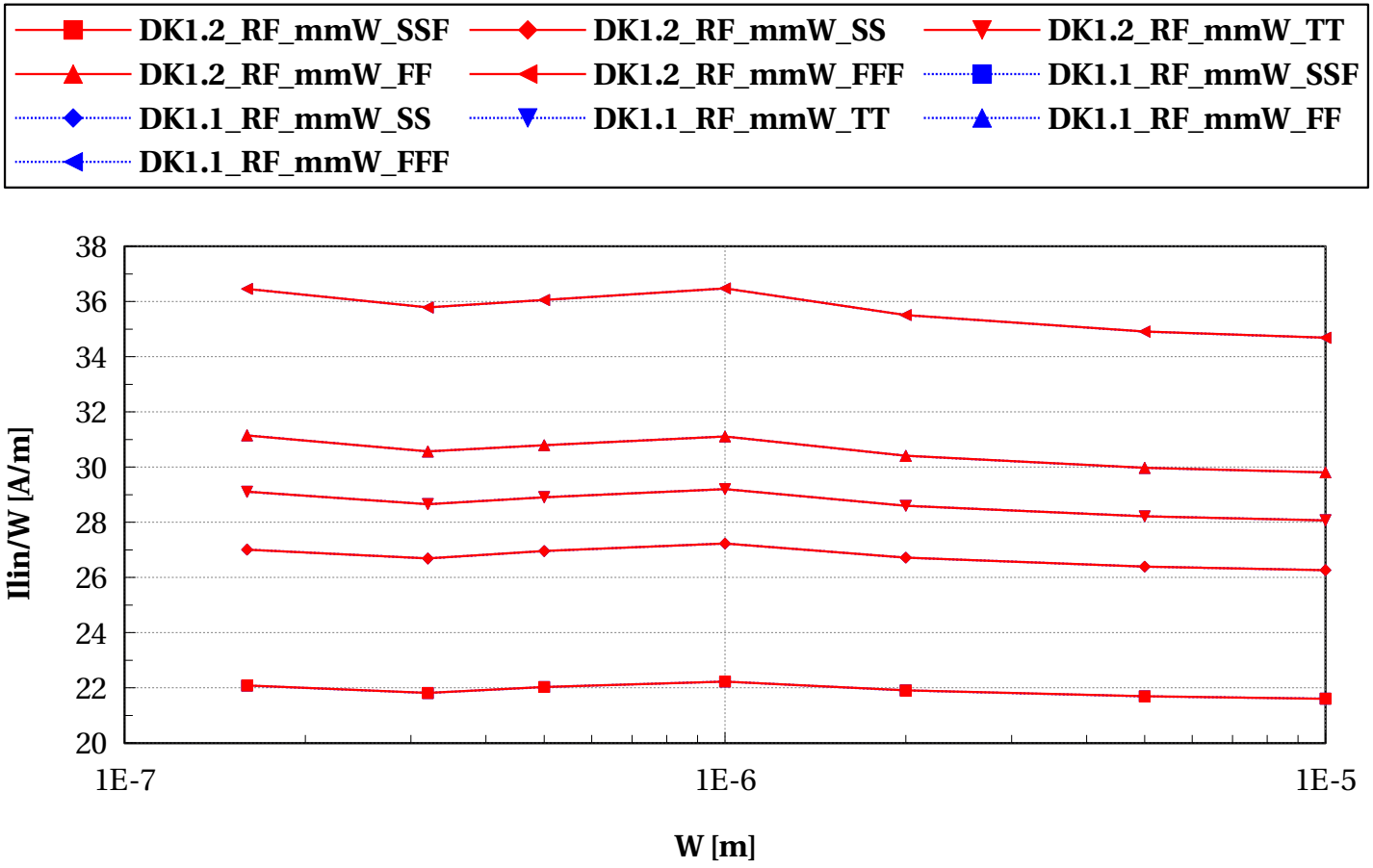
eglvtvpfet_acc, Vt_lin [mV] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



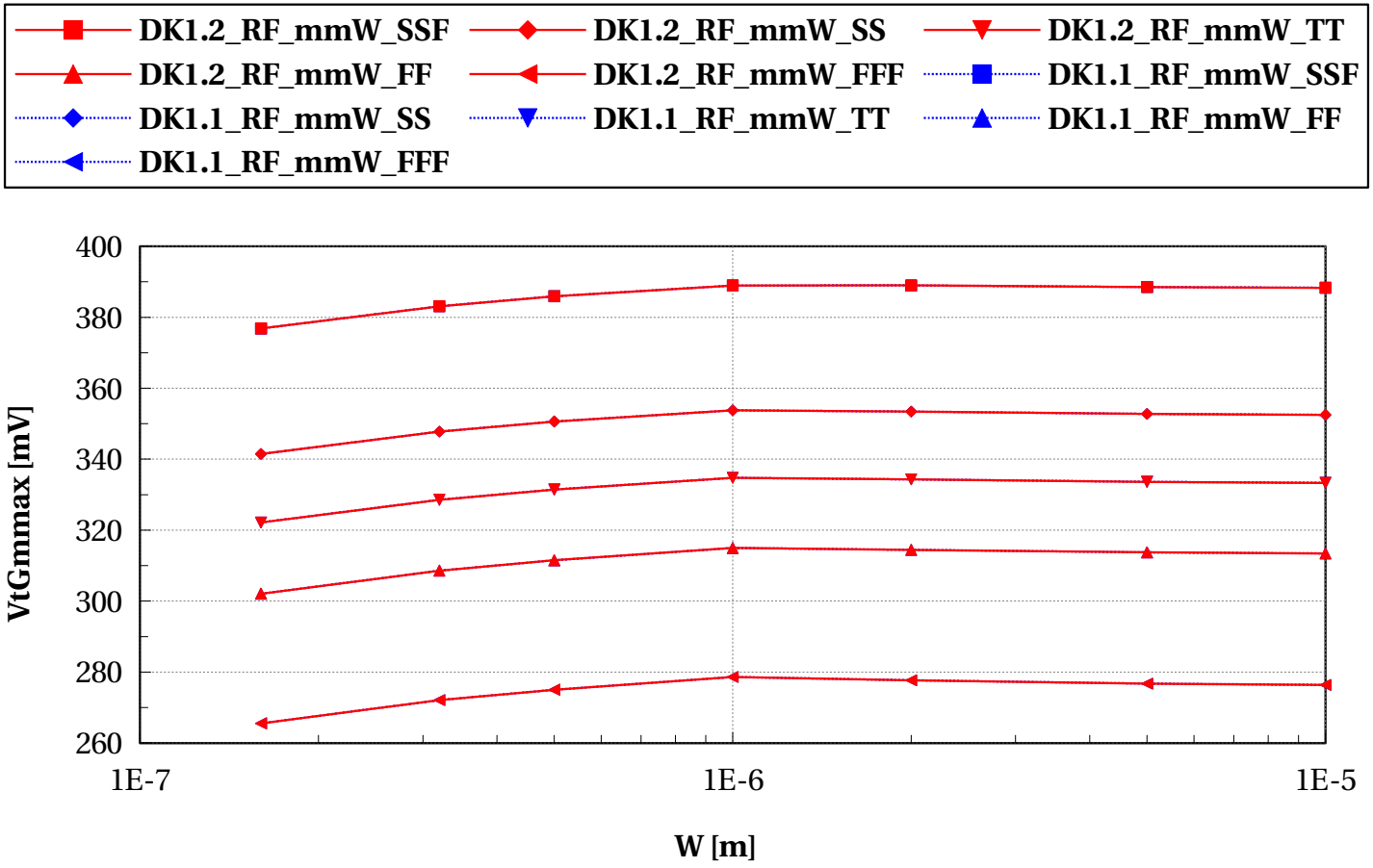
eglvtvpfet_acc, Ilin/W [A/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



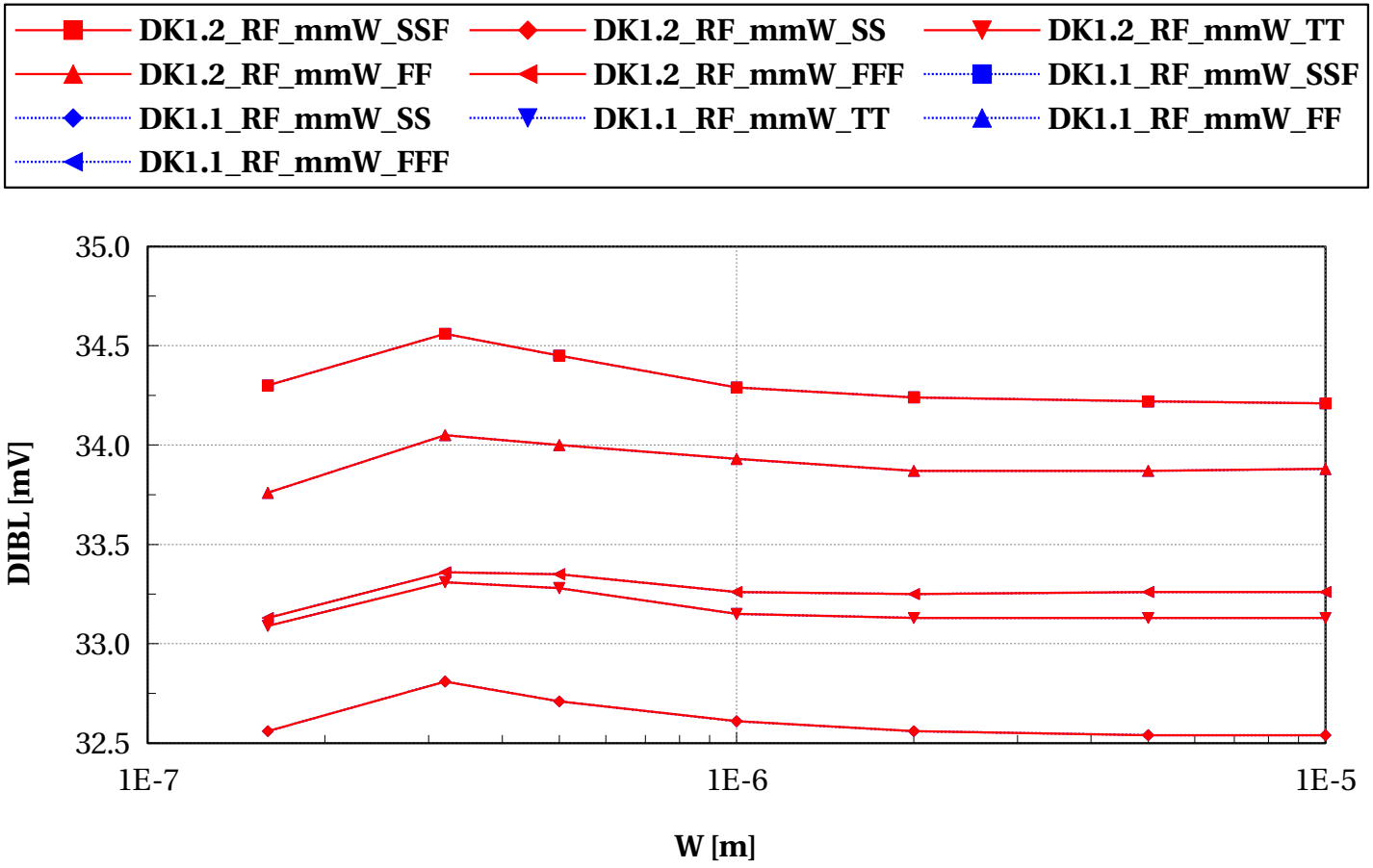
eglvtvpfet_acc, VtGmmax [mV] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



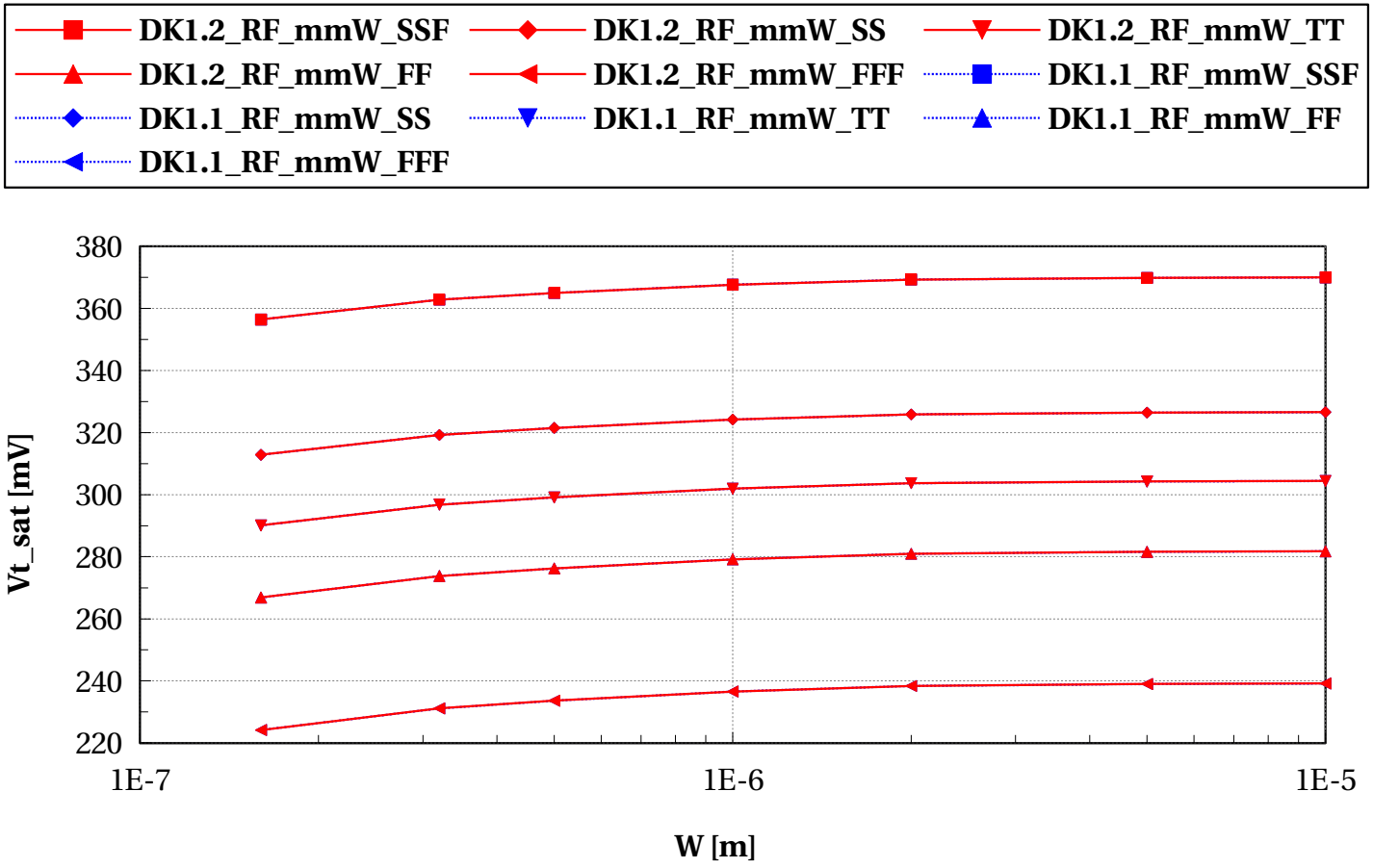
eglvtvpfet_acc, DIBL [mV] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



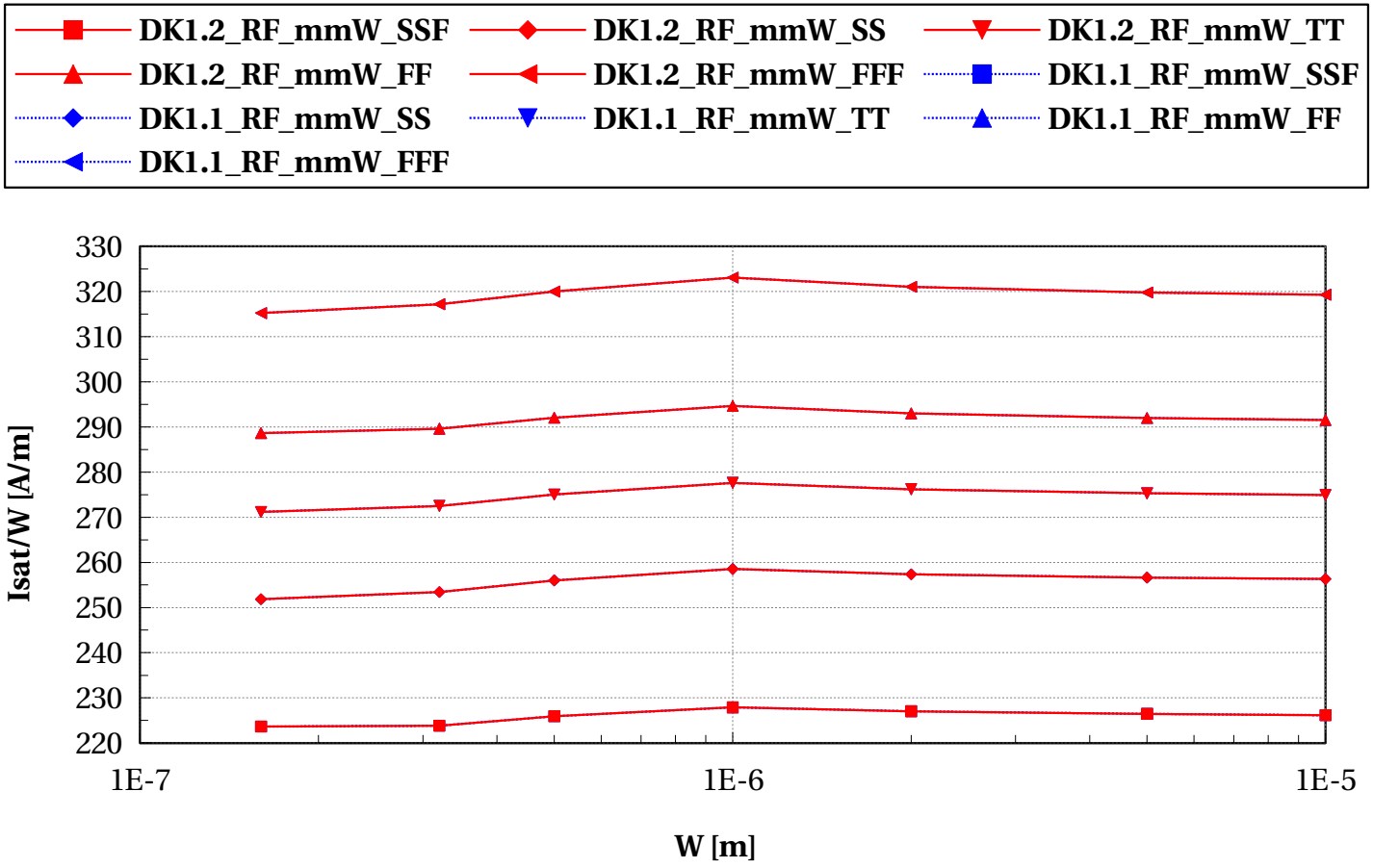
eglvtvpfet_acc, Vt_sat [mV] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



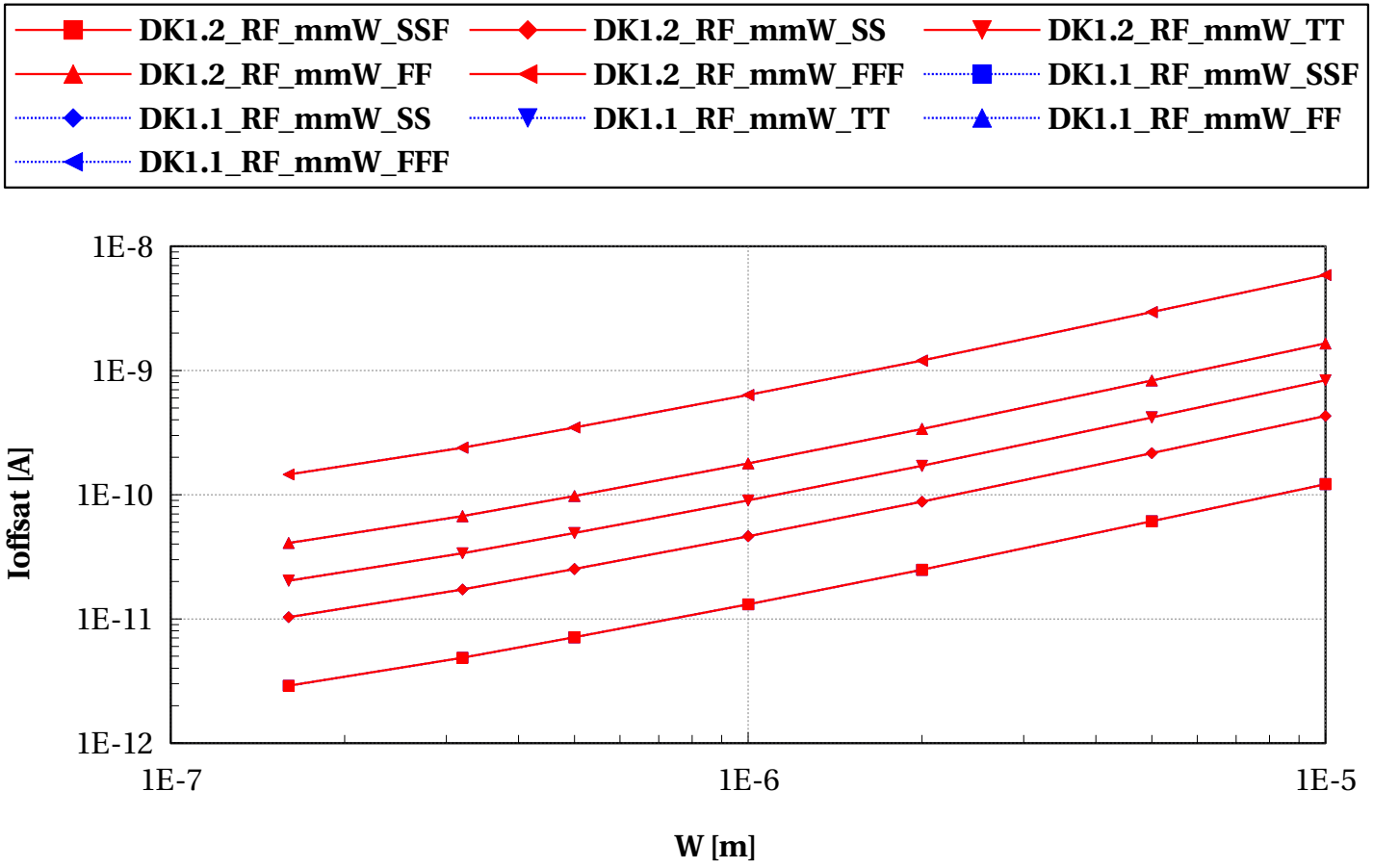
eglvtvpfet_acc, Isat/W [A/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



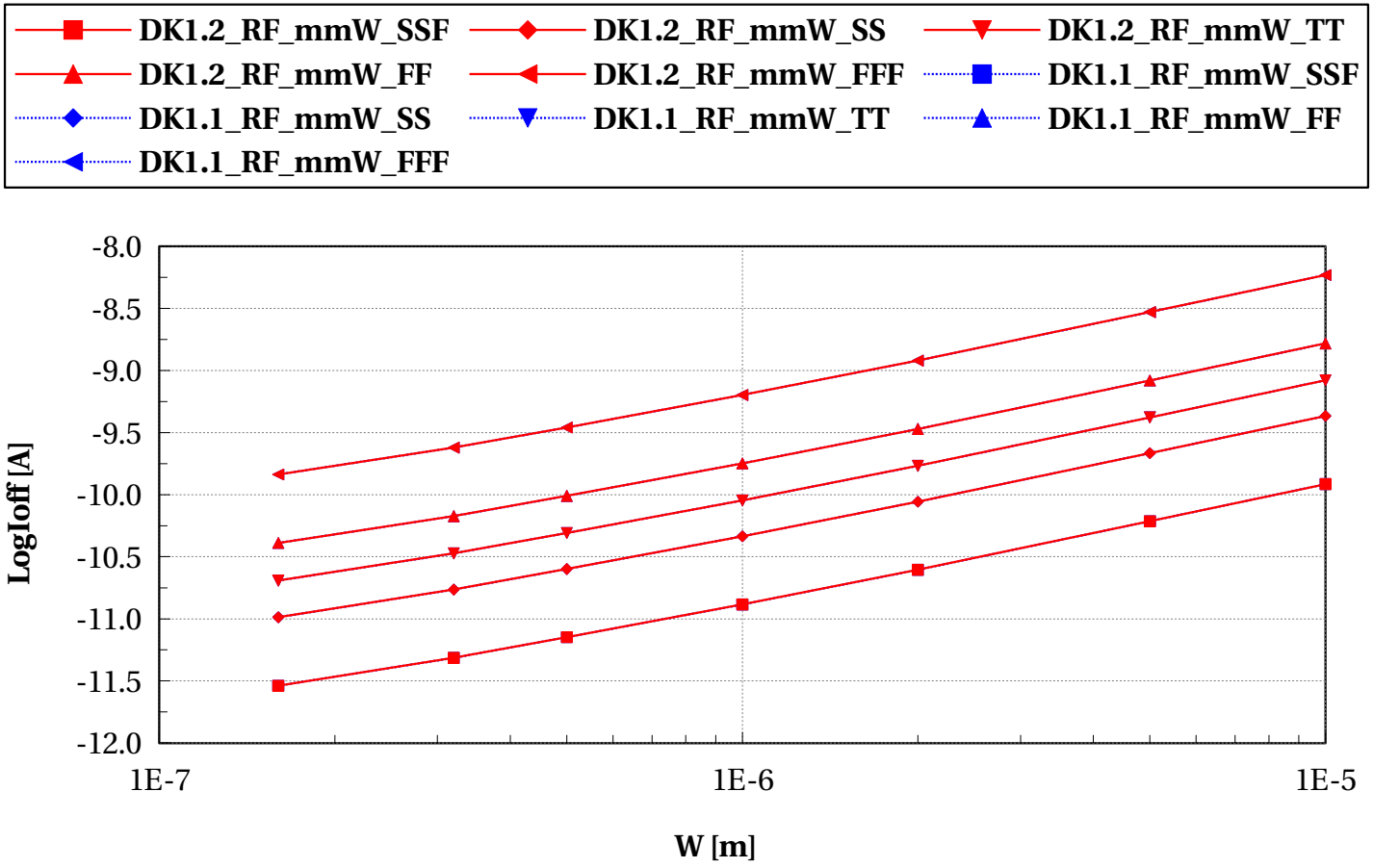
eglvtvpfet_acc, Ioffsat [A] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



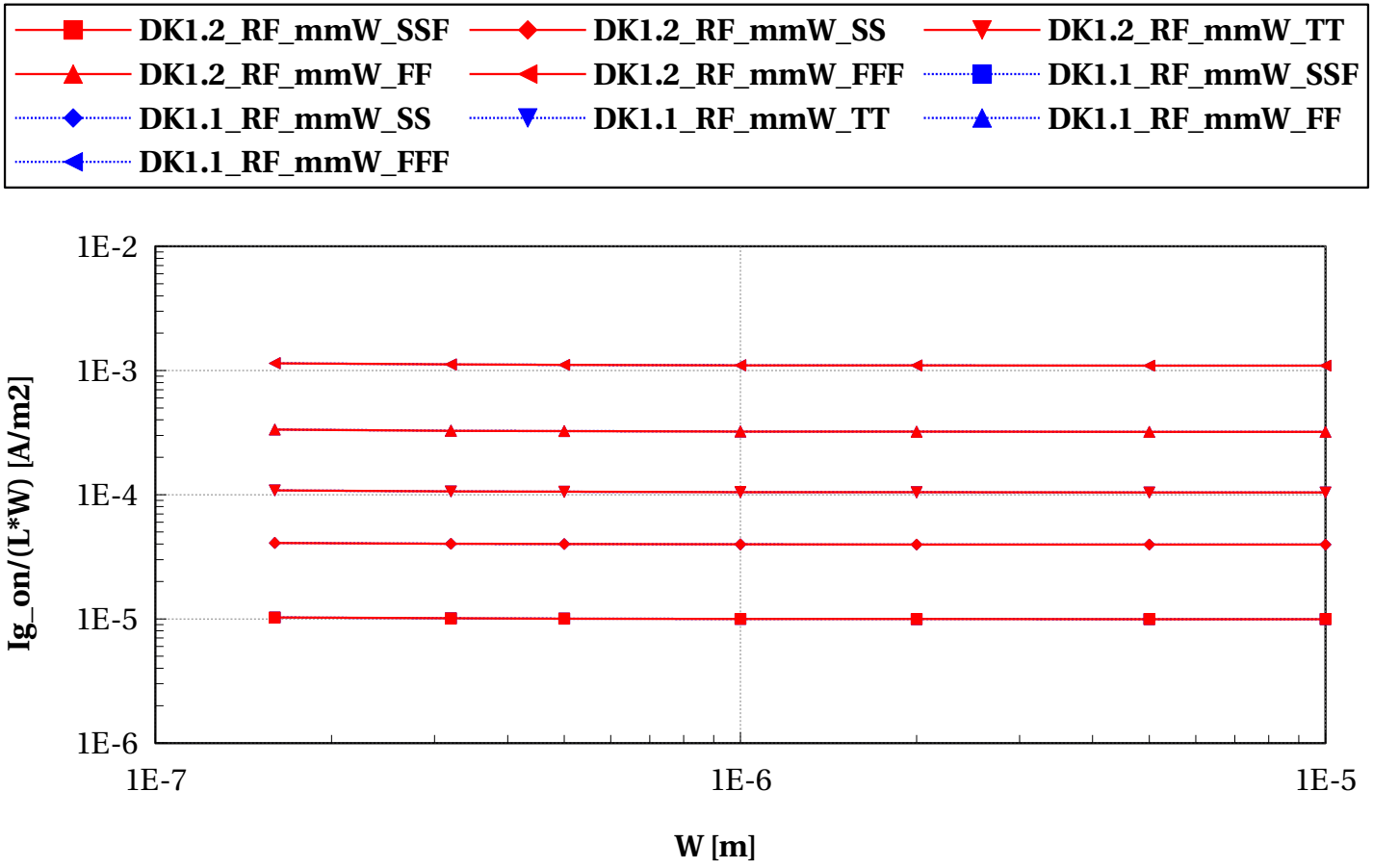
eglvtvpfet_acc, LogIoff [A] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



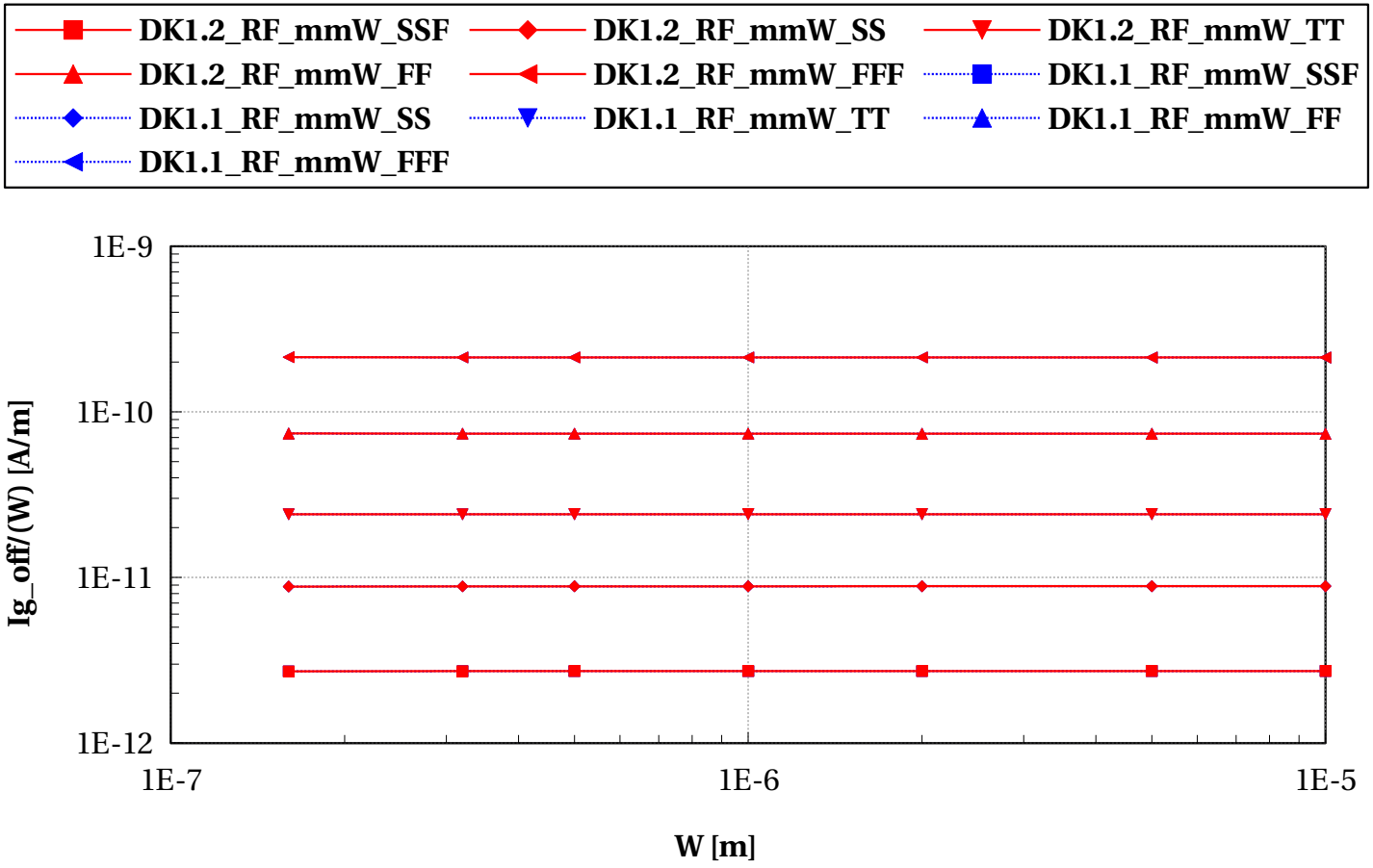
eglvtvpfet_acc, Ig_on/(L*W) [A/m2] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



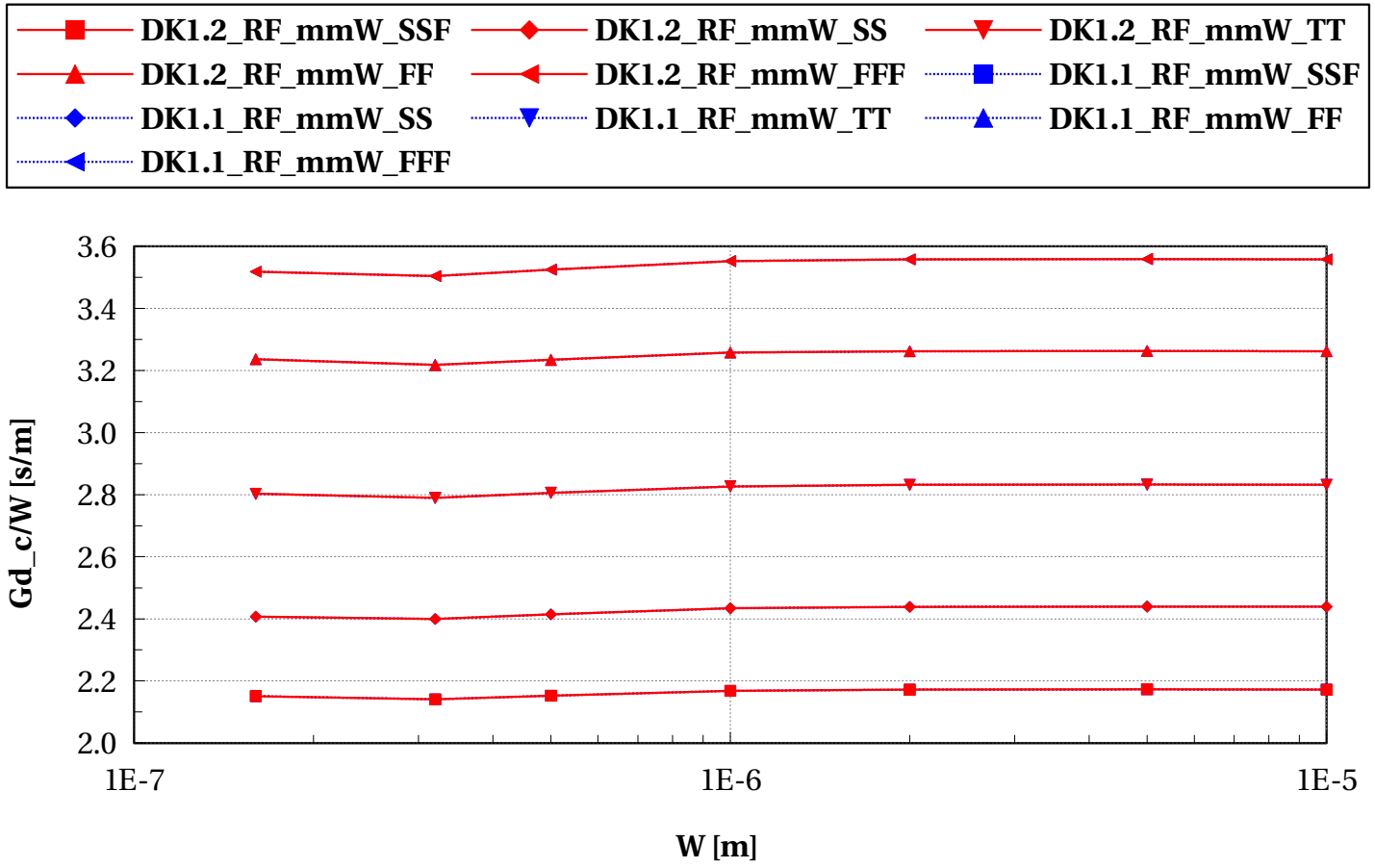
eglvtvpfet_acc, Ig_off/(W) [A/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



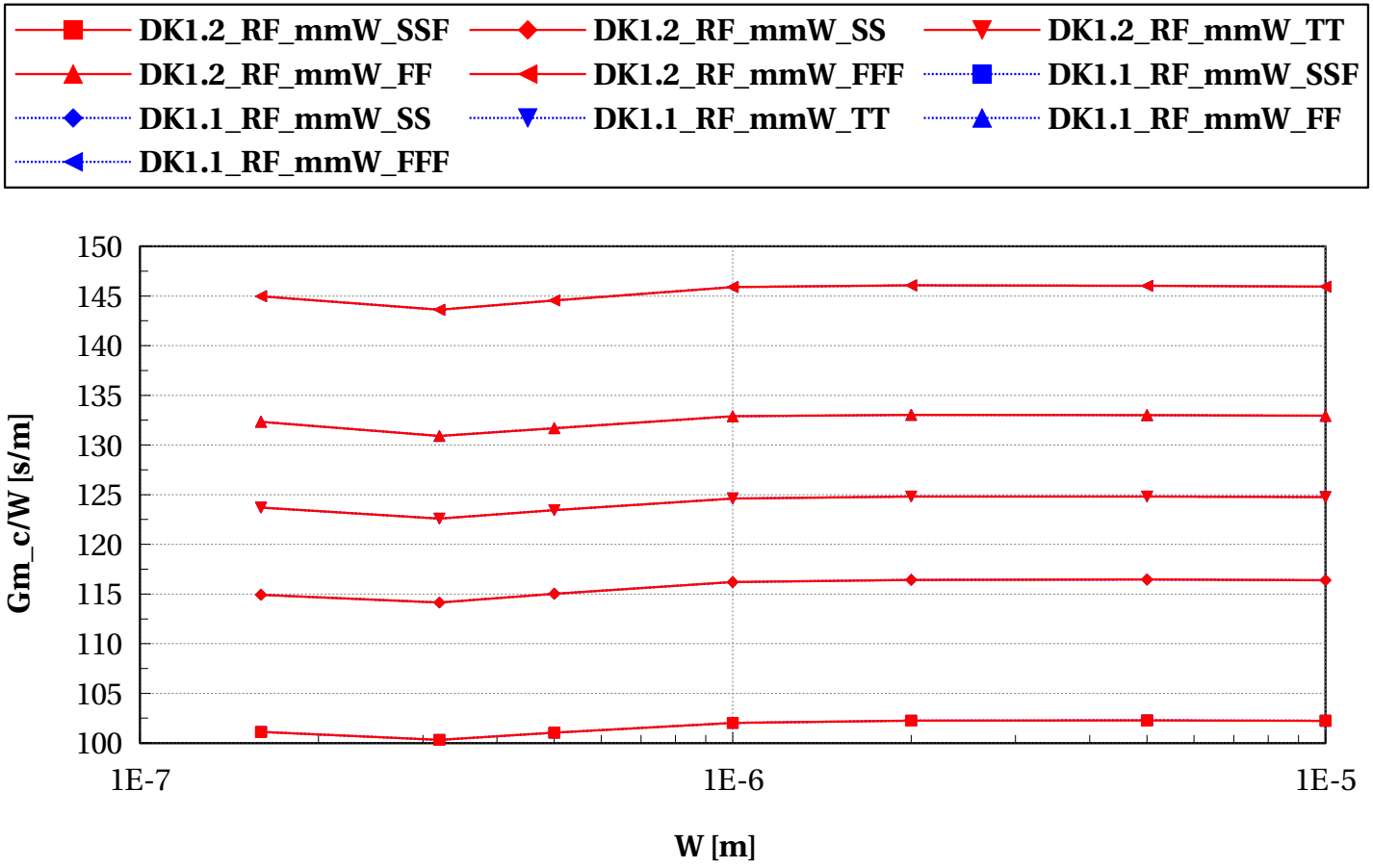
eglvtvpfet_acc, Gd_c/W [s/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



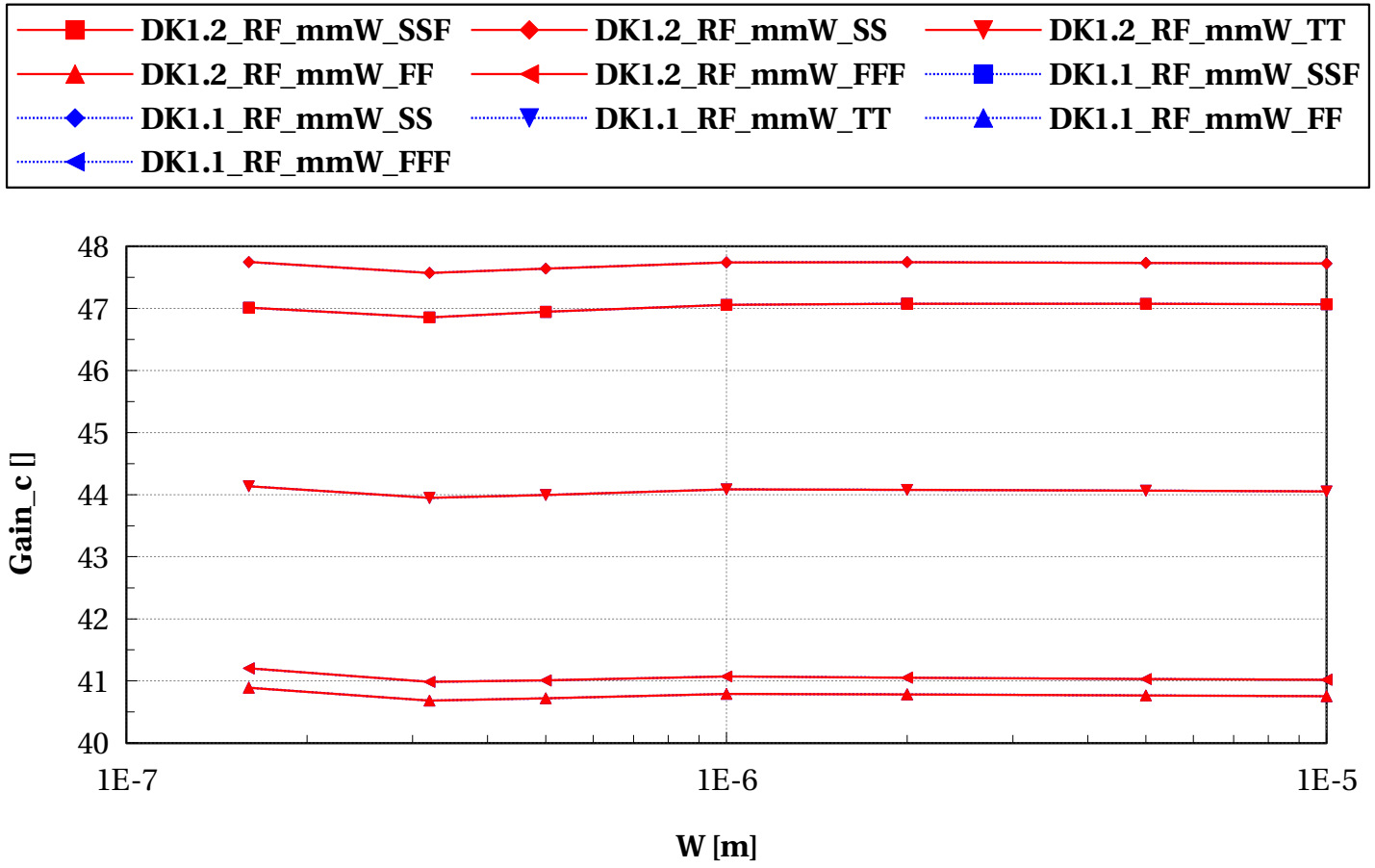
eglvtvpfet_acc, Gm_c/W [s/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



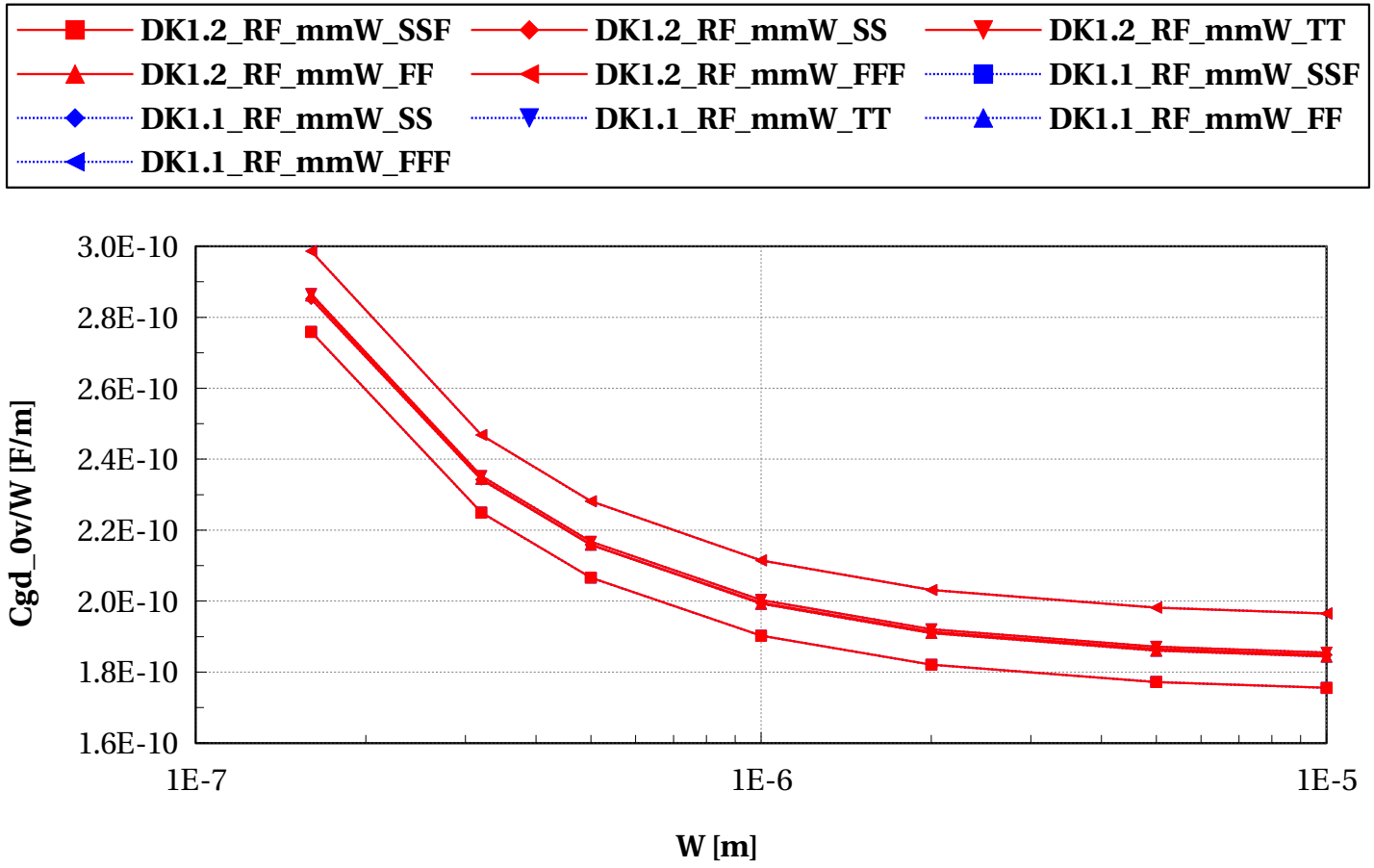
eglvtvpfet_acc, Gain_c [] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



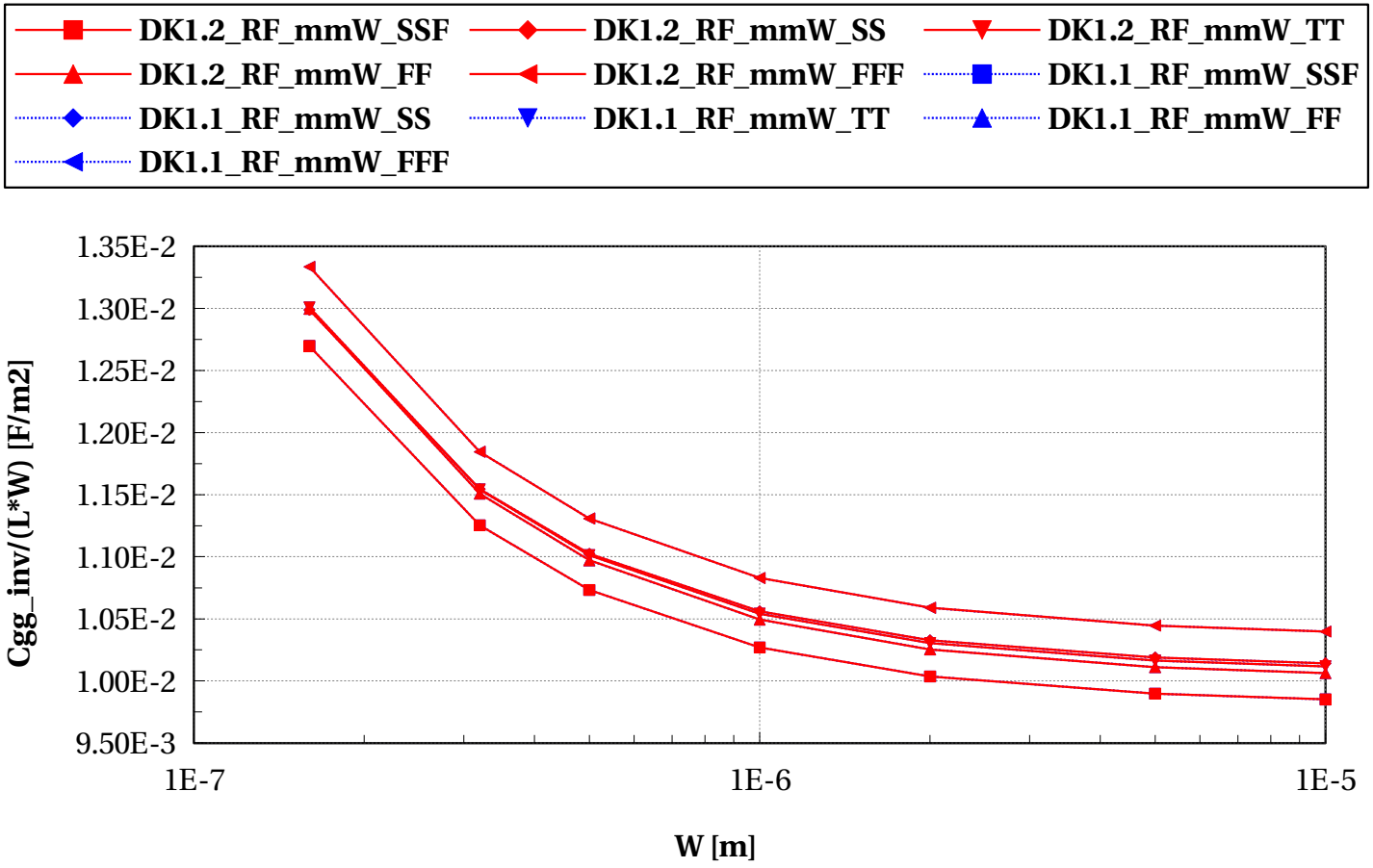
eglvtvpfet_acc, Cgd_0v/W [F/m] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



eglvtvpfet_acc, Cgg_inv/(L*W) [F/m2] vs W [m]

l==0.10e-6 and Temp==25 and w>0.135e-6 and devType=="PCELLwoWPE"



Scaling versus Temp @ Vbs=0, L=0.1u

Normalized scaling versus Temp @ Vbs=0, L=0.1u

Annex

Conditions of simulations

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

- Model eglvtvnfet_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.e
    - ✘ 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 = 0
- ✘ vgs_start = -0.5 V
- ✘ plashrink_ivt = 1
- ✘ ithslwi = 10e-9 A
- ✘ vds_cbd = 0 V
- ✘ vddmax = vdd
- ✘ voffset = 0.2 V
- ✘ mc_runs = 1000
- ✘ vstep_ivt = 0.005 V
- ✘ vgs_off = 0 V
- ✘ temp = 25 °C
- ✘ f_ext = 100k Hz
- ✘ vbs = 0 V
- ✘ vdd = 1.5 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

- ✘ eglvt_dev = 0
- ✘ gflag__noisedev__eglvt__cmos028fdsoi = 0

● Model eglvtvpfet_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 = 70e-9 A
- ✘ model_version = 1.2.e
- ✘ 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 = 0
- ✘ vgs_start = -0.5 V
- ✘ plashrink_ivt = 1
- ✘ ithslwi = 10e-9 A
- ✘ vds_cbd = 0 V
- ✘ vddmax = vdd
- ✘ voffset = 0.2 V
- ✘ mc_runs = 1000
- ✘ vstep_ivt = 0.005 V
- ✘ vgs_off = 0 V
- ✘ temp = 25 °C
- ✘ f_ext = 100k Hz
- ✘ vbs = 1.5 V

- ✘ vdd = 1.5 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

- ✘ eglvt_dev = 0
- ✘ gflag__noisedev__eglvt__cmos028fdsoi = 0

● Model eglvtvnfet_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.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
- ✘ dlshrink_tinv = 0

- ✘ vgs_start = -0.5 V
- ✘ plashrink_ivt = 1
- ✘ ithslwi = 10e-9 A
- ✘ vds_cbd = 0 V
- ✘ vddmax = vdd
- ✘ voffset = 0.2 V
- ✘ mc_runs = 1000
- ✘ vstep_ivt = 0.005 V
- ✘ vgs_off = 0 V
- ✘ temp = 25 °C
- ✘ f_ext = 100k Hz
- ✘ vbs = 0 V
- ✘ vdd = 1.5 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

- ✘ eglvt_dev = 0
- ✘ gflag__noisedev__eglvt__cmos028fdsoi = 0

● Model eglvtvpfet_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 = 70e-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
- ✘ dlshrink_tinv = 0
- ✘ vgs_start = -0.5 V
- ✘ plashrink_ivt = 1
- ✘ ithslwi = 10e-9 A
- ✘ vds_cbd = 0 V
- ✘ vddmax = vdd
- ✘ voffset = 0.2 V
- ✘ mc_runs = 1000
- ✘ vstep_ivt = 0.005 V
- ✘ vgs_off = 0 V
- ✘ temp = 25 °C
- ✘ f_ext = 100k Hz
- ✘ vbs = 1.5 V
- ✘ vdd = 1.5 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

- ✘ eglvt_dev = 0
- ✘ gflag__noisedev__eglvt__cmos028fdsoi = 0