



cmos028fdsoi Technology

EGLVT models

DK1.2_RF_mmW

Comparison with DK1.1_RF_mmW model(s)

Focus on analog/RF performance

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Sep 21, 2018

Technology R&D Crolles Site – TDP/TDS/SPICE Modeling

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General information on EGLVT models

- Maximum supply voltage is 1.8 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): eglvtnfet_rf, eglvtnfet_rfseg, eglvtpfet_rf, eglvtpfet_rfseg
 - ✓ V_{t_lin} : Threshold voltage defined as V_{gs} value for which drain current is $i_{vt} \cdot M \cdot 1 \cdot W / (1 \cdot L + 0 + 1 \cdot p_la)$ at $V_{ds} = 0.05V$.
 - ✓ G_{m_ana} : Drain transconductance at $I_{ds} = i_{ana} \cdot M \cdot W / L$, $V_{ds} = V_{dd}/4V$, $f = 100kHz$.
 - ✓ F_{t_max} : Maximum transition frequency at $V_{ds} = V_{dd}V$, $f = 100kHz$.
 - ✓ G_{ds_ana} : Drain conductance at $I_{ds} = i_{ana} \cdot M \cdot W / L$, $V_{ds} = V_{dd}/4$, $f = 100k$
 - ✓ V_{gs_ana} : V_{gs} value for which drain current is $i_{ana} \cdot M \cdot 1 \cdot W / (1 \cdot L + 0 + 0 \cdot p_la)$ at $V_{ds} = V_{dd}/4V$.
 - ✓ I_{lin} : Drain current at $V_{gs} = 1.8V$, $V_{ds} = 0.05V$.
 - ✓ F_{maxmax} : Maximum oscillation frequency at $V_{ds} = V_{dd}V$, $f = 10GHz$
 - ✓ R_g : Total gate resistance at $V_{gs} = 1.8V$, $V_{ds} = 0V$, $f = 10GHz$
 - ✓ V_{t_sat} : Threshold voltage defined as V_{gs} value for which drain current is $i_{vt} \cdot M \cdot 1 \cdot W / (1 \cdot L + 0 + 1 \cdot p_la)$ at $V_{ds} = v_{ds_sat}V$.
 - ✓ C_{gg_inv} : Total gate capacitance at $V_{gs} = 1.8V$, $V_{ds} = 0V$, $f = 100kHz$.
 - ✓ F_{t_ana} : Transition frequency at $I_{ds} = i_{ana} \cdot M \cdot W / L$, $V_{ds} = V_{dd}/4V$
 - ✓ G_{dc_ana} : Voltage gain at $I_{ds} = i_{ana} \cdot M \cdot W / L$, $V_{ds} = V_{dd}/4V$, $f = 100kHz$
 - ✓ I_{sat} : Drain current at $V_{gs} = 1.8V$, $V_{ds} = V_{dd}V$.
 - ✓ C_{gd_0v} : Gate-to-Drain capacitance at $V_{gs} = 0V$, $V_{ds} = 0V$, $f = 100kHz$.
 - ✓ V_{tgmmax} : Threshold voltage at $V_{ds} = 0.05$ derived from G_m max method.

eglvtnfet_rf

Electrical characteristics per geometry

**eglvtnfet_rf @ w=4e-05, l=1.5e-07, nf=20, wfing=2e-06, ngcon=1, sd=140e-9,
wstrap=1.6e-07, pocos=5e-08, pocod=5e-08, strap=2, sa=1.2e-07, sb=1.2e-07,
study=LScaling_W2u, vbs=0, vdd=1.8, temp=25**

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	TT	FFF
vt_lin [mV]	416.2 0.0mV	366.8 0.0mV	317.8 0.0mV
vt_sat [mV]	394.5 0.0mV	345.8 0.0mV	297.5 0.0mV
ilin [mA]	2.61 0.0%	2.88 0.0%	3.14 0.0%
cgd_0V/w []	2.31e-10 0.0%	2.16e-10 0.0%	2e-10 0.0%
rg [Ω]	27.19 0.0%	23.39 0.0%	20.17 0.0%
Ft_max [GHz]	60.44 0.0%	64.17 0.0%	68.42 0.0%
Fmaxmax [GHz]	112.4 0.0%	134.1 0.0%	161.5 0.0%

eglvtnfet_rfseg

Electrical characteristics per geometry

**eglvtnfet_rfseg @ w=4e-05, l=1.5e-07, nf=20, wfing=2e-06, ngcon=1, sd=140e-9,
wstrap=1.6e-07, pocos=5e-08, pocod=5e-08, strap=2, sa=1.2e-07, sb=1.2e-07,
study=LScaling_W2u, vbs=0, vdd=1.8, temp=25**

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	TT	FFF
vt_lin [mV]	415.6 0.0mV	366.2 0.0mV	317.3 0.0mV
vt_sat [mV]	389.7 0.0mV	341.2 0.0mV	293.1 0.0mV
ilin [mA]	2.61 0.0%	2.89 0.0%	3.14 0.0%
cgd_0V/w []	2.31e-10 0.0%	2.16e-10 0.0%	2e-10 0.0%
rg [Ω]	25.58 0.0%	21.81 0.0%	18.62 0.0%
Ft_max [GHz]	61.4 0.0%	66.1 0.0%	72.06 0.0%
Fmaxmax [GHz]	116.4 0.0%	141.9 0.0%	175.9 0.0%

eglvtpfet_rf

Electrical characteristics per geometry

**eglvtpfet_rf @ w=4e-05, l=1.5e-07, nf=20, wfing=2e-06, ngcon=1, sd=140e-9,
wstrap=1.6e-07, pocos=5e-08, pocod=5e-08, strap=2, sa=1.2e-07, sb=1.2e-07,
study=LScaling_W2u, vbs=Vdd, vdd=1.8, temp=25**

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	TT	FFF
vt_lin [mV]	347.8 0.0mV	293.2 0.0mV	238.8 0.0mV
vt_sat [mV]	322 0.0mV	268 0.0mV	213.6 0.0mV
ilin [mA]	0.84 0.0%	0.98 0.0%	1.12 0.0%
cgd_0V/w []	1.88e-10 0.0%	1.73e-10 0.0%	1.59e-10 0.0%
rg [Ω]	70.85 0.0%	58.4 0.0%	53.81 0.0%
Ft_max [GHz]	36.36 0.0%	38.32 0.0%	40.45 0.0%
Fmaxmax [GHz]	54.52 0.0%	66.88 0.0%	76.84 0.0%

eglvtpfet_rfseg

Electrical characteristics per geometry

**eglvtpfet_rfseg @ w=4e-05, l=1.5e-07, nf=20, wfing=2e-06, ngcon=1, sd=140e-9,
wstrap=1.6e-07, pocos=5e-08, pocod=5e-08, strap=2, sa=1.2e-07, sb=1.2e-07,
study=LScaling_W2u, vbs=Vdd, vdd=1.8, temp=25**

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	SSF	TT	FFF
vt_lin [mV]	347.4 0.0mV	292.9 0.0mV	238.5 0.0mV
vt_sat [mV]	321.8 0.0mV	268.2 0.0mV	214.1 0.0mV
ilin [mA]	0.84 0.0%	0.98 0.0%	1.12 0.0%
cgd_0V/w []	1.88e-10 0.0%	1.73e-10 0.0%	1.59e-10 0.0%
rg [Ω]	63.64 0.0%	50.58 0.0%	45.35 0.0%
Ft_max [GHz]	38.11 0.0%	40.91 0.0%	43.82 0.0%
Fmaxmax [GHz]	59.41 0.0%	75.22 0.0%	90.61 0.0%

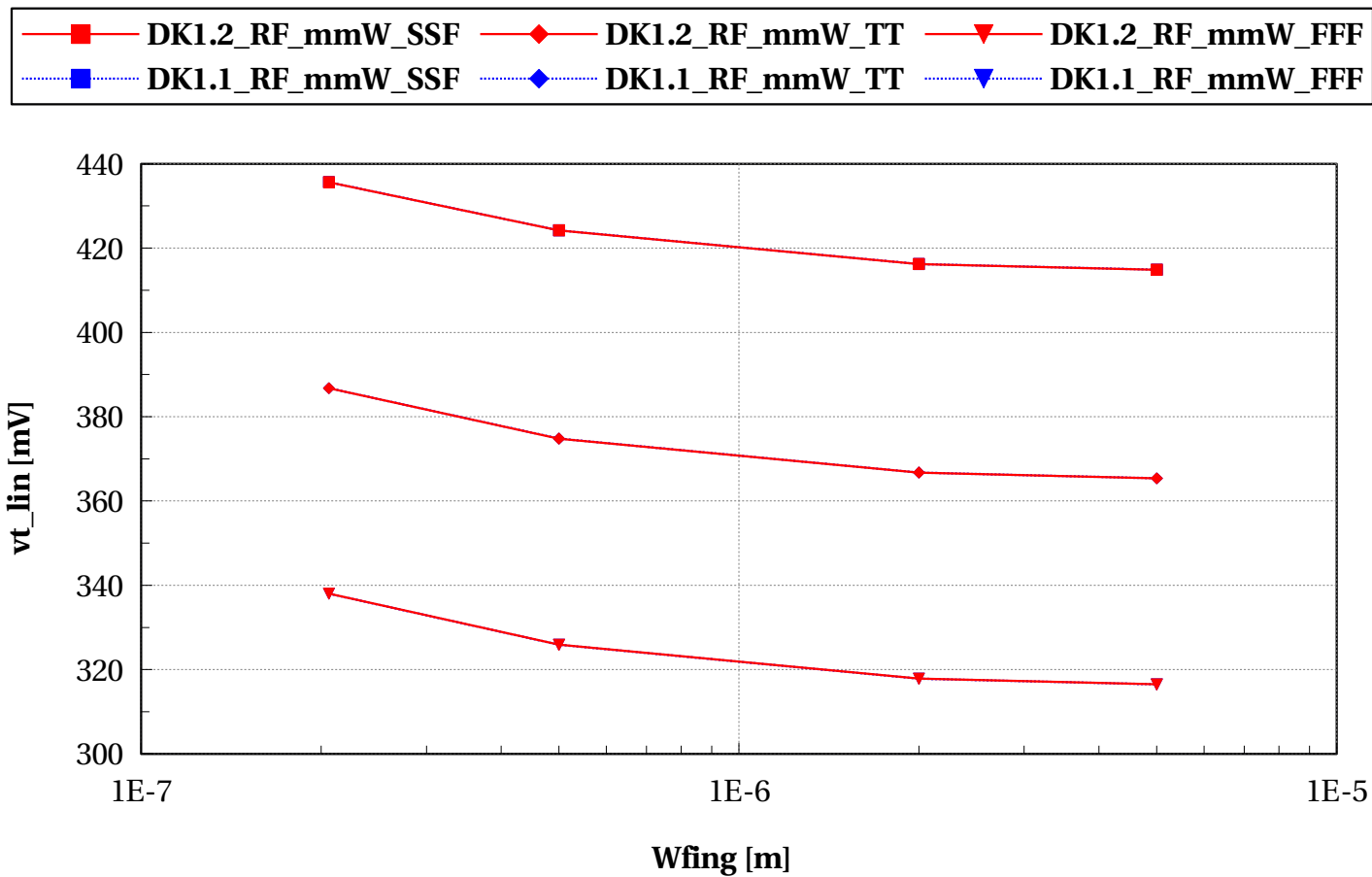
eglvtnfet_rf

Electrical characteristics scaling

Scaling versus width $L=150\text{nm}$ - DC

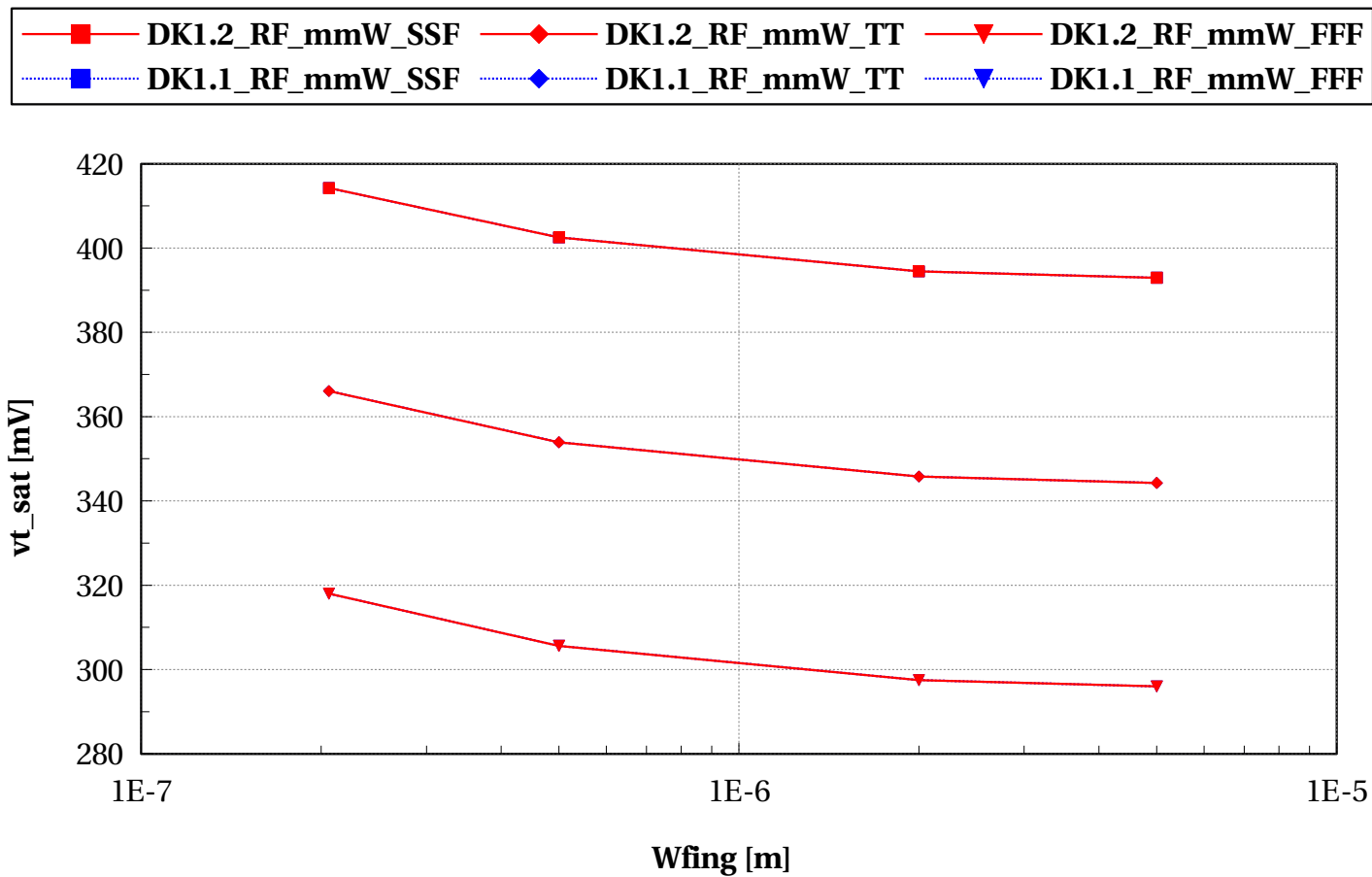
eglvtnfet_rf, vt_lin [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



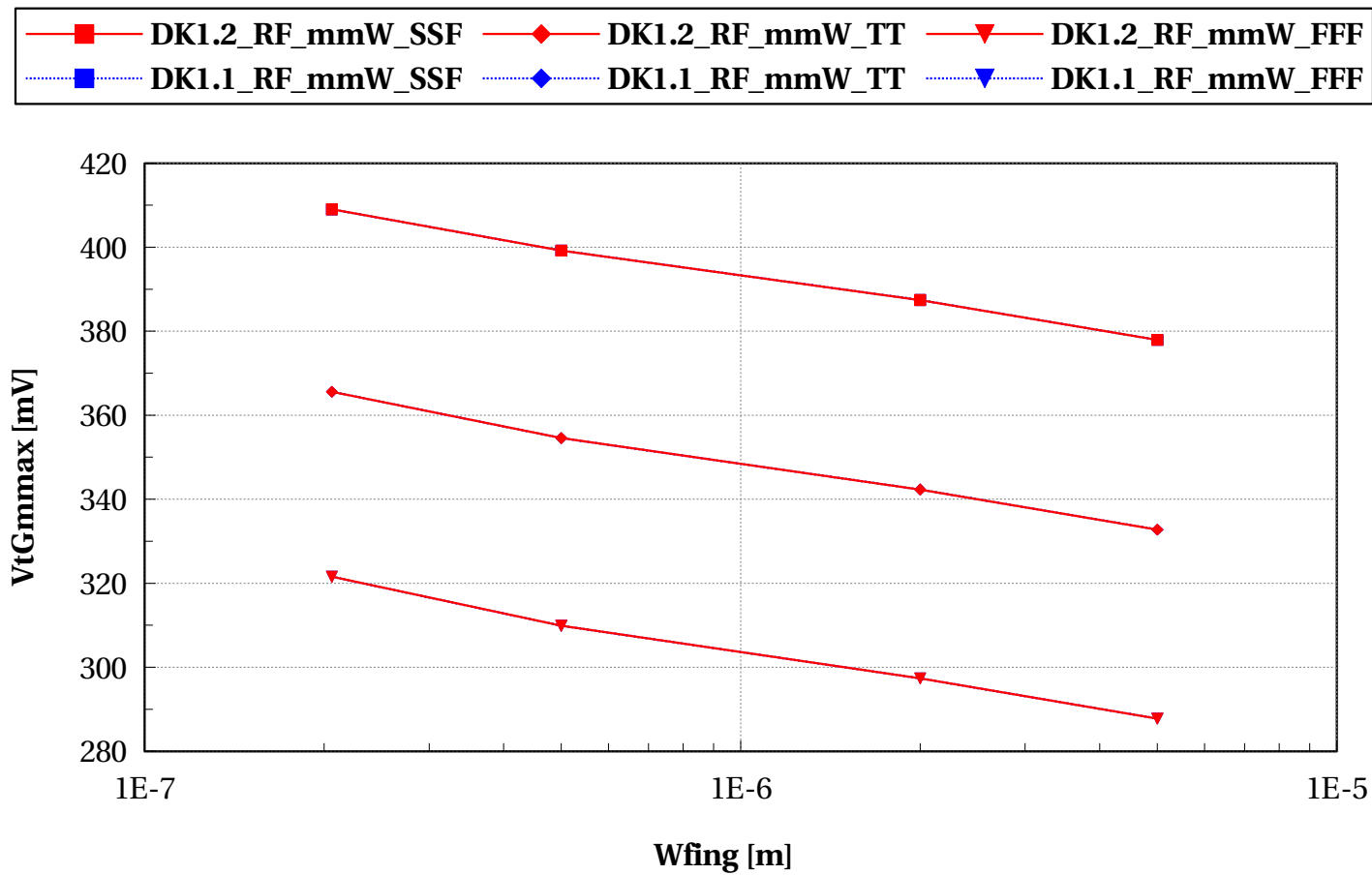
eglvtnfet_rf, vt_sat [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



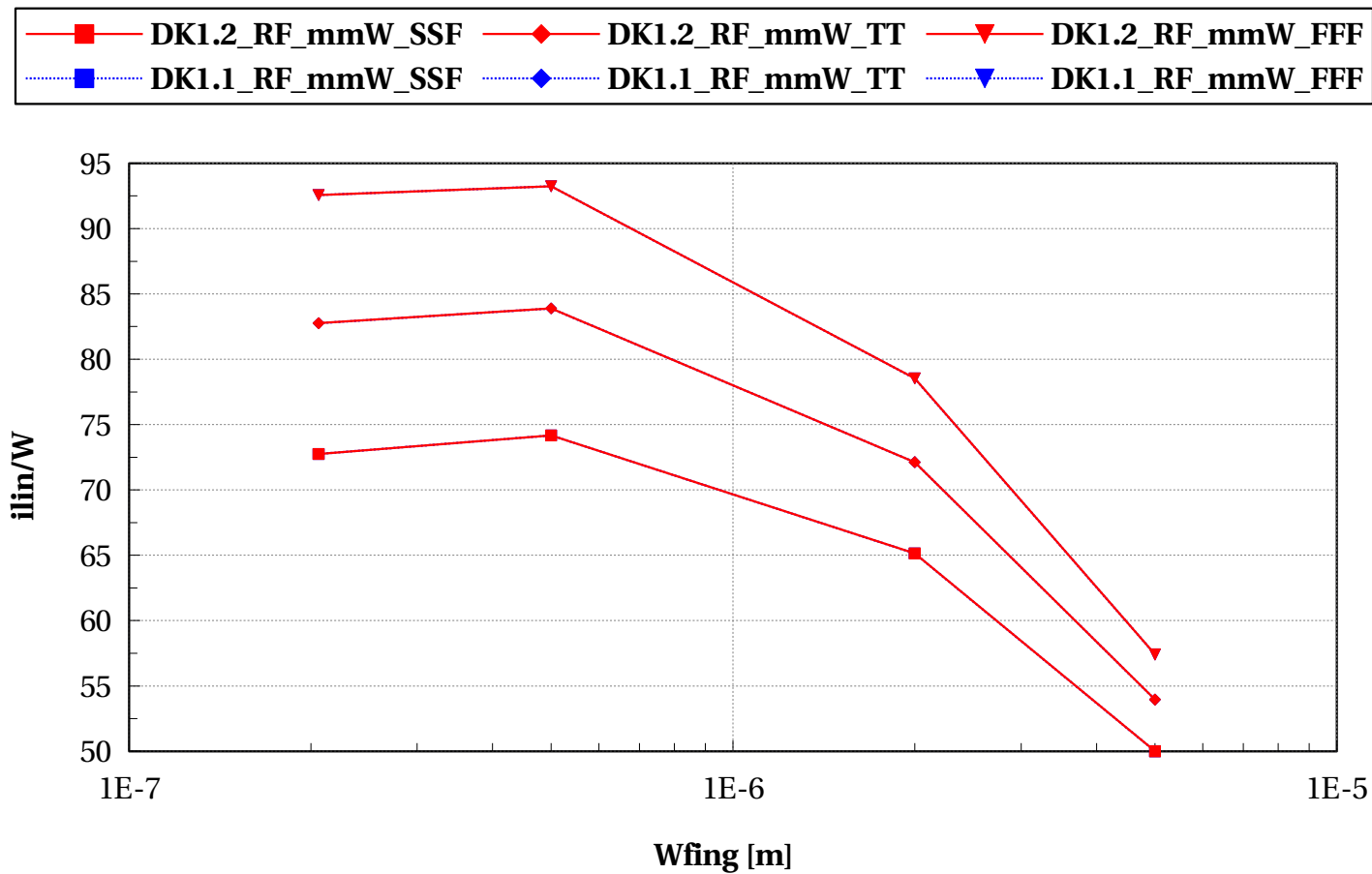
eglvtnfet_rf, VtGmmax [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



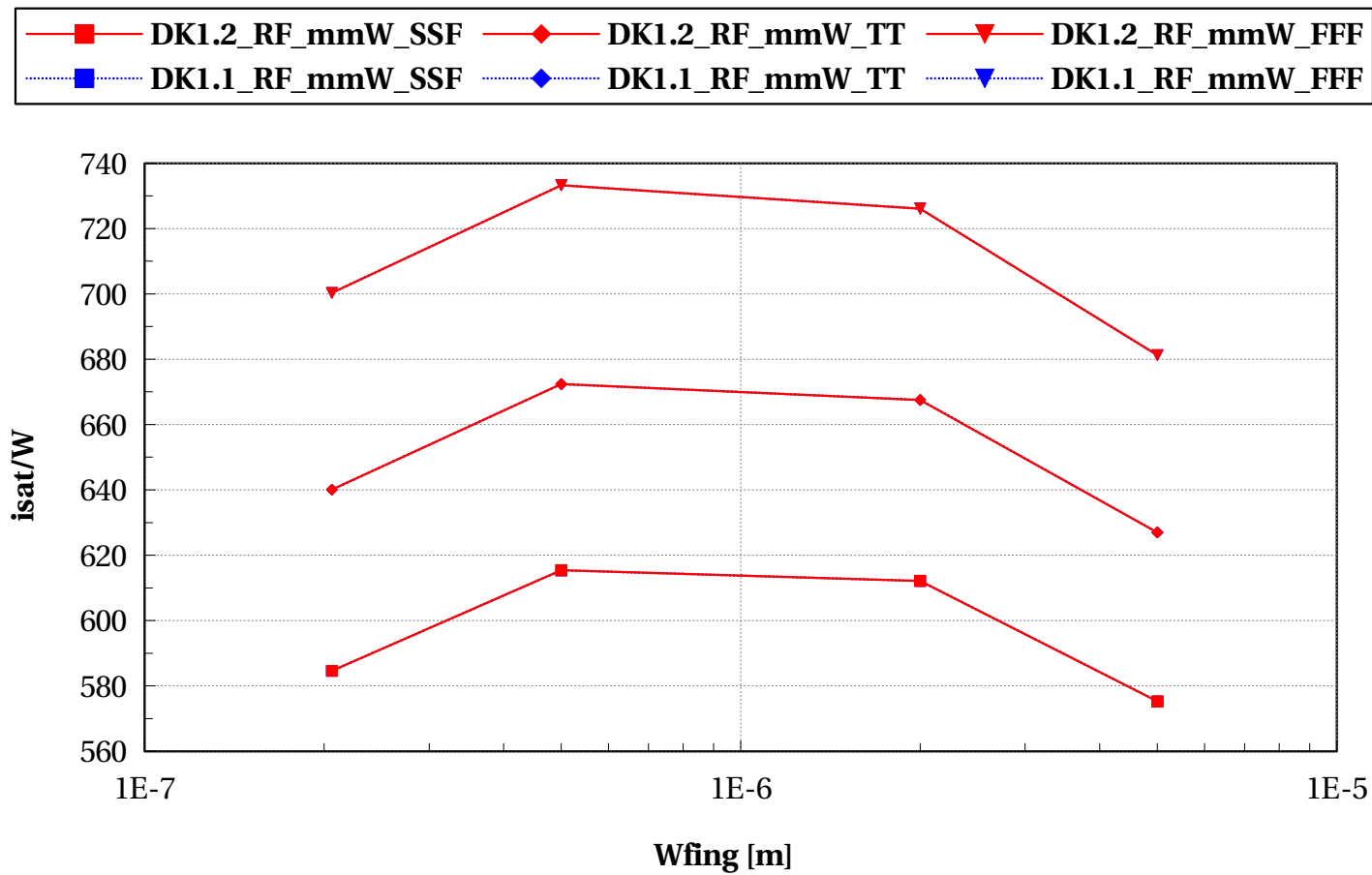
eglvtnfet_rf, i_{lin}/W vs W_{fing} [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and $l=150e-9$



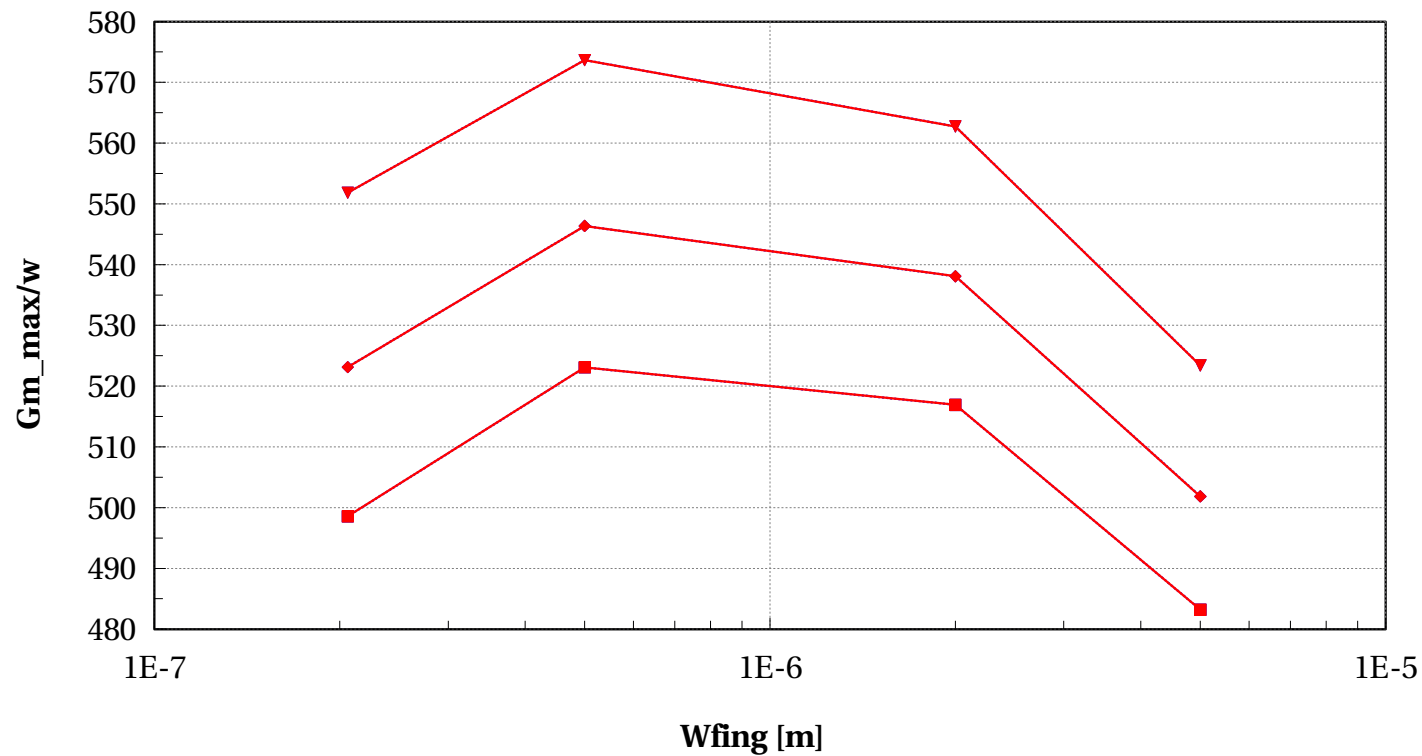
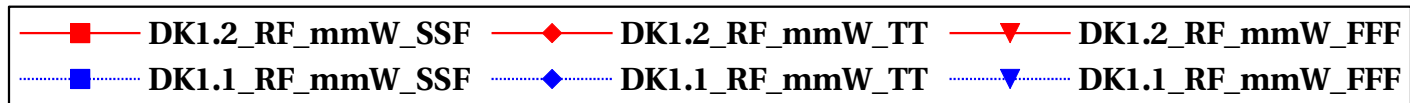
eglvtnfet_rf, isat/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtnfet_rf, Gm_max/w vs Wfing [m]

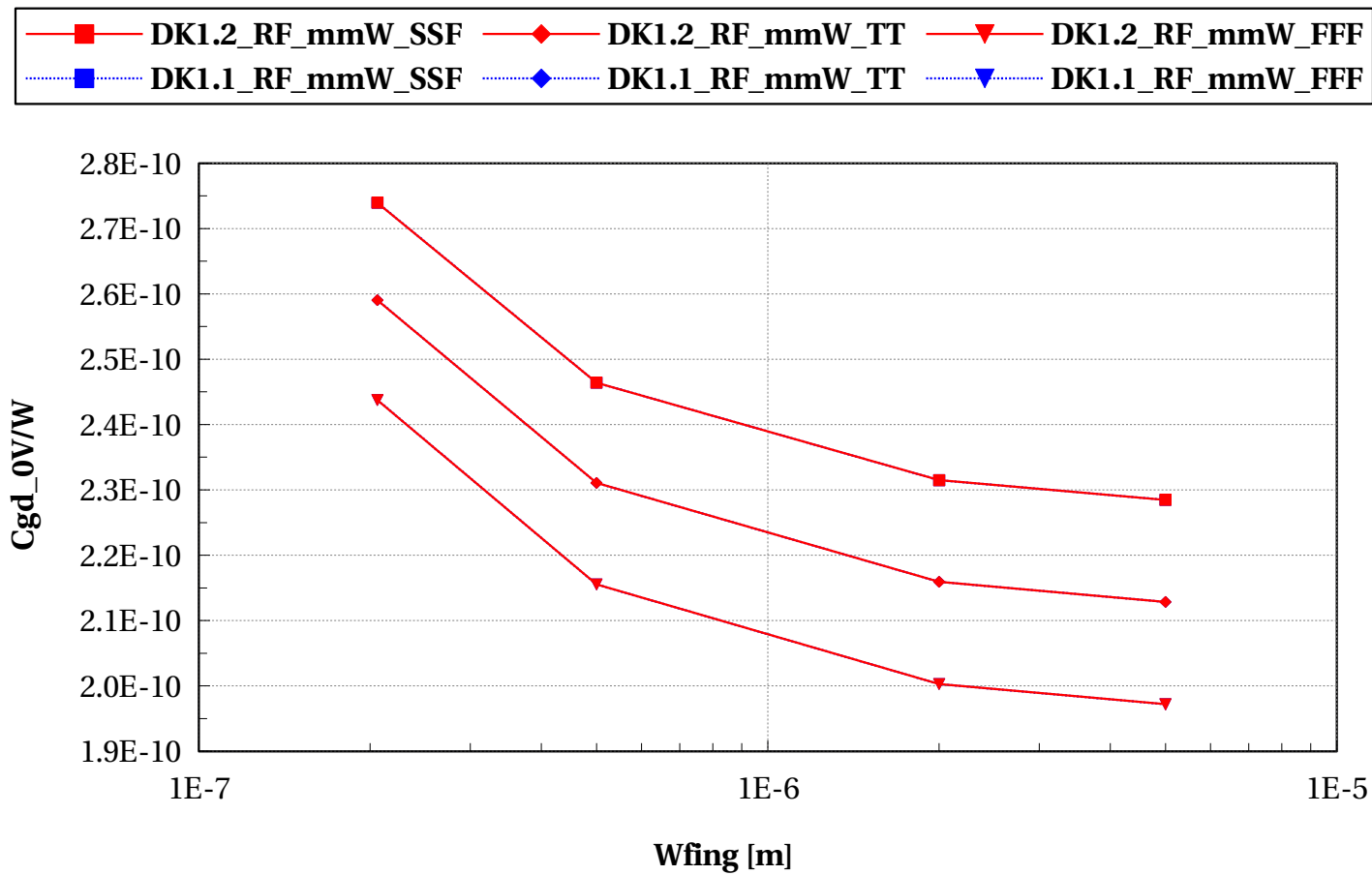
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus width $L=150\text{nm}$ - RF

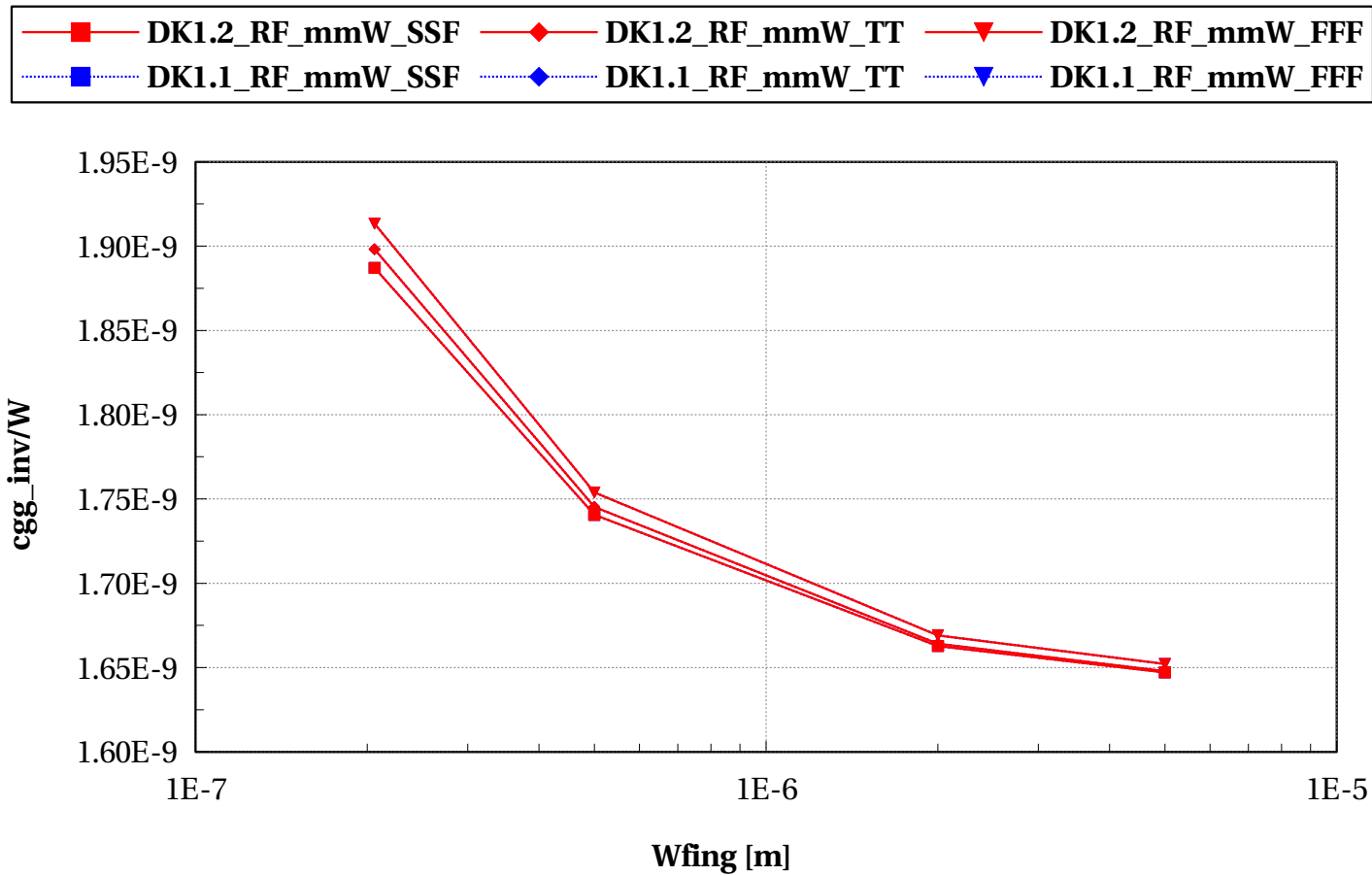
eglvtnfet_rf, Cgd_0V/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



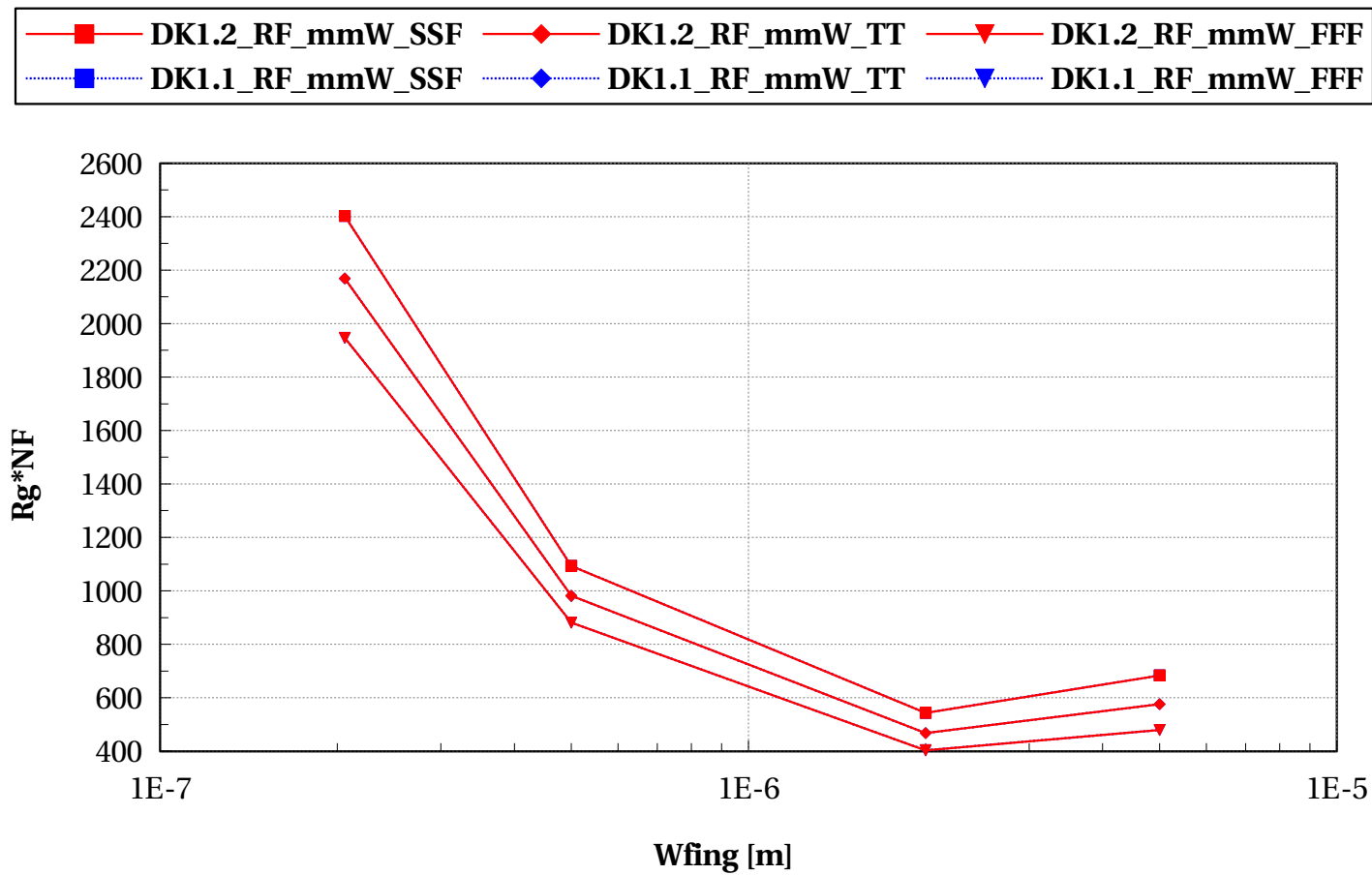
eglvtnfet_rf, cgg_inv/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



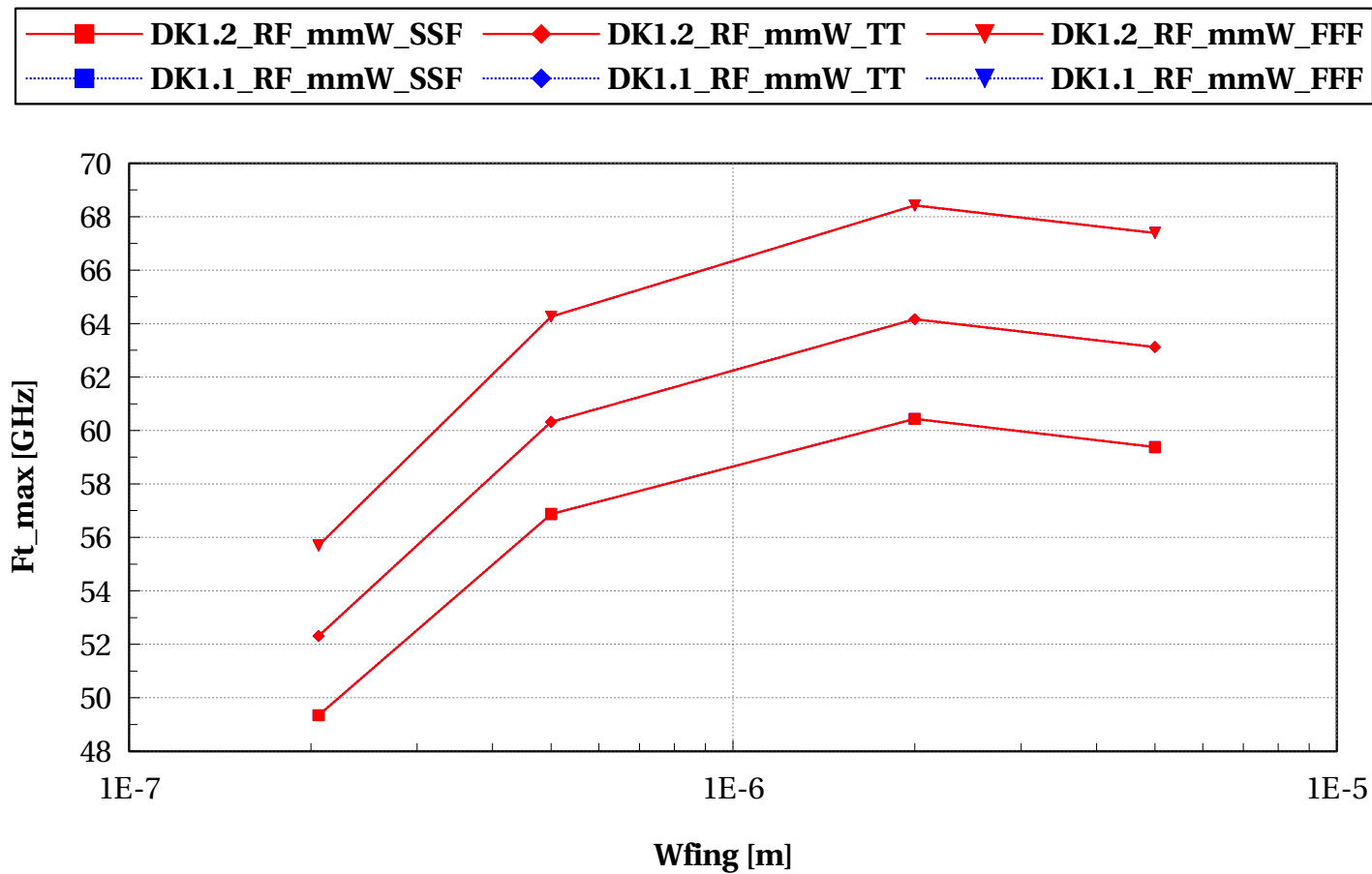
eglvtnfet_rf, Rg*NF vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



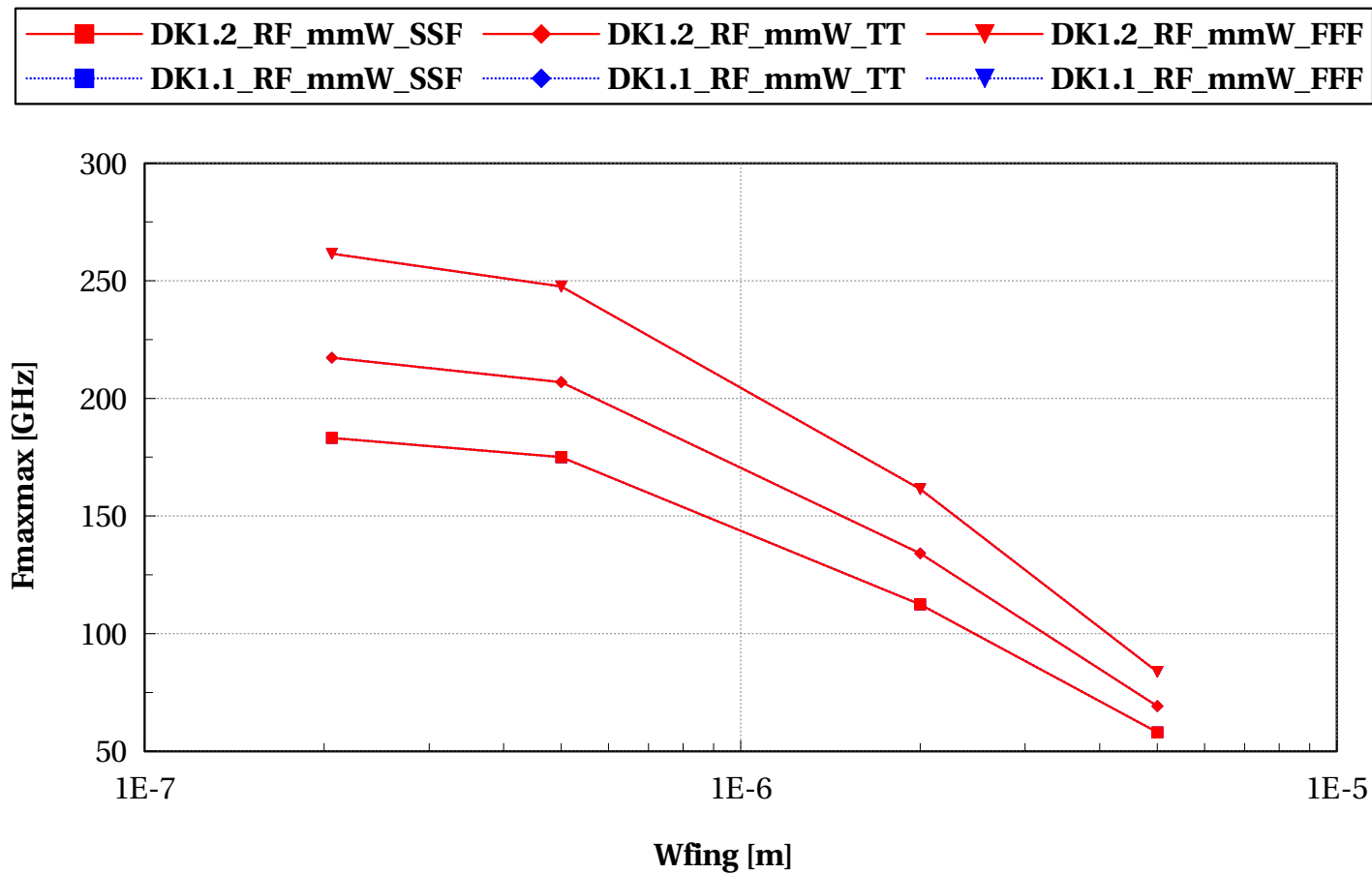
eglvtnfet_rf, Ft_max [GHz] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtnfet_rf, Fmaxmax [GHz] vs Wfing [m]

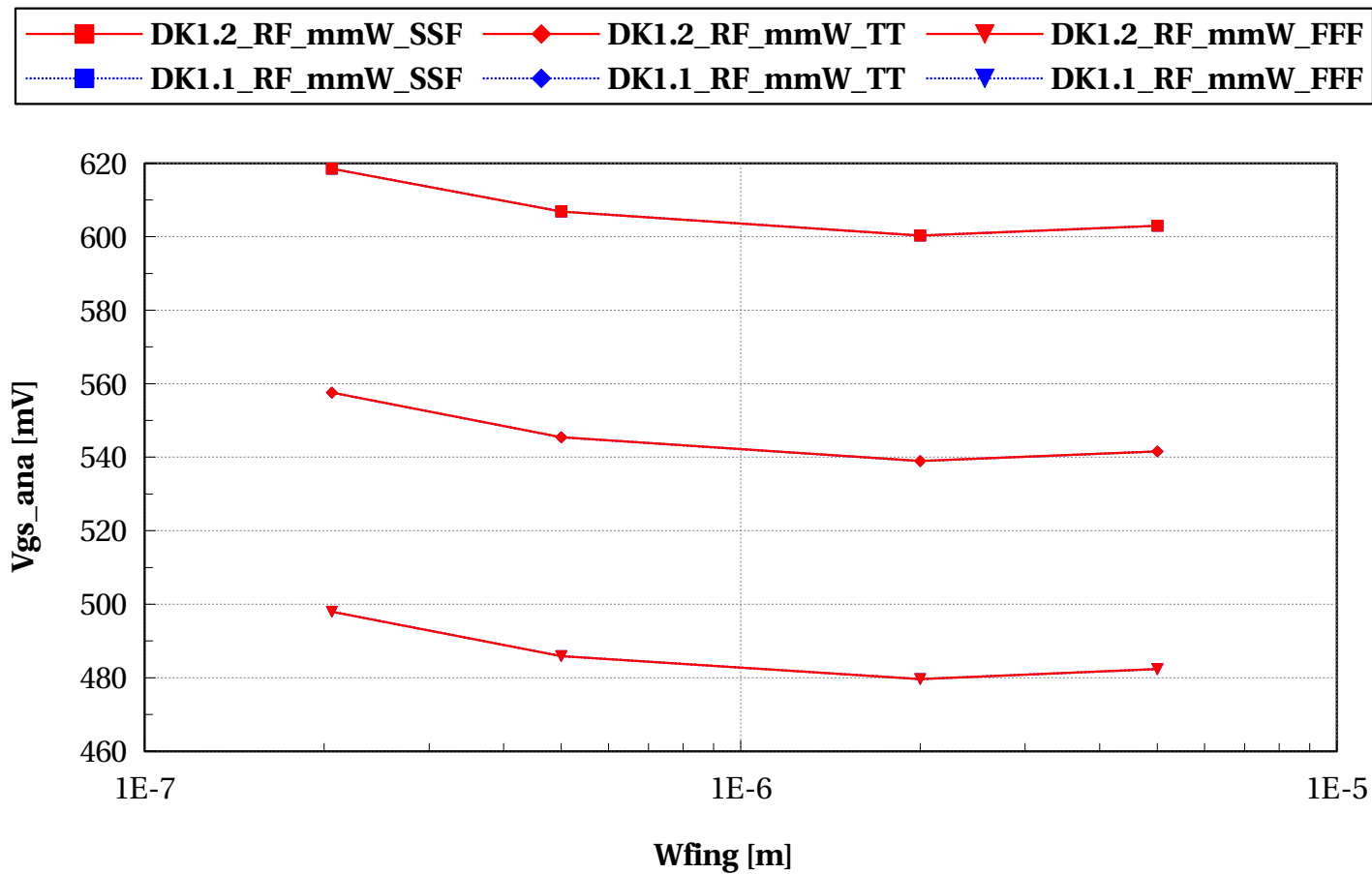
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus width $L=150\text{nm}$ - Analog

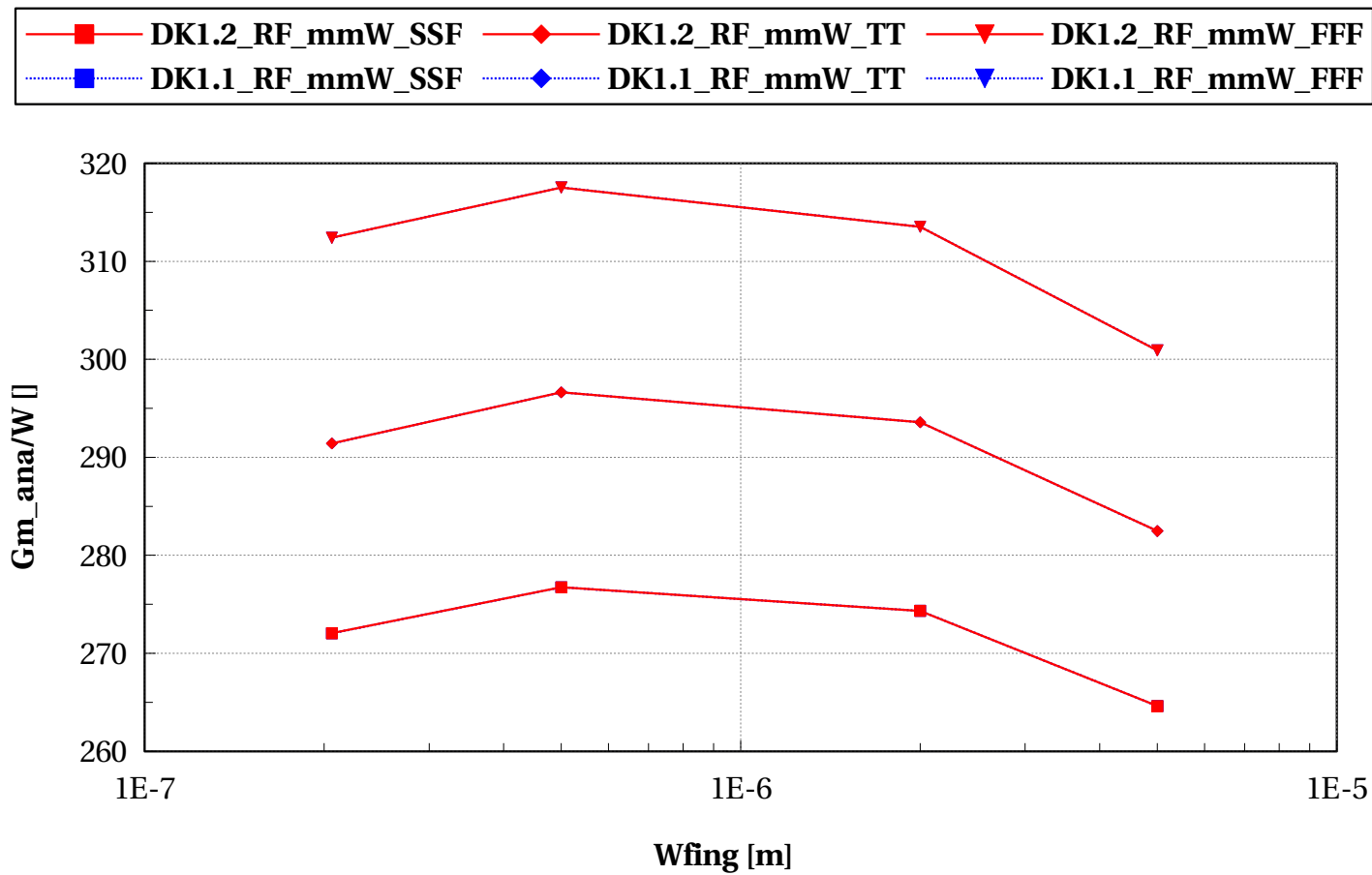
eglvtnfet_rf, Vgs_ana [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



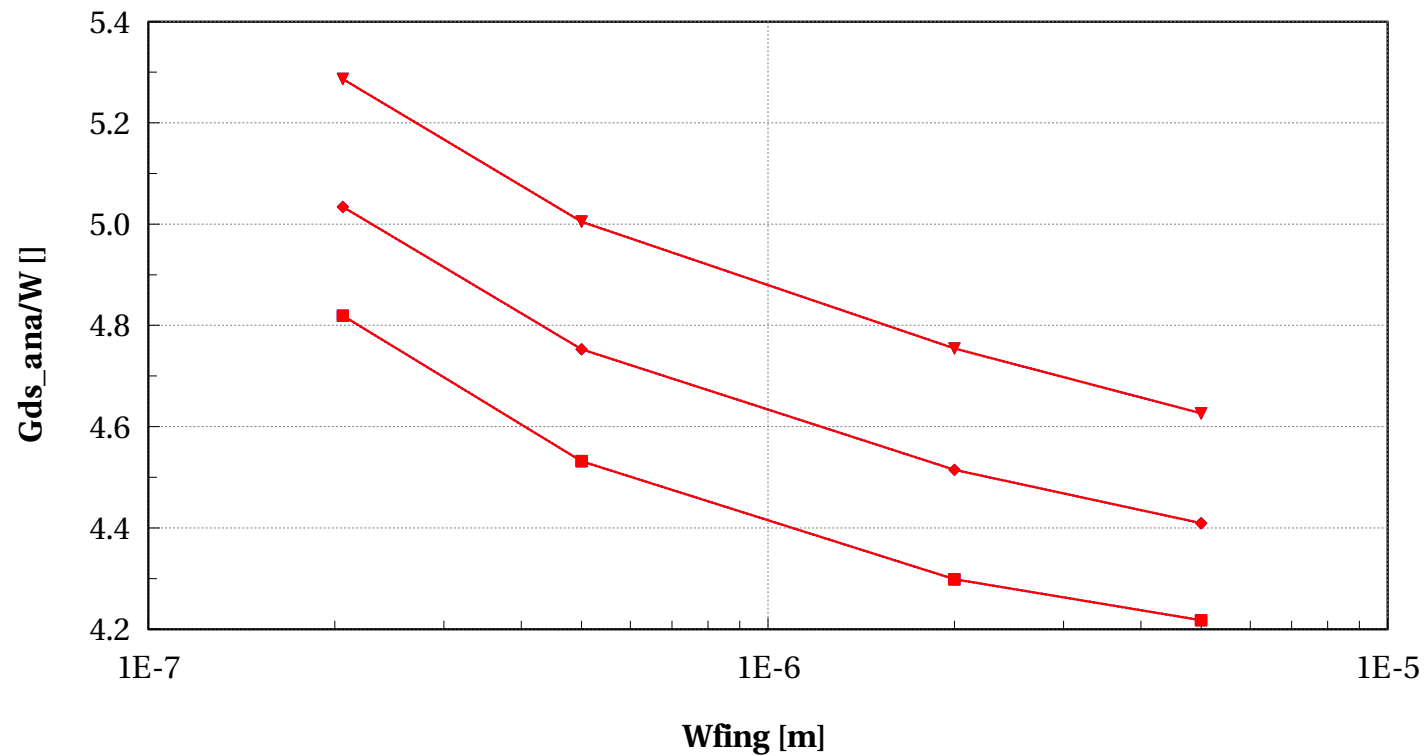
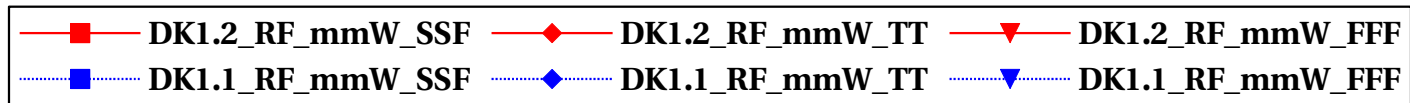
eglvtnfet_rf, Gm_ana/W [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



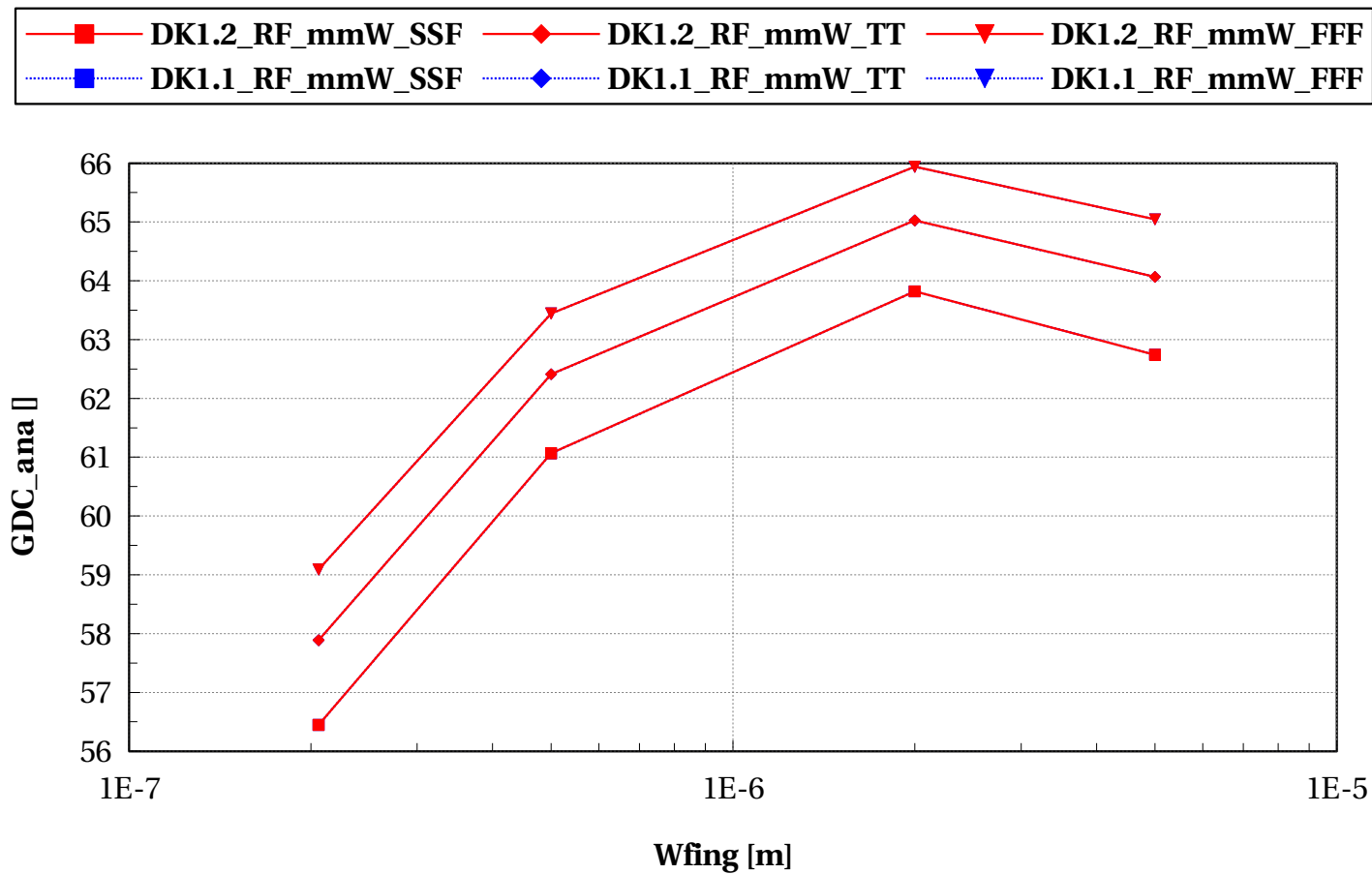
eglvtnfet_rf, Gds_ana/W [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



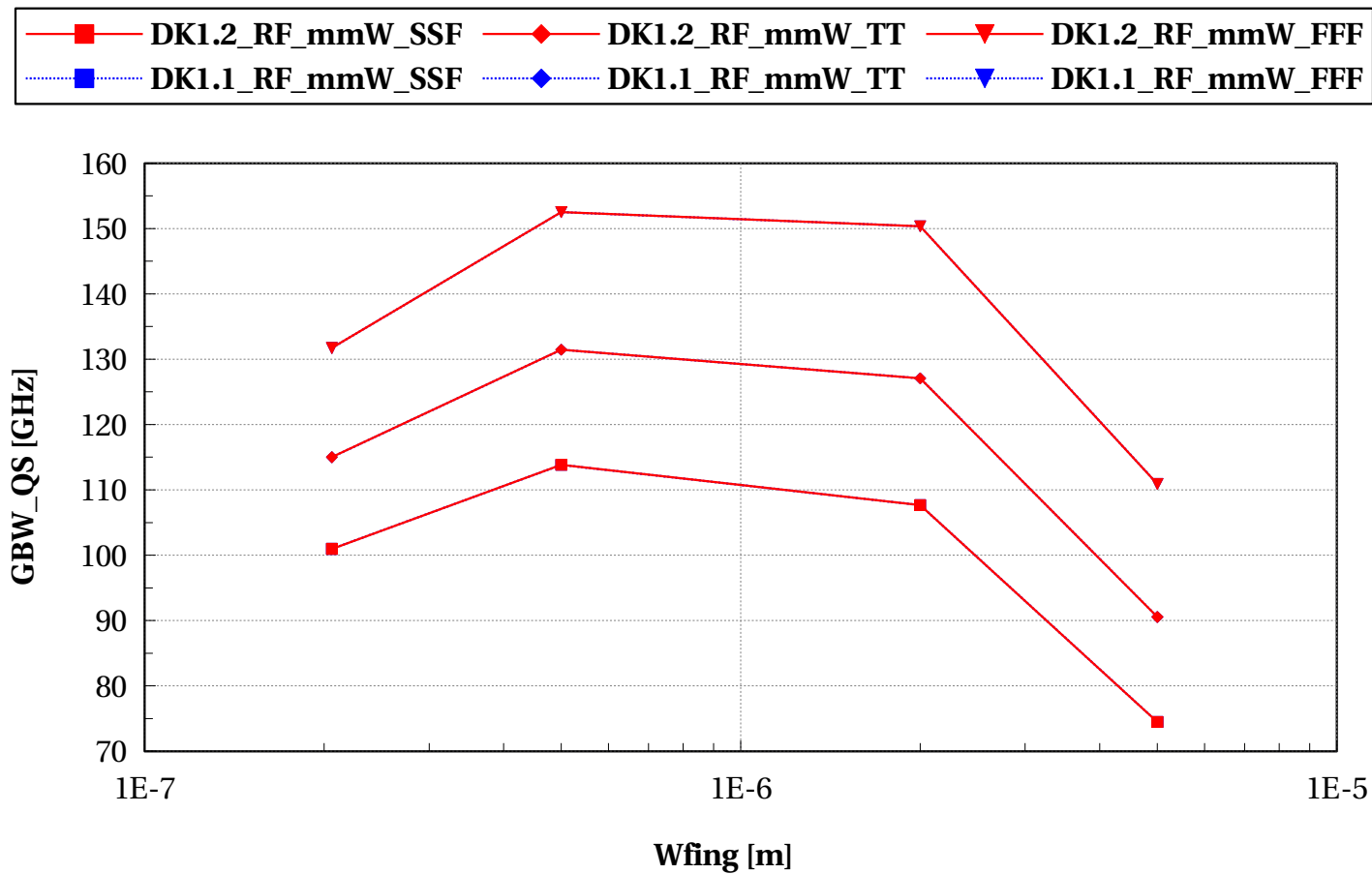
eglvtnfet_rf, GDC_ana [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



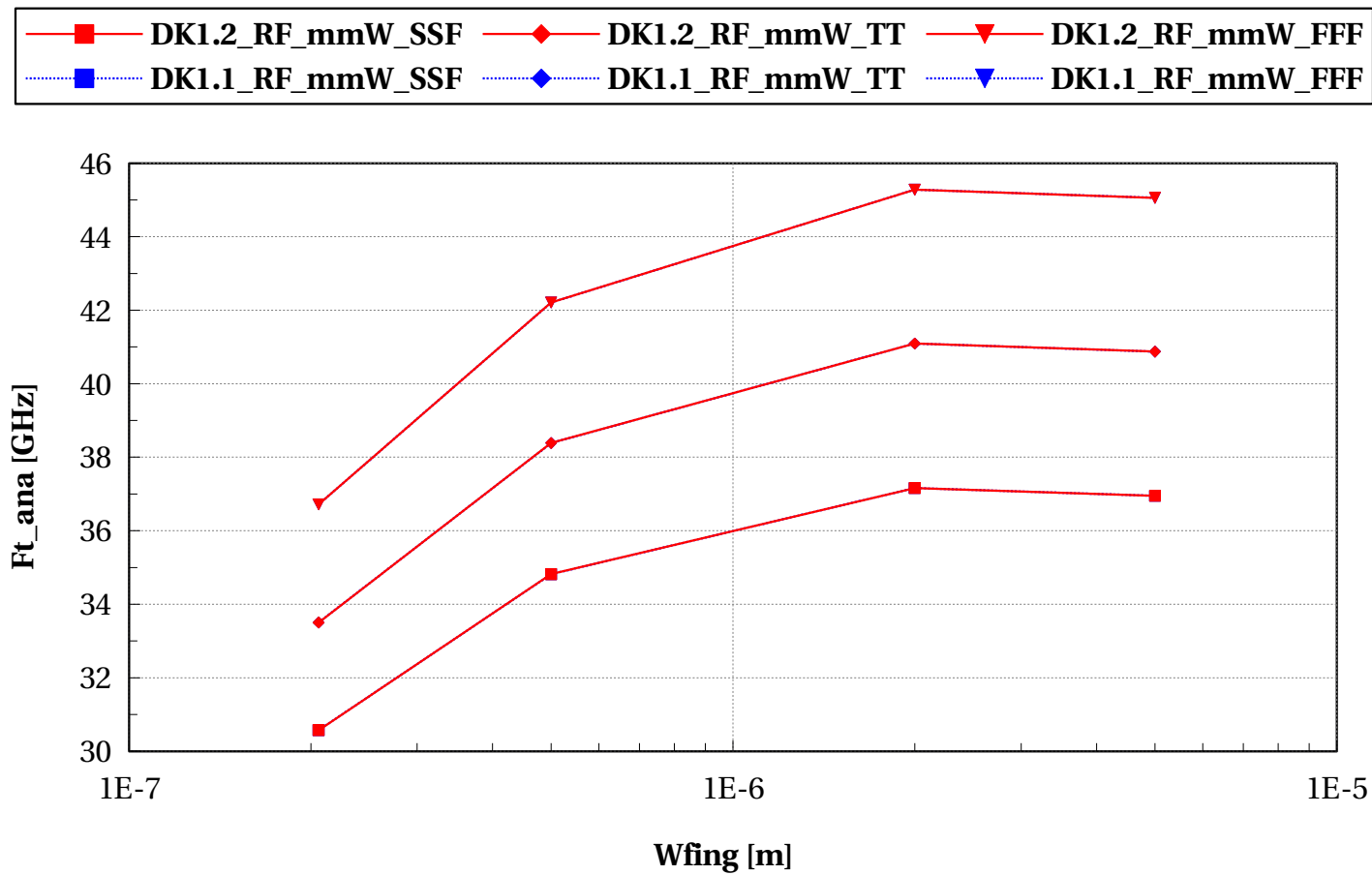
eglvtnfet_rf, GBW_QS [GHz] vs Wfing [m]

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eglvtnfet_rf, Ft_ana [GHz] vs Wfing [m]

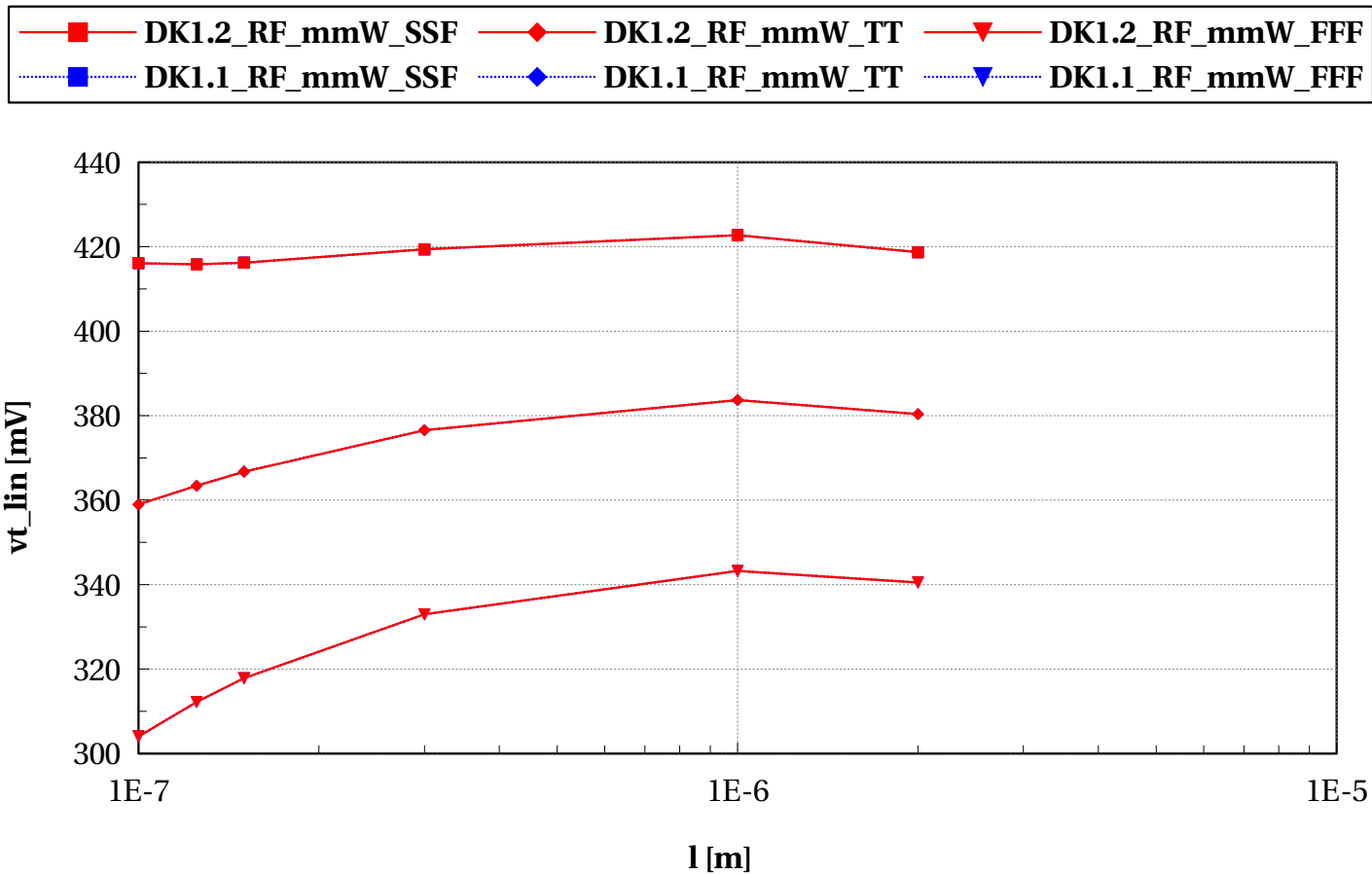
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Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - DC

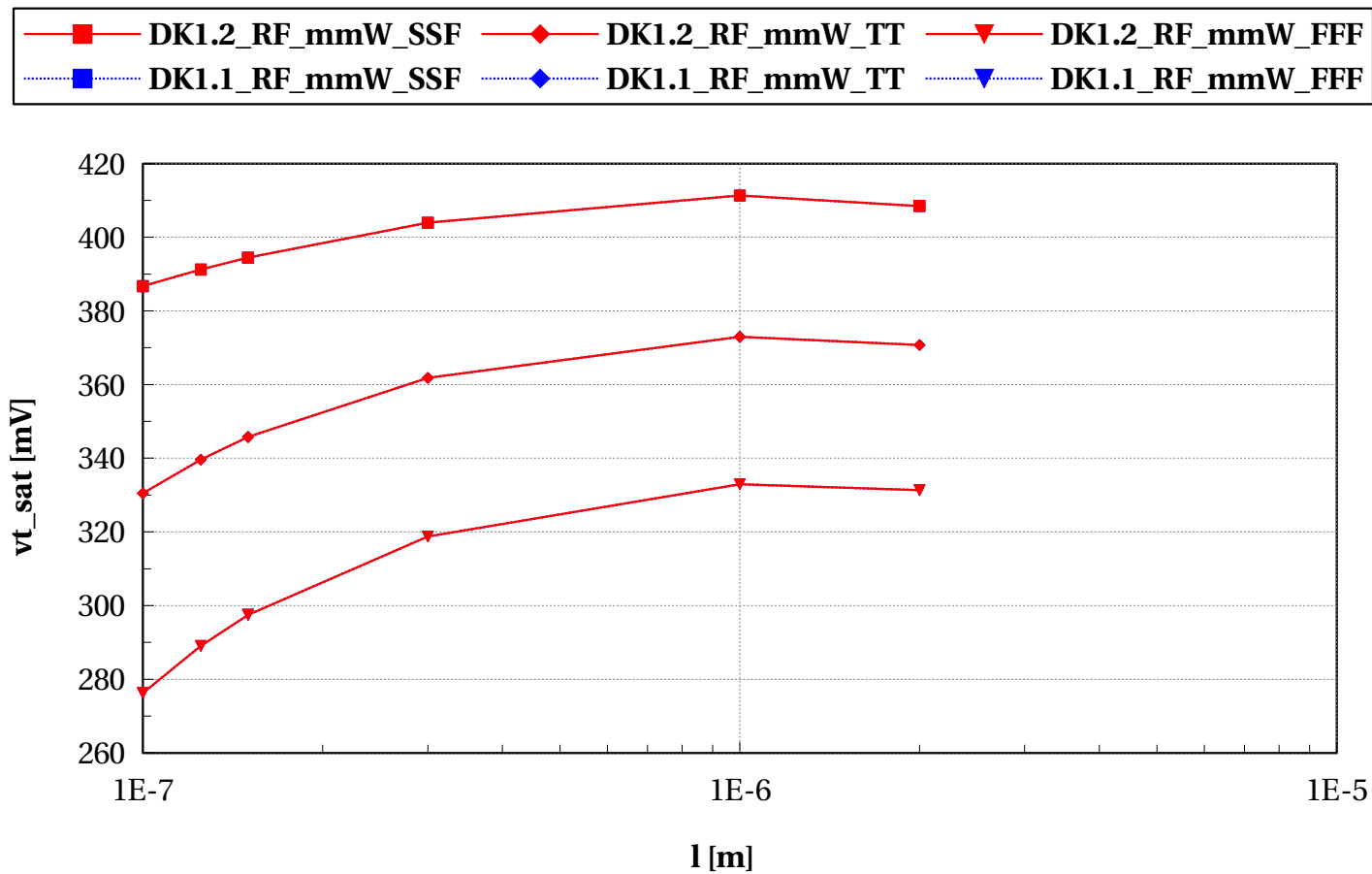
eglvtnfet_rf, vt_lin [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



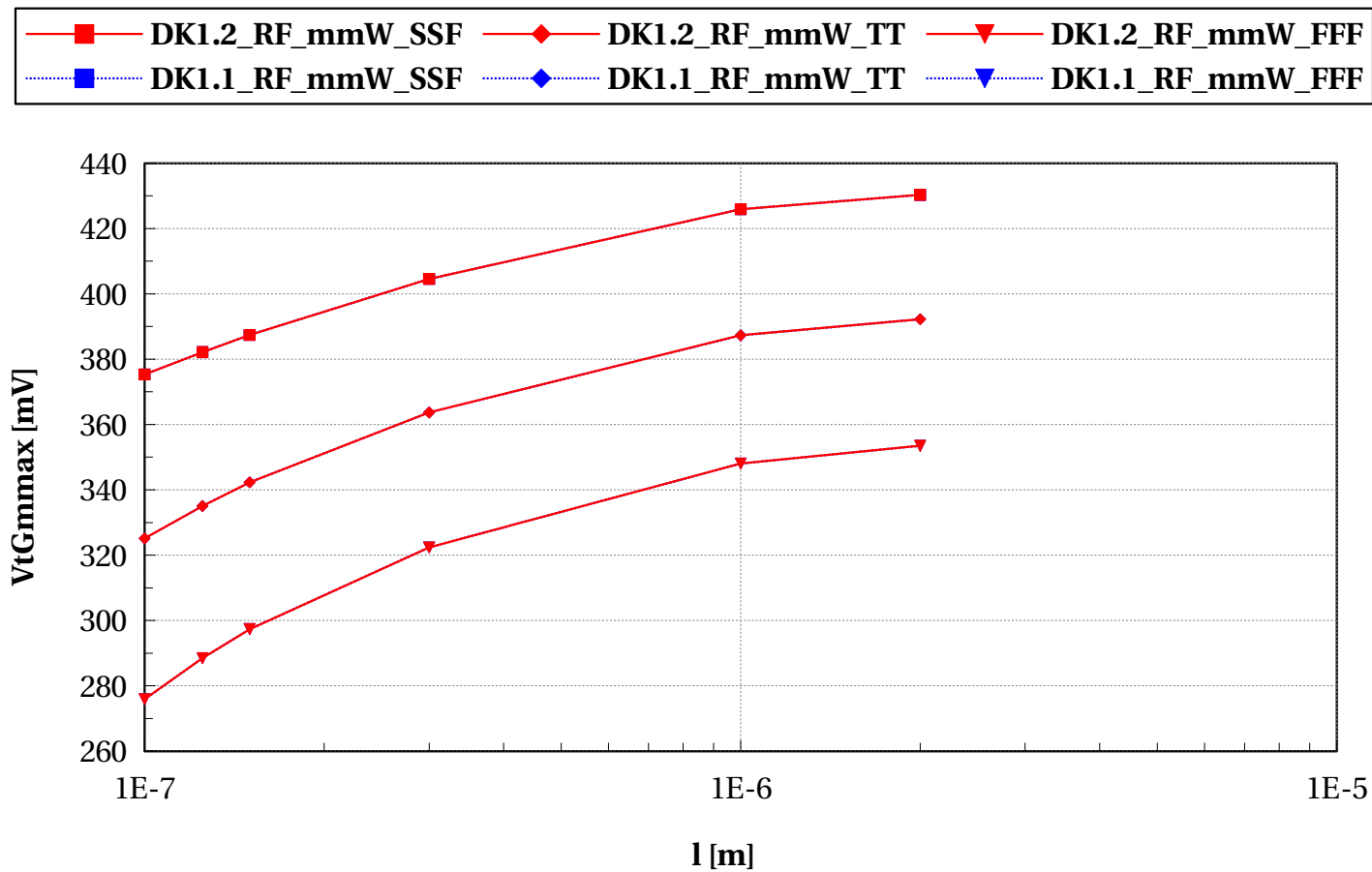
eglvtnfet_rf, vt_sat [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



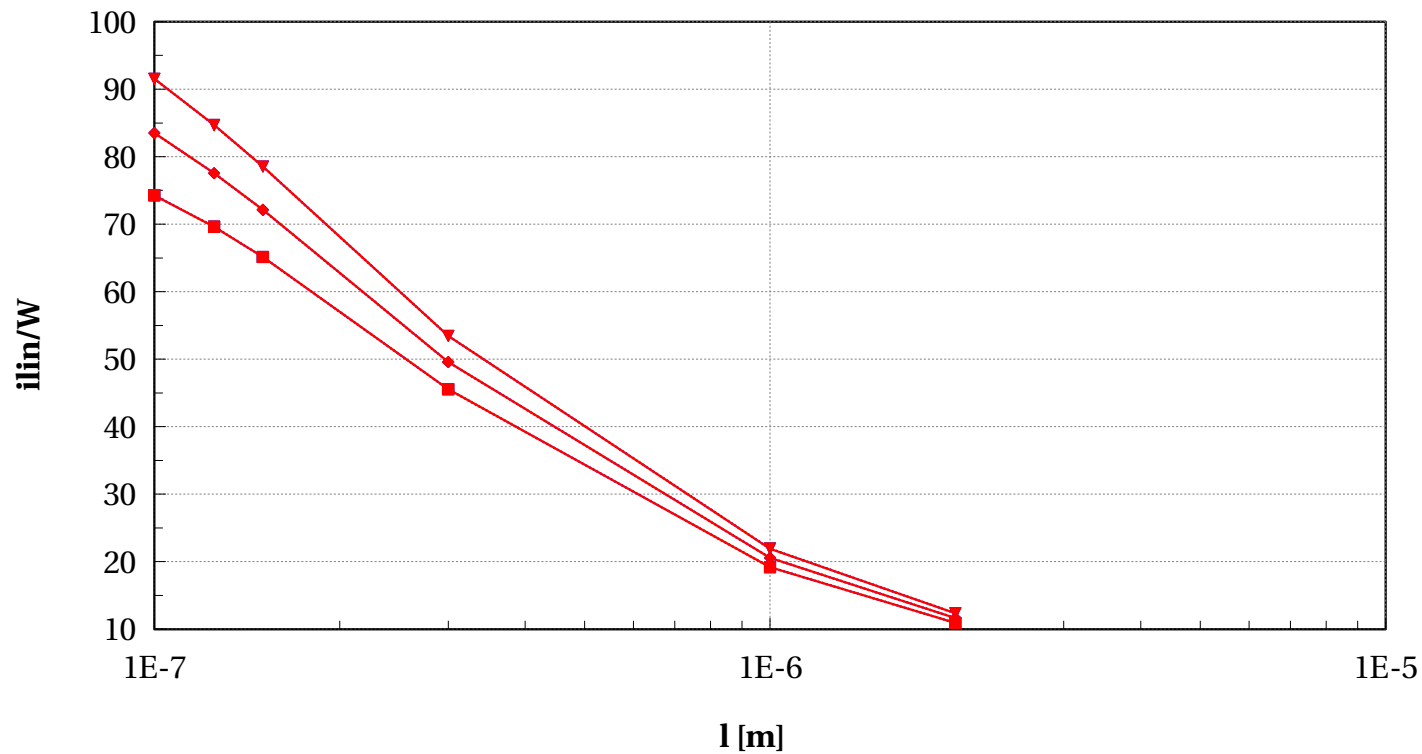
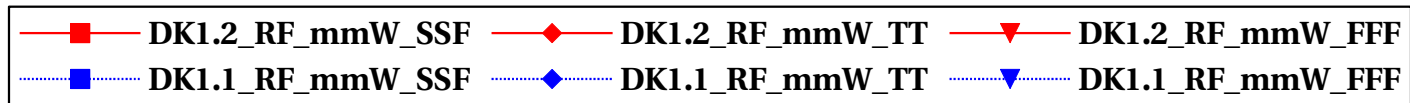
eglvtnfet_rf, VtGmmax [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



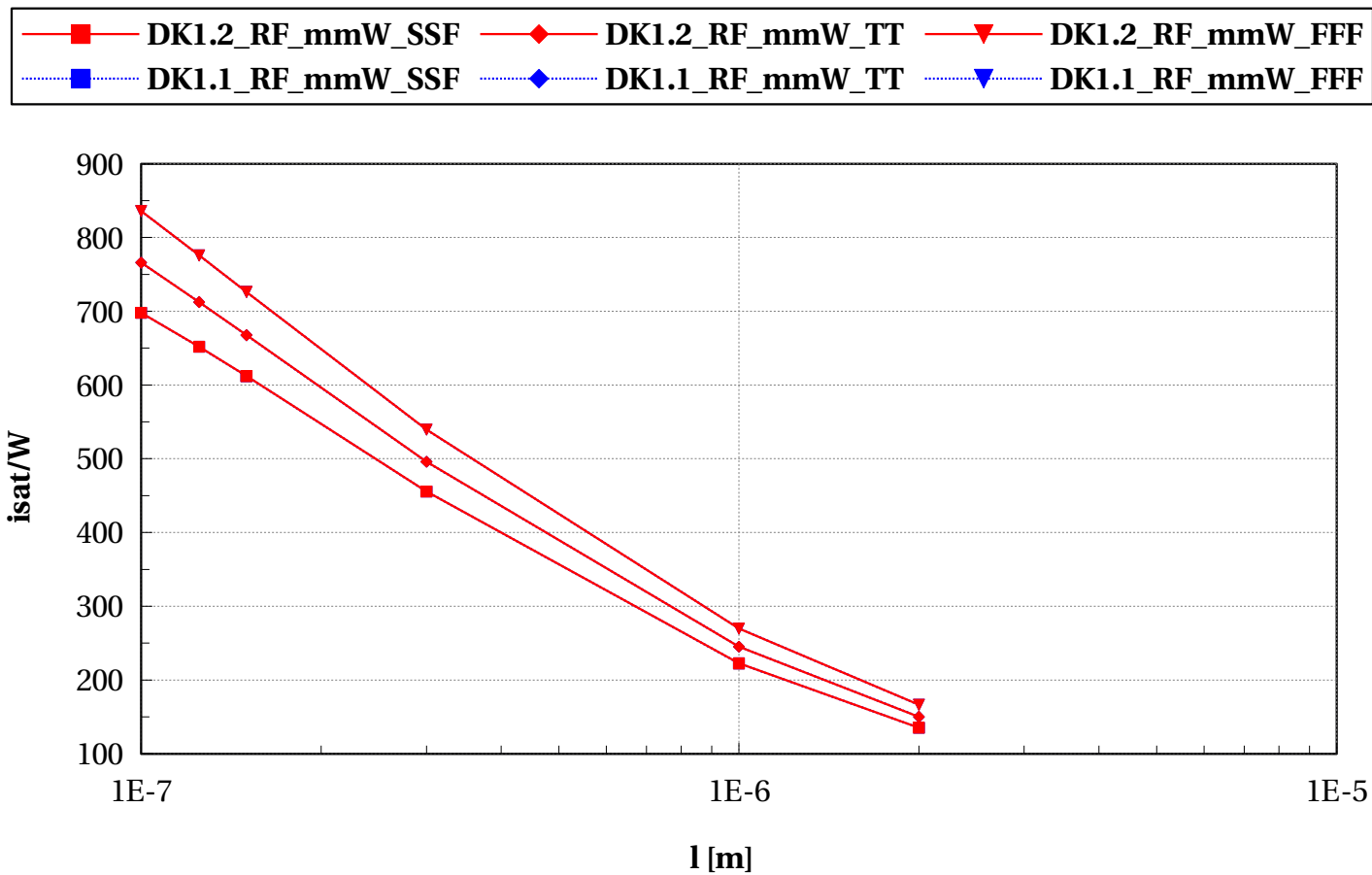
eglvtnfet_rf, i_{lin}/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



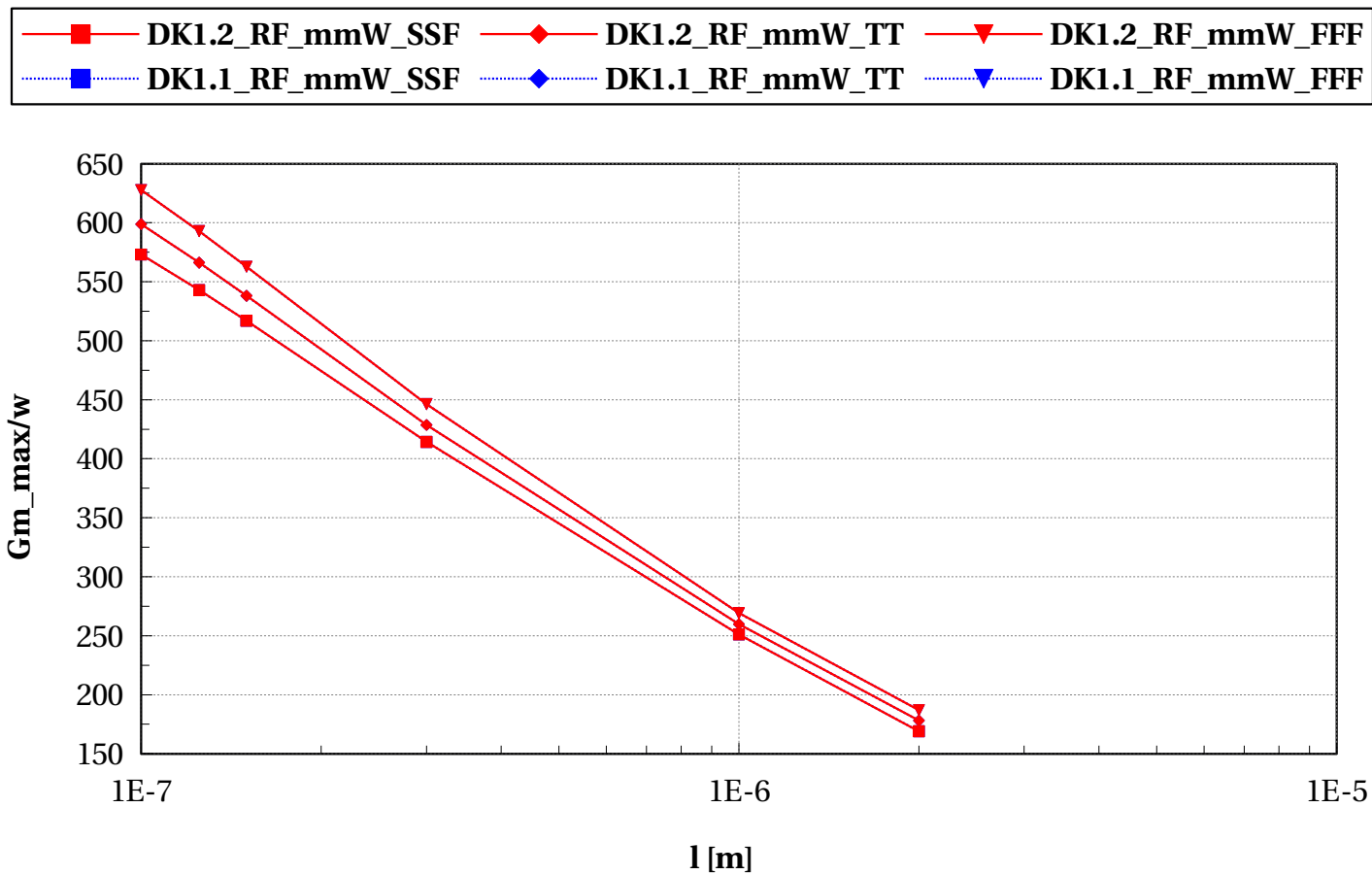
eglvtnfet_rf, isat/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtnfet_rf, Gm_max/w vs l [m]

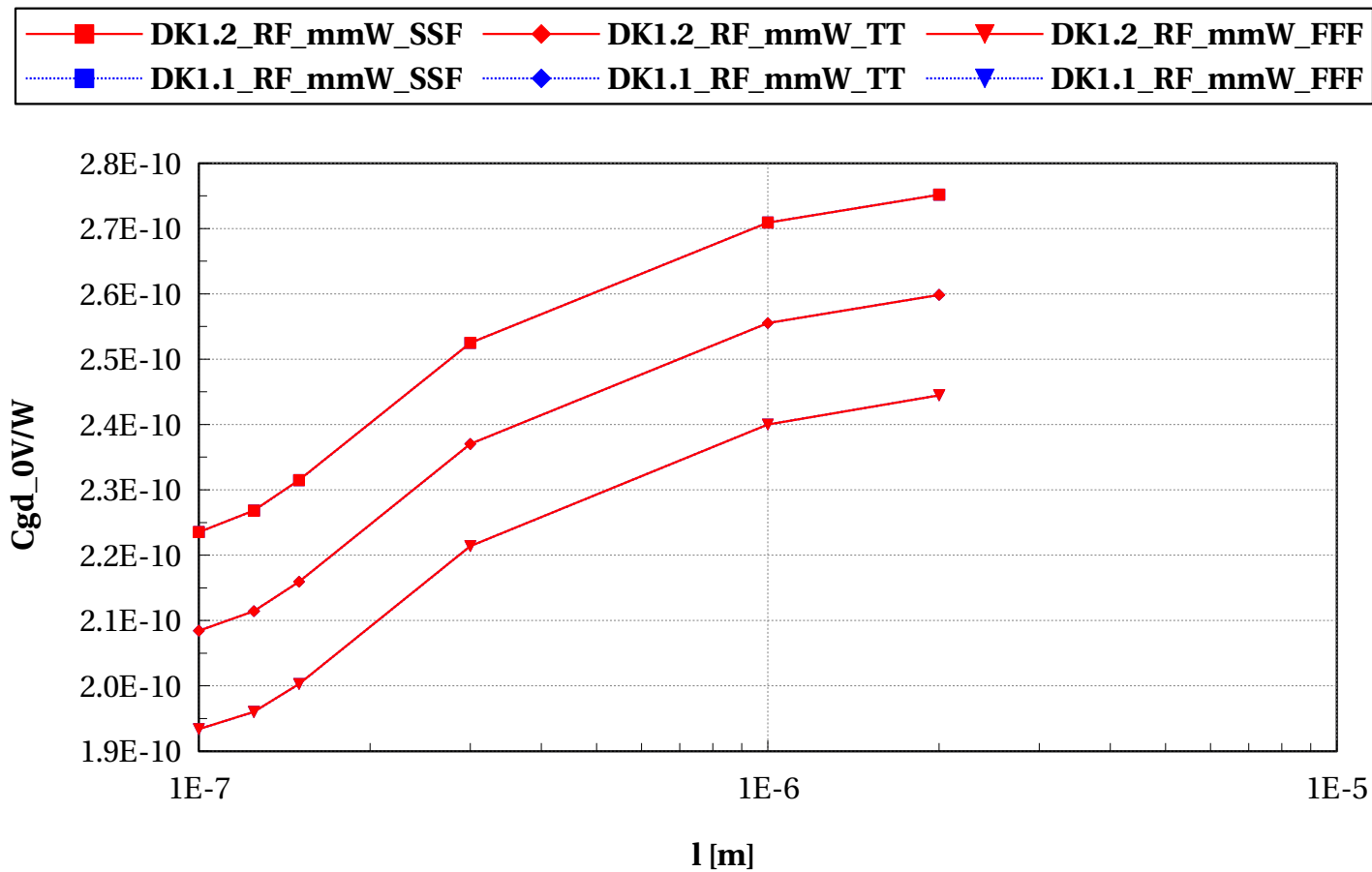
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Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - RF

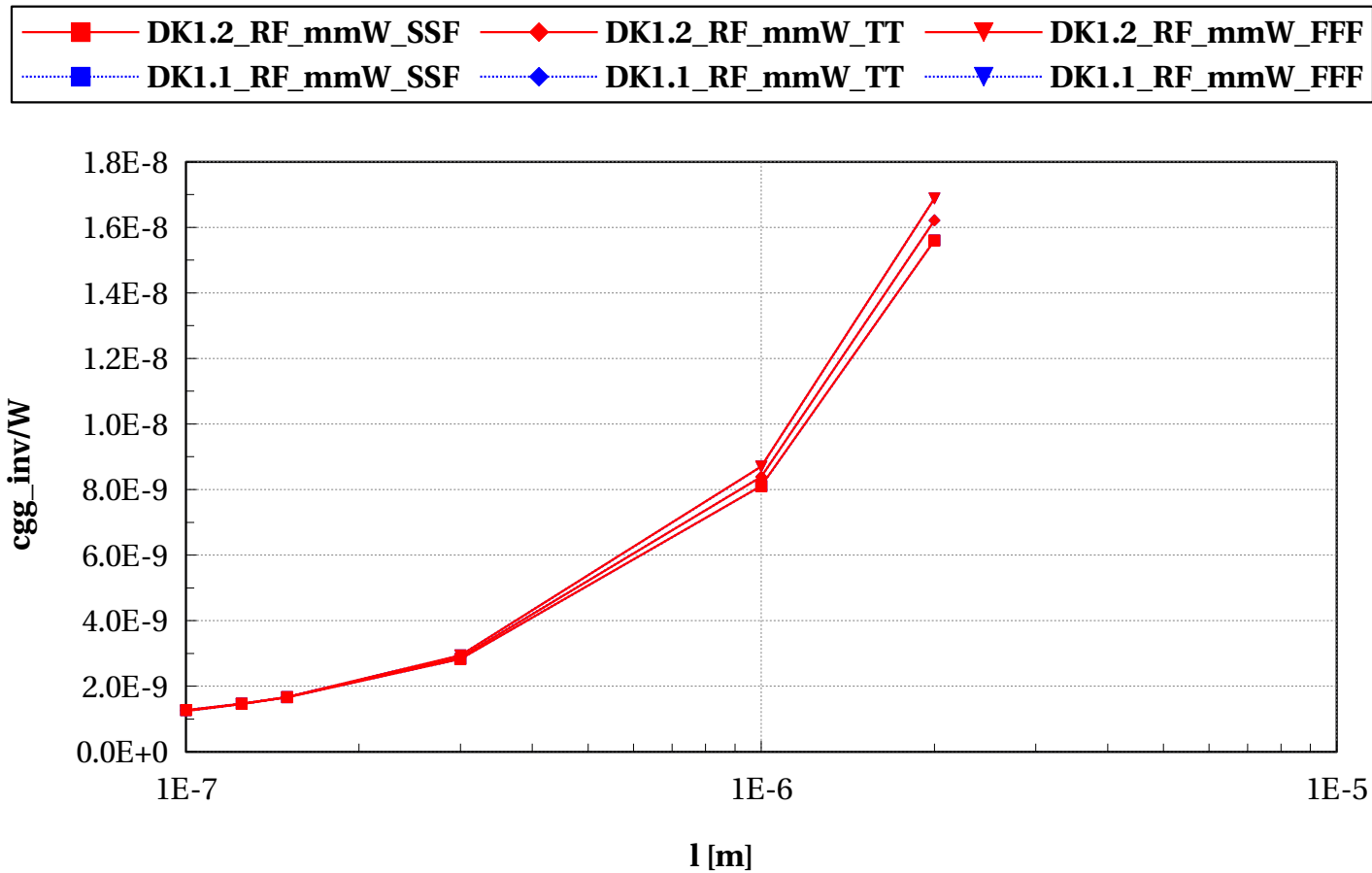
eglvtnfet_rf, Cgd_0V/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



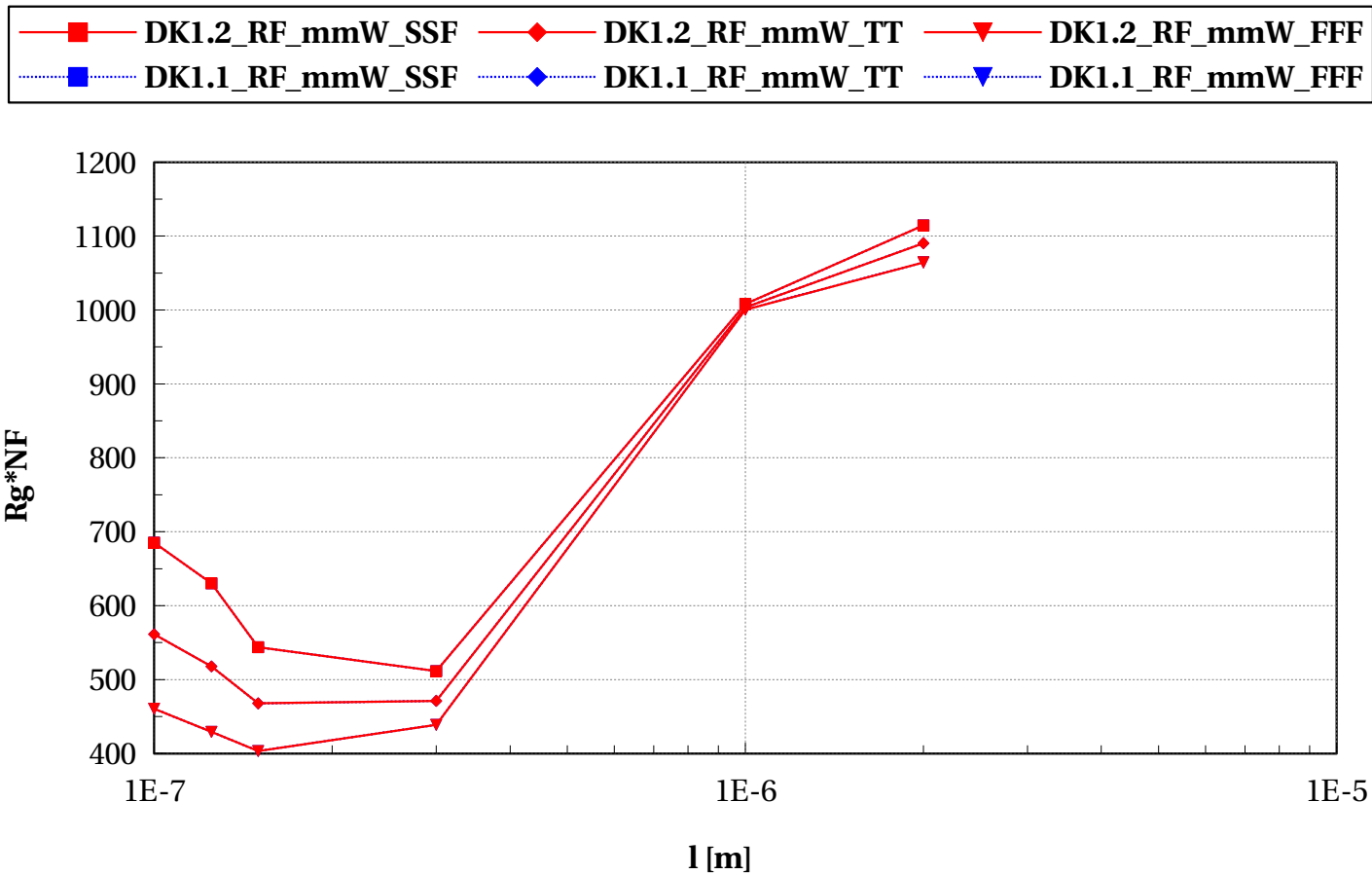
eglvtnfet_rf, cgg_inv/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



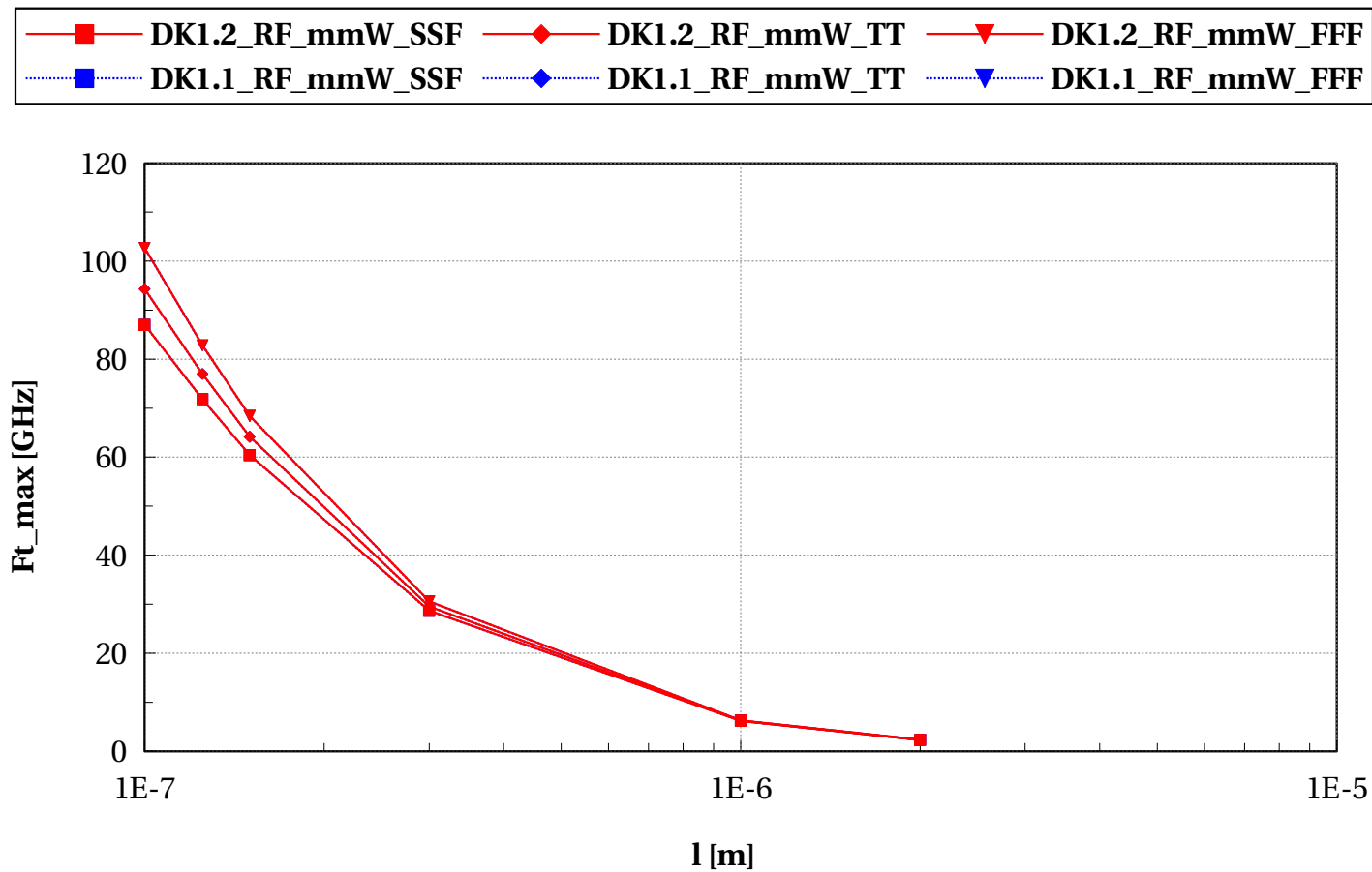
eglvtnfet_rf, $R_g * NF$ vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



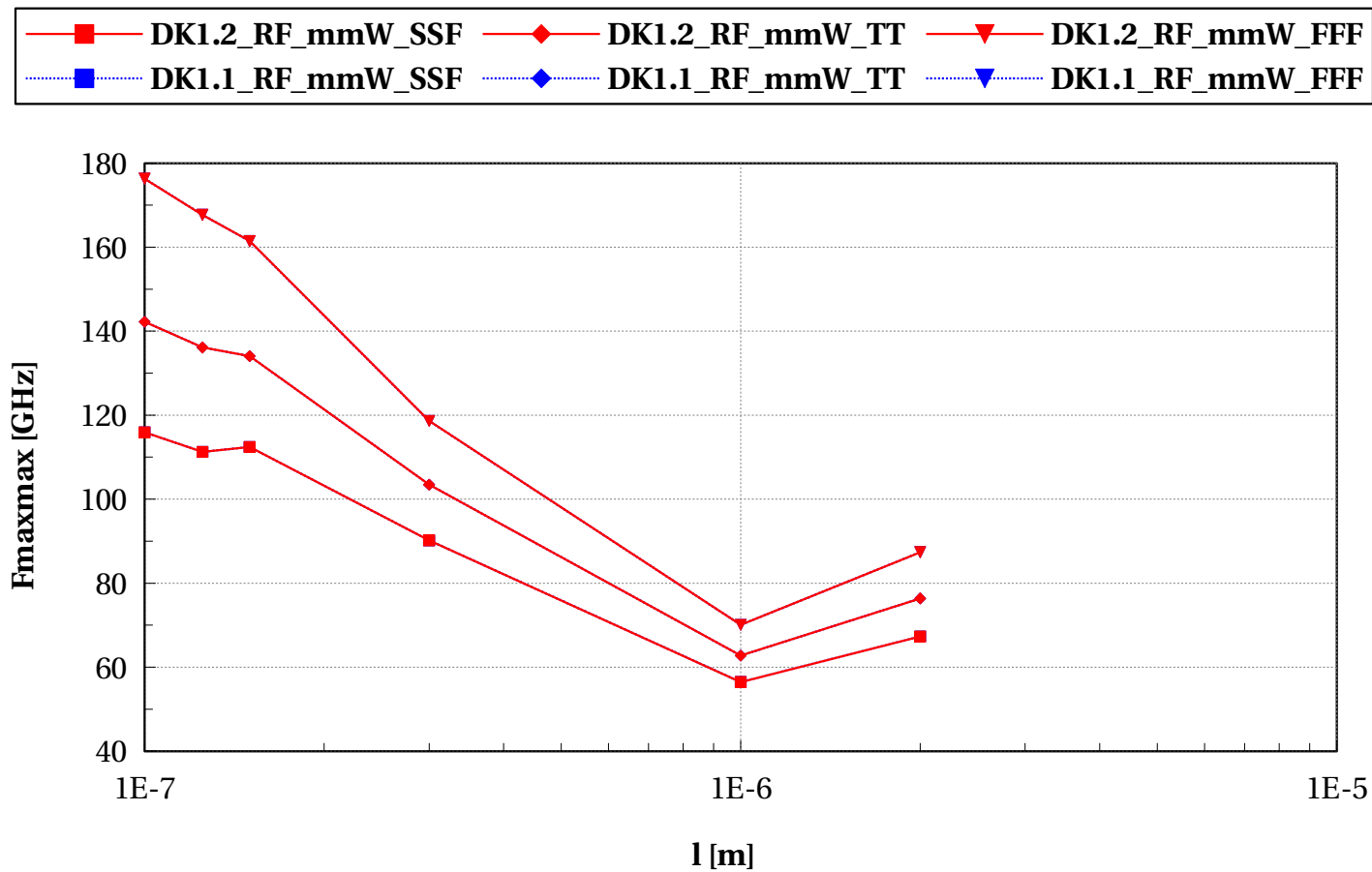
eglvtnfet_rf, Ft_max [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtnfet_rf, Fmaxmax [GHz] vs l [m]

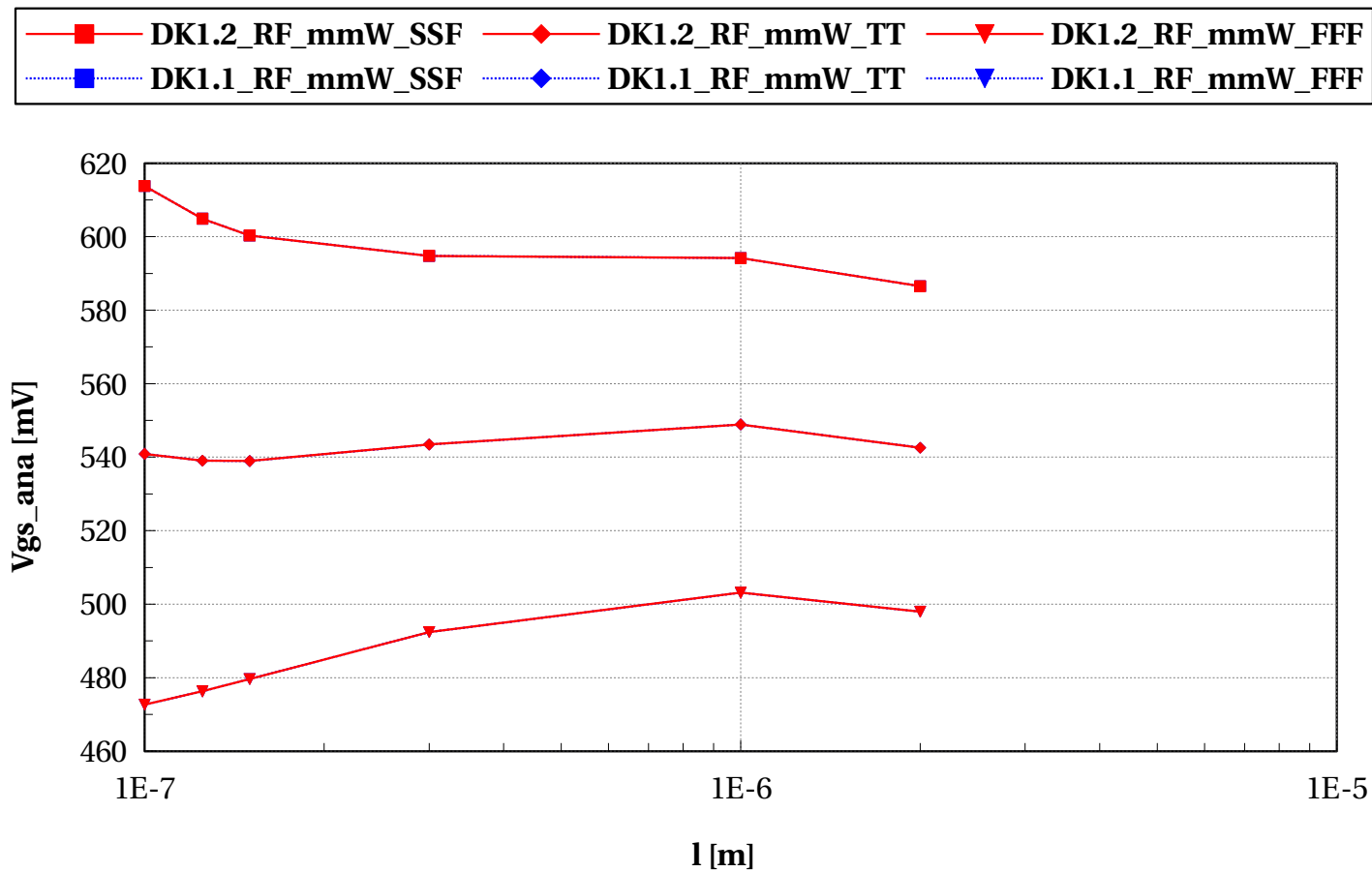
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - Analog

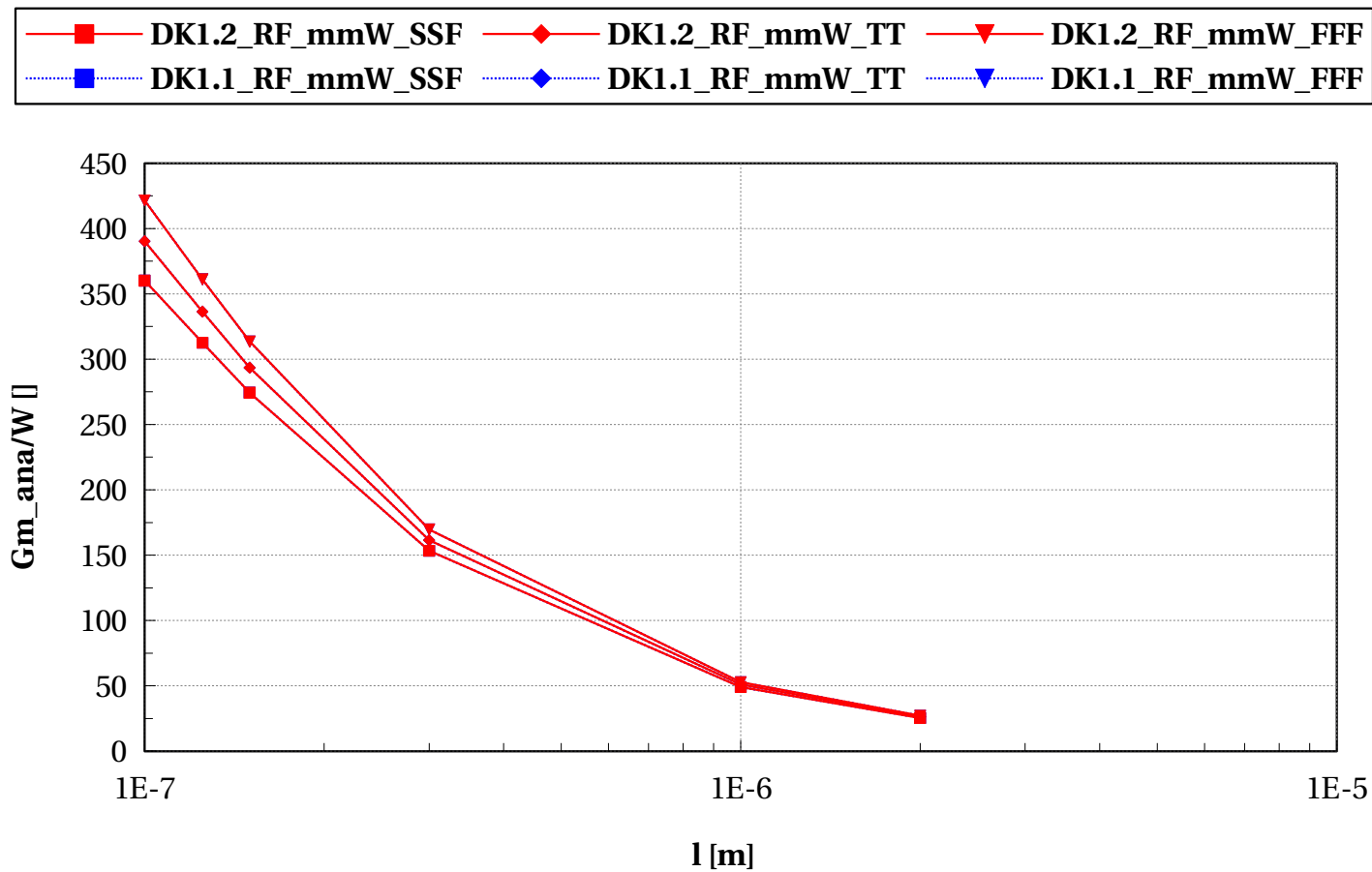
eglvtnfet_rf, Vgs_ana [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



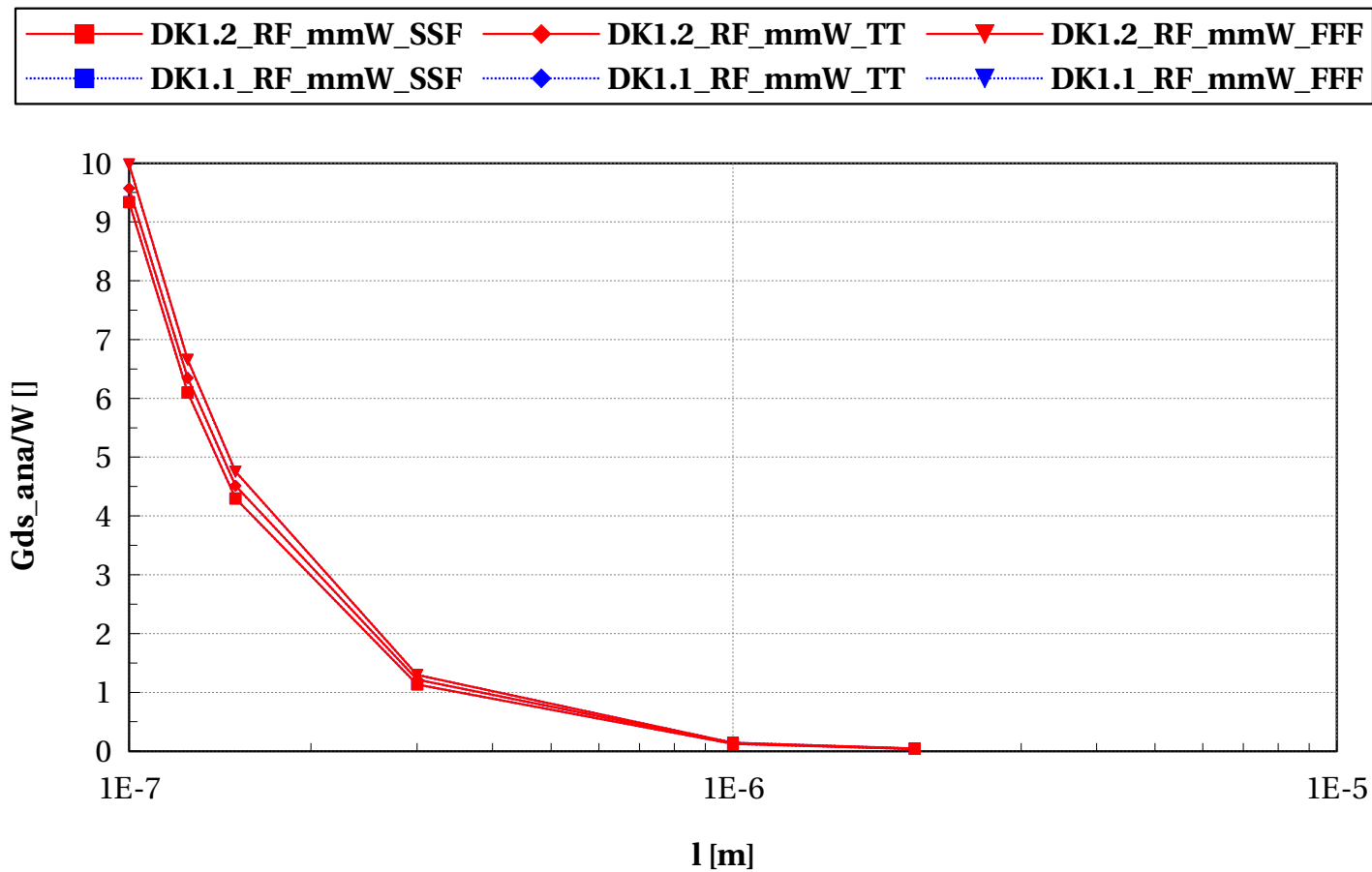
eglvtnfet_rf, Gm_ana/W [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



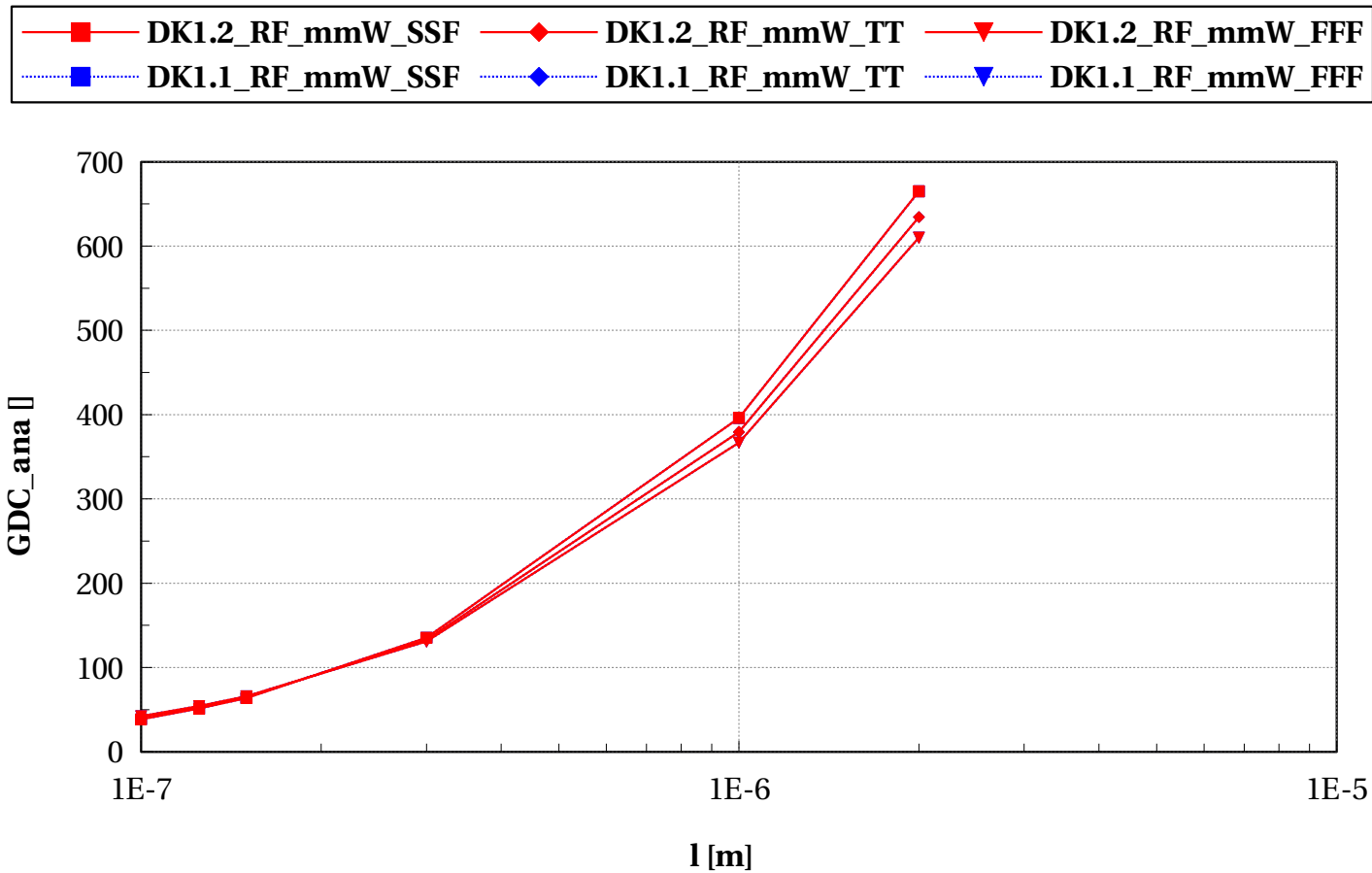
eglvtnfet_rf, Gds_ana/W [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



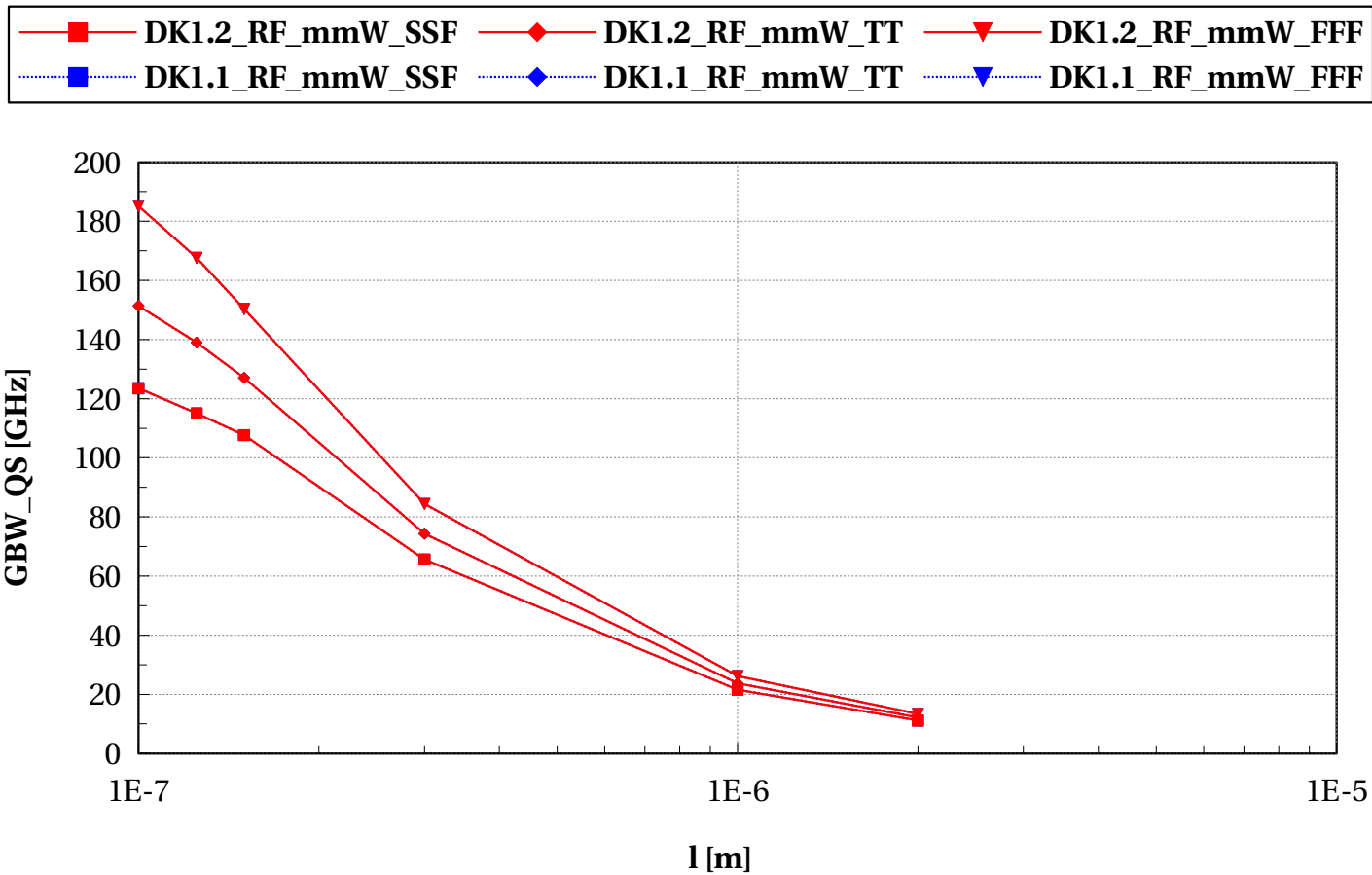
eglvtnfet_rf, GDC_ana [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



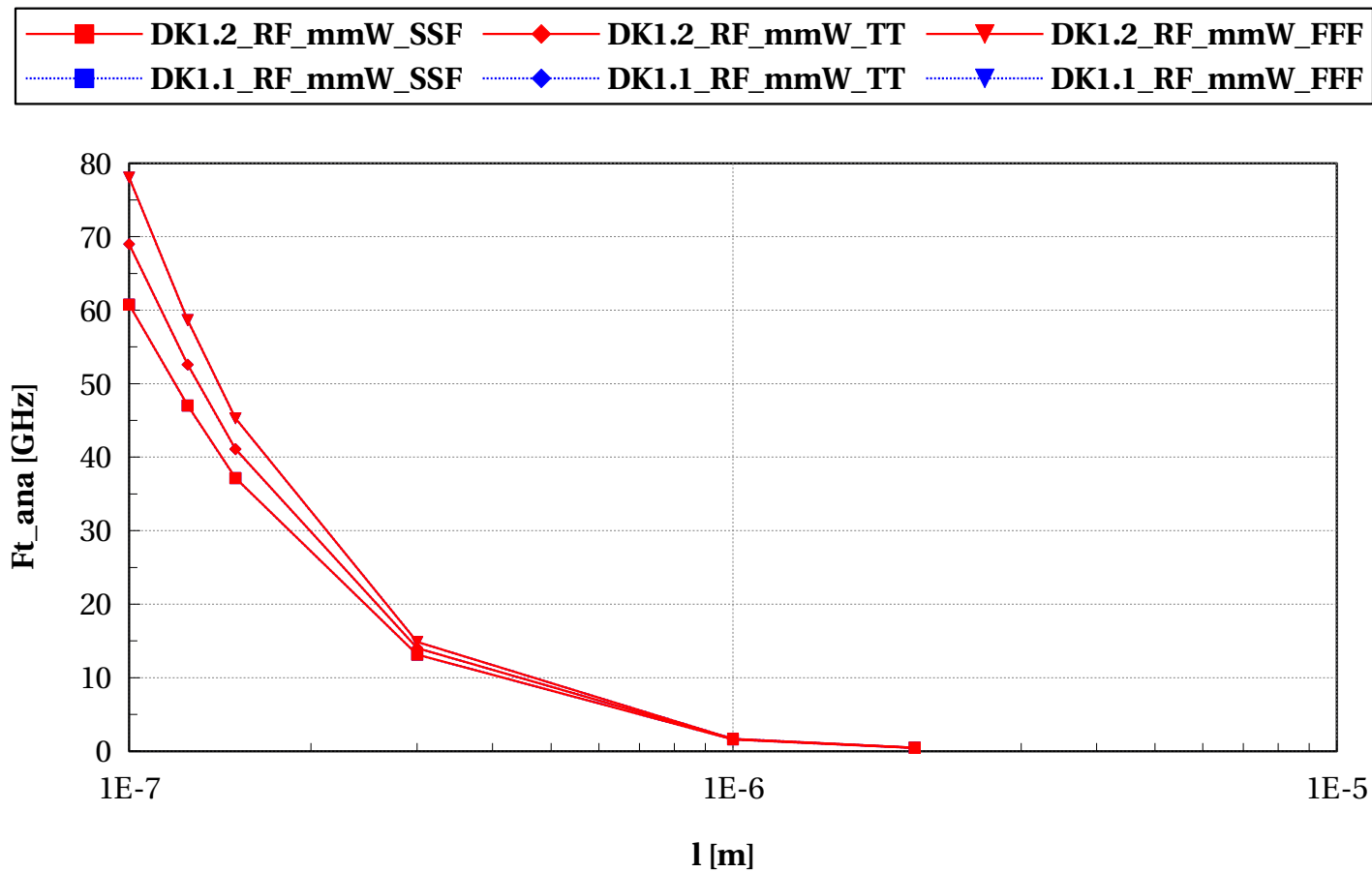
eglvtnfet_rf, GBW_QS [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtnfet_rf, Ft_ana [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



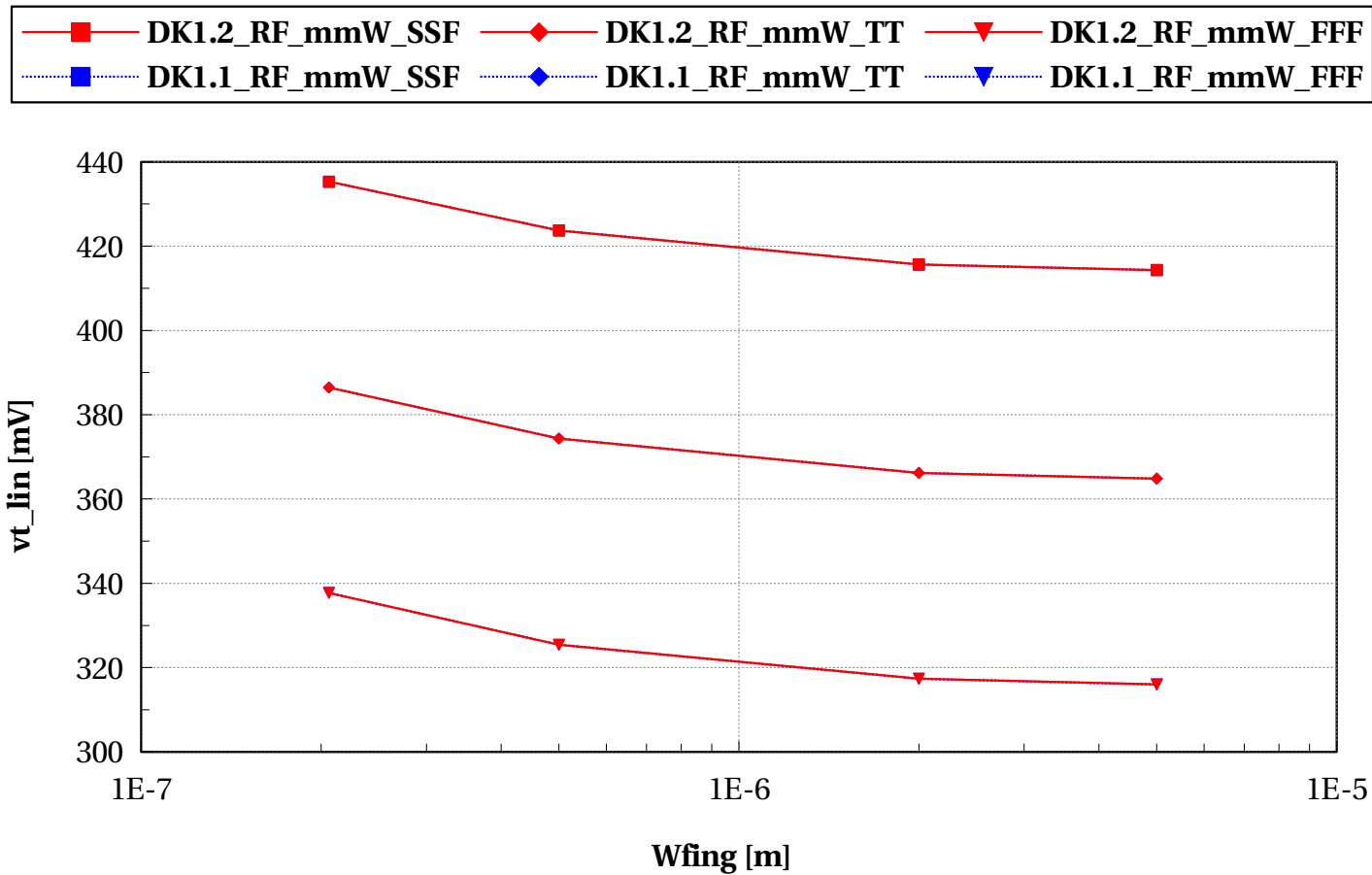
eglvtnfet_rfseg

Electrical characteristics scaling

Scaling versus width $L=150\text{nm}$ - DC

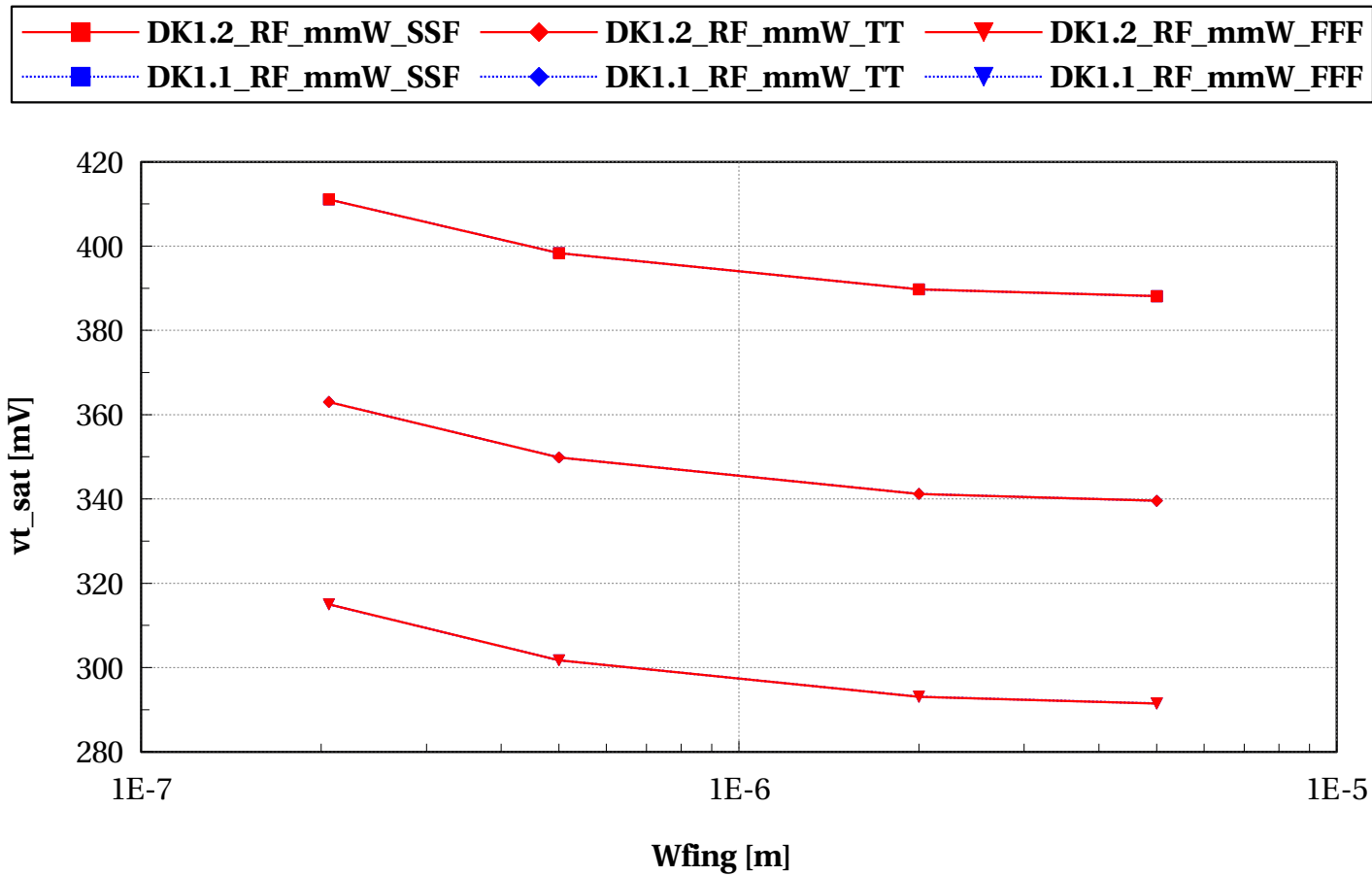
eglvtnfet_rfseg, vt_lin [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



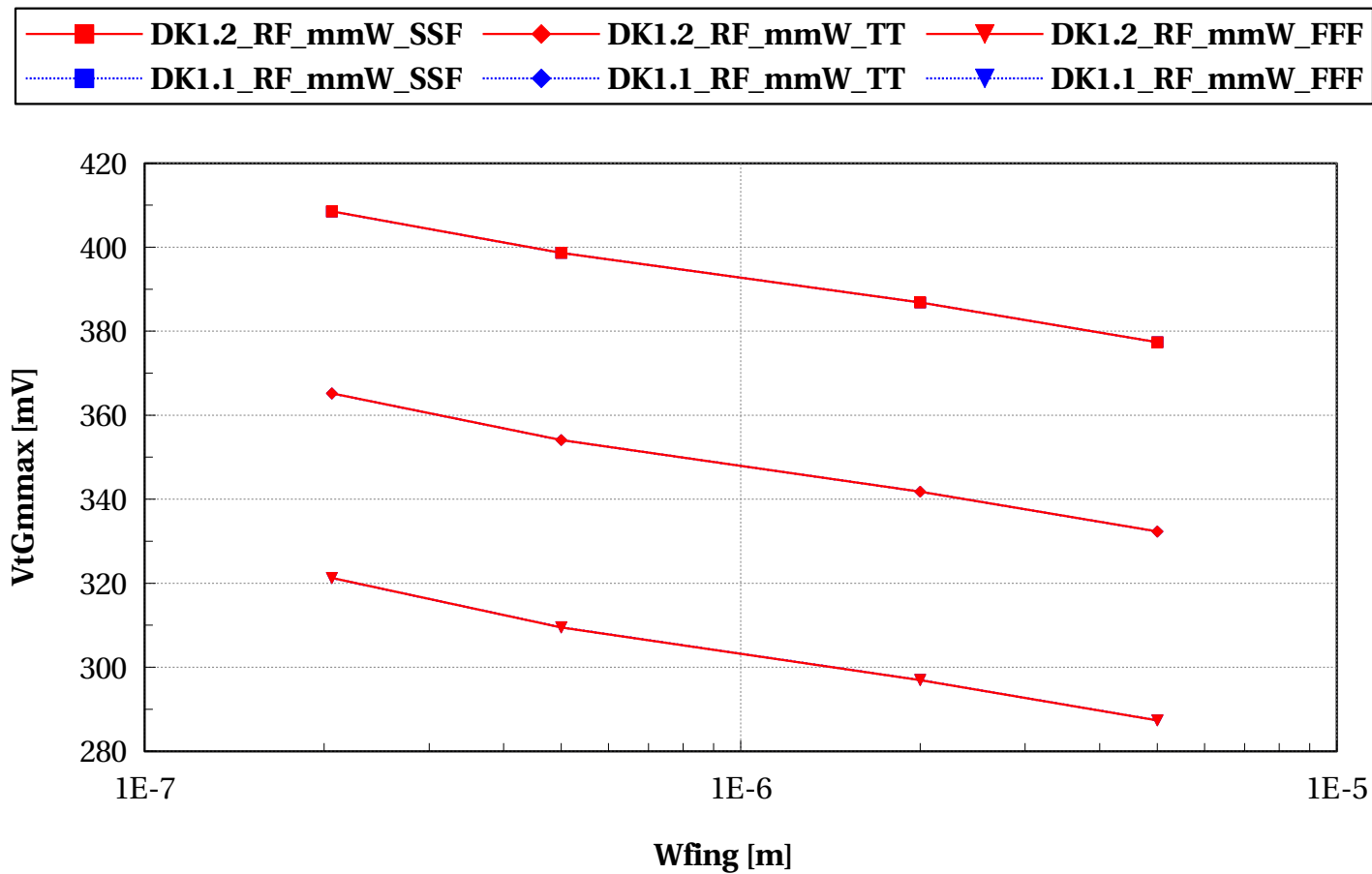
eglvtnfet_rfseg, vt_sat [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



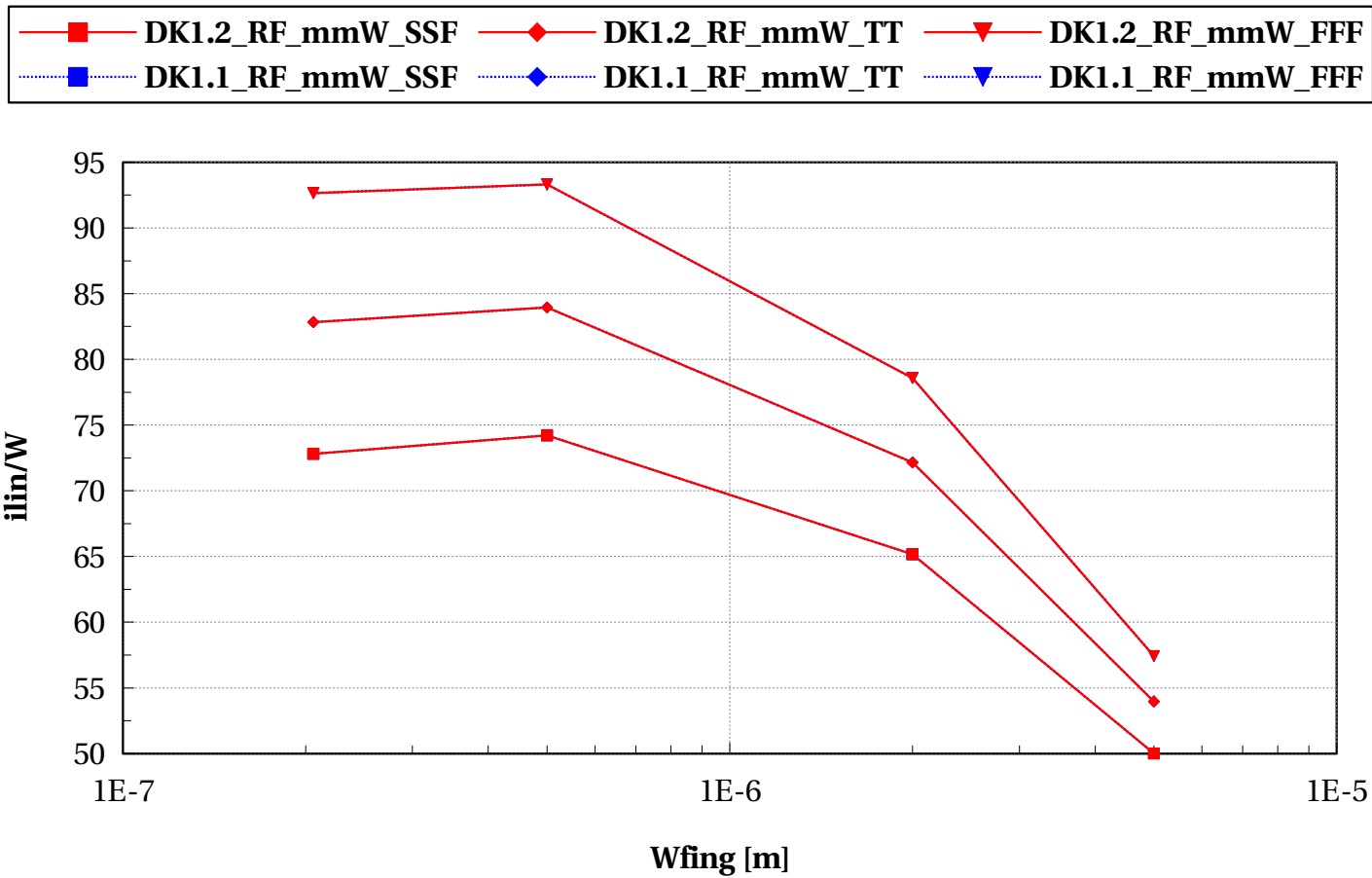
eglvtnfet_rfseg, VtGmmax [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



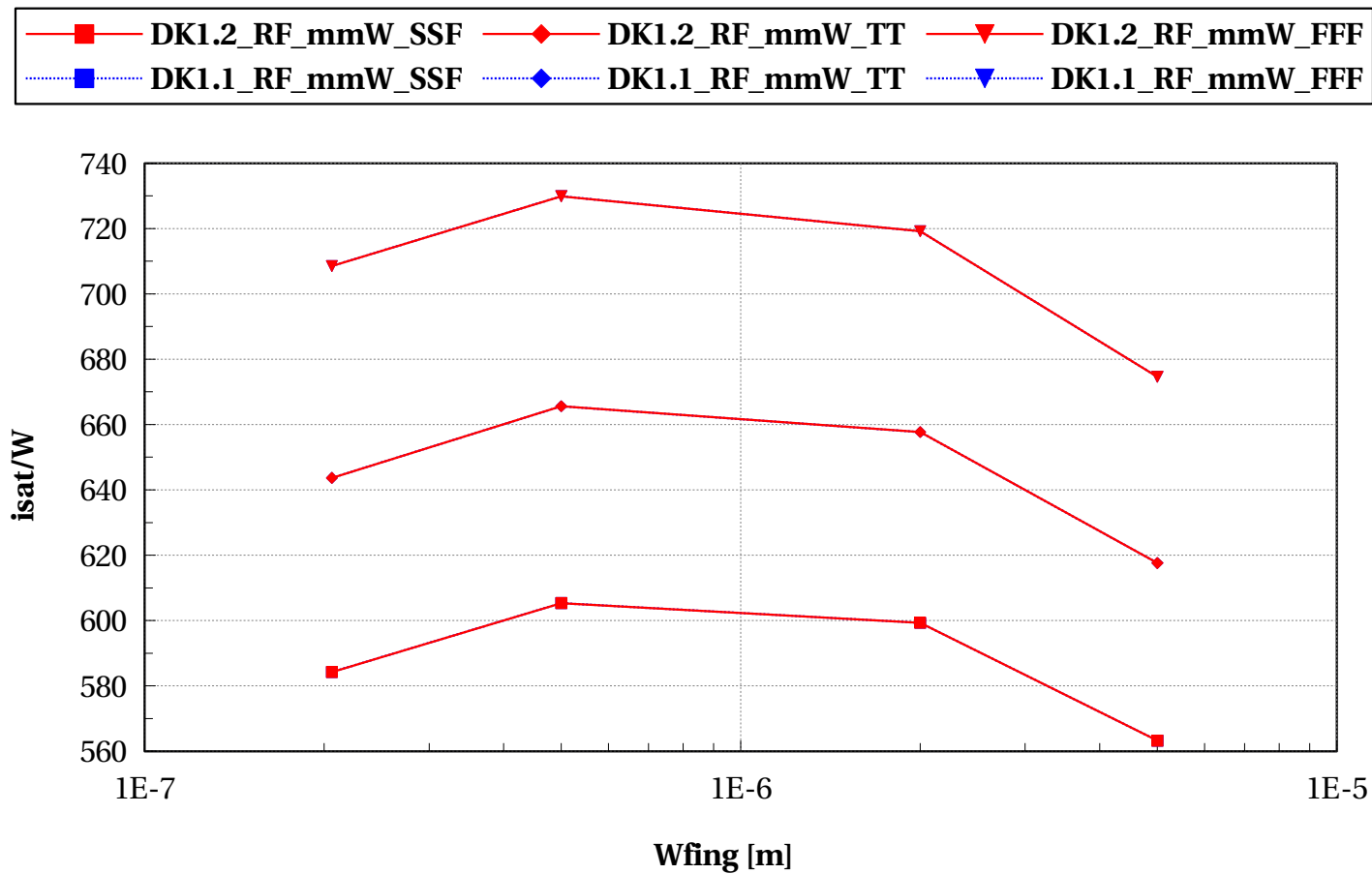
eglvtnfet_rfseg, i_{lin}/W vs W_{fing} [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and $l=150e-9$



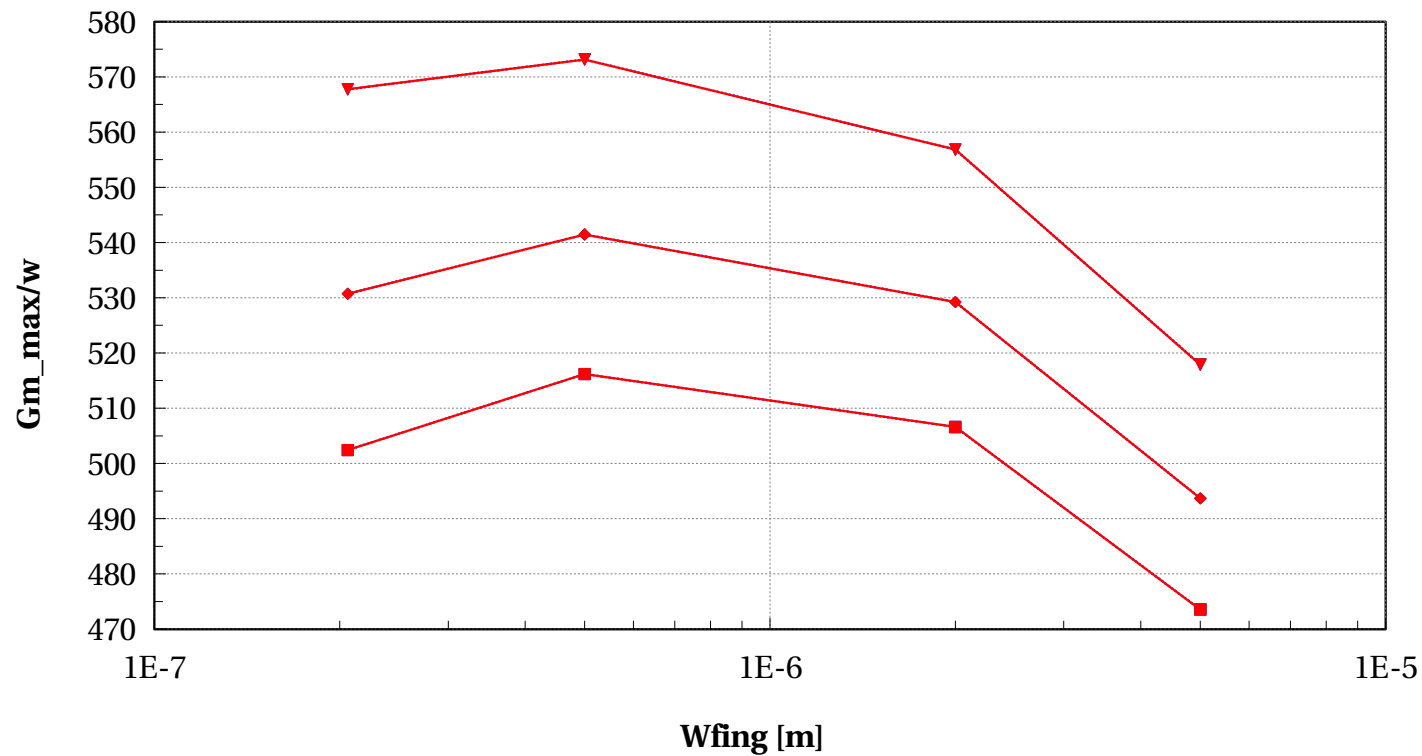
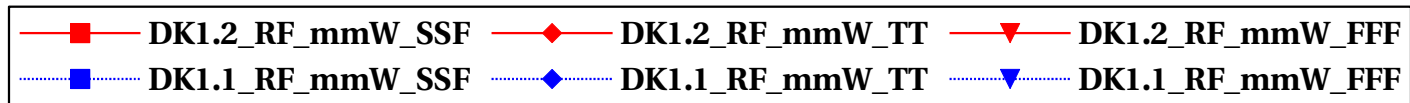
eglvtnfet_rfseg, isat/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtnfet_rfseg, Gm_max/w vs Wfing [m]

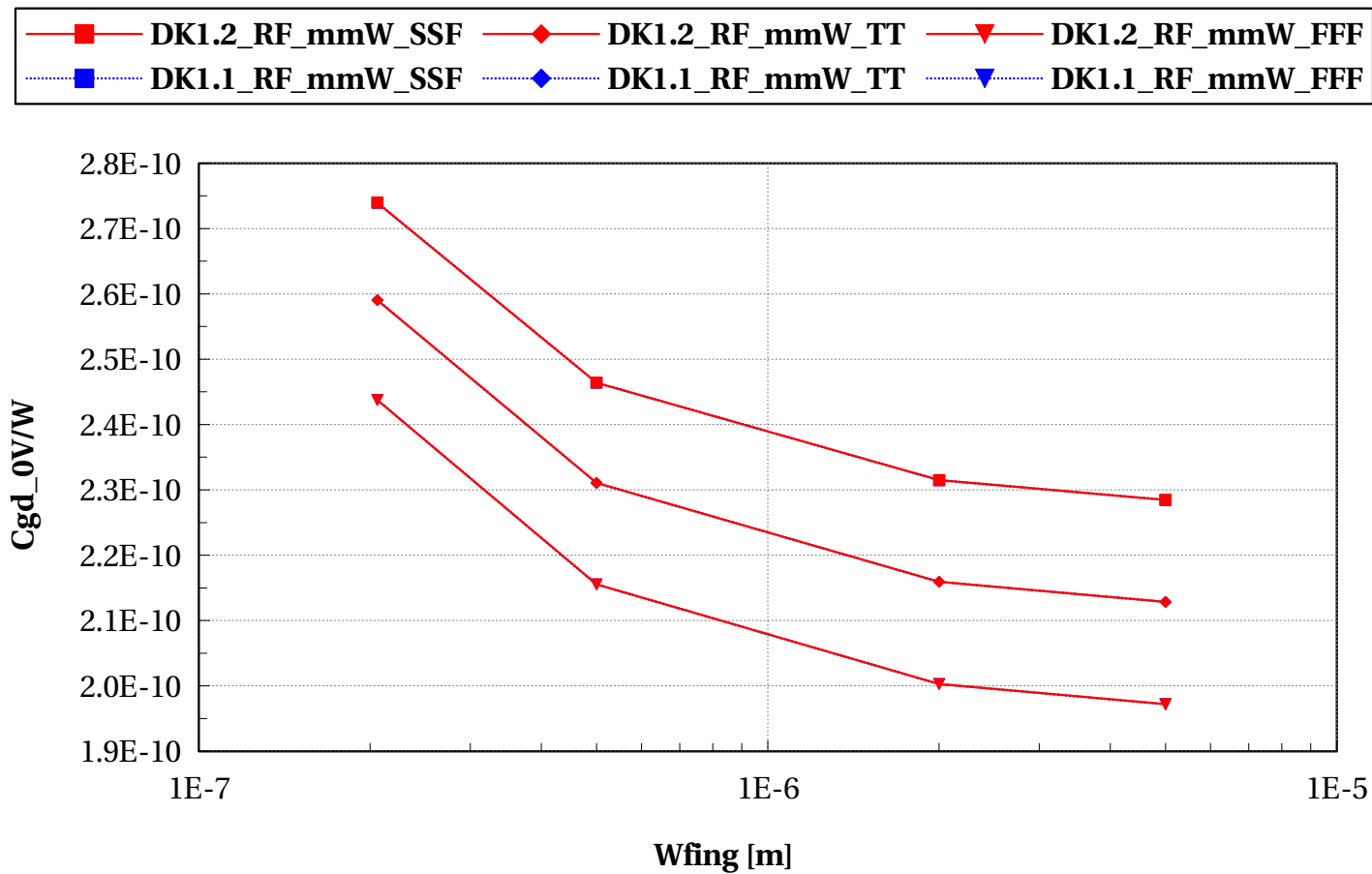
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus width $L=150\text{nm}$ - RF

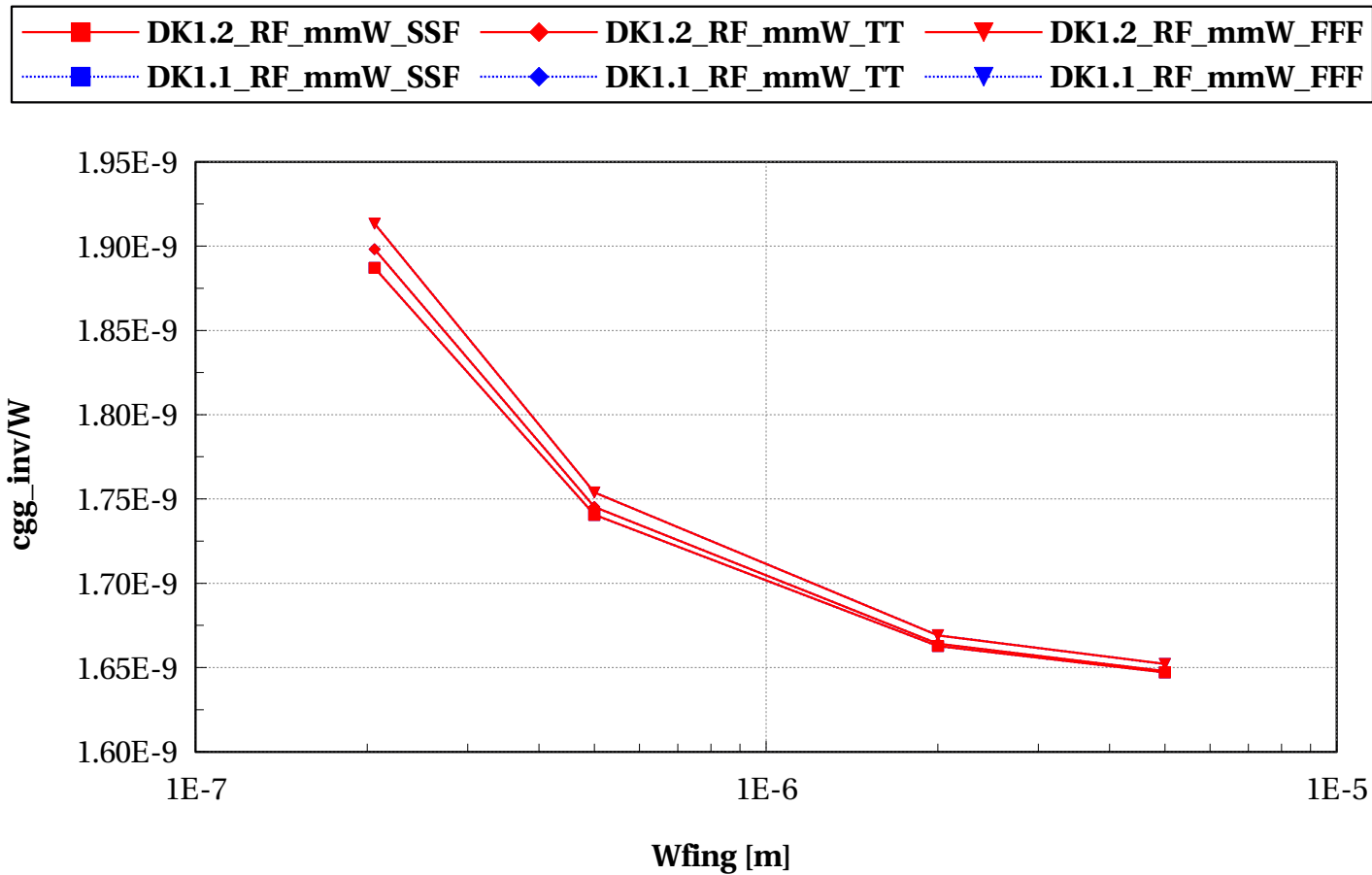
eglvtnfet_rfseg, Cgd_0V/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



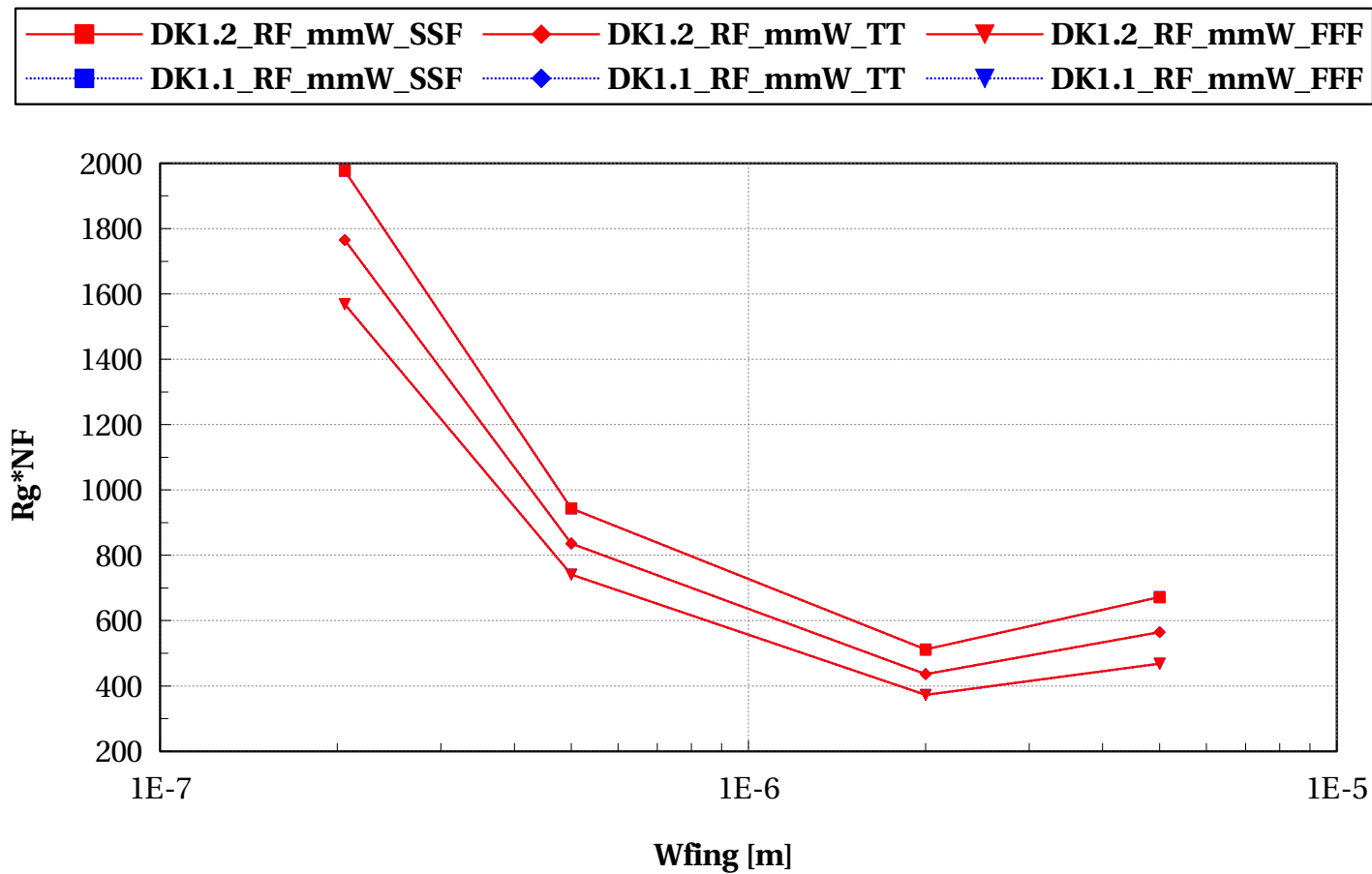
eglvtnfet_rfseg, cgg_inv/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



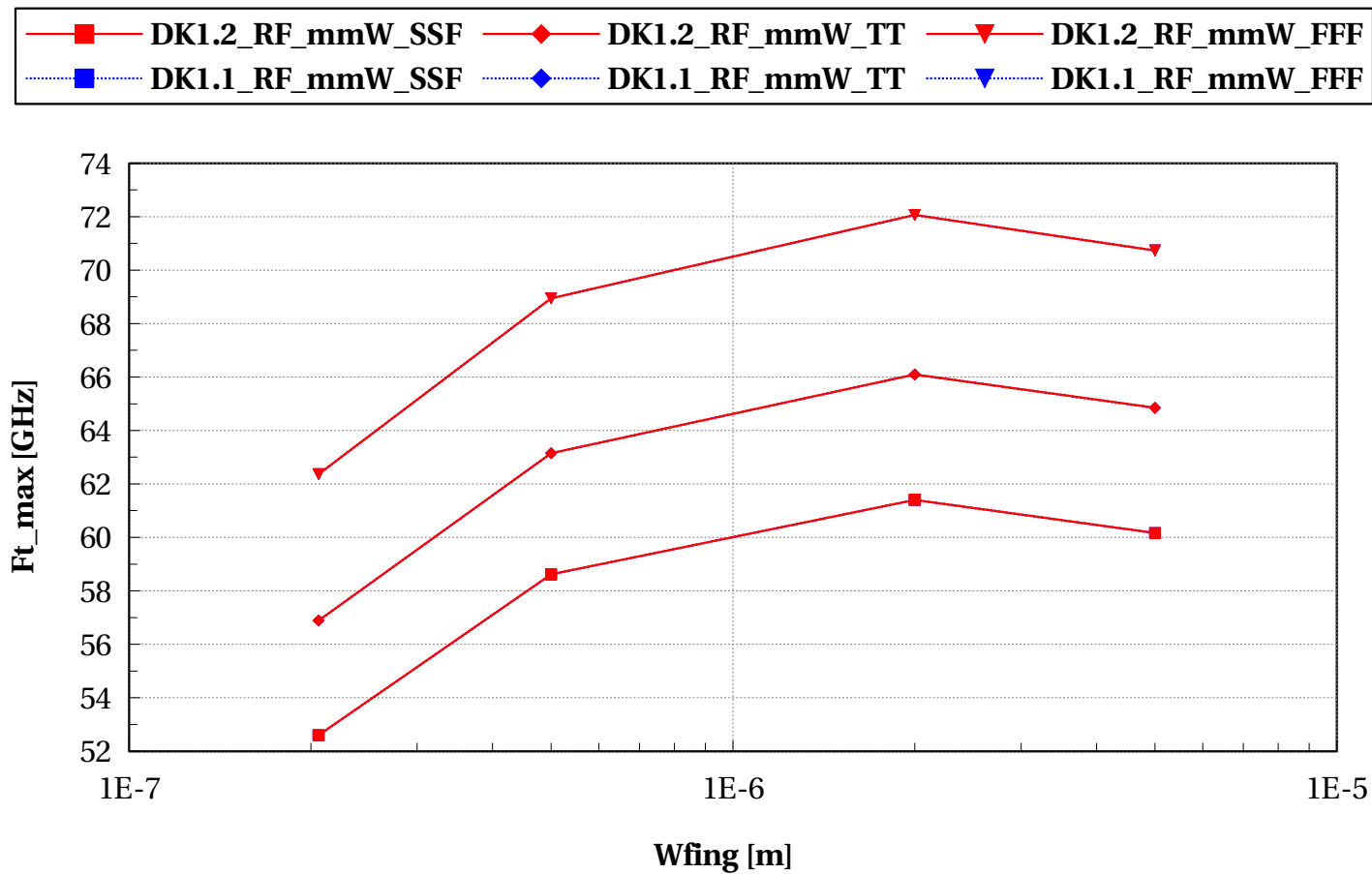
eglvtnfet_rfseg, $R_g \cdot NF$ vs W_{fing} [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and $l=150e-9$



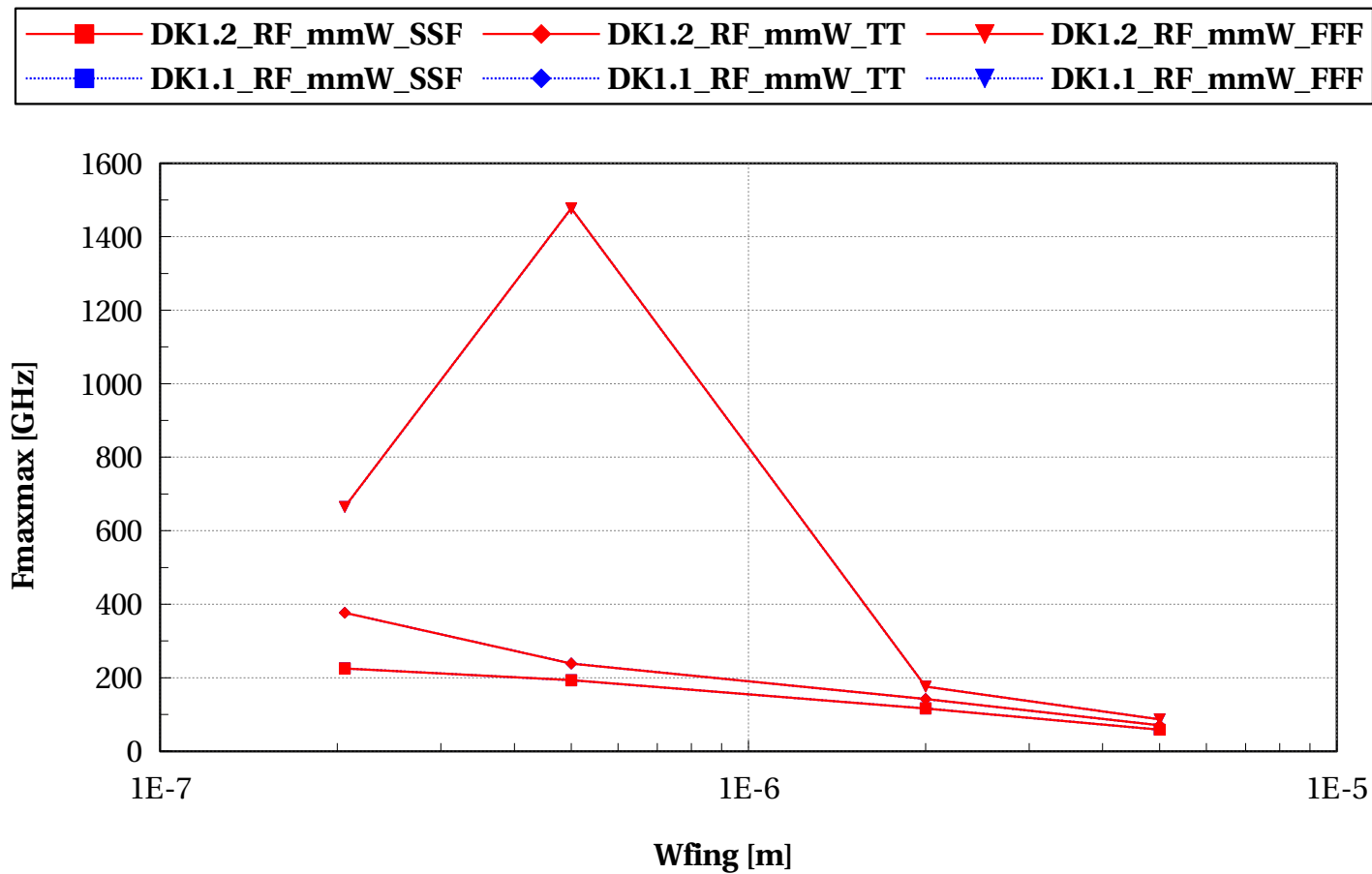
eglvtnfet_rfseg, Ft_max [GHz] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtnfet_rfseg, Fmaxmax [GHz] vs Wfing [m]

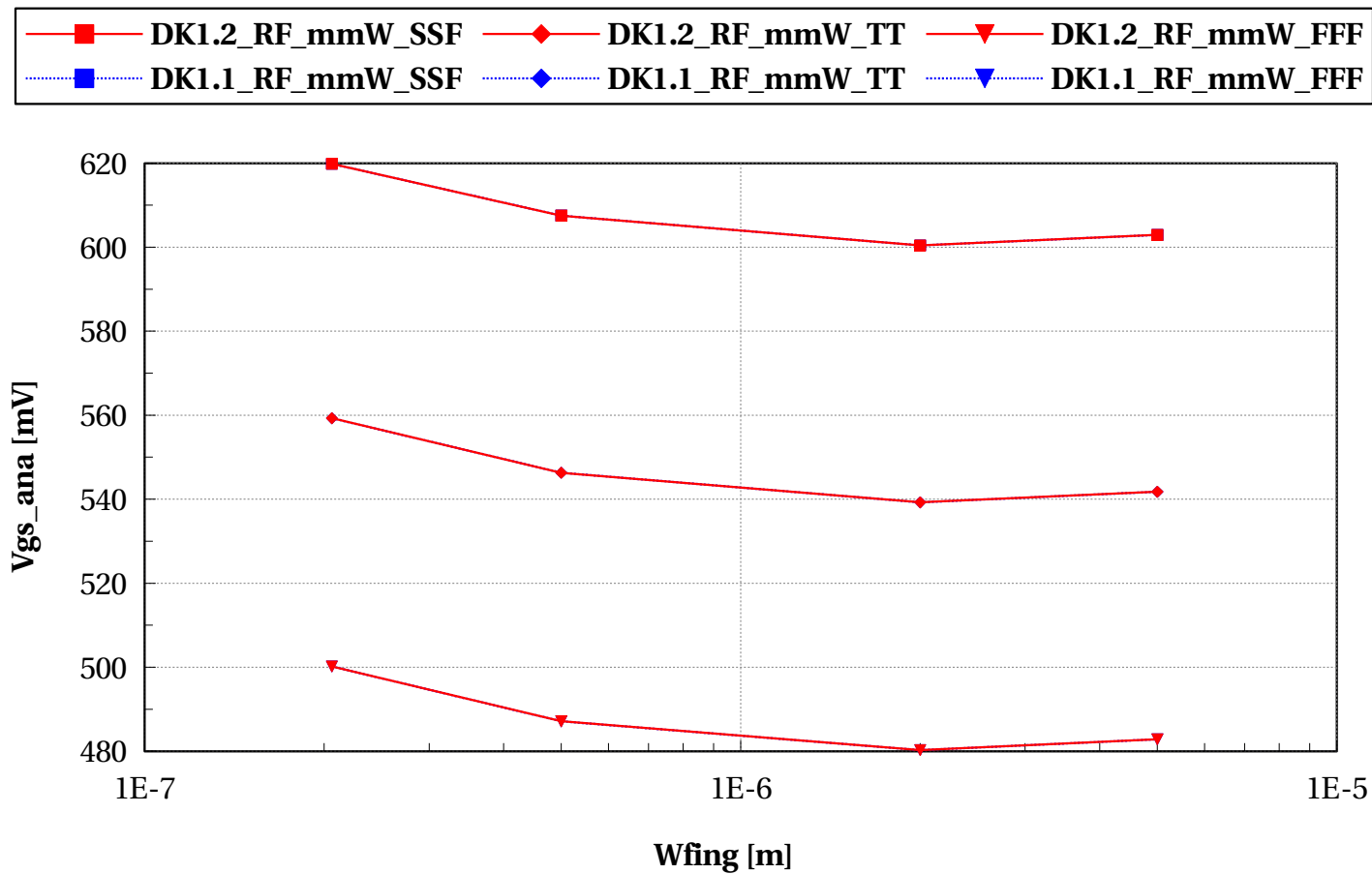
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus width $L=150\text{nm}$ - Analog

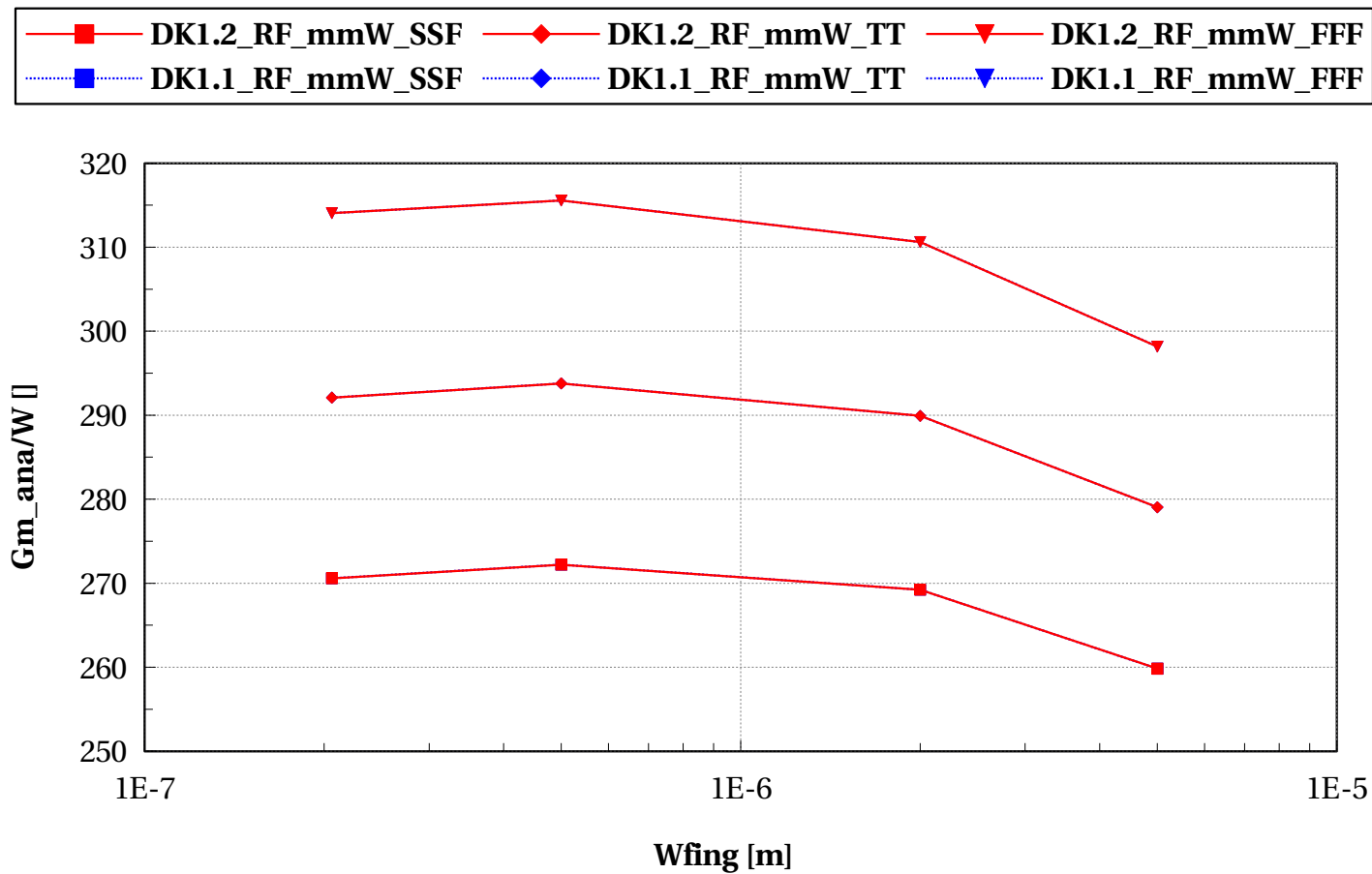
eglvtnfet_rfseg, Vgs_ana [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



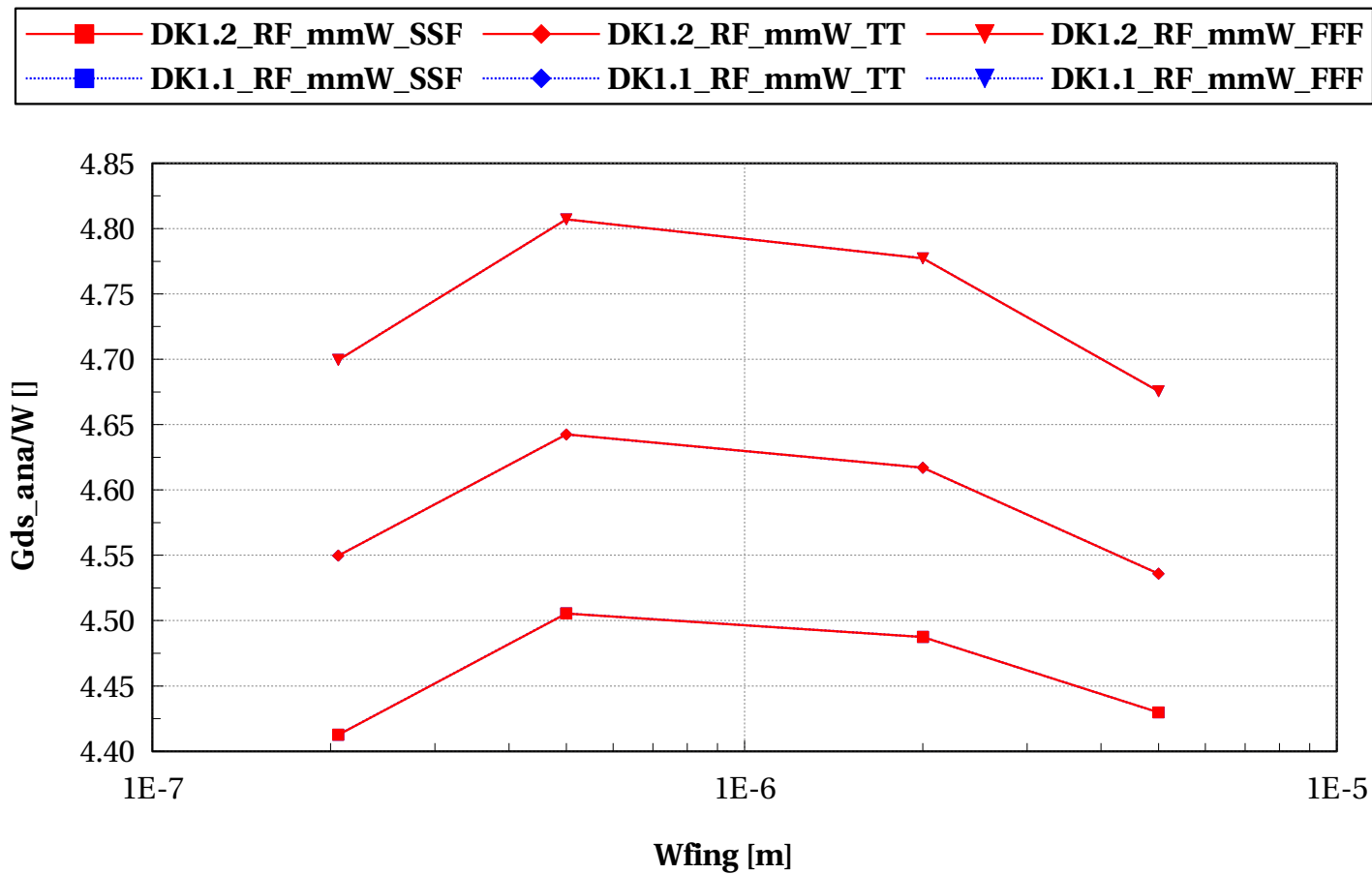
eglvtnfet_rfseg, Gm_ana/W [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



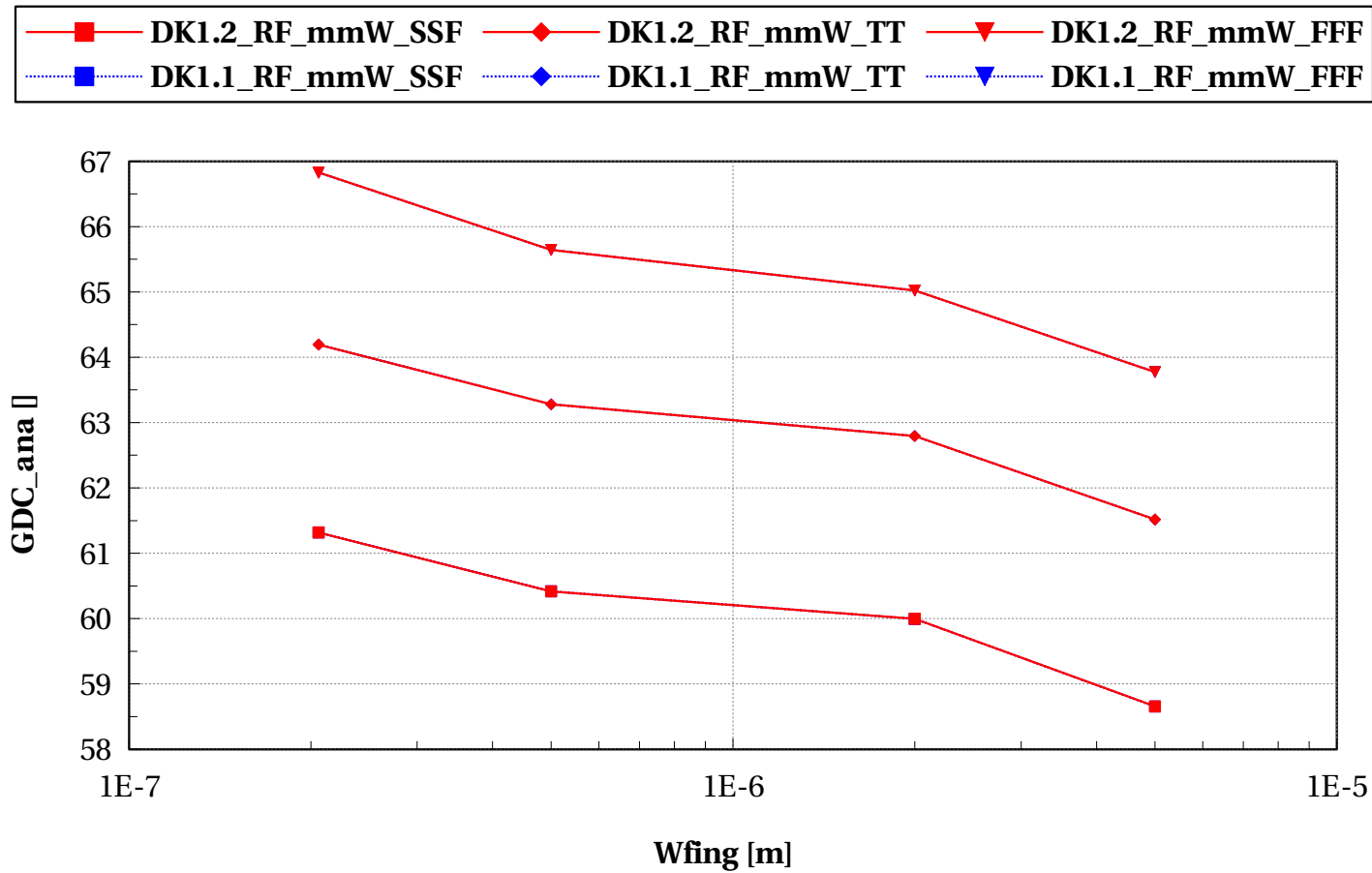
eglvtnfet_rfseg, Gds_ana/W [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



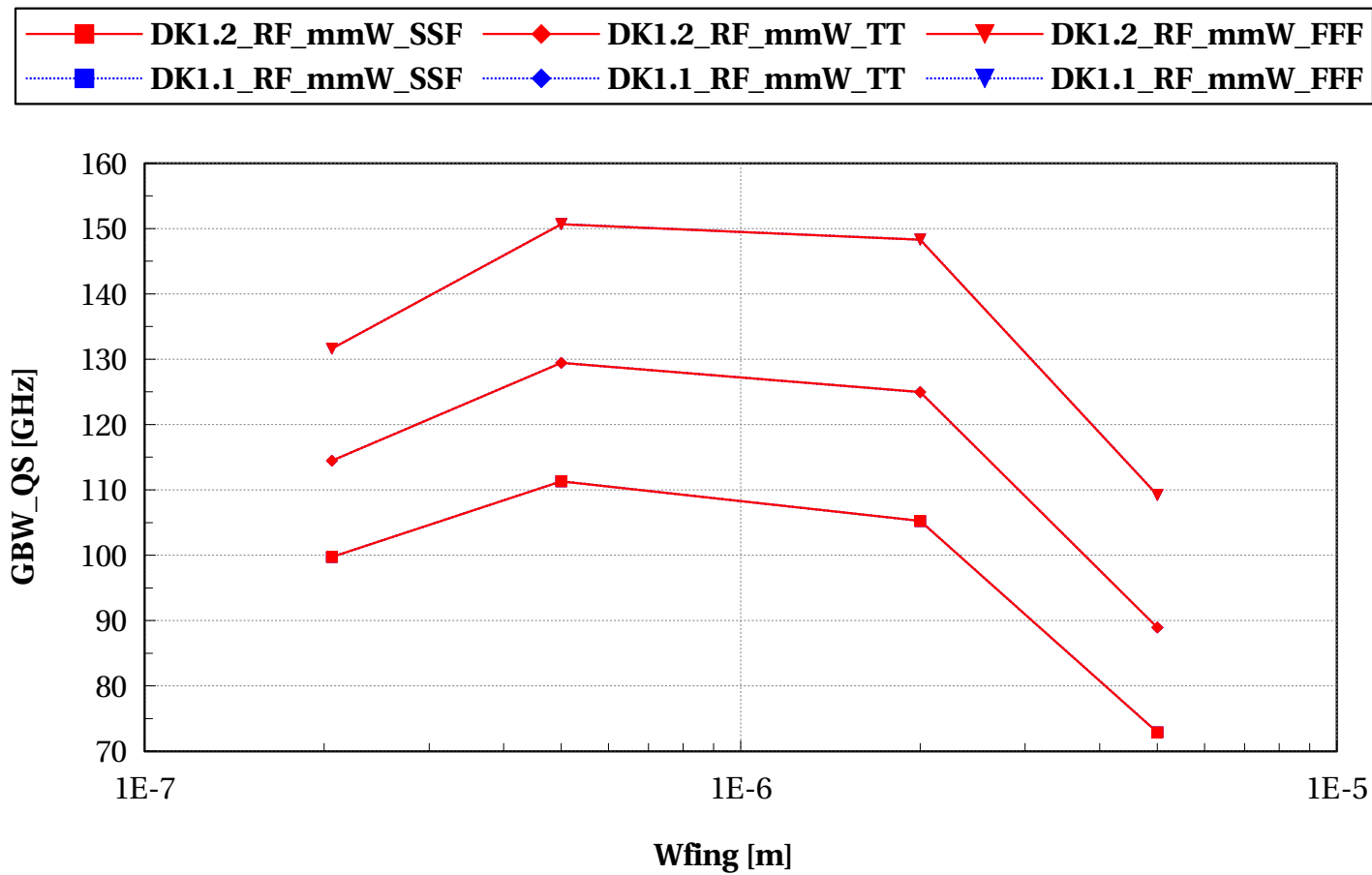
eglvtnfet_rfseg, GDC_ana [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



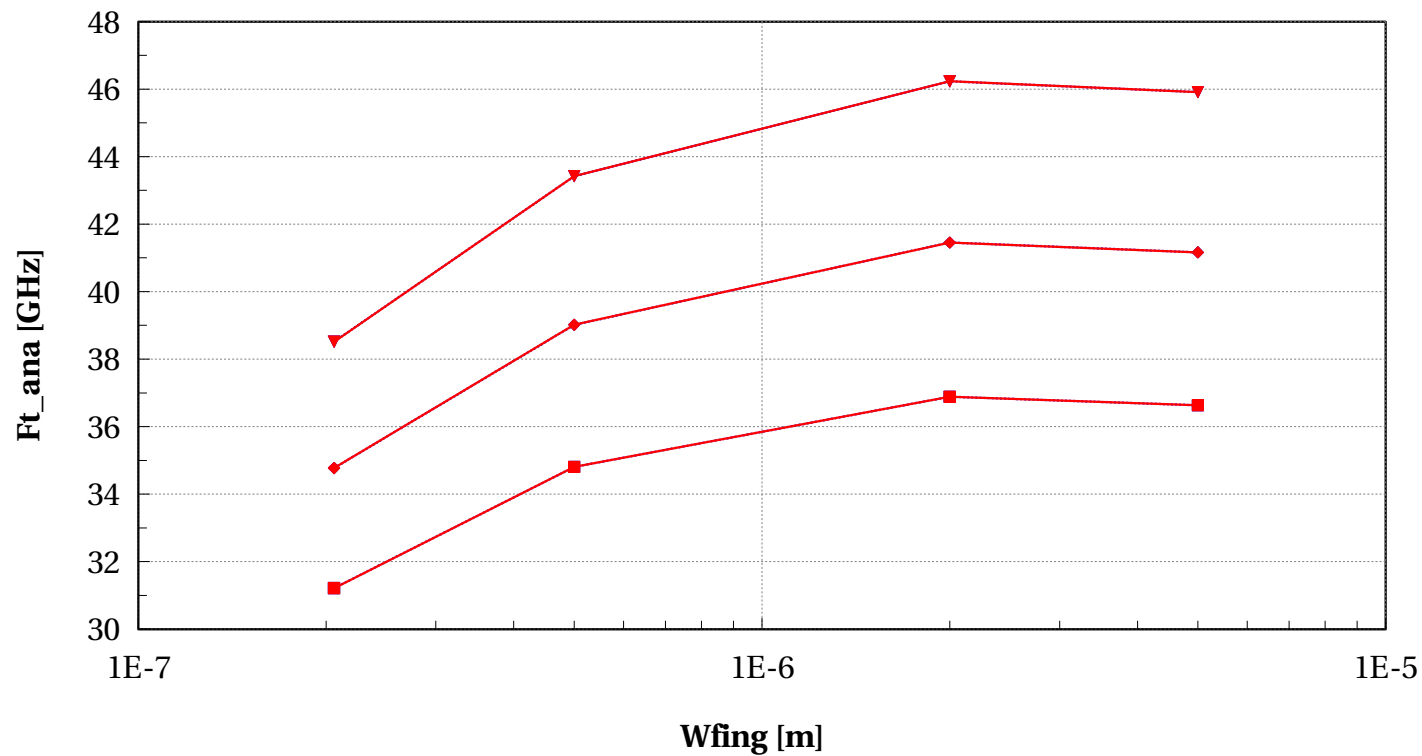
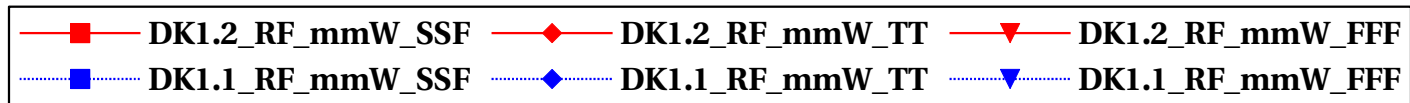
eglvtnfet_rfseg, GBW_QS [GHz] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtnfet_rfseg, Ft_ana [GHz] vs Wfing [m]

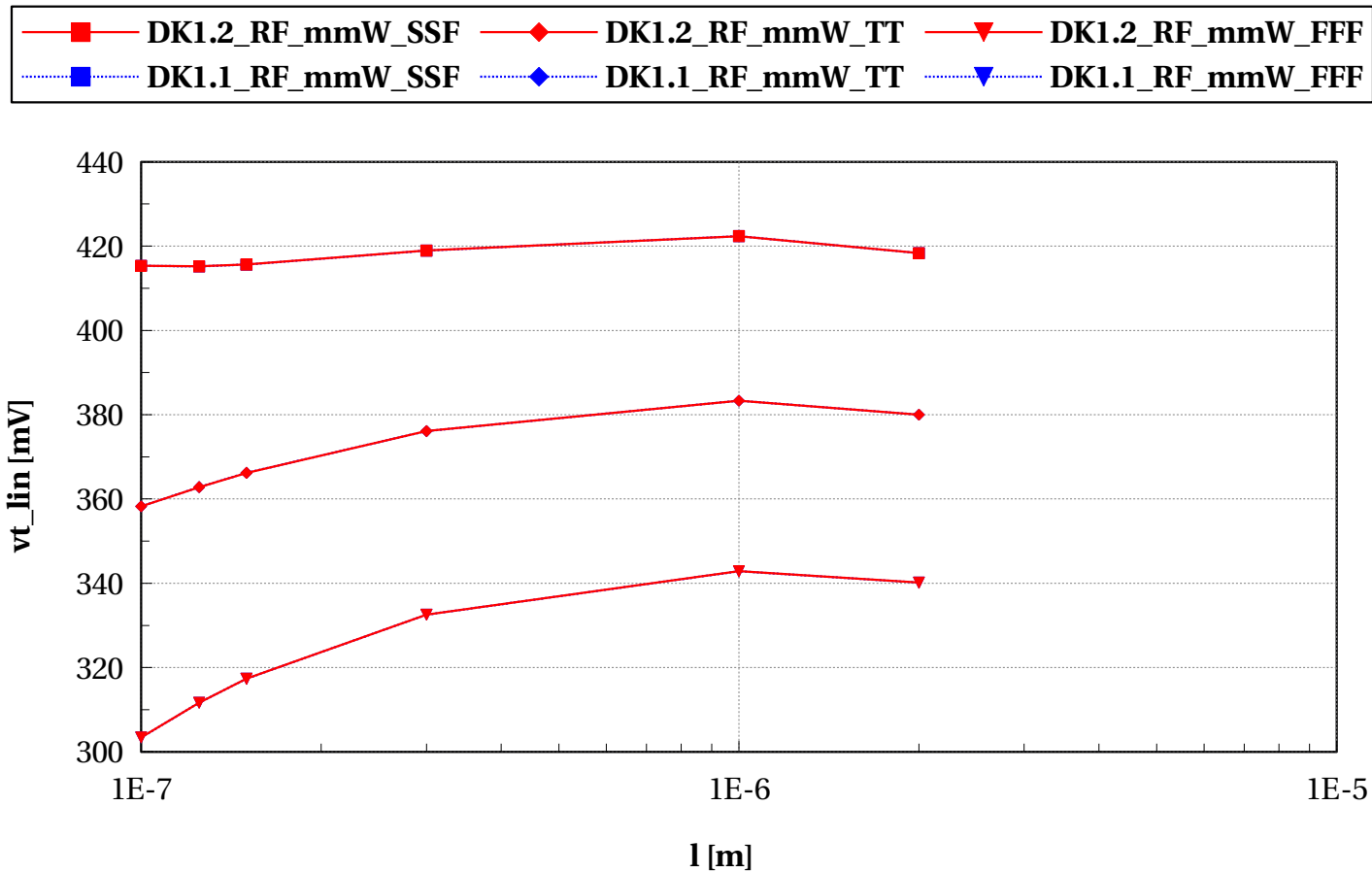
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - DC

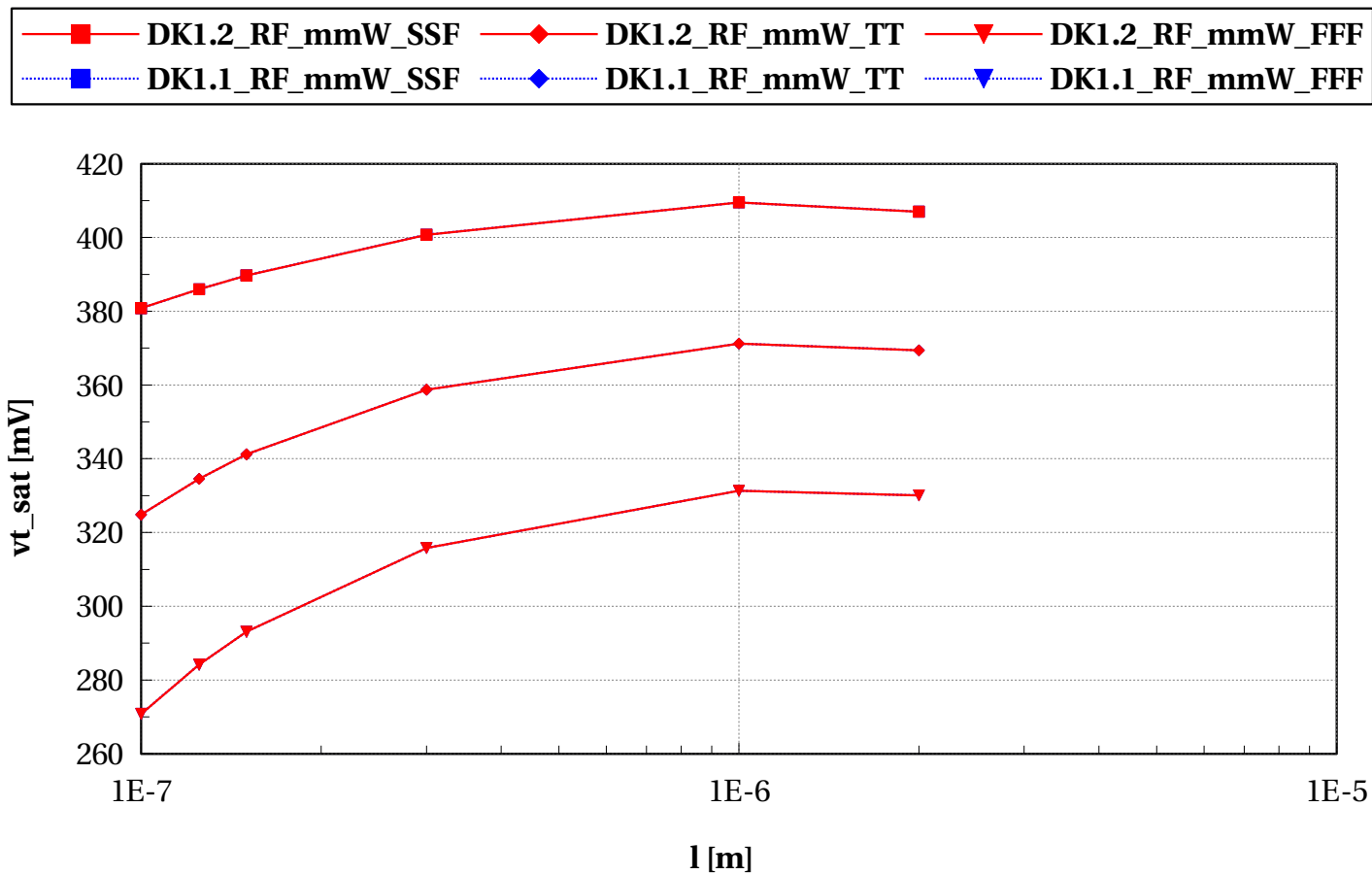
eglvtnfet_rfseg, vt_lin [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



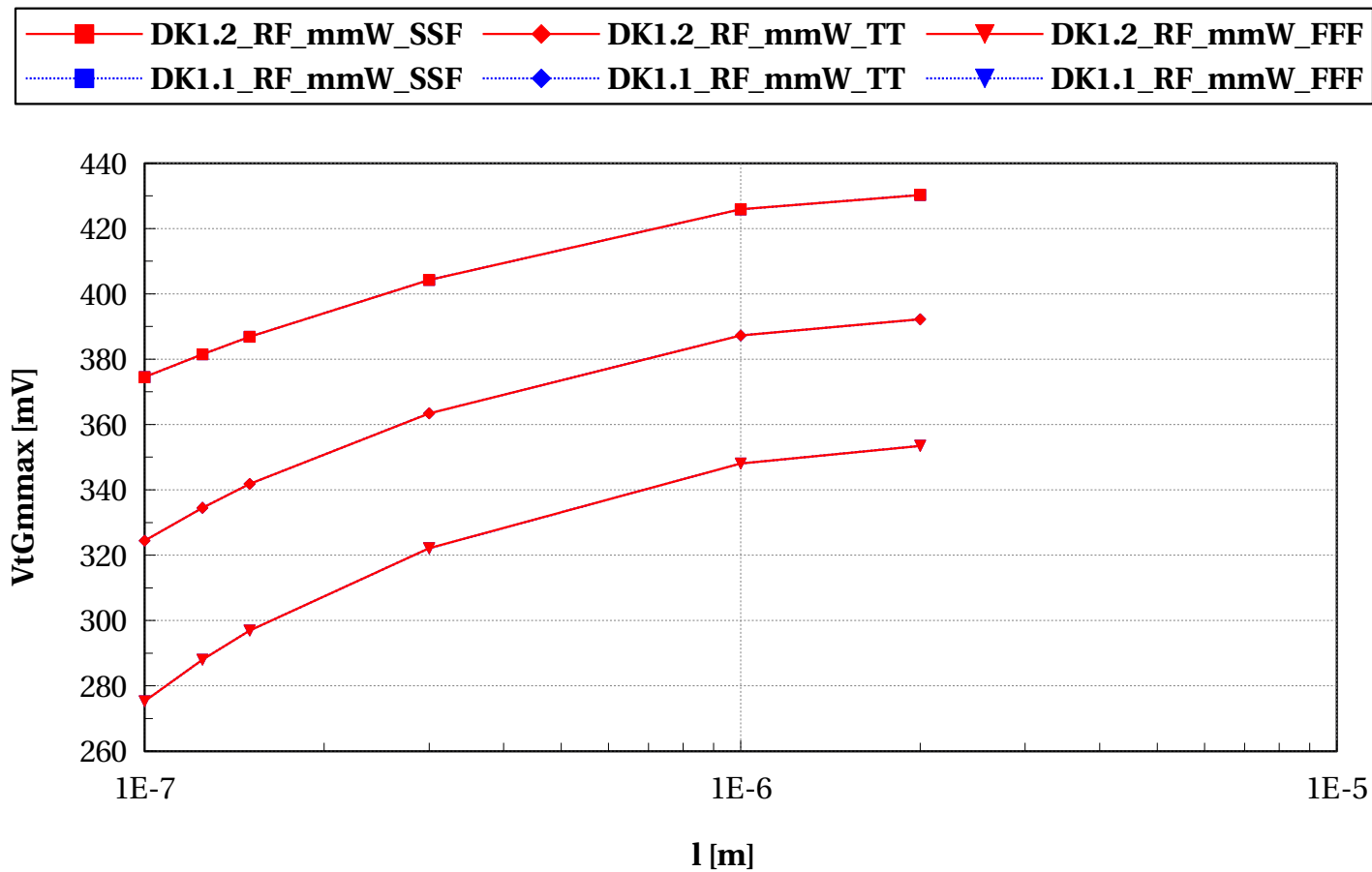
eglvtnfet_rfseg, vt_sat [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



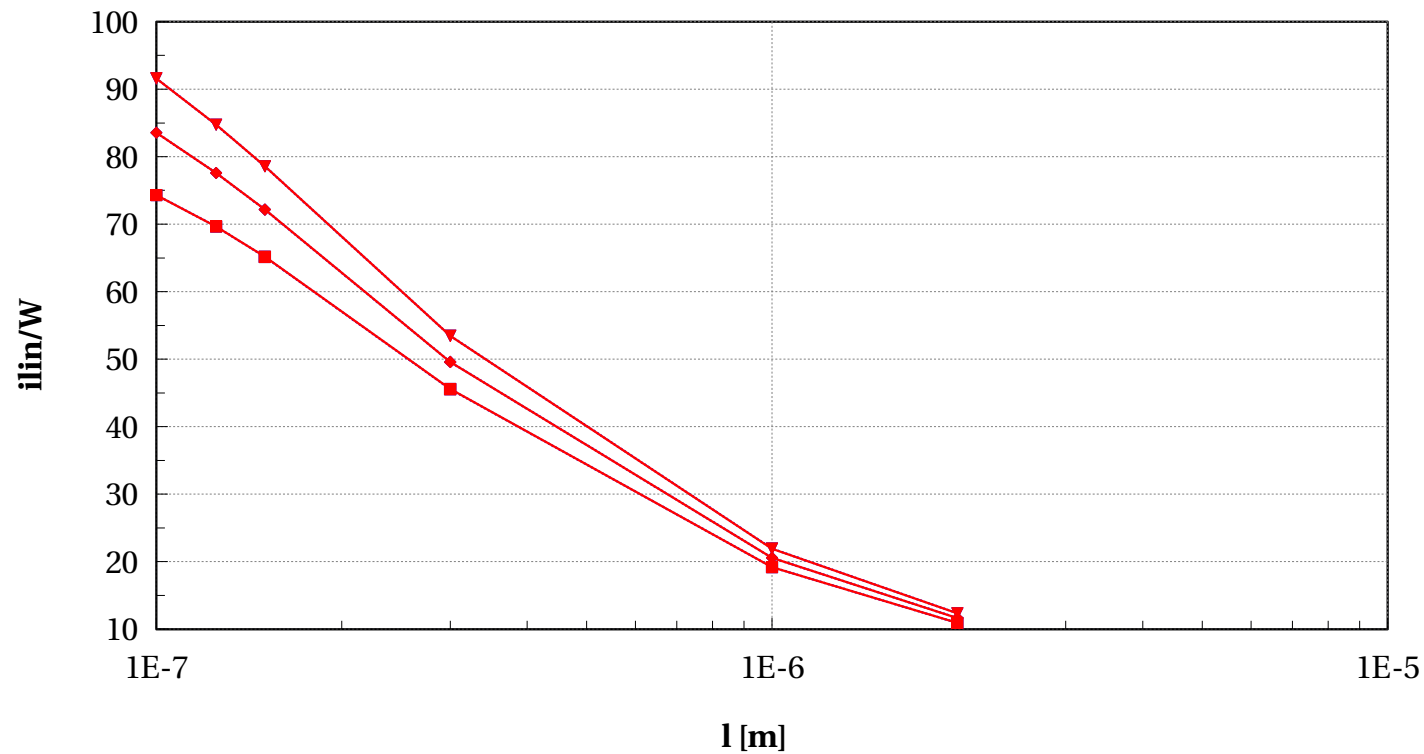
eglvtnfet_rfseg, VtGmmax [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



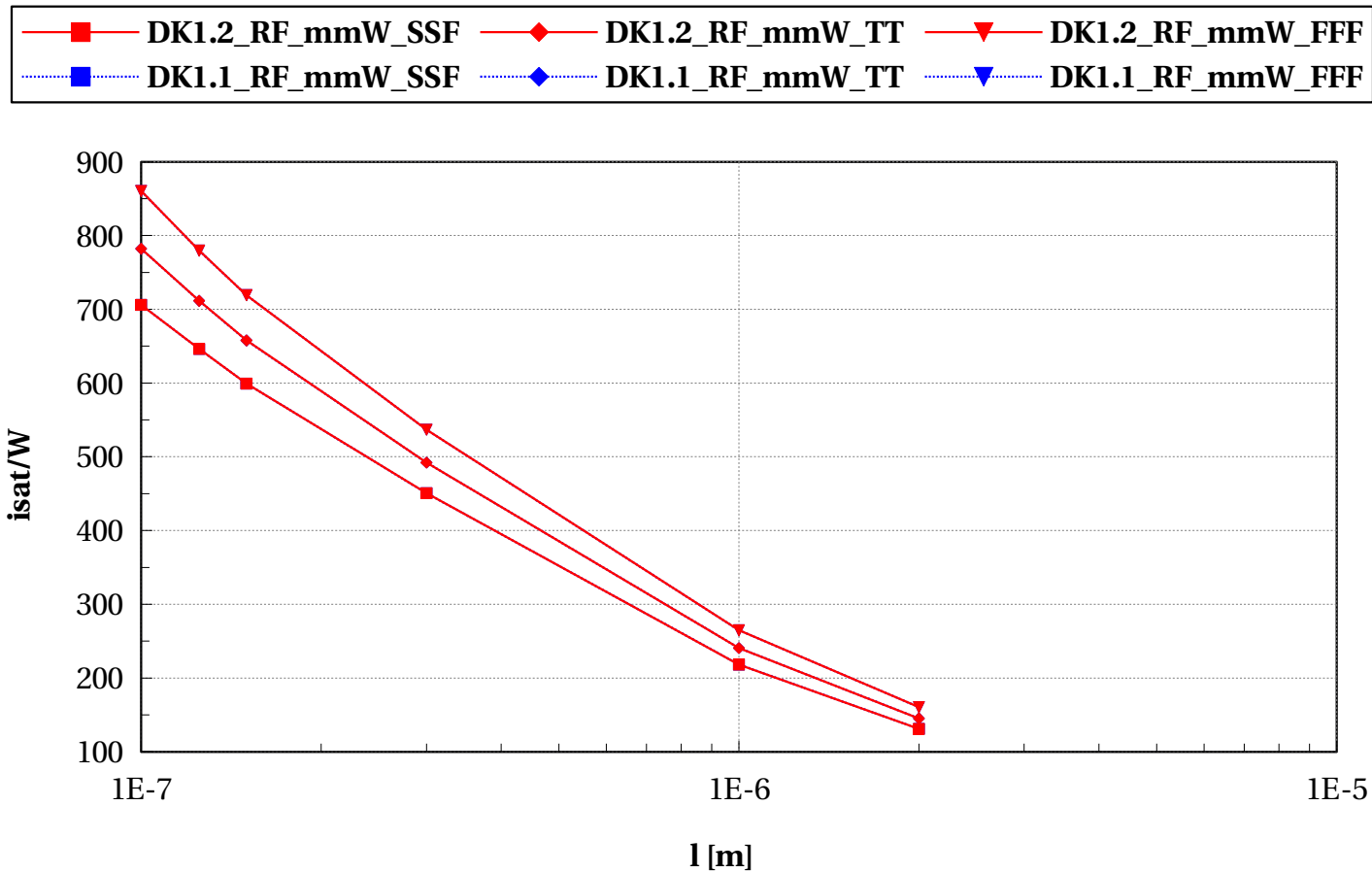
eglvtnfet_rfseg, i_{lin}/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



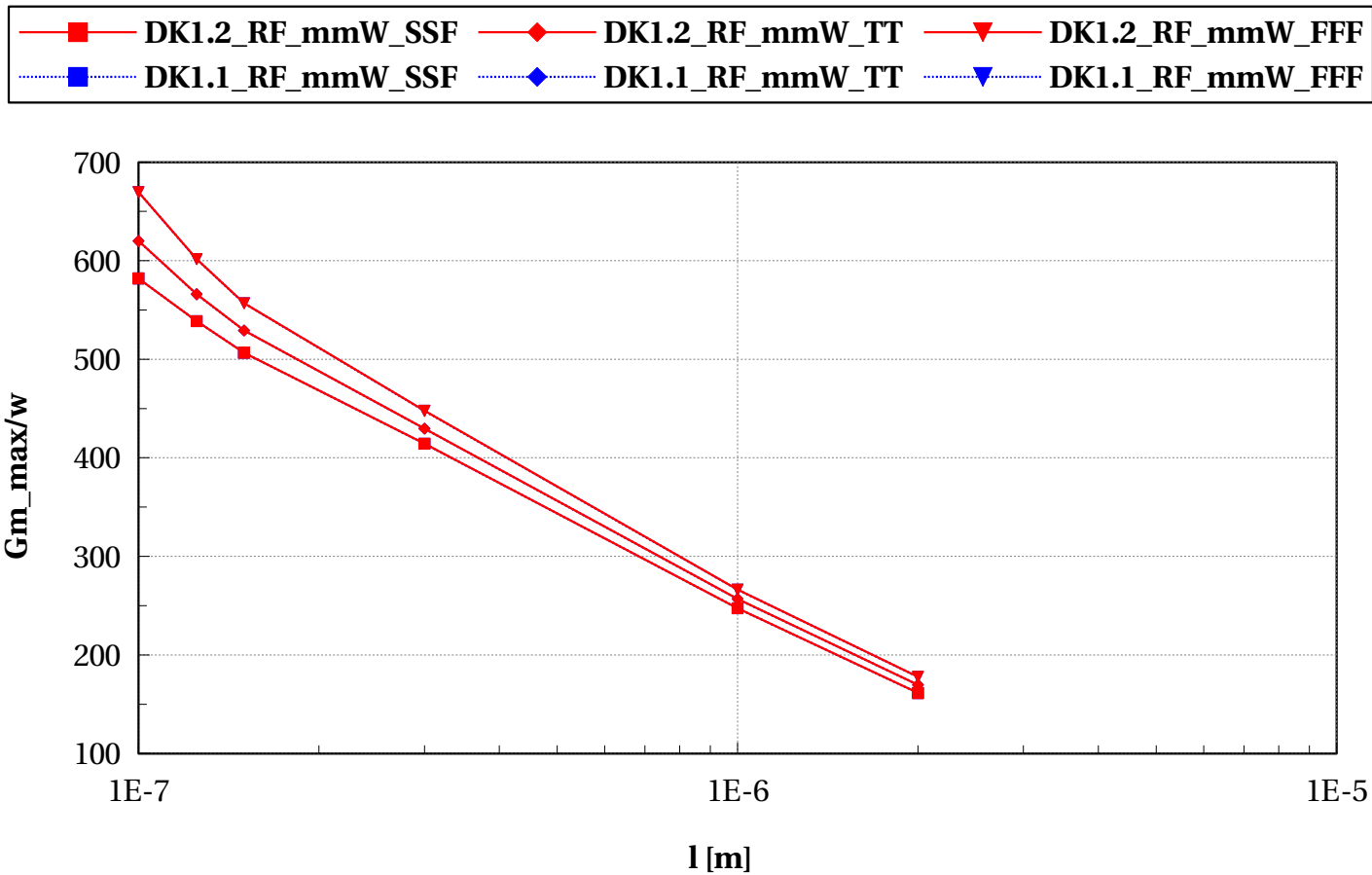
eglvtnfet_rfseg, isat/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtnfet_rfseg, Gm_max/w vs l [m]

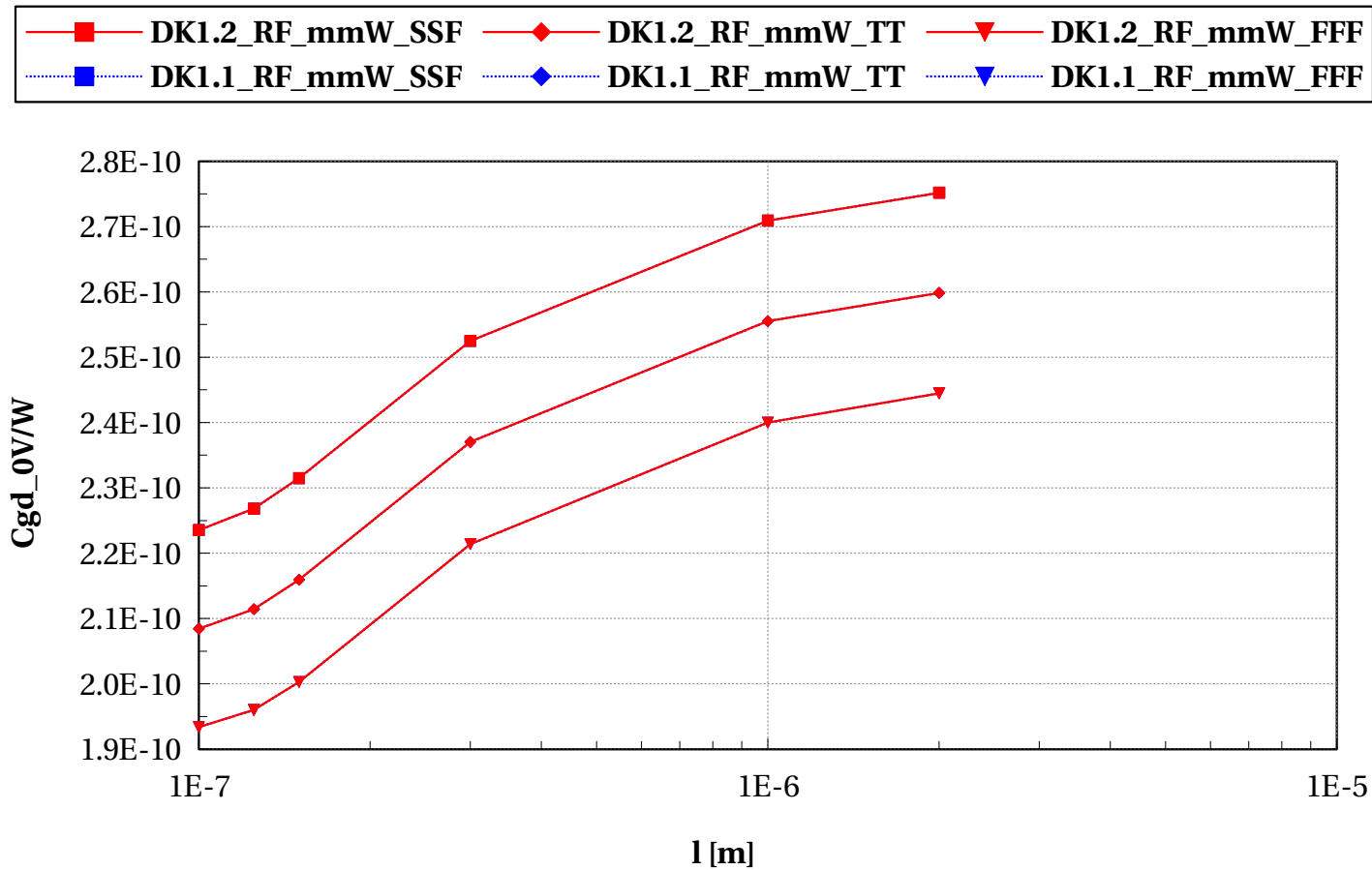
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - RF

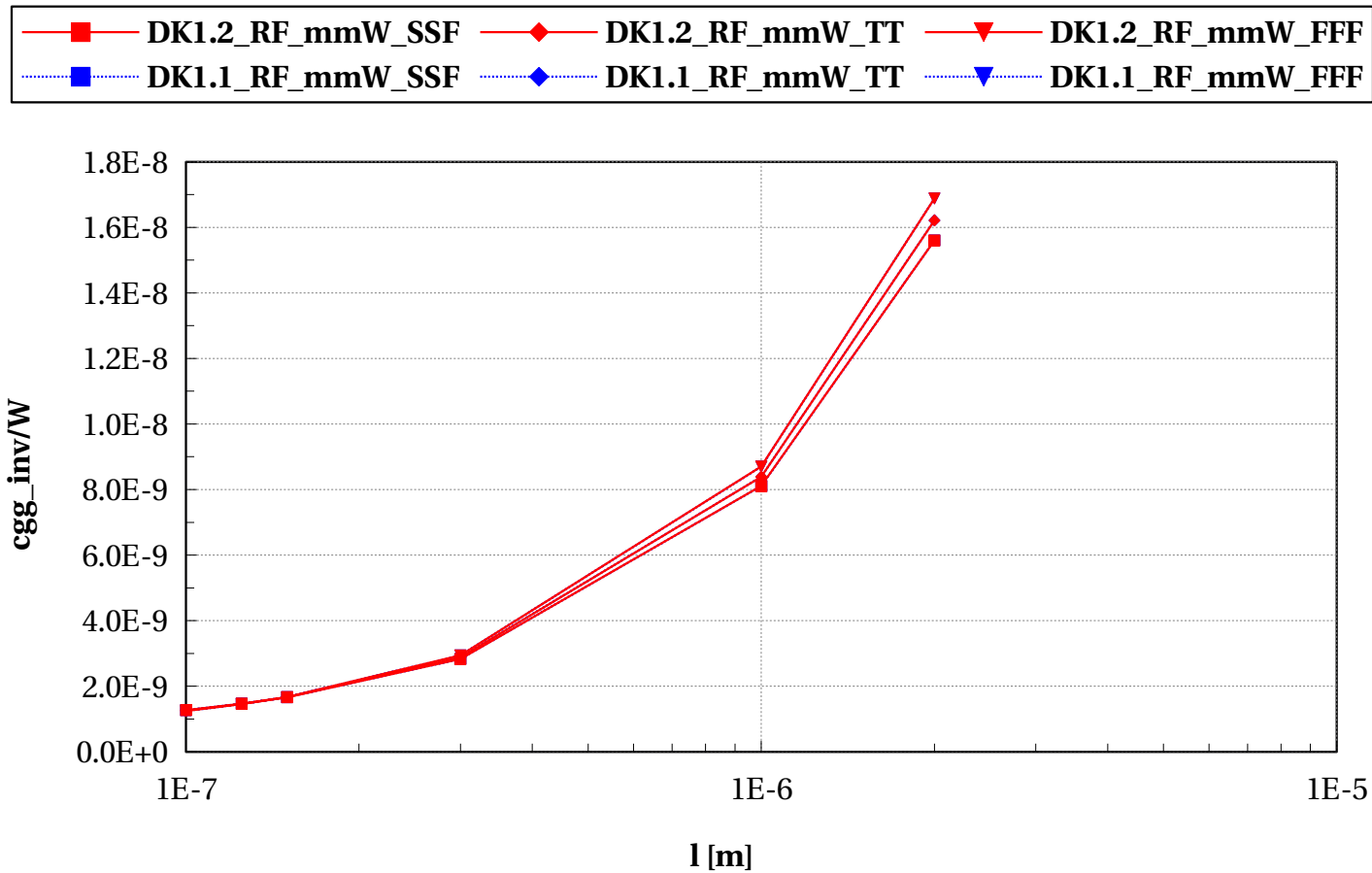
eglvtnfet_rfseg, Cgd_0V/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



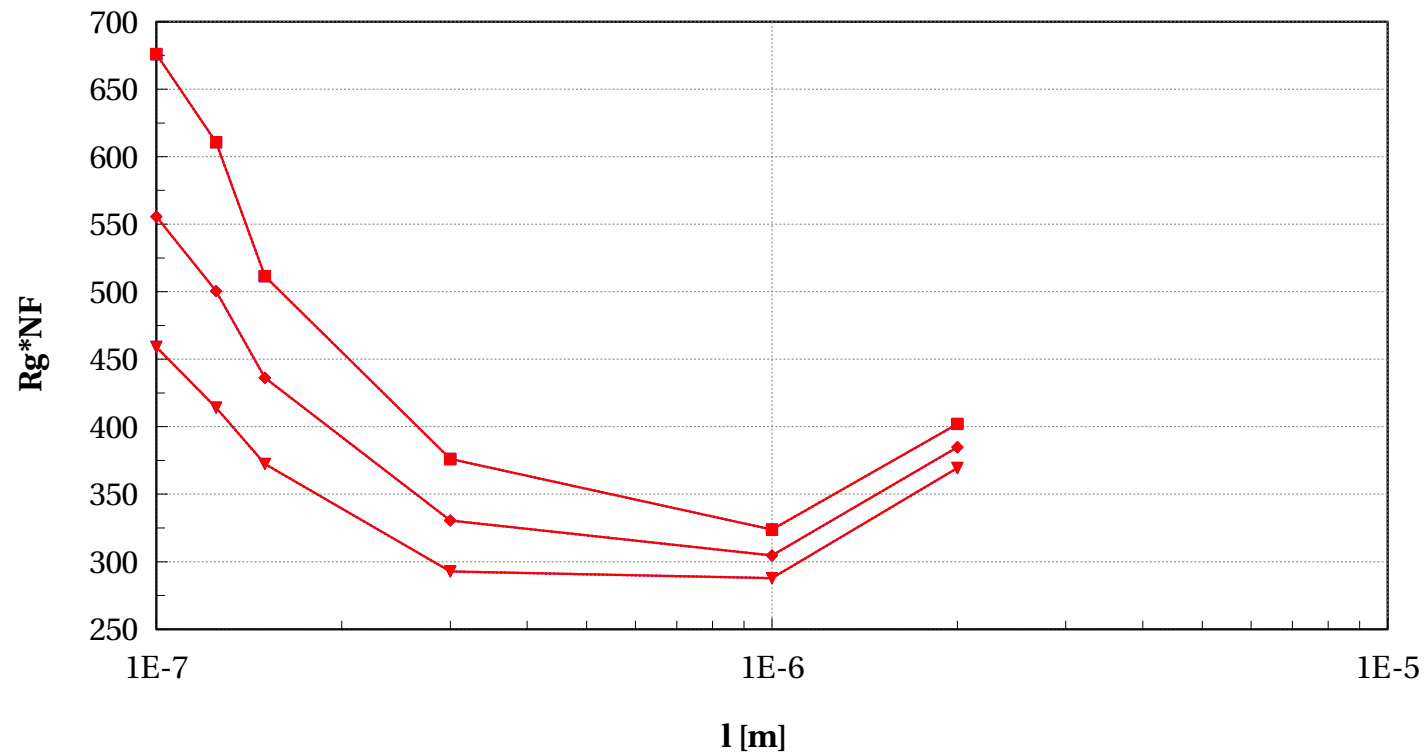
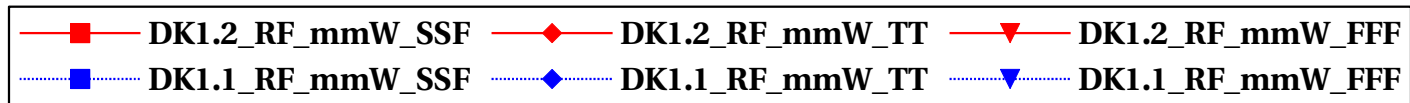
eglvtnfet_rfseg, cgg_inv/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



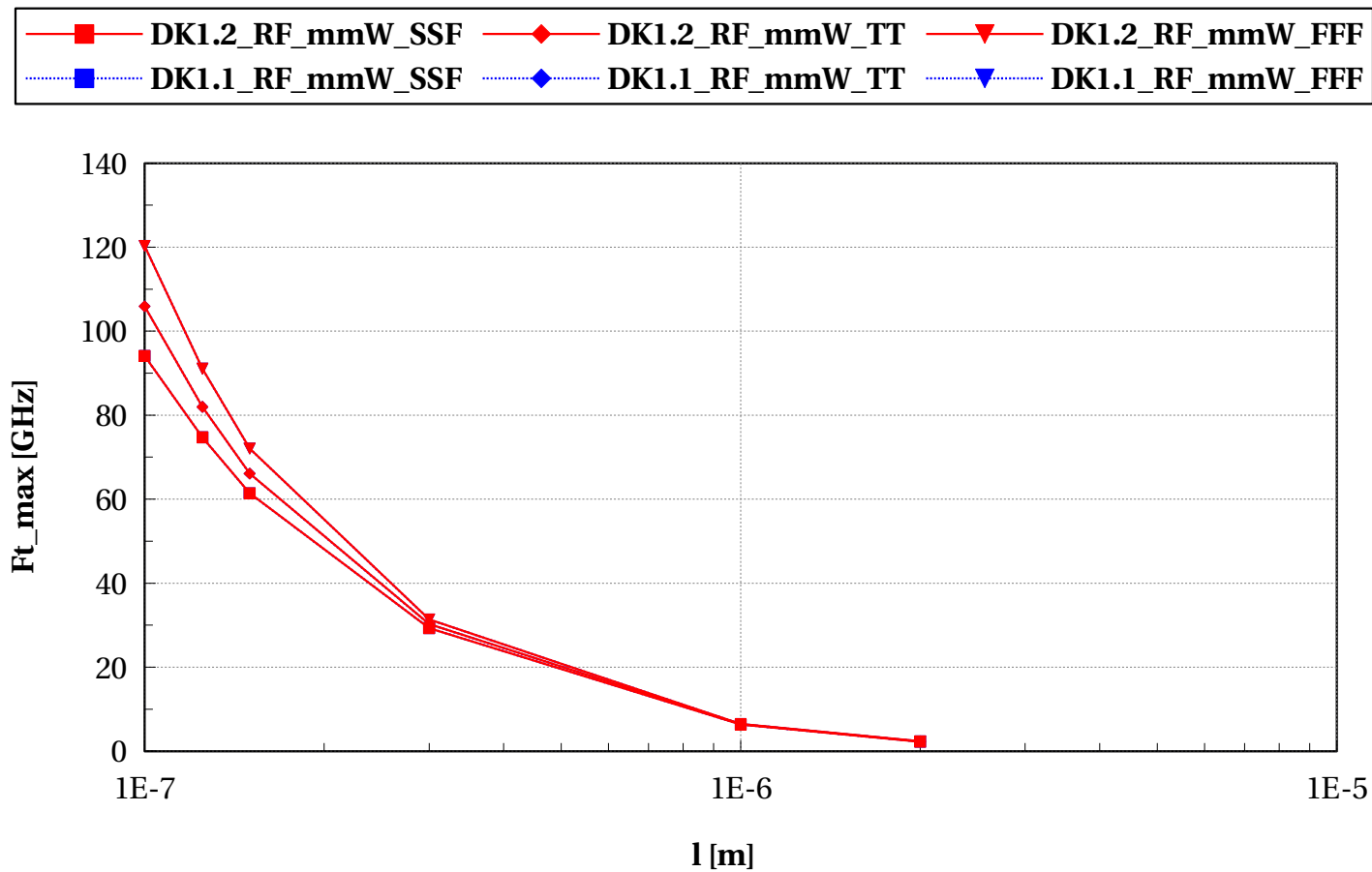
eglvtnfet_rfseg, $R_g * NF$ vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



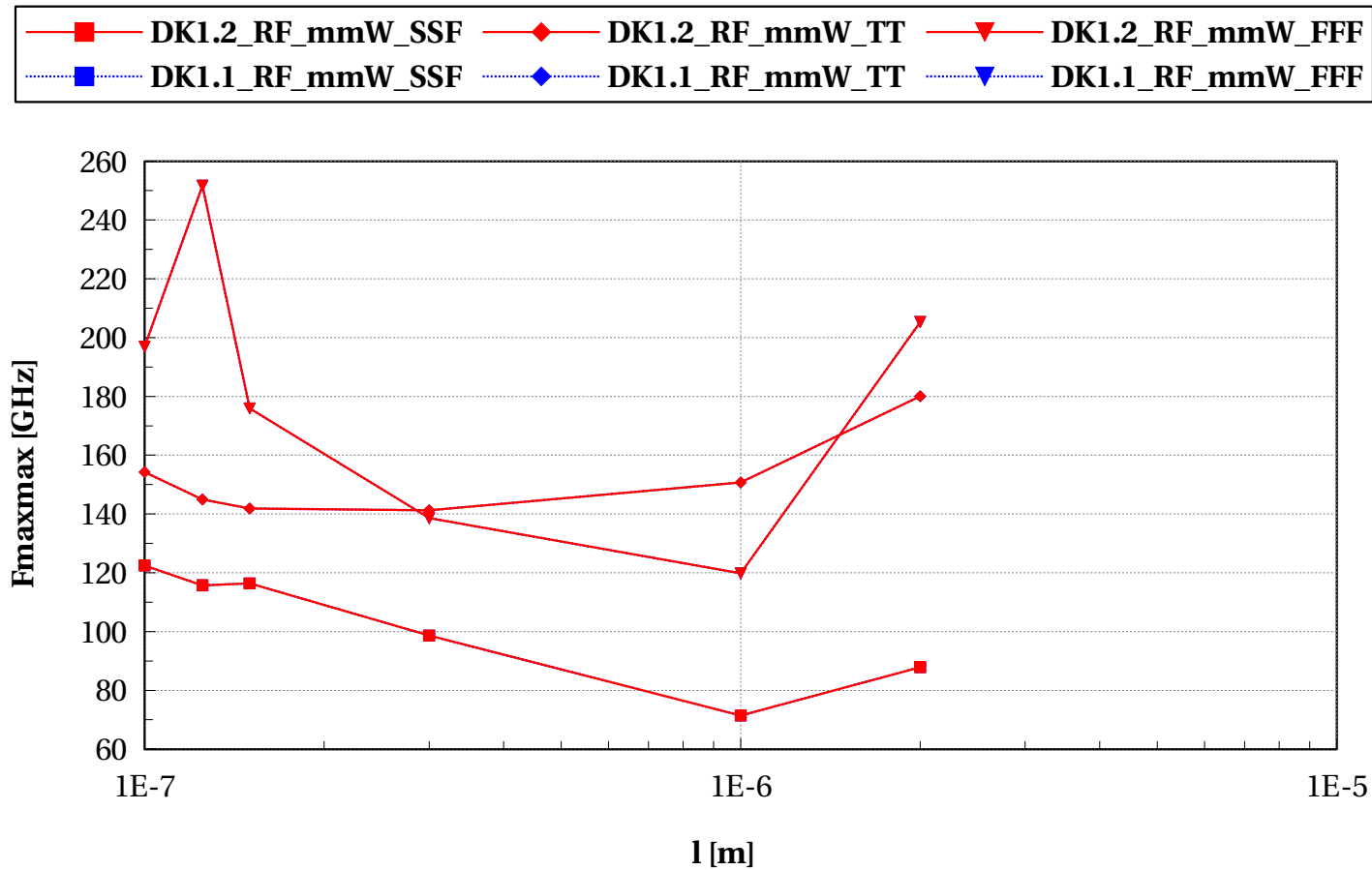
eglvtnfet_rfseg, Ft_max [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtnfet_rfseg, Fmaxmax [GHz] vs l [m]

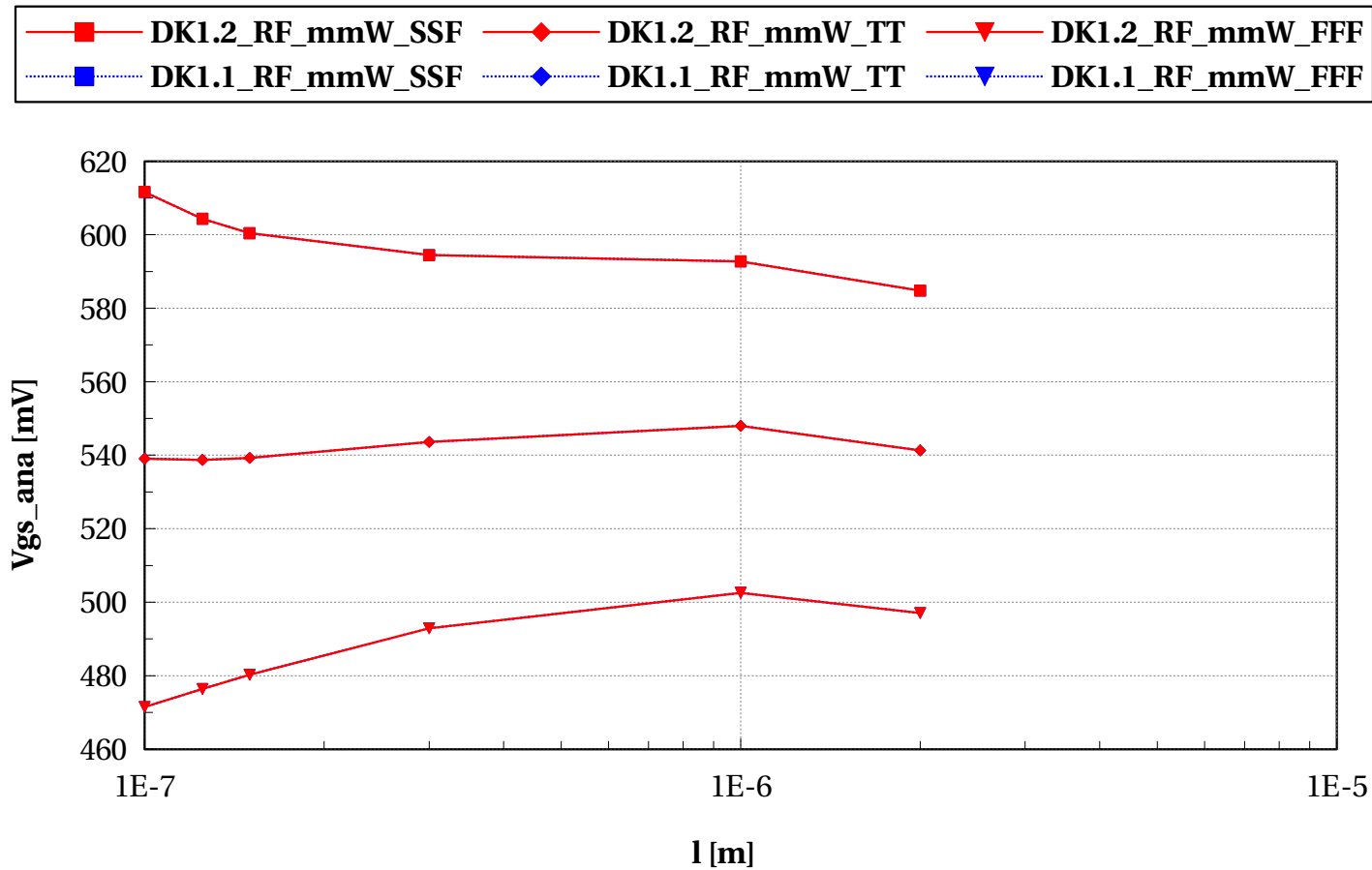
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - Analog

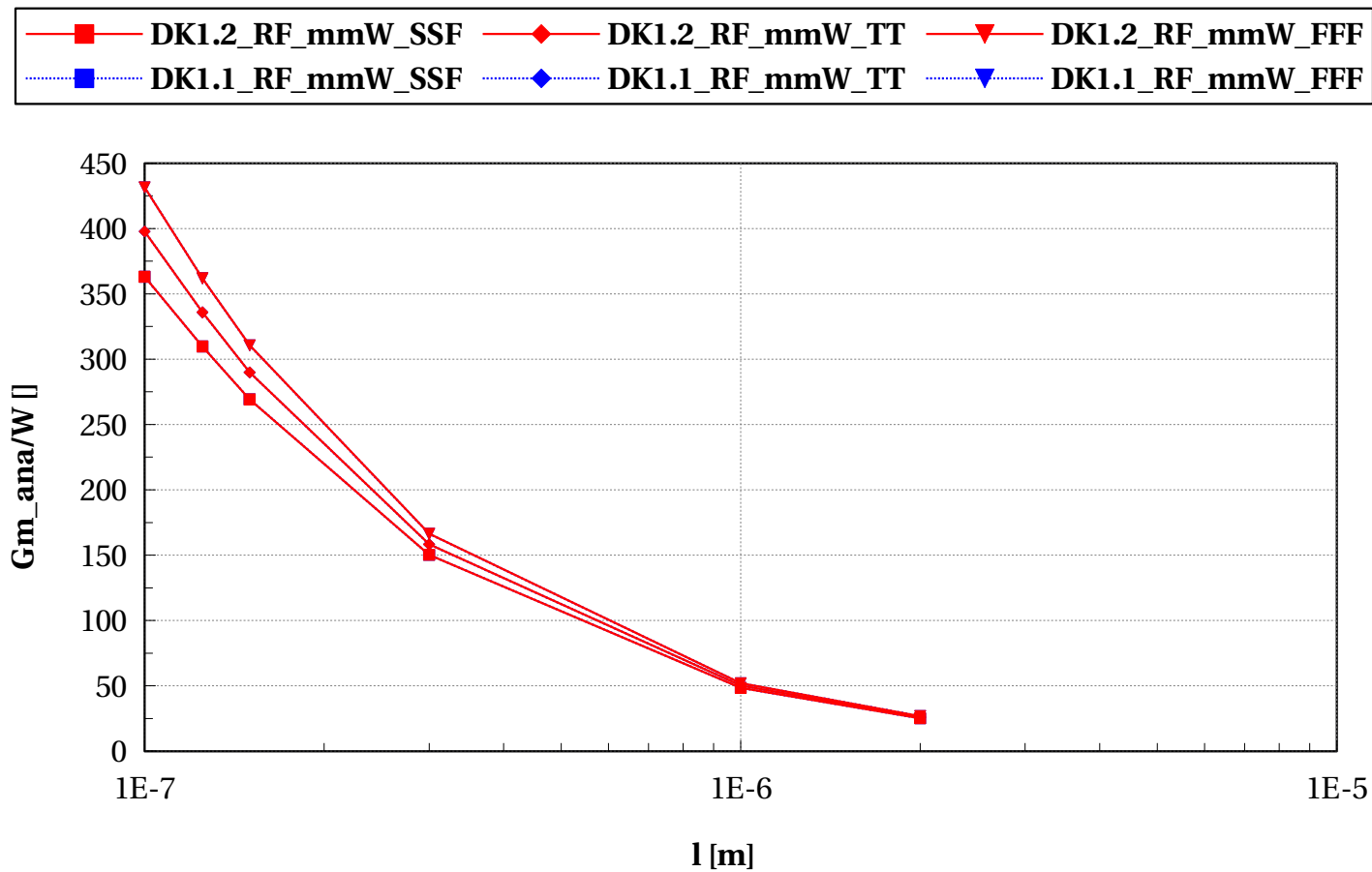
eglvtnfet_rfseg, Vgs_ana [mV] vs I [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



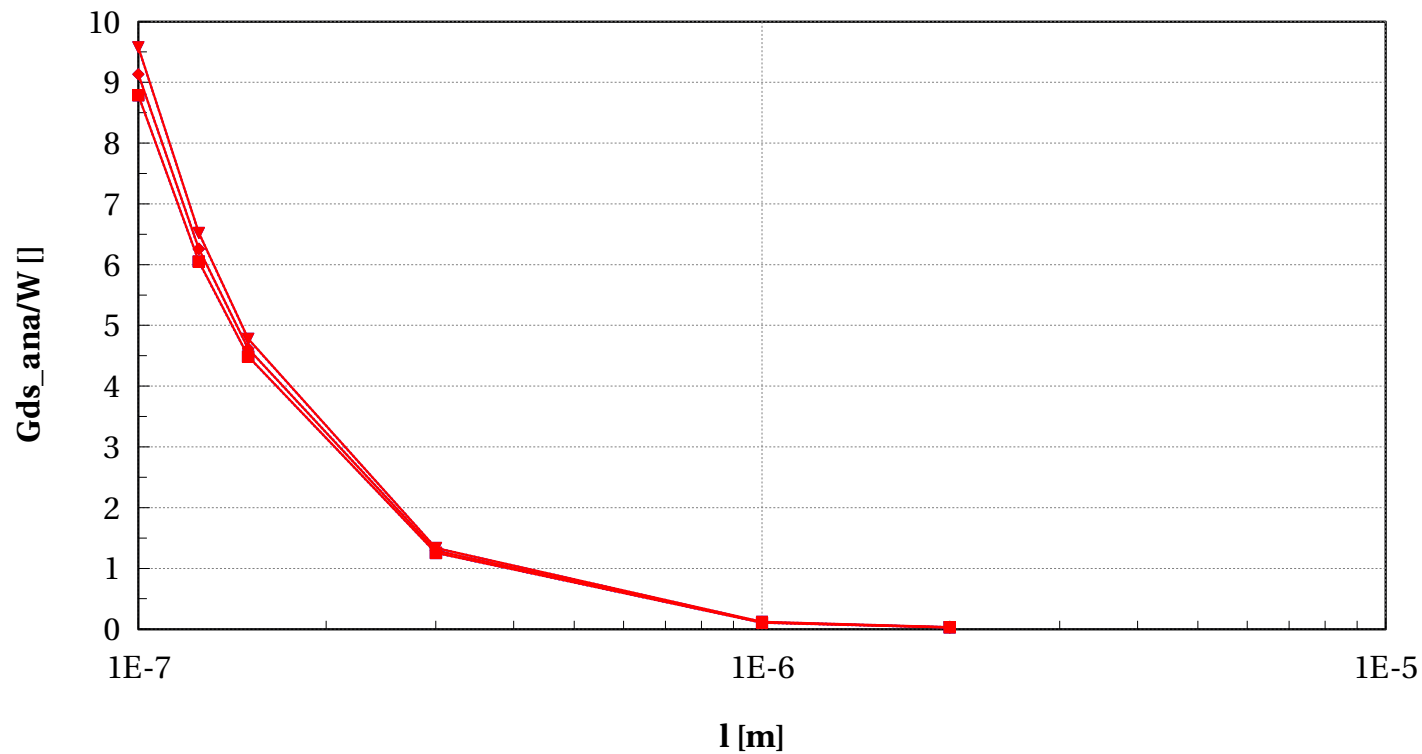
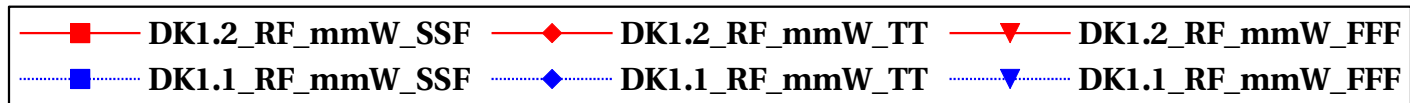
eglvtnfet_rfseg, Gm_ana/W [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



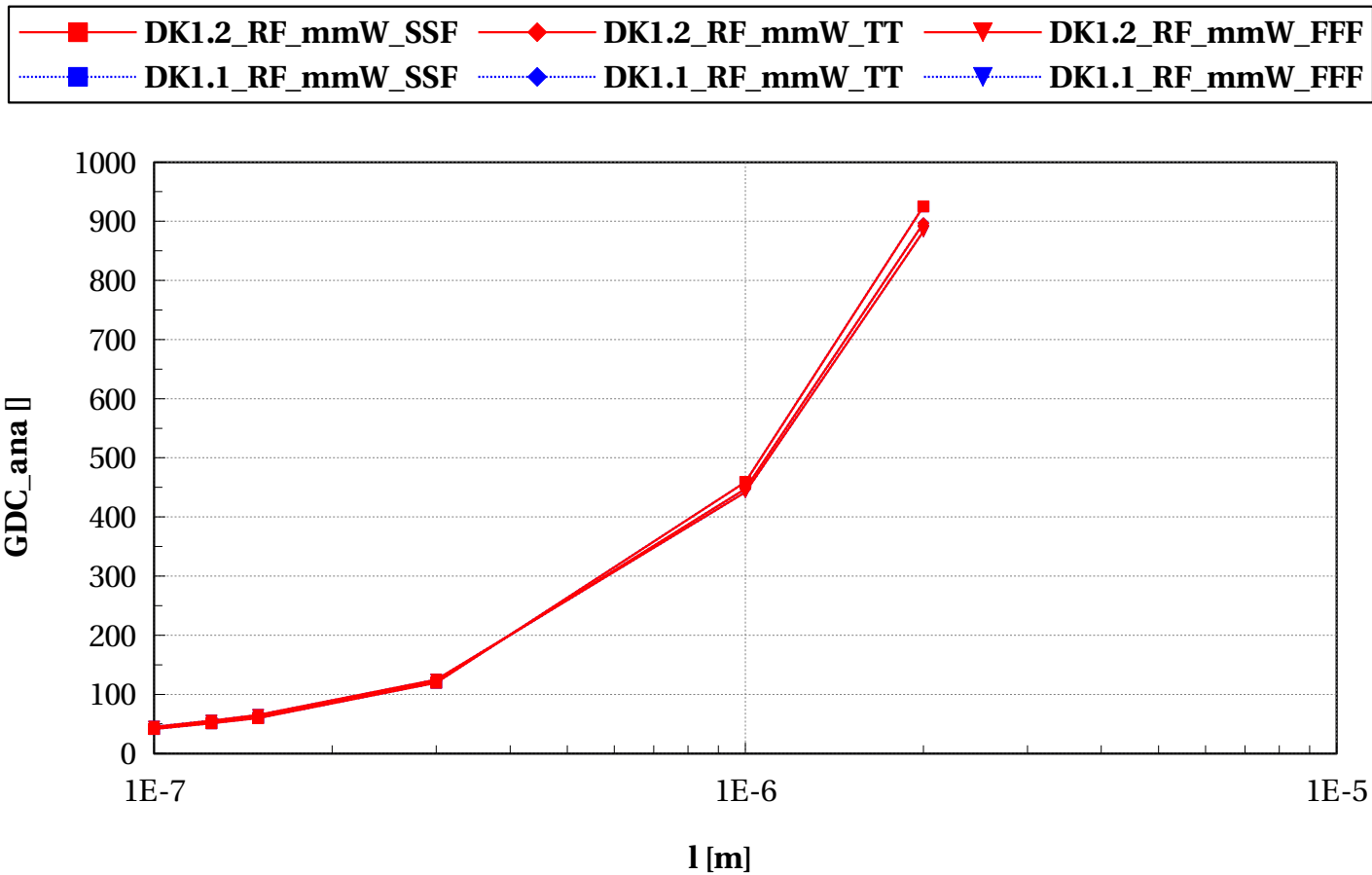
eglvtnfet_rfseg, Gds_ana/W [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



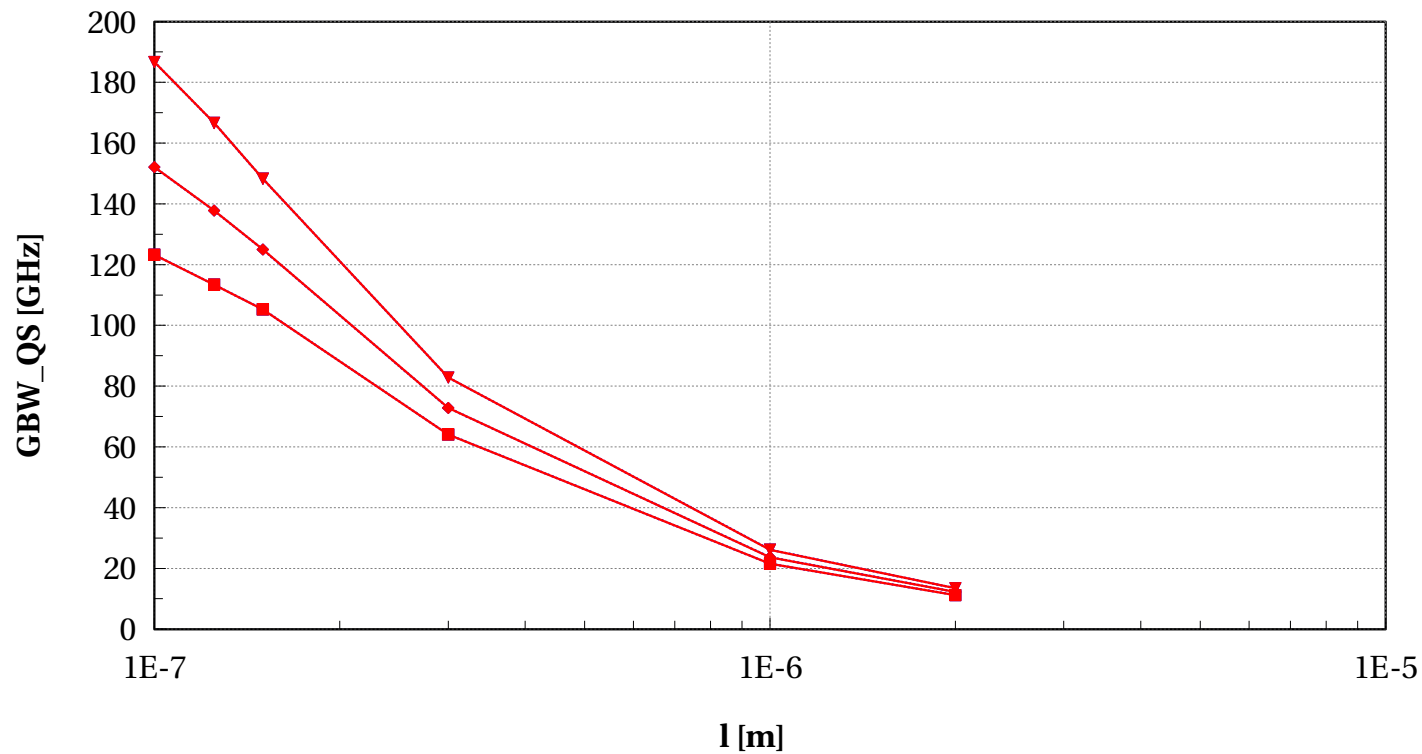
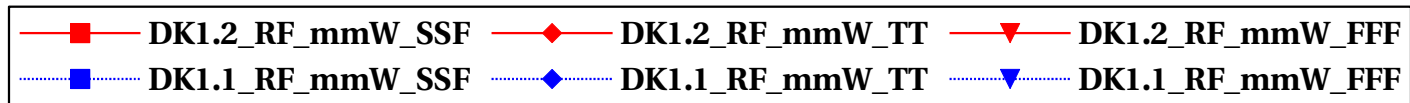
eglvtnfet_rfseg, GDC_ana [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



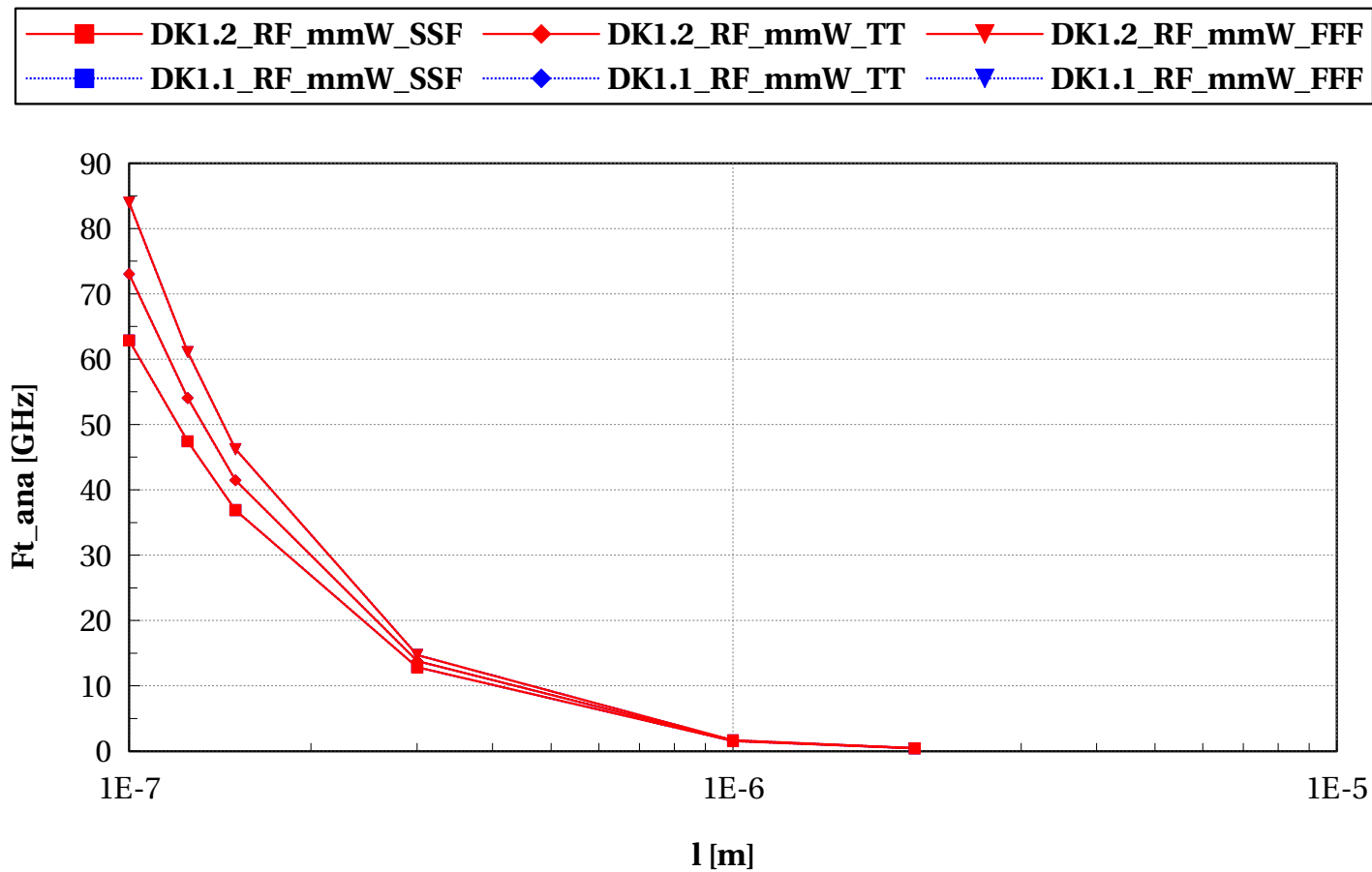
eglvtnfet_rfseg, GBW_QS [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtnfet_rfseg, Ft_ana [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



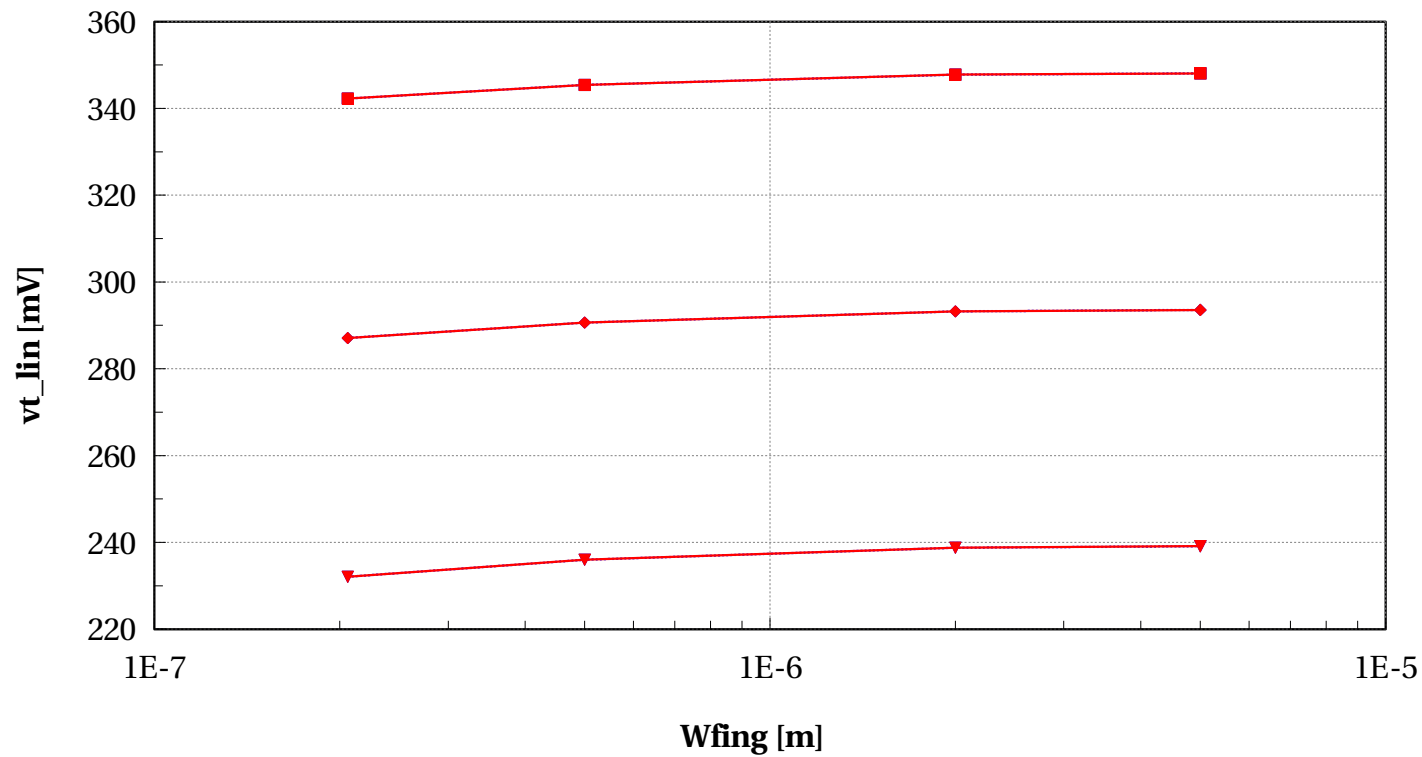
eglvtpfet_rf

Electrical characteristics scaling

Scaling versus width $L=150\text{nm}$ - DC

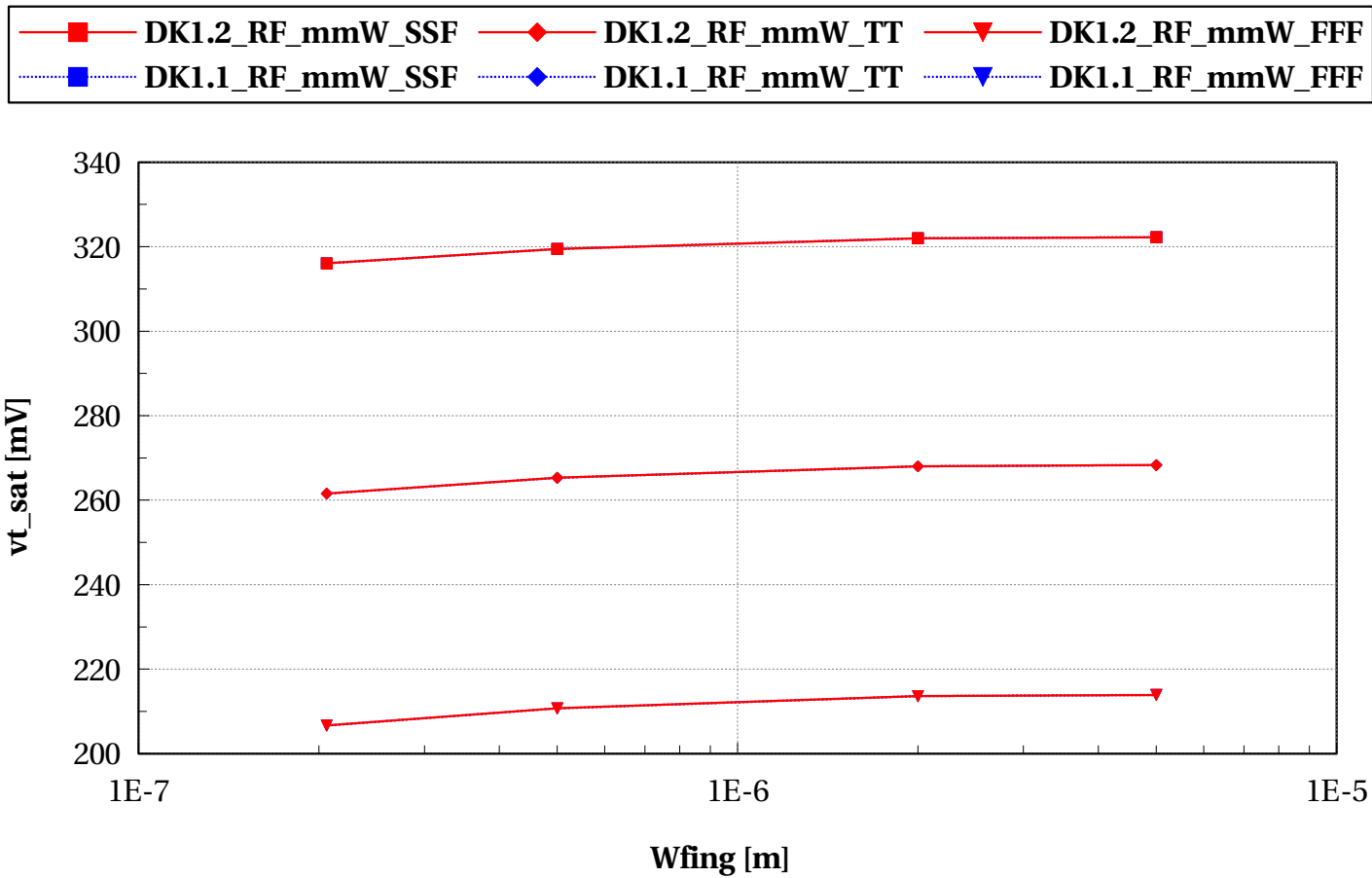
eglvtpfet_rf, vt_lin [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



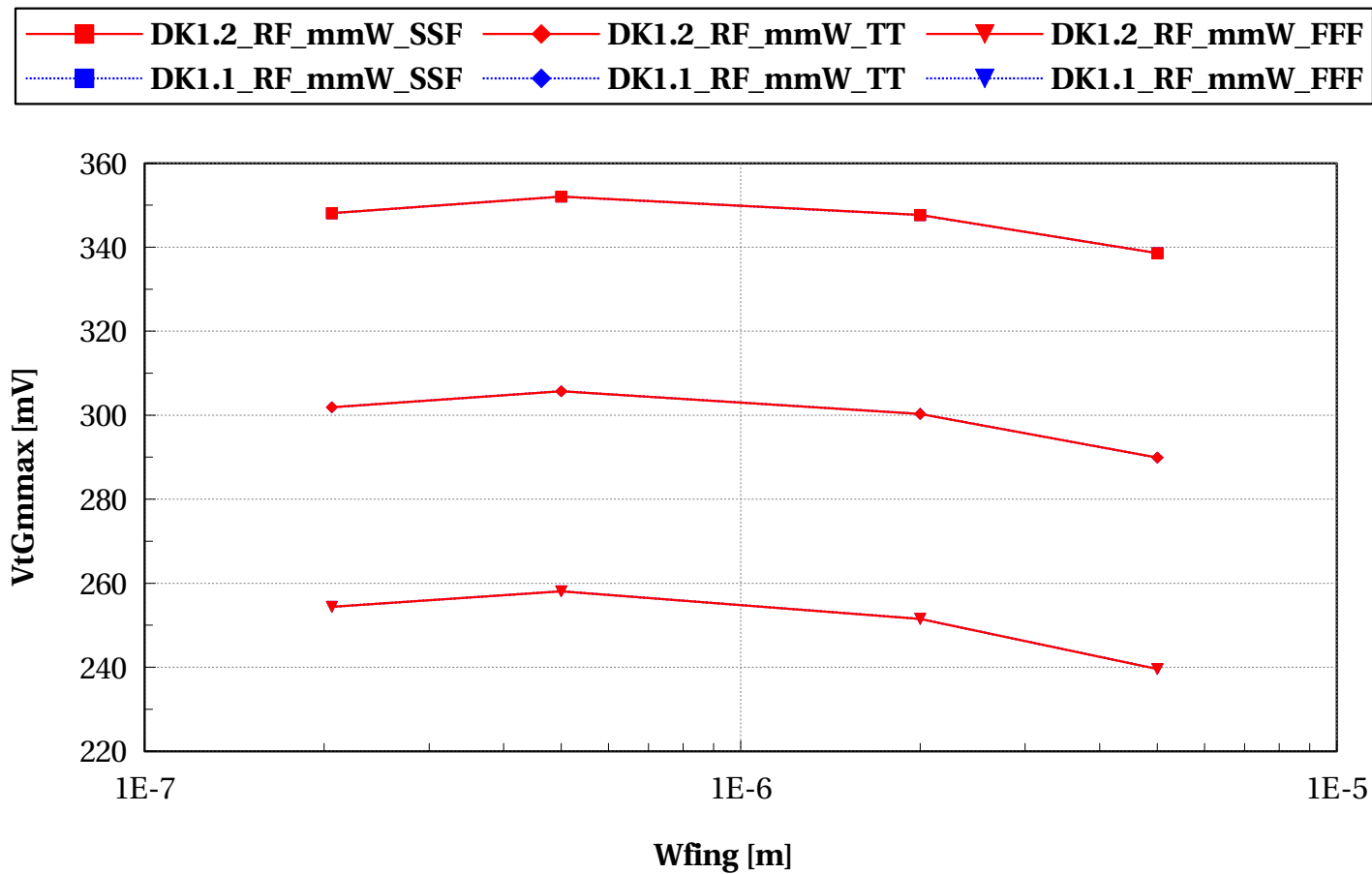
eglvtpfet_rf, vt_sat [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



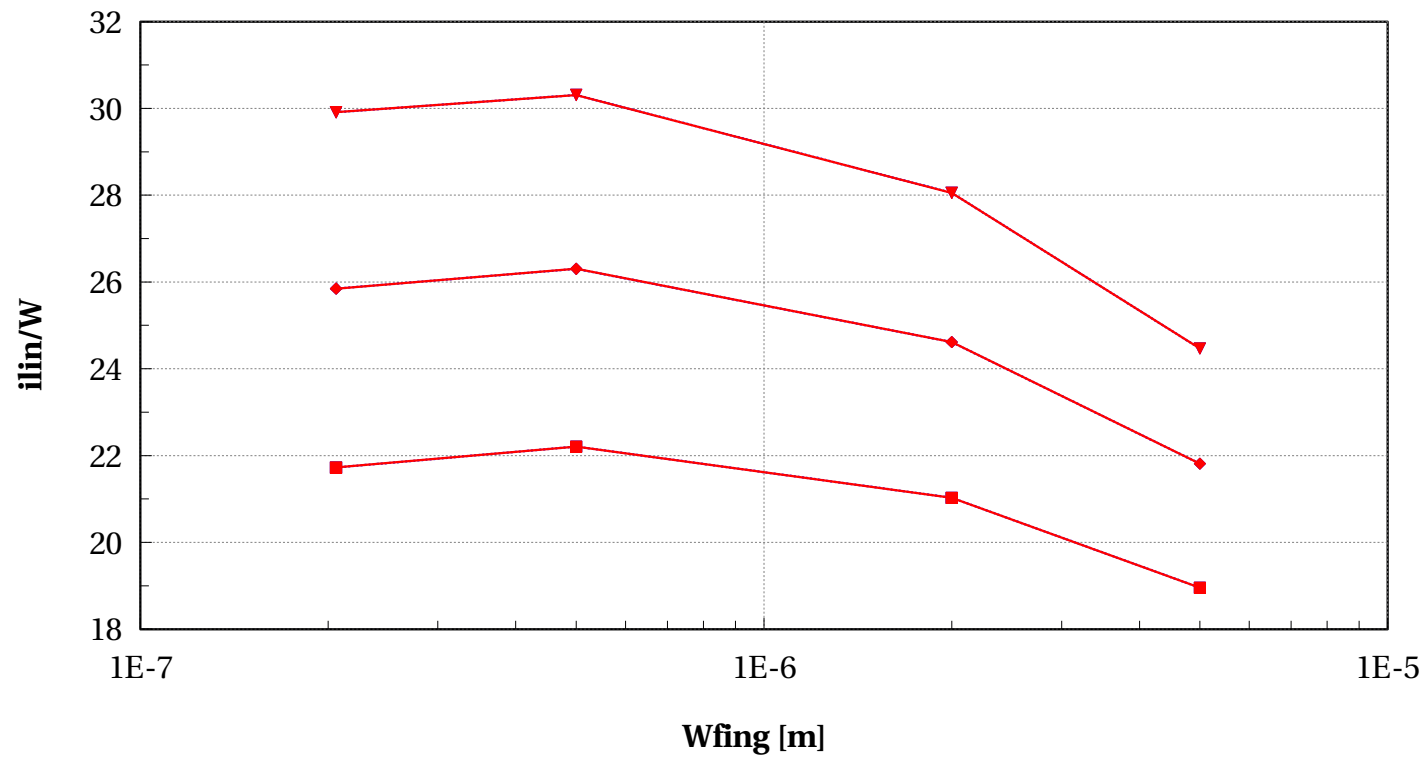
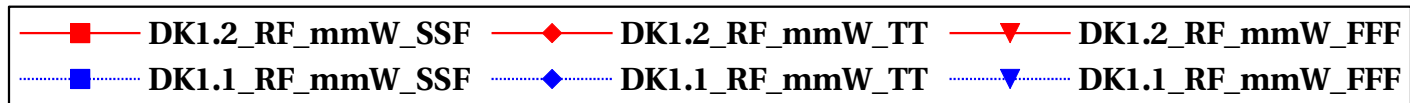
eglvtpfet_rf, VtGmmax [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



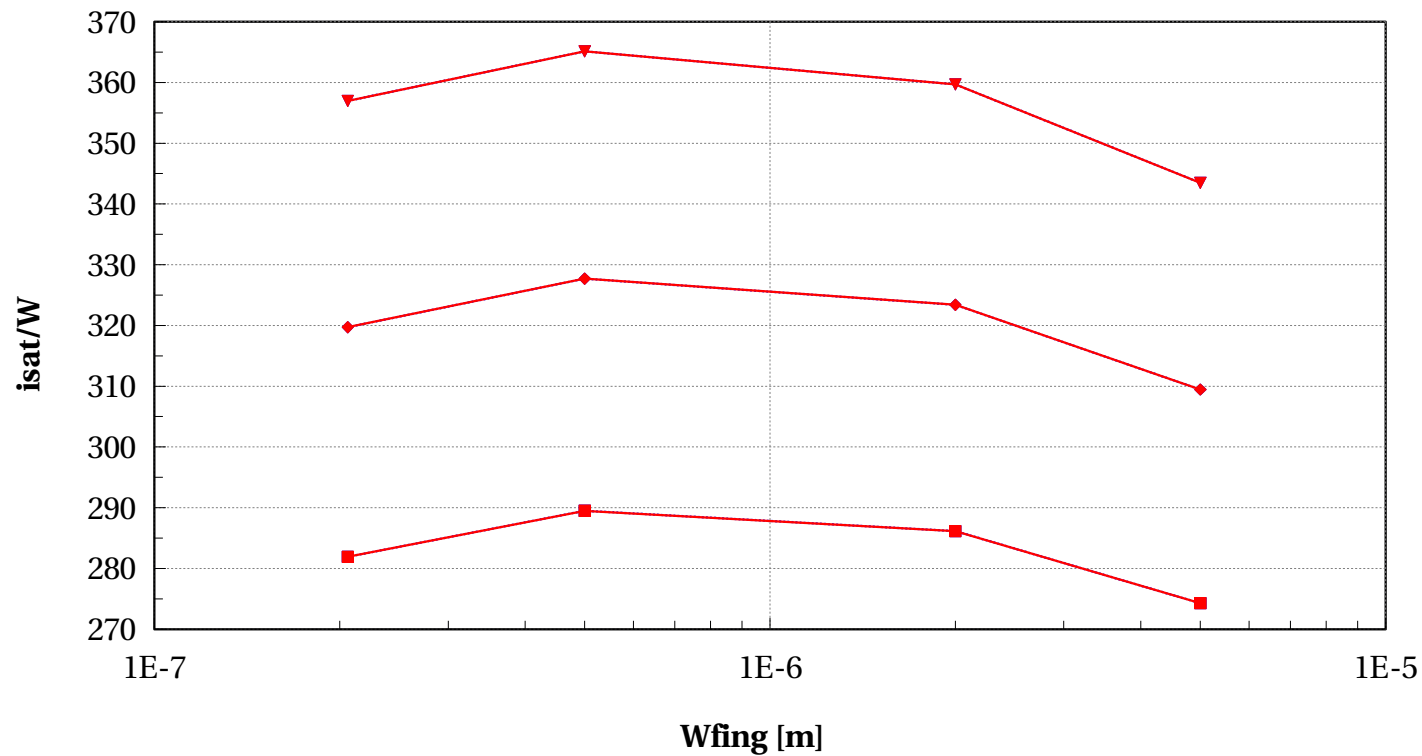
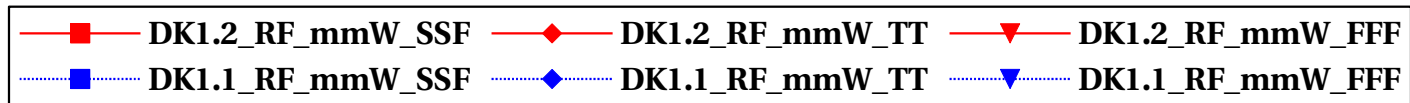
eglvtpfet_rf, i_{lin}/W vs W_{fing} [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and $l=150e-9$



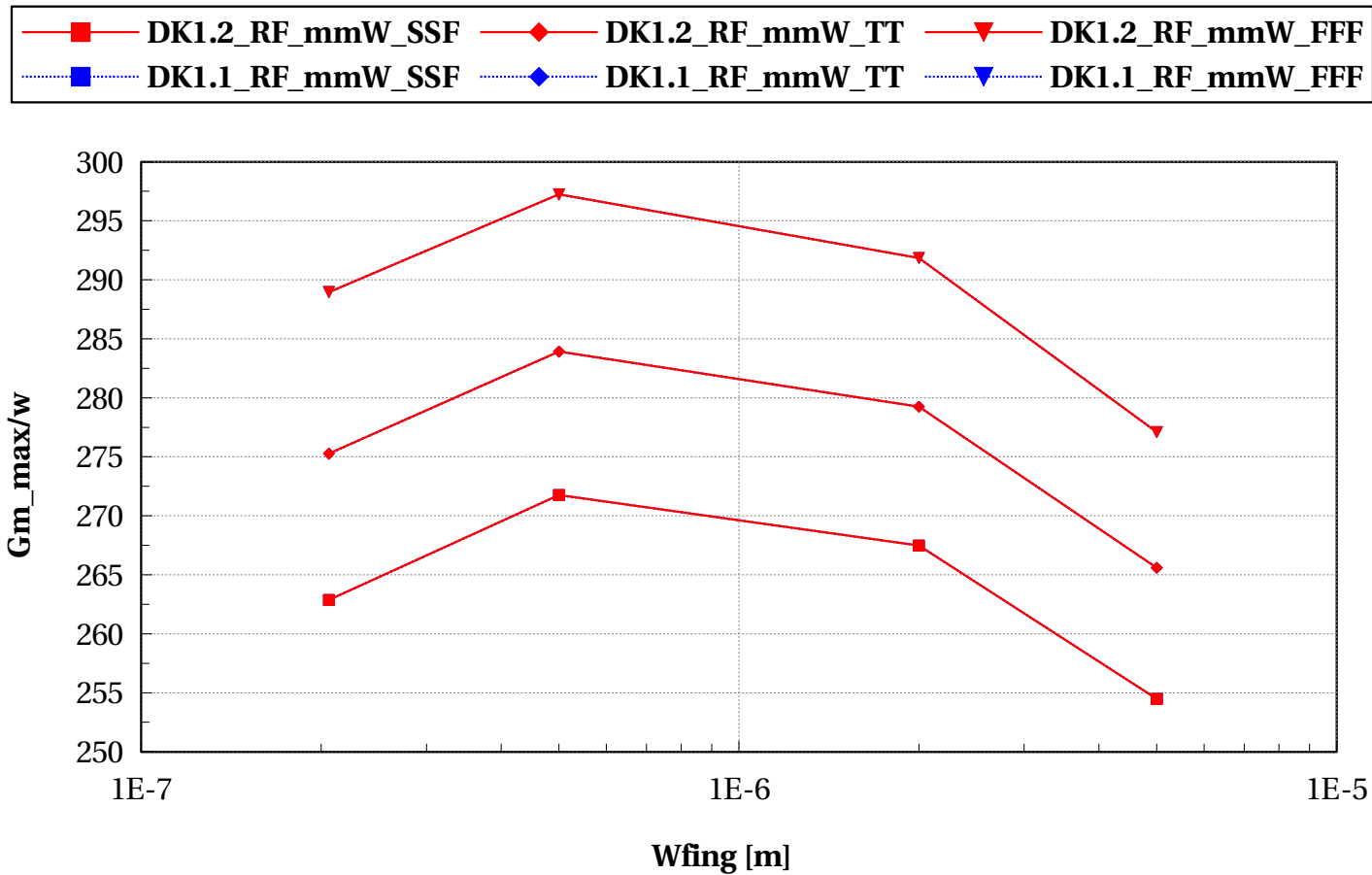
eglvtpfet_rf, isat/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtpfet_rf, Gm_max/w vs Wfing [m]

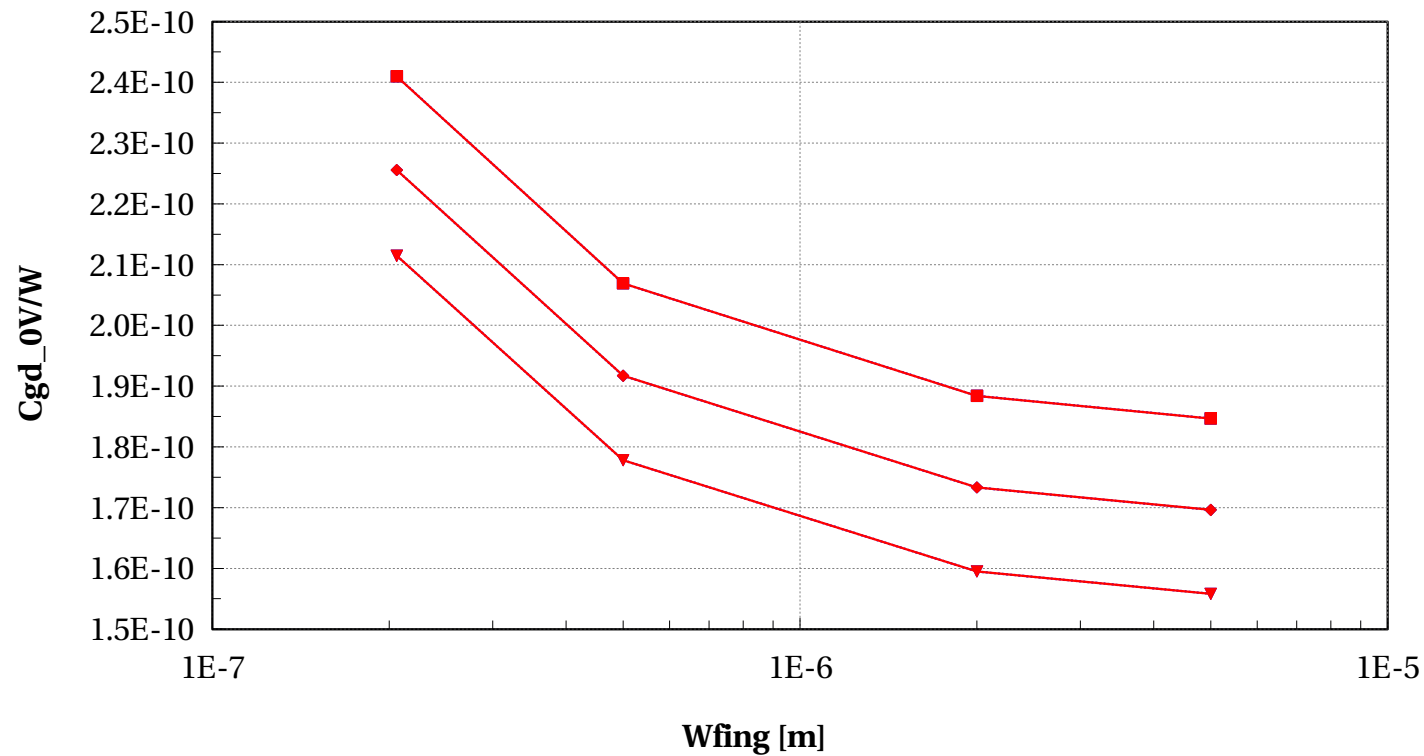
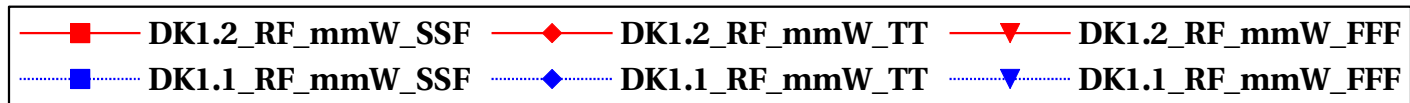
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus width $L=150\text{nm}$ - RF

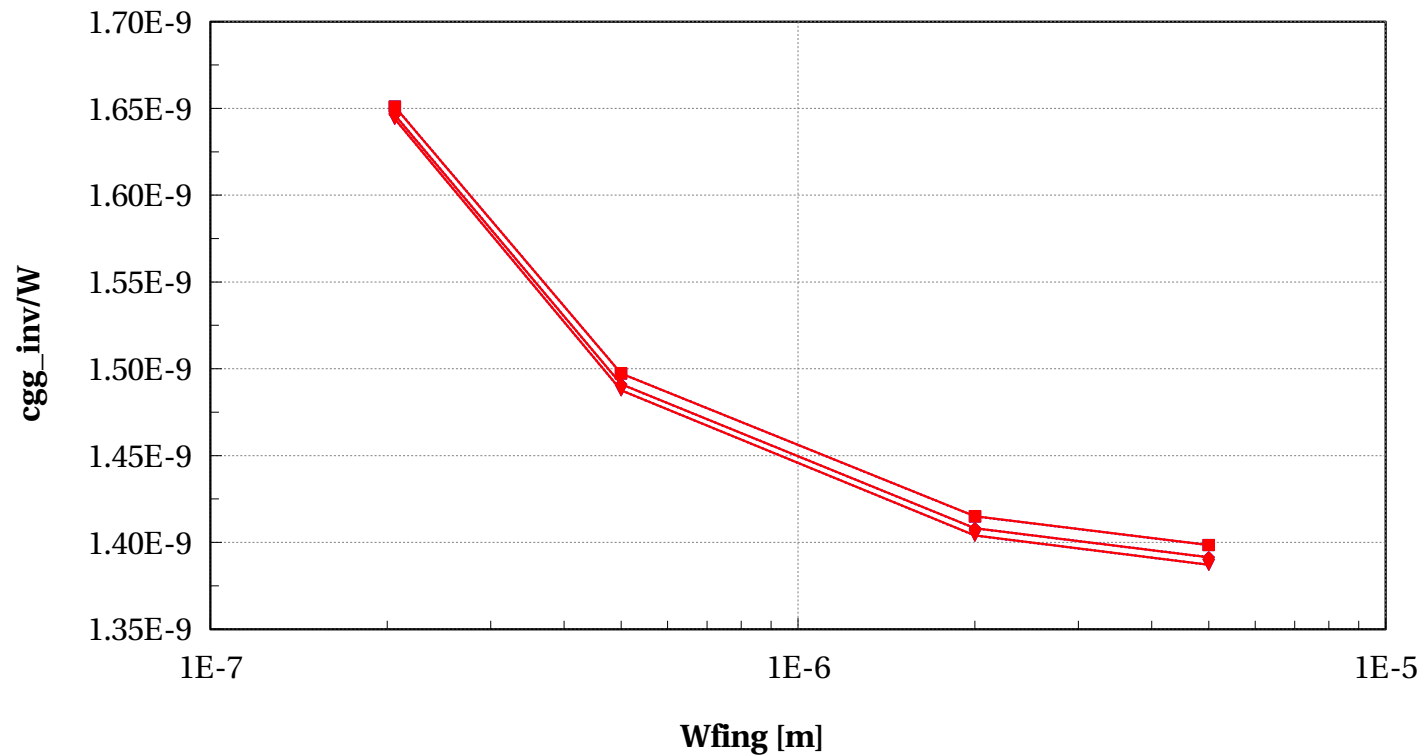
eglvtpfet_rf, Cgd_0V/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



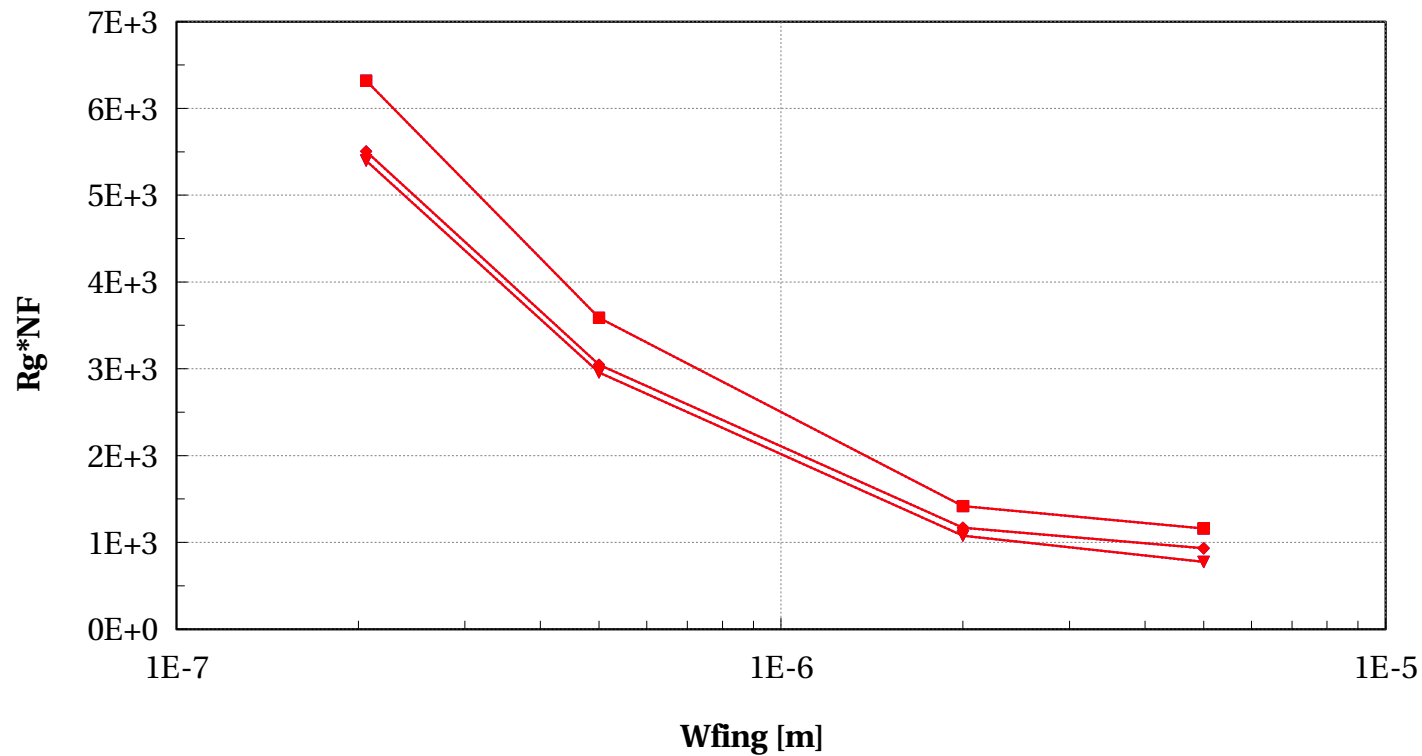
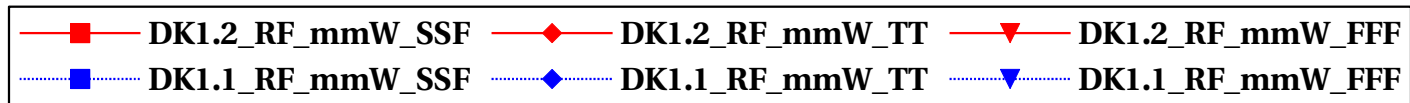
eglvtpfet_rf, cgg_inv/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



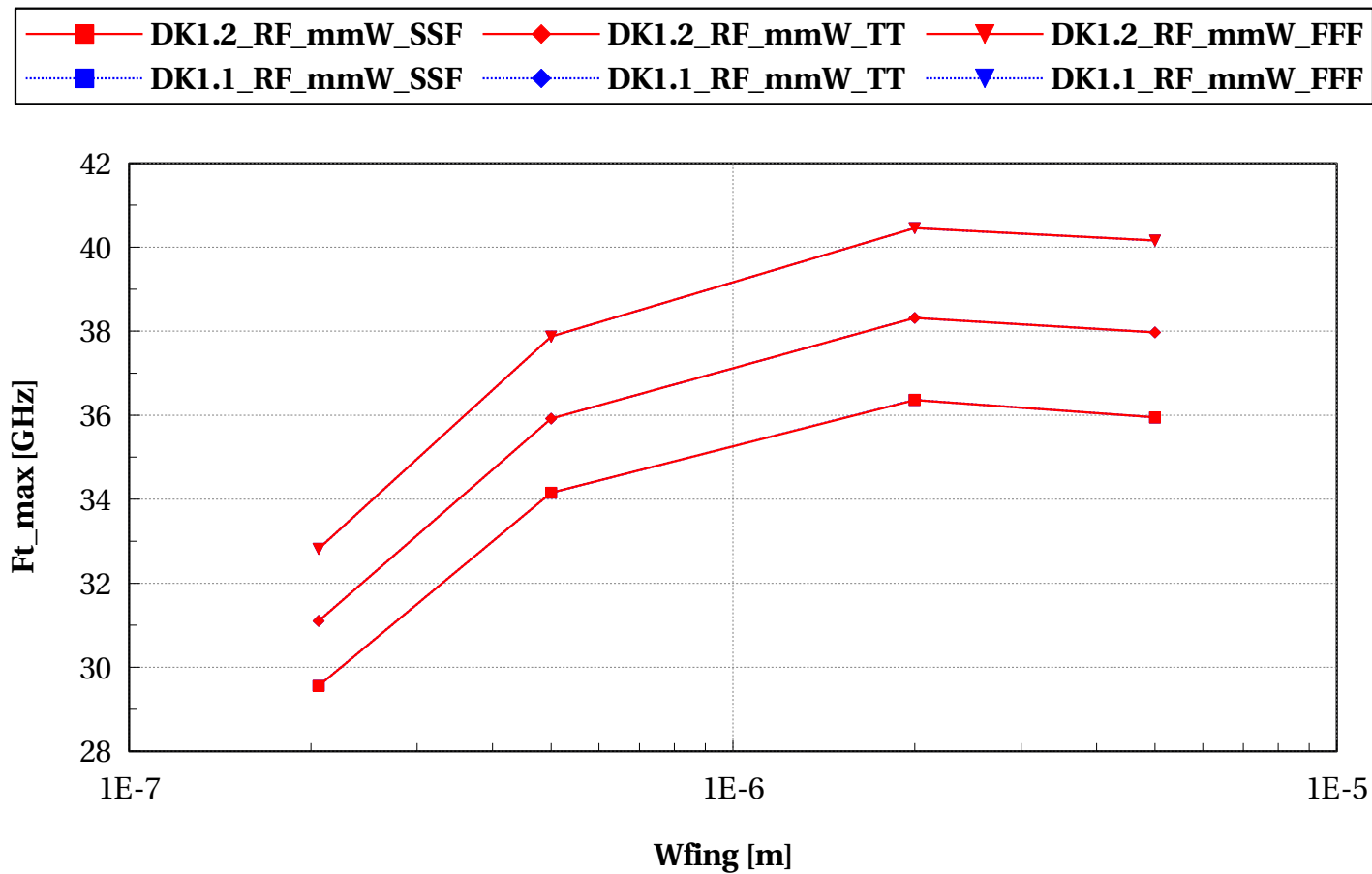
eglvtpfet_rf, Rg*NF vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



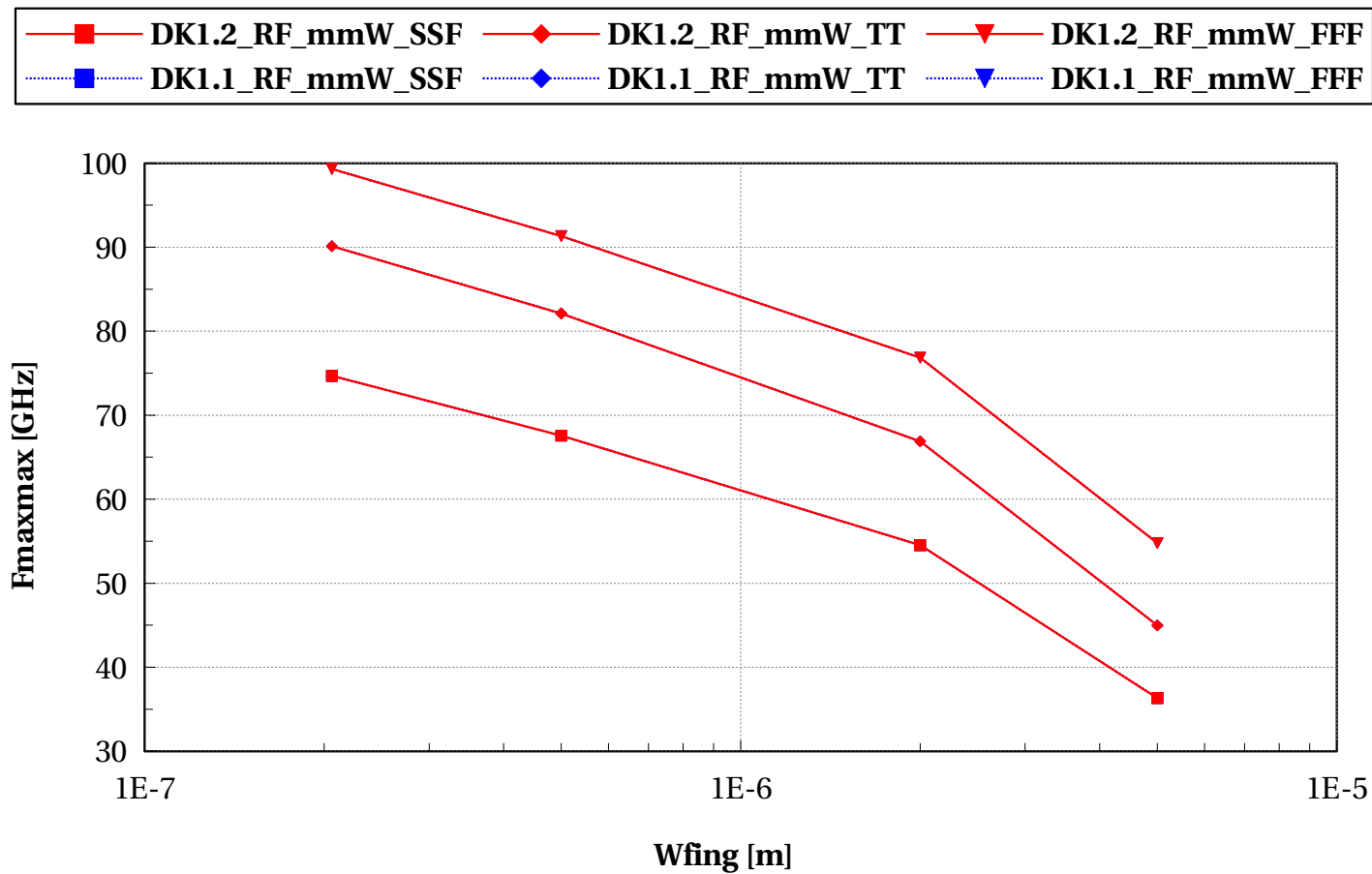
eglvtpfet_rf, Ft_max [GHz] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtpfet_rf, Fmaxmax [GHz] vs Wfing [m]

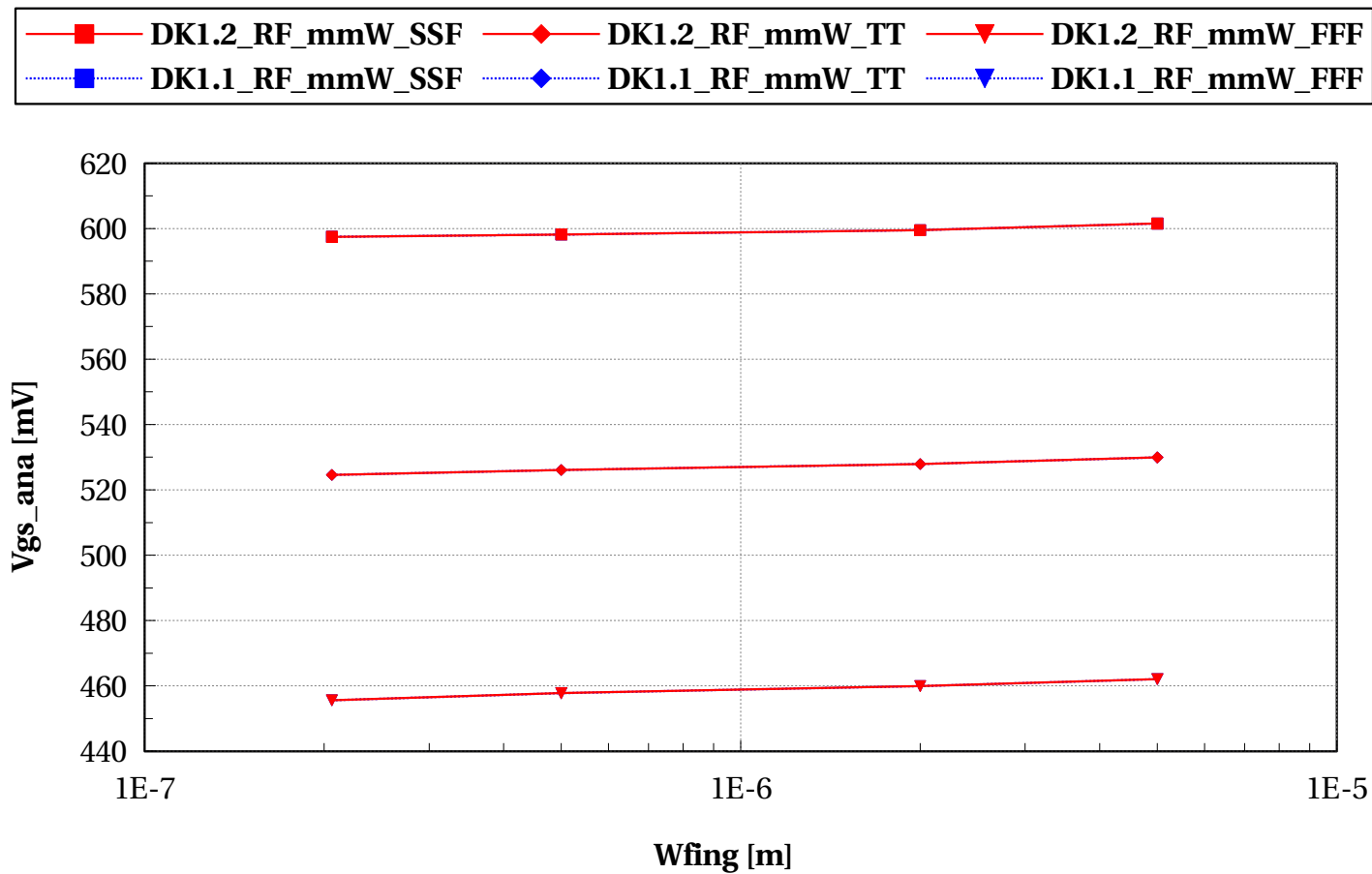
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus width $L=150\text{nm}$ - Analog

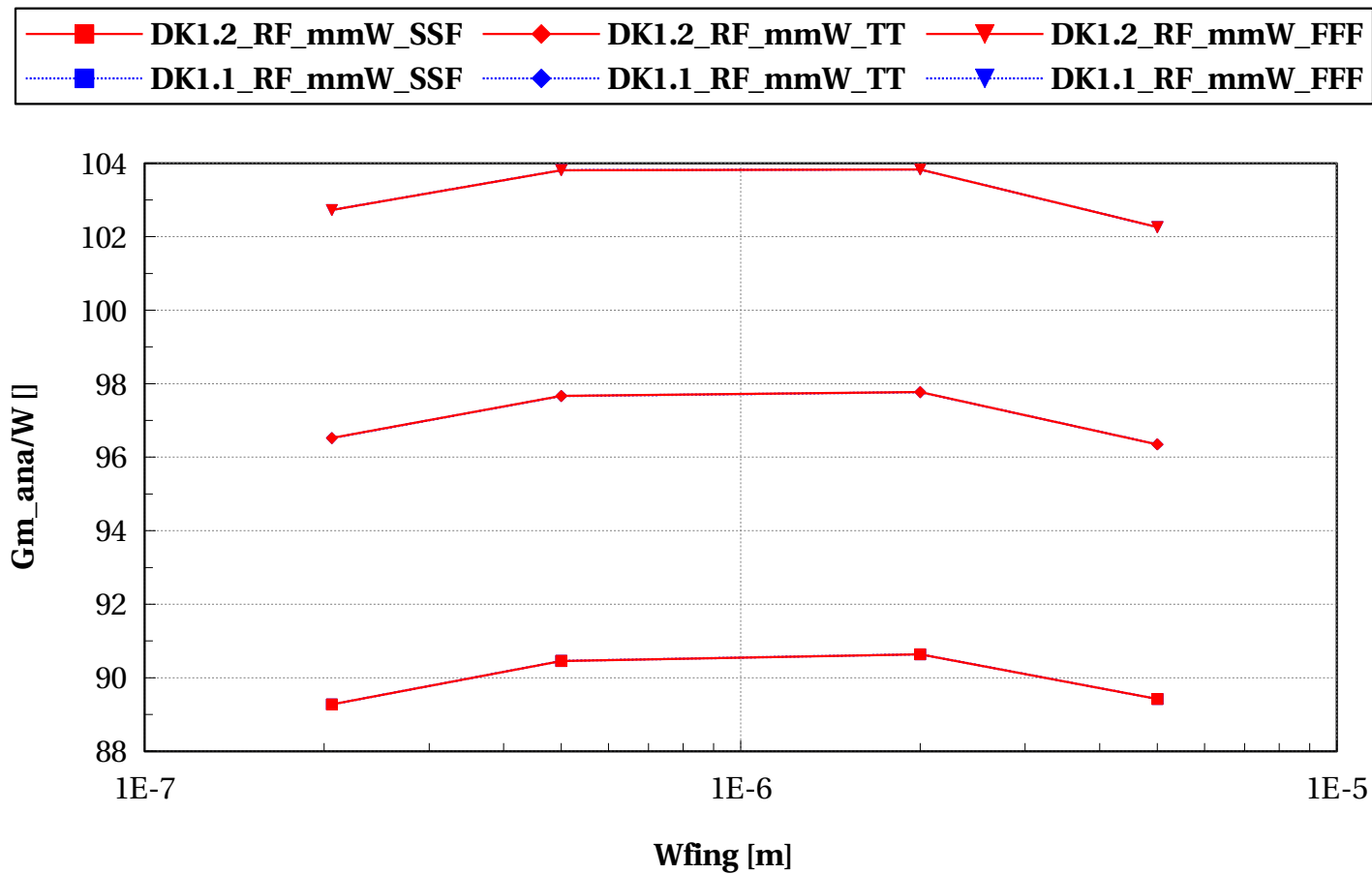
eglvtpfet_rf, Vgs_ana [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



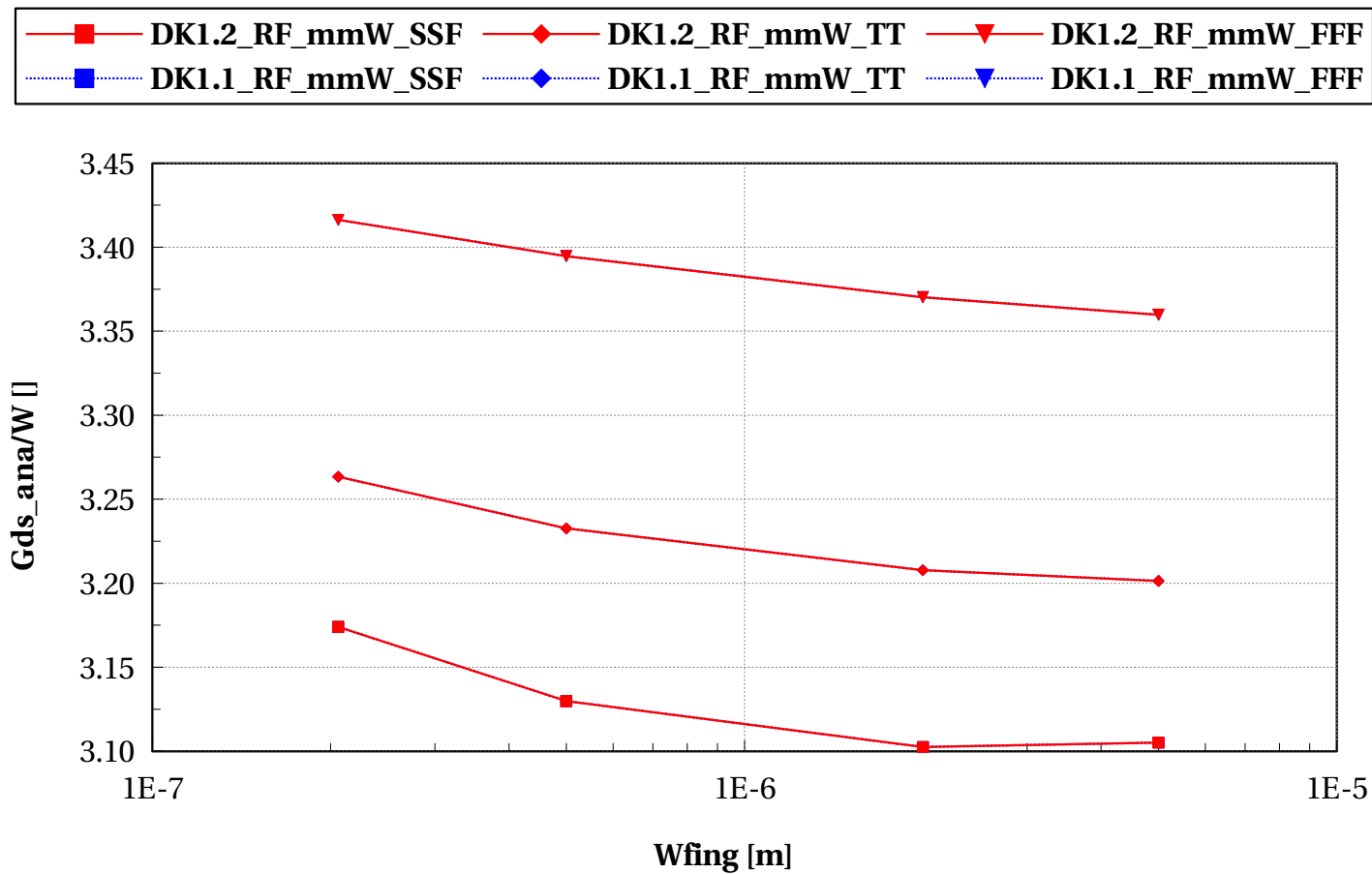
eglvtpfet_rf, Gm_ana/W [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



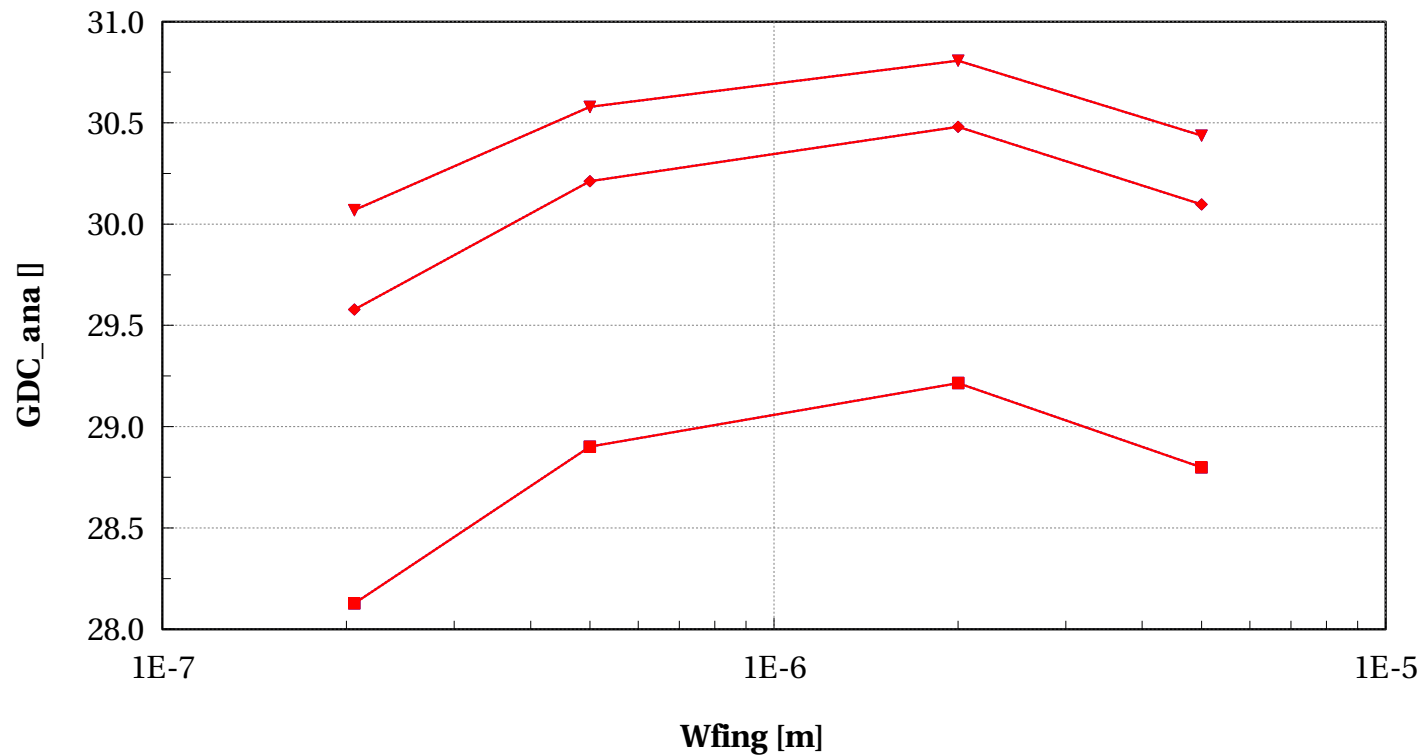
eglvtpfet_rf, Gds_ana/W [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



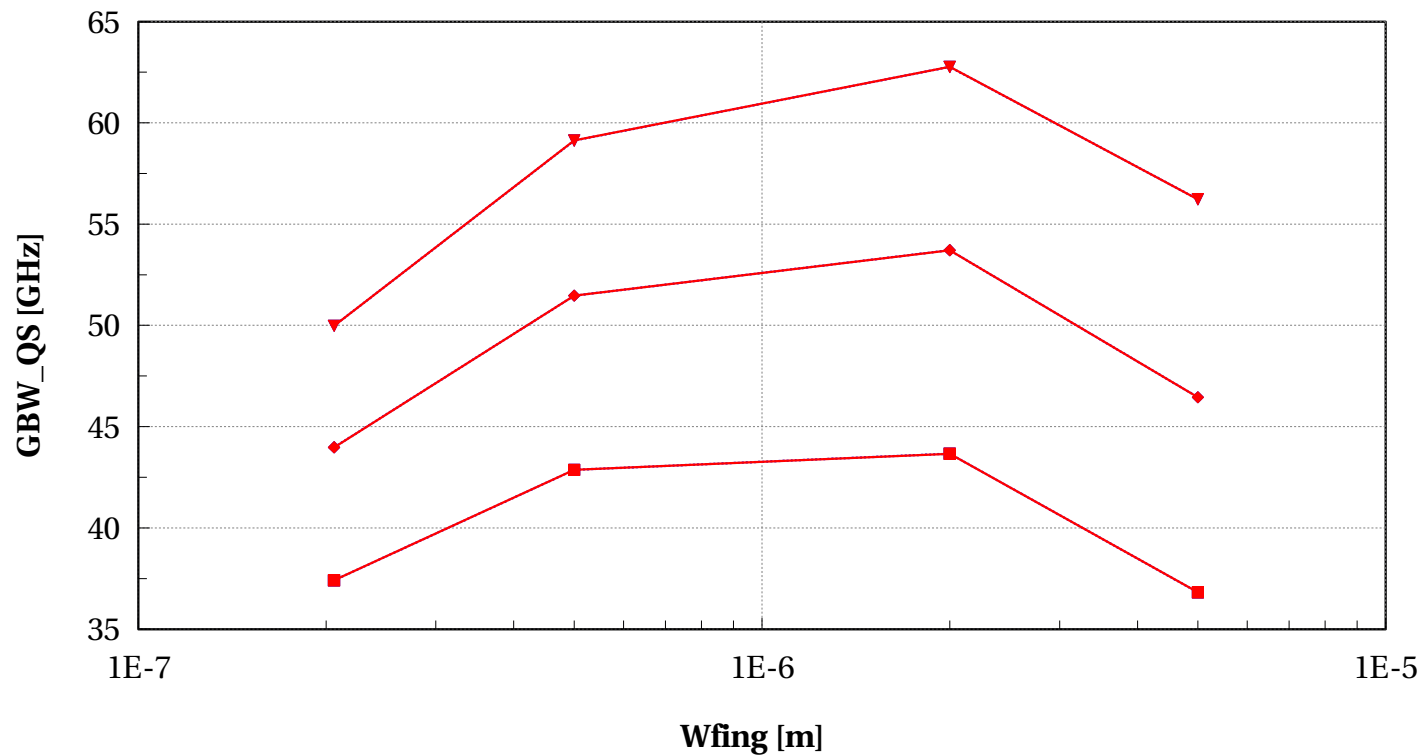
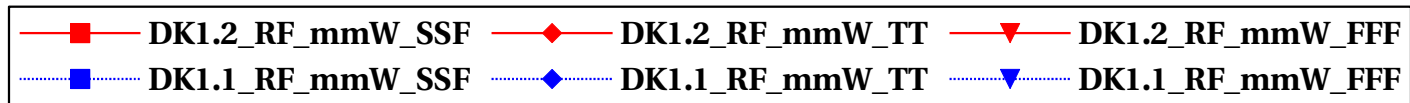
eglvtpfet_rf, GDC_ana [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



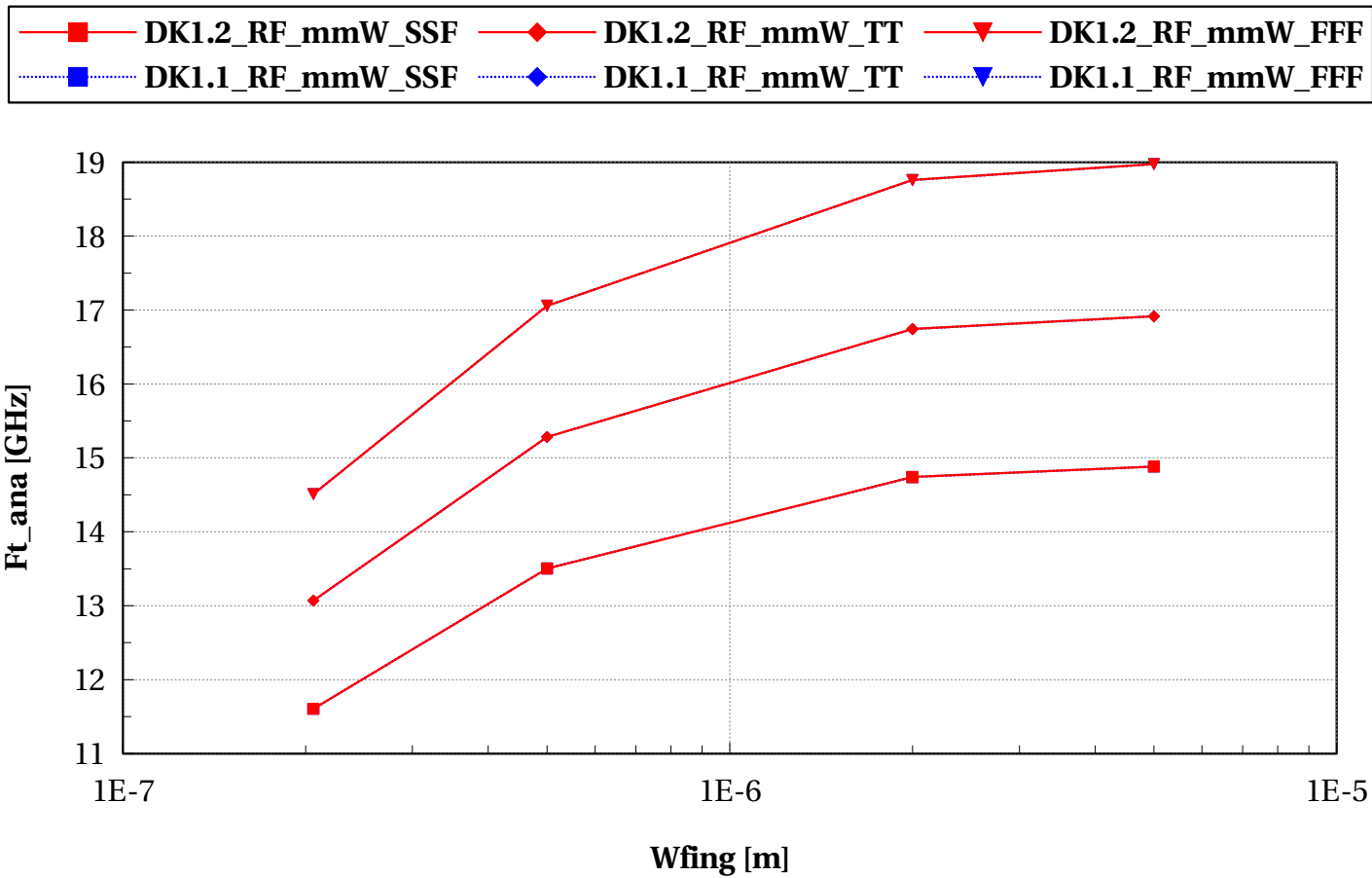
eglvtpfet_rf, GBW_QS [GHz] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtpfet_rf, Ft_ana [GHz] vs Wfing [m]

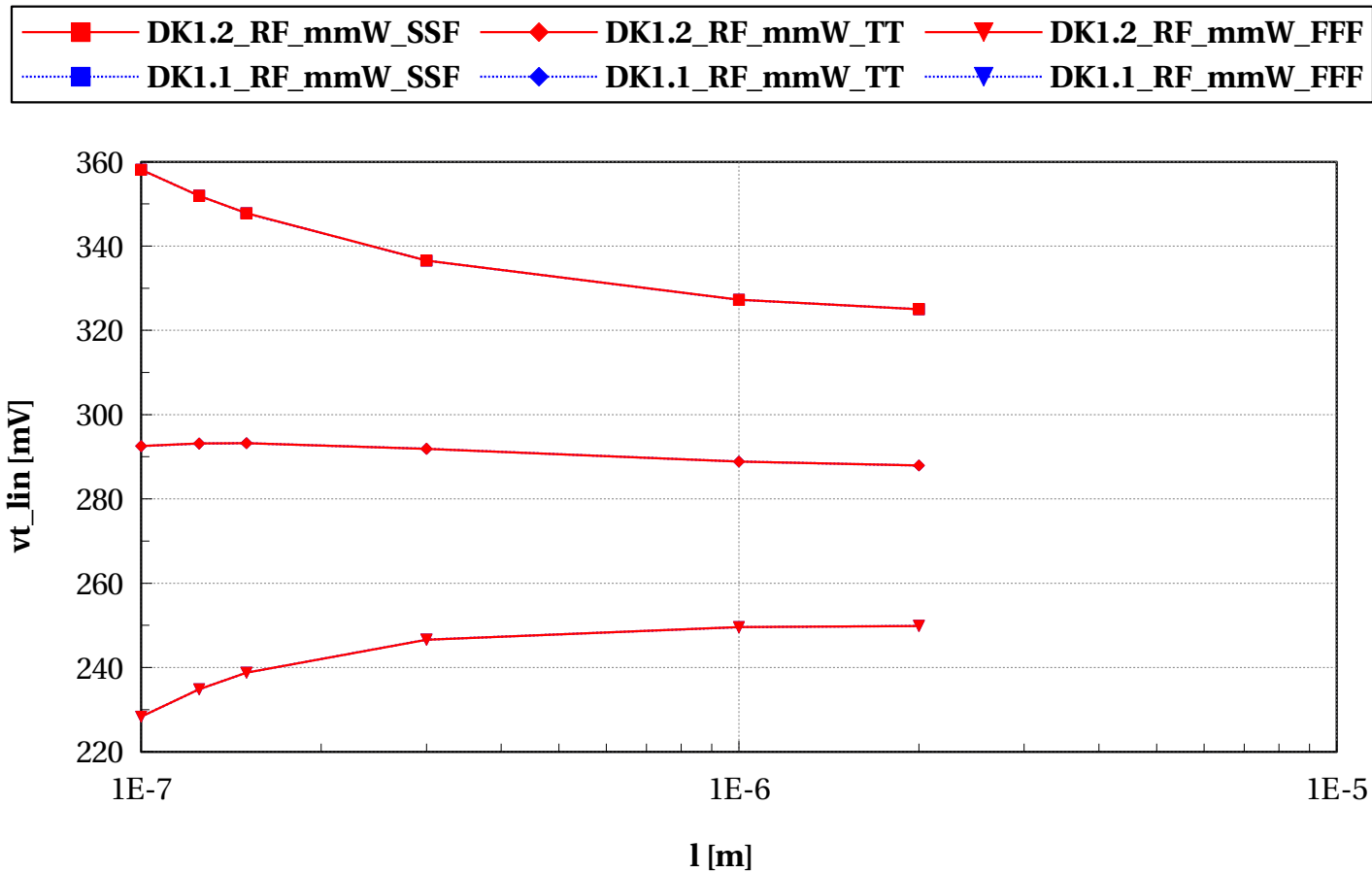
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - DC

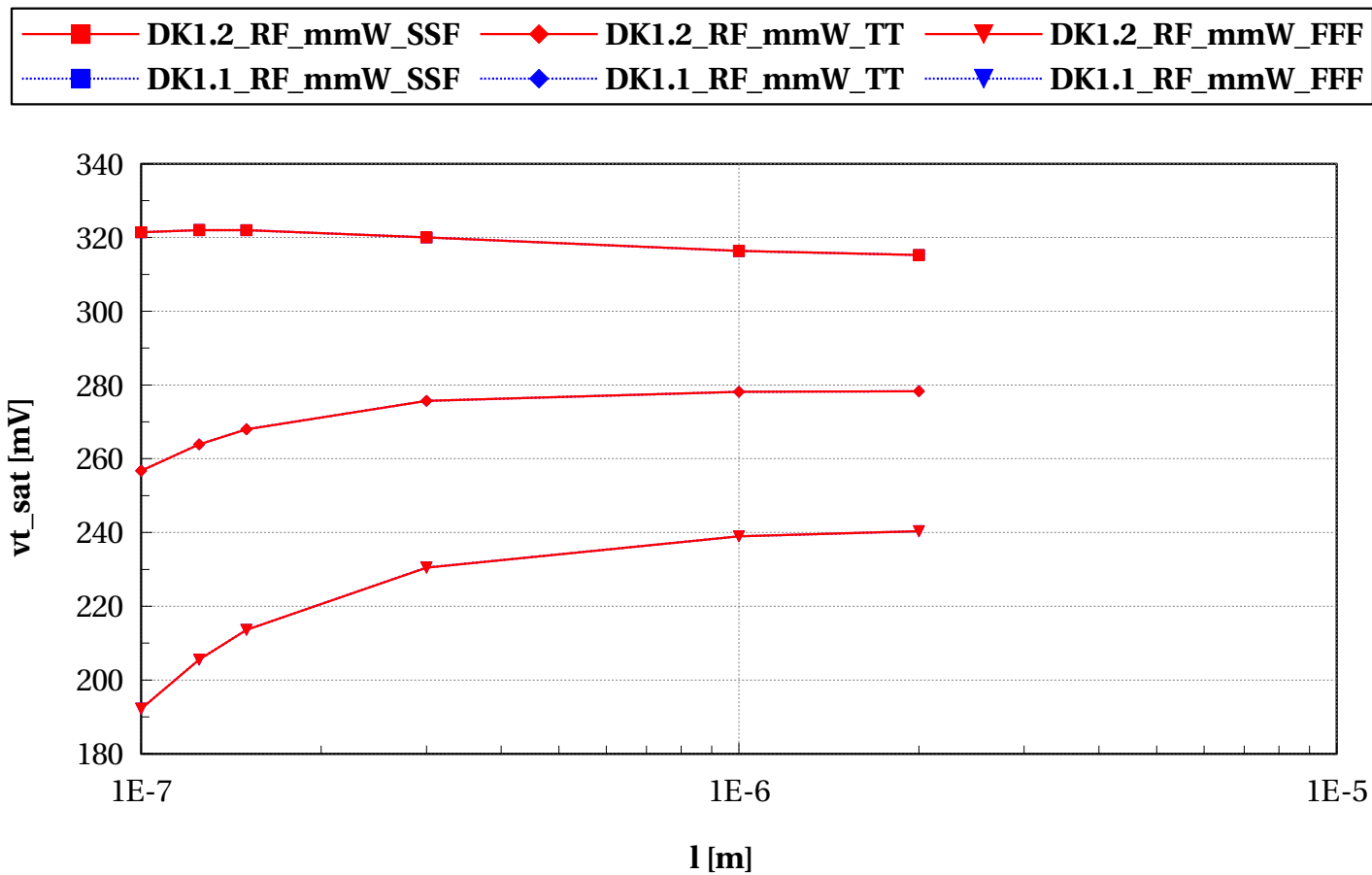
eglvtpfet_rf, vt_lin [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



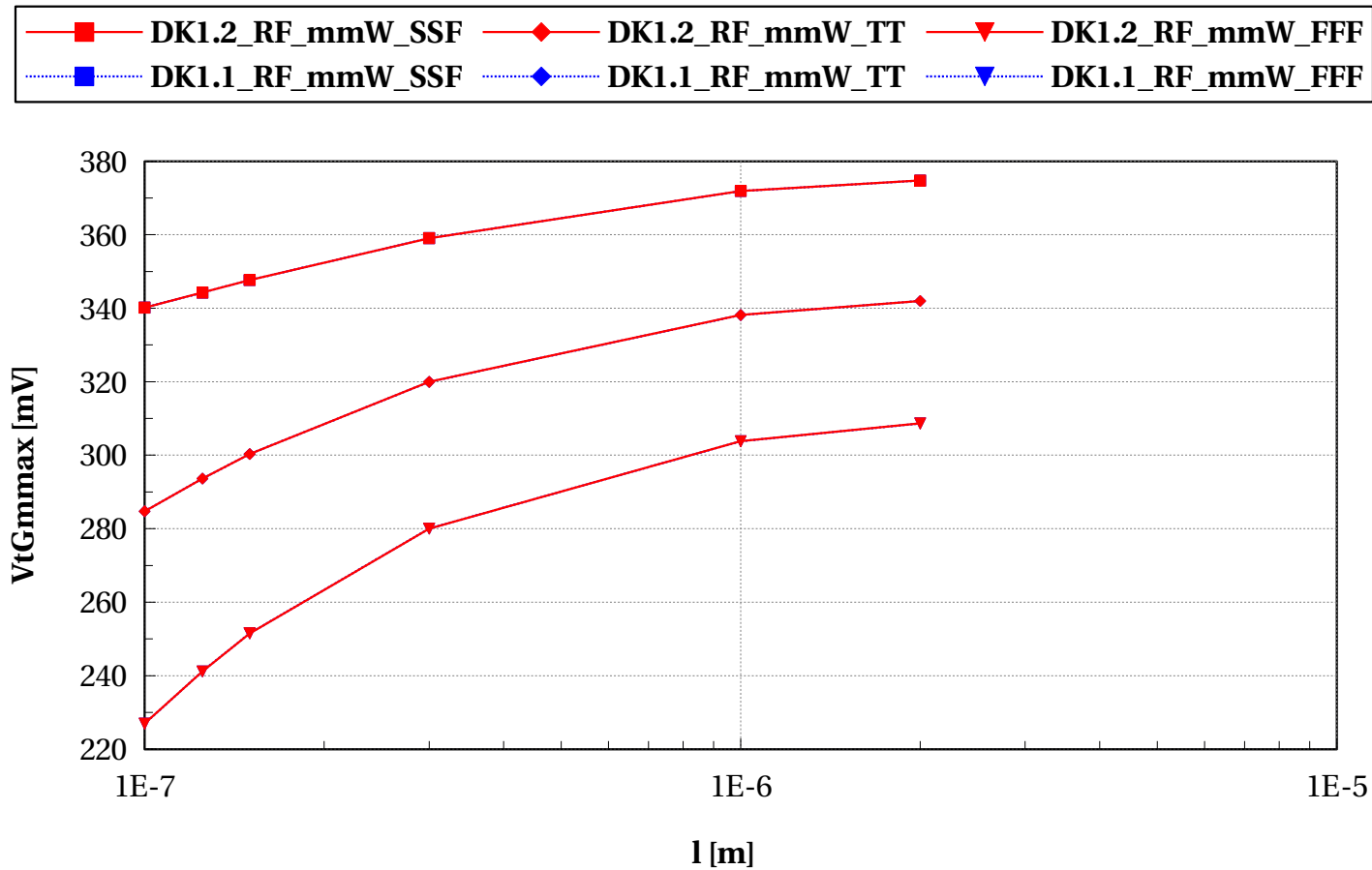
eglvtpfet_rf, vt_sat [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



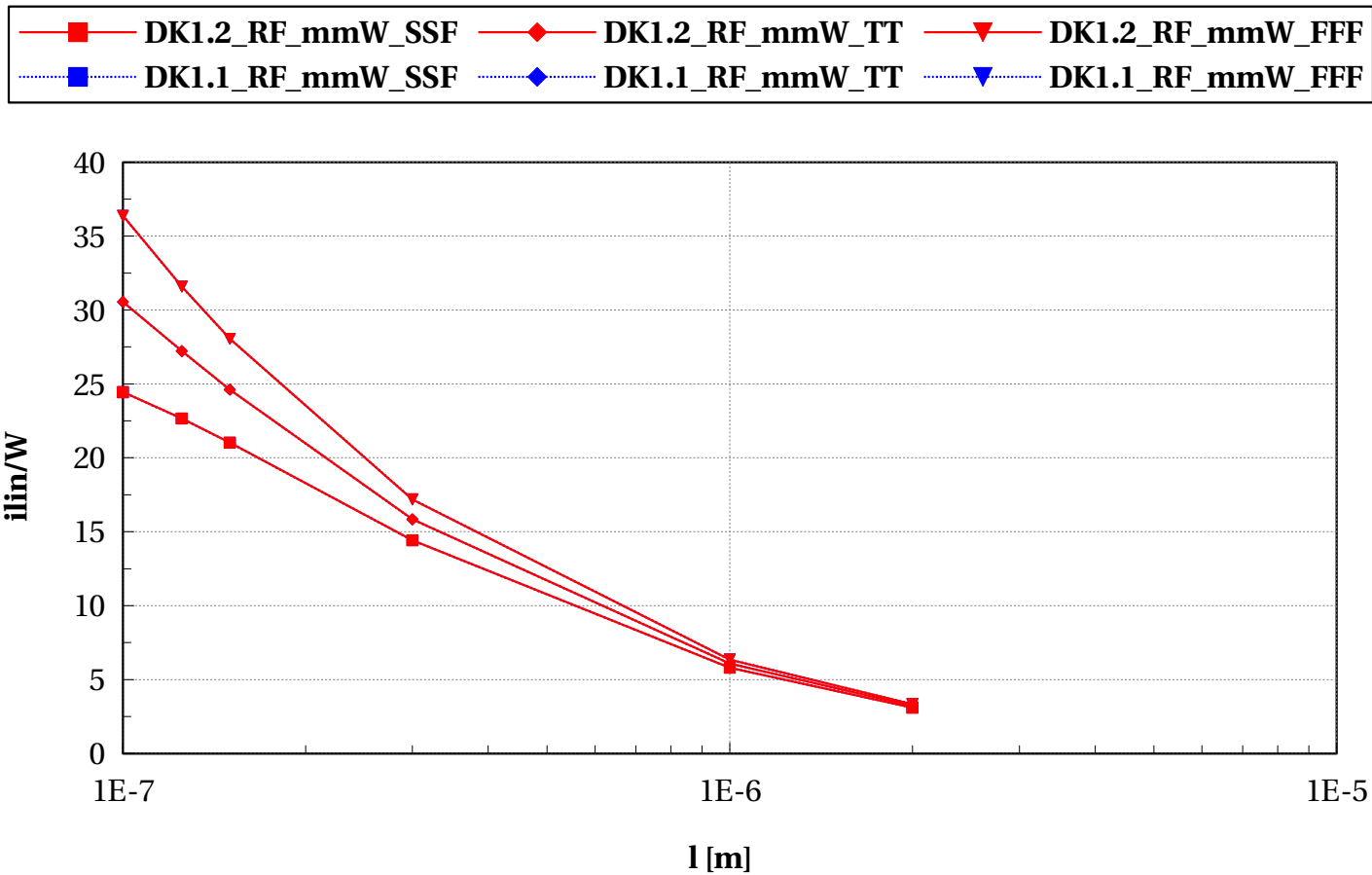
eglvtpfet_rf, VtGmmax [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



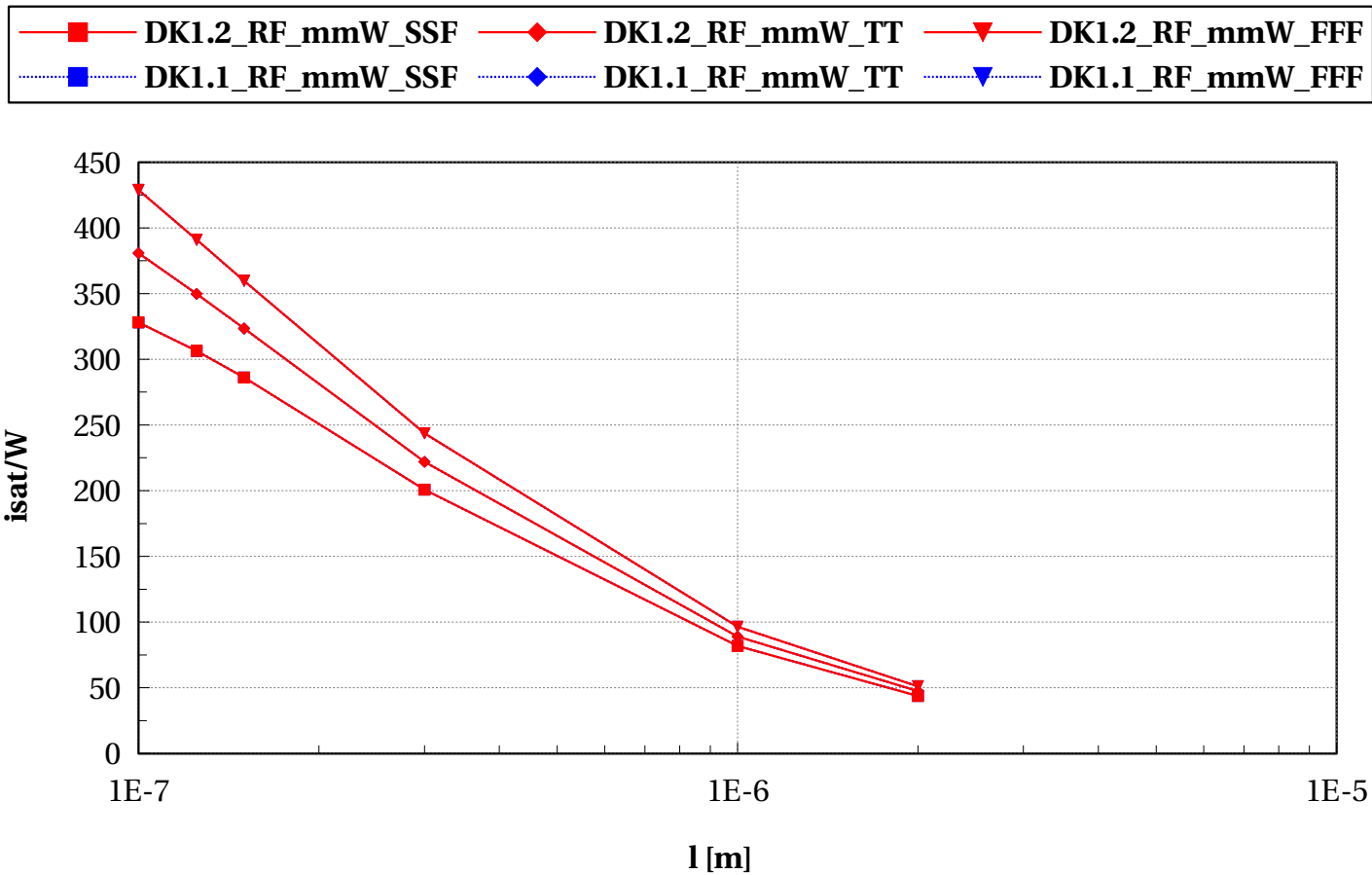
eglvtpfet_rf, i_{lin}/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



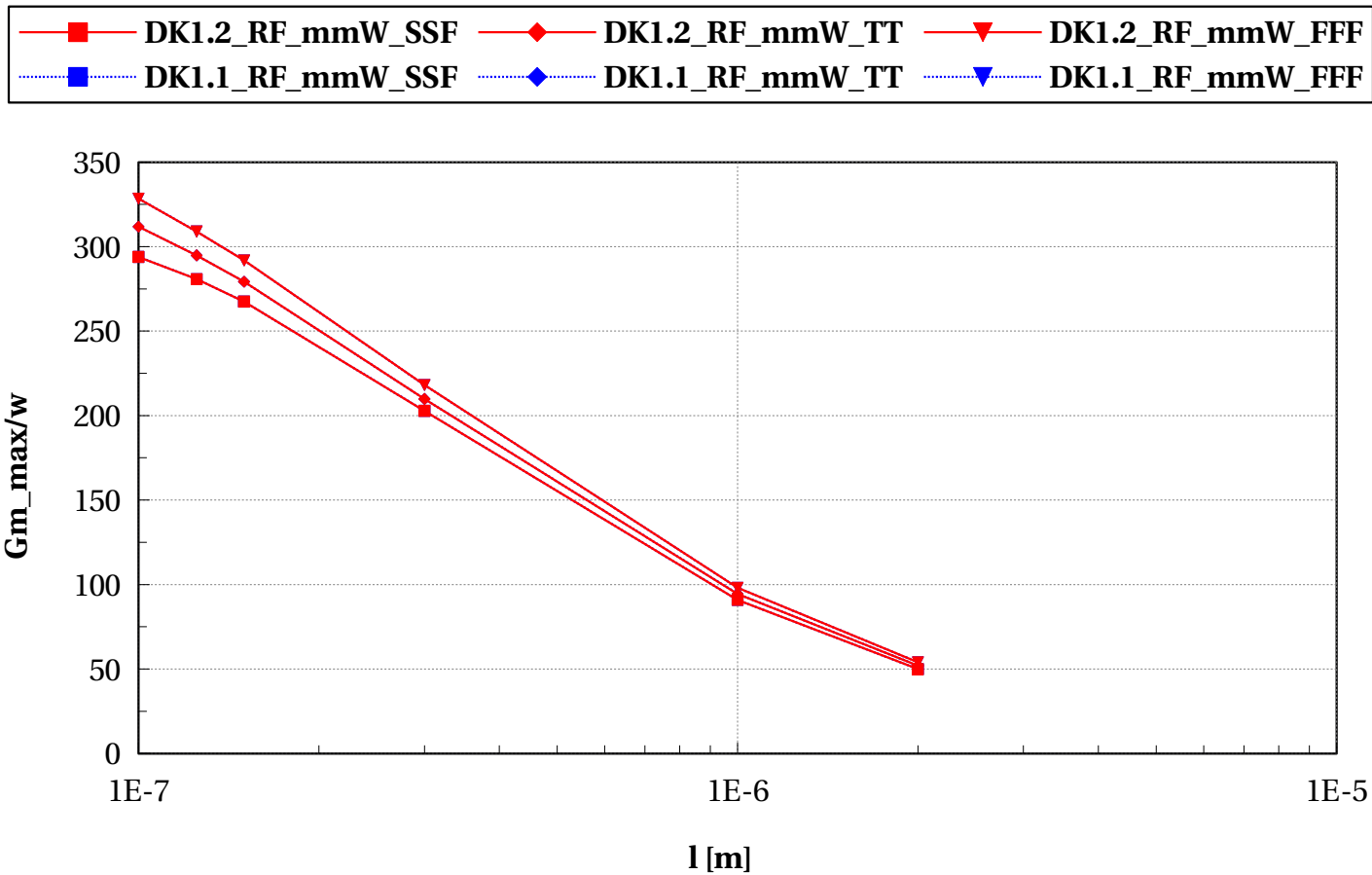
eglvtpfet_rf, isat/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtpfet_rf, Gm_max/w vs l [m]

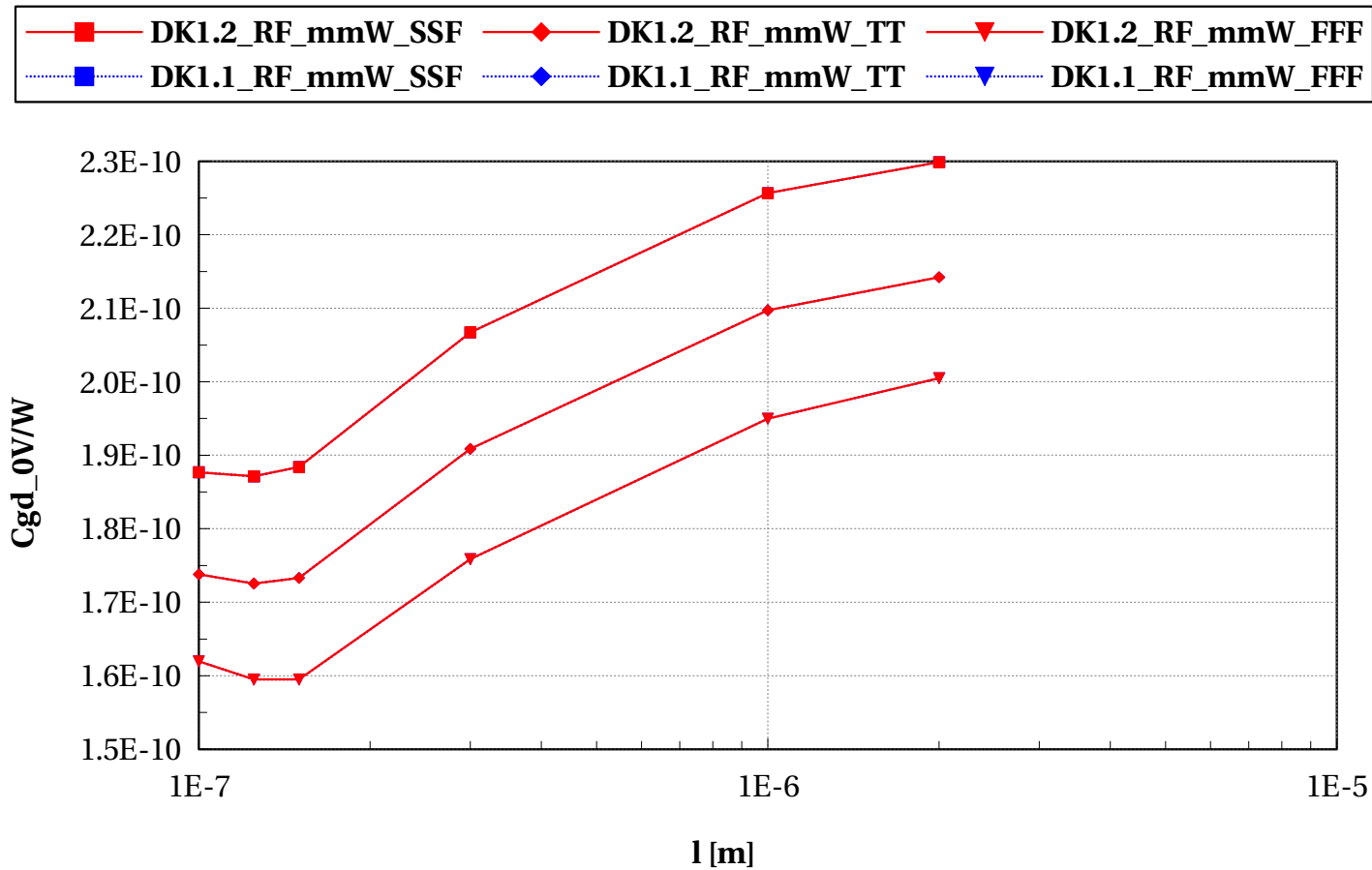
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - RF

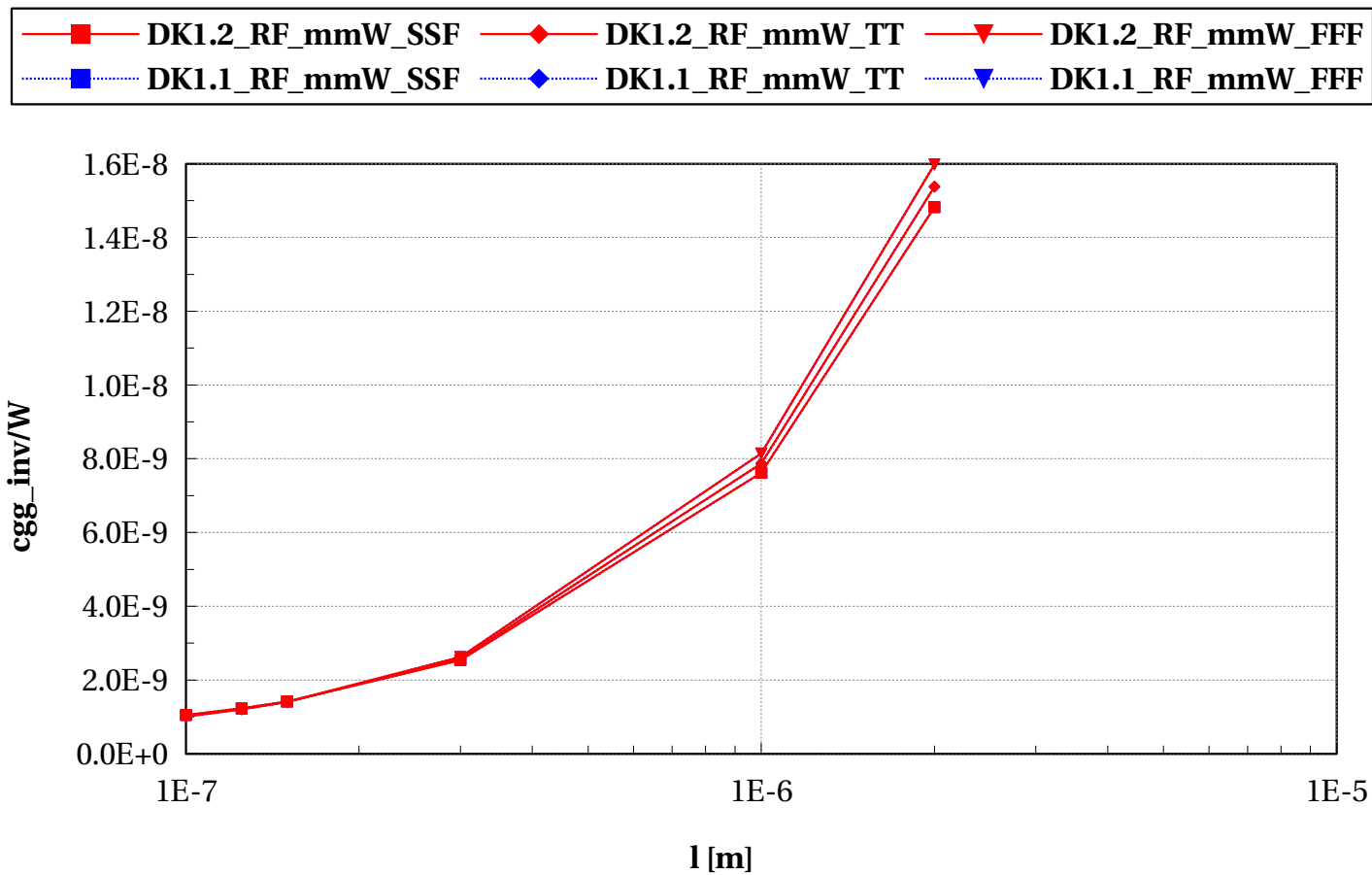
eglvtpfet_rf, Cgd_0V/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



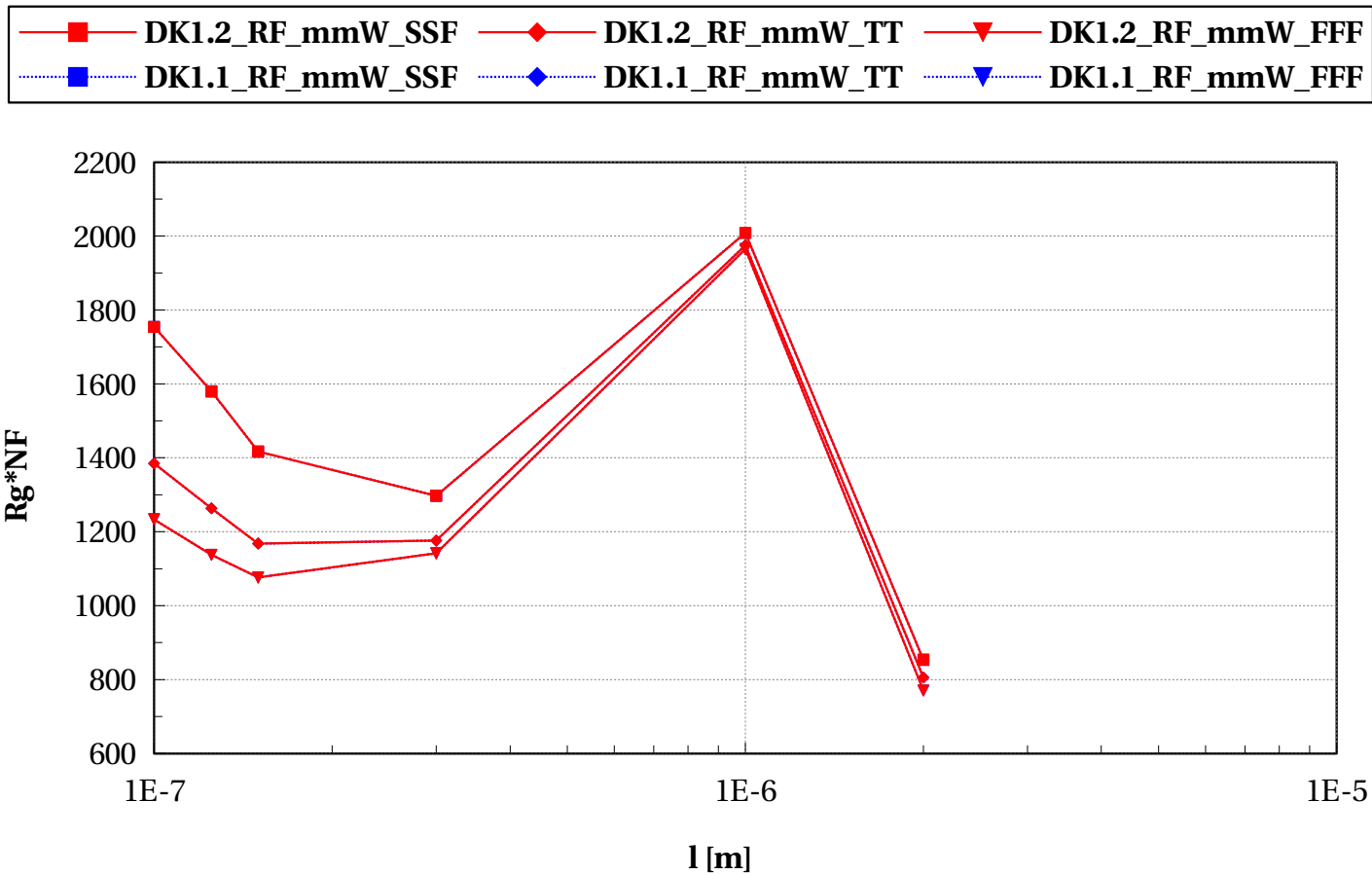
eglvtpfet_rf, cgg_inv/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



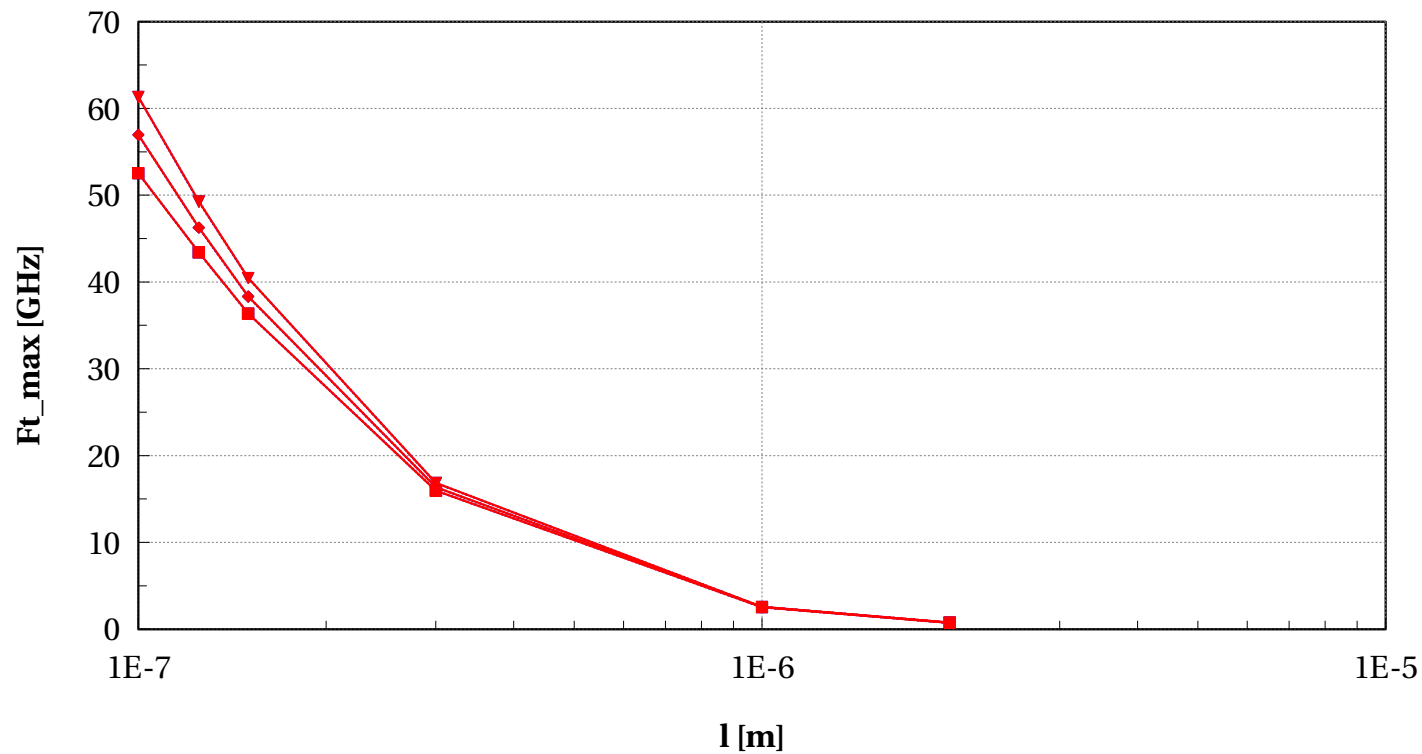
eglvtpfet_rf, $R_g * NF$ vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



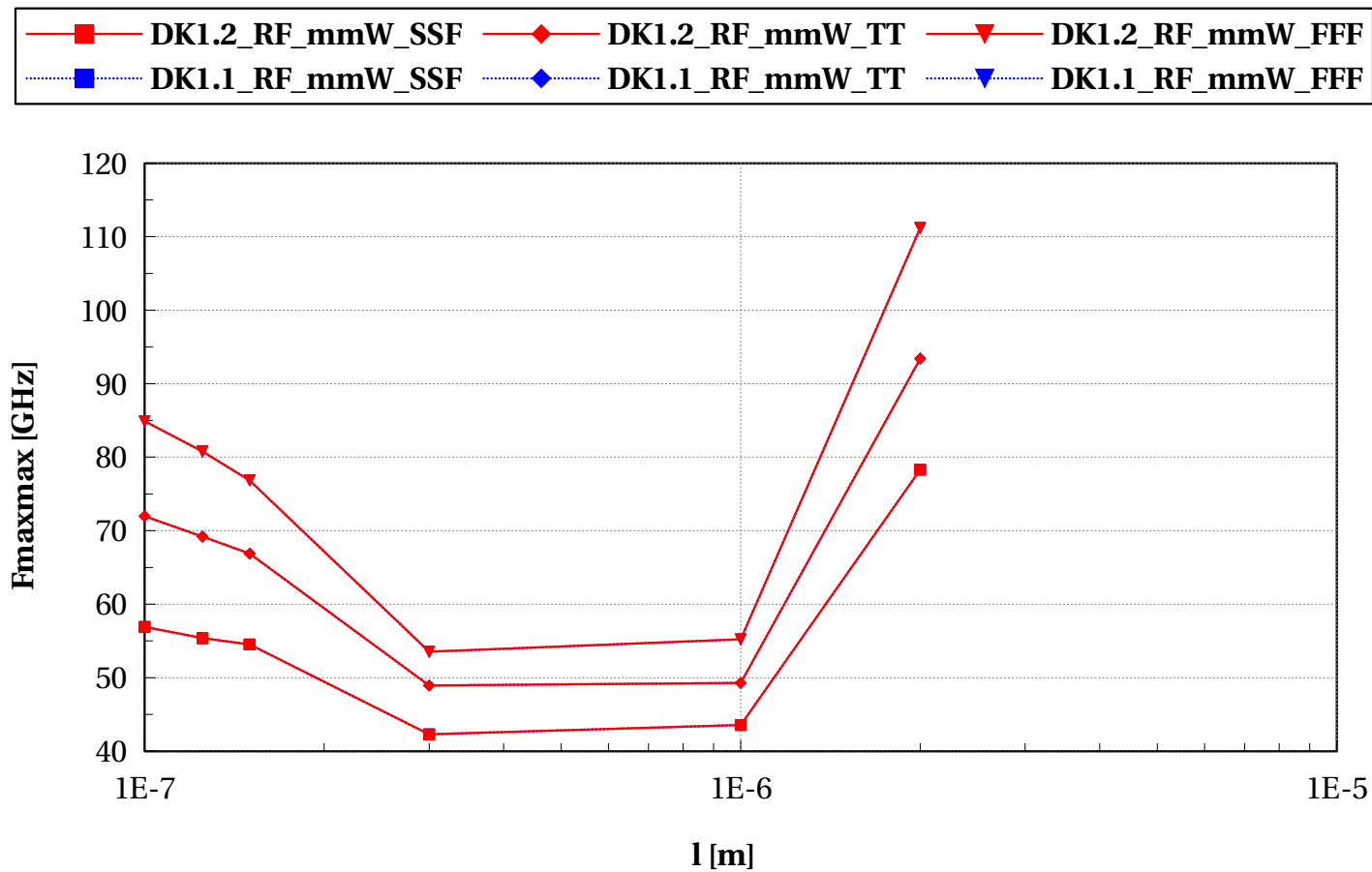
eglvtpfet_rf, Ft_max [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtpfet_rf, Fmaxmax [GHz] vs l [m]

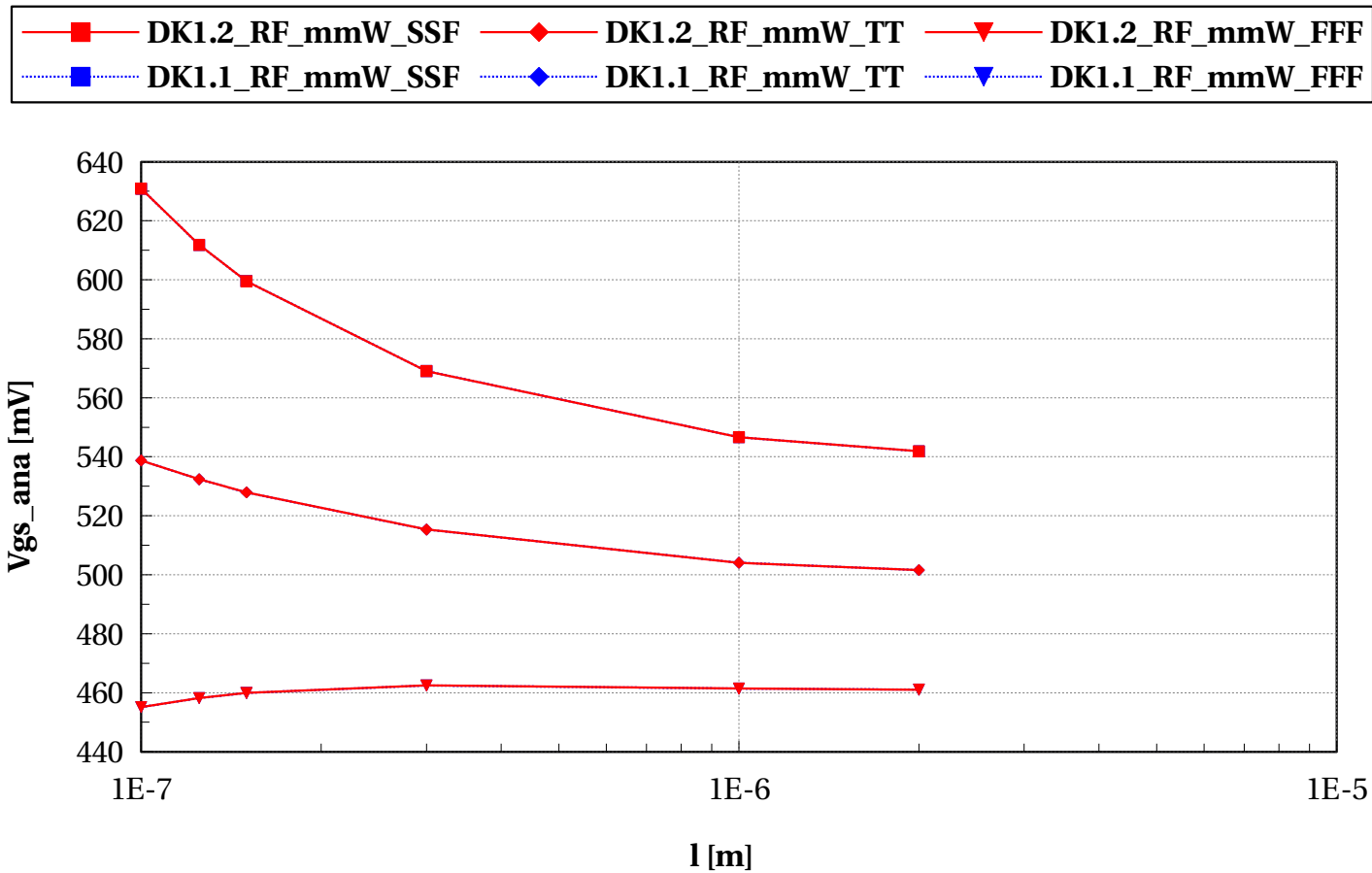
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - Analog

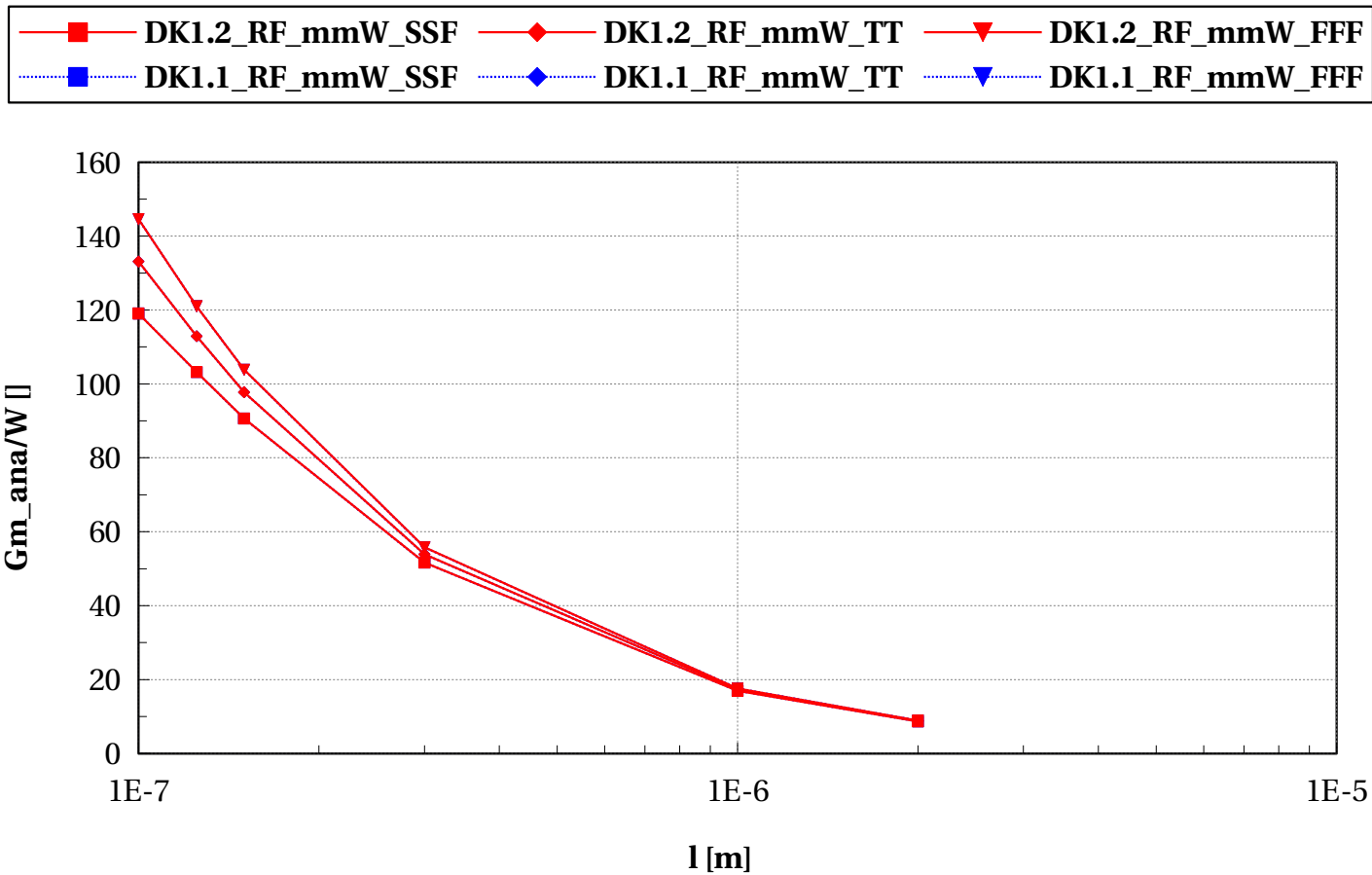
eglvtpfet_rf, Vgs_ana [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



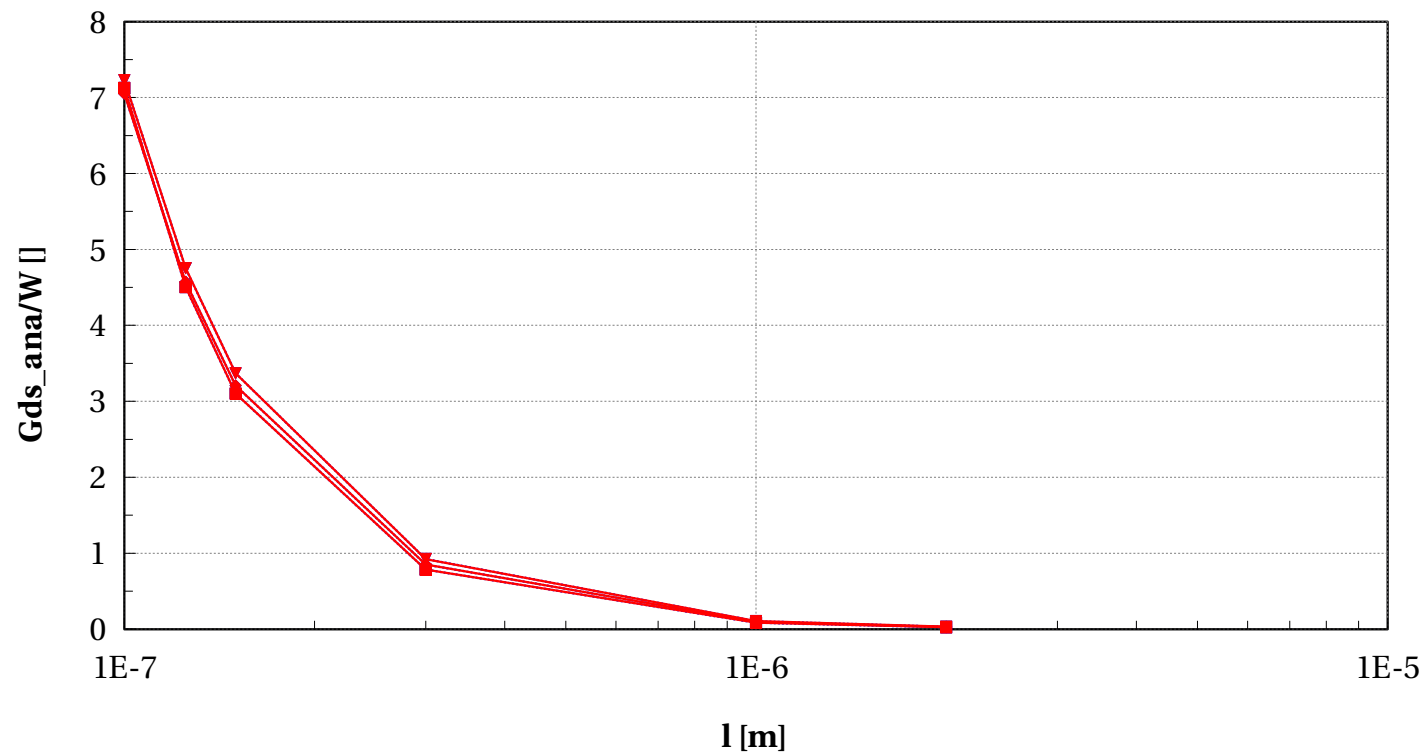
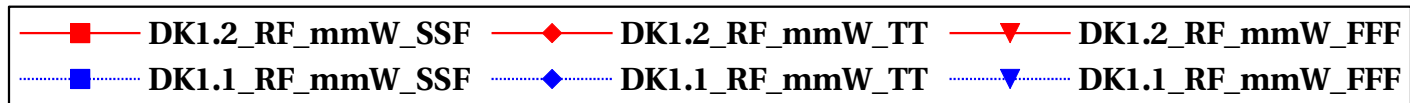
eglvtpfet_rf, Gm_ana/W [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



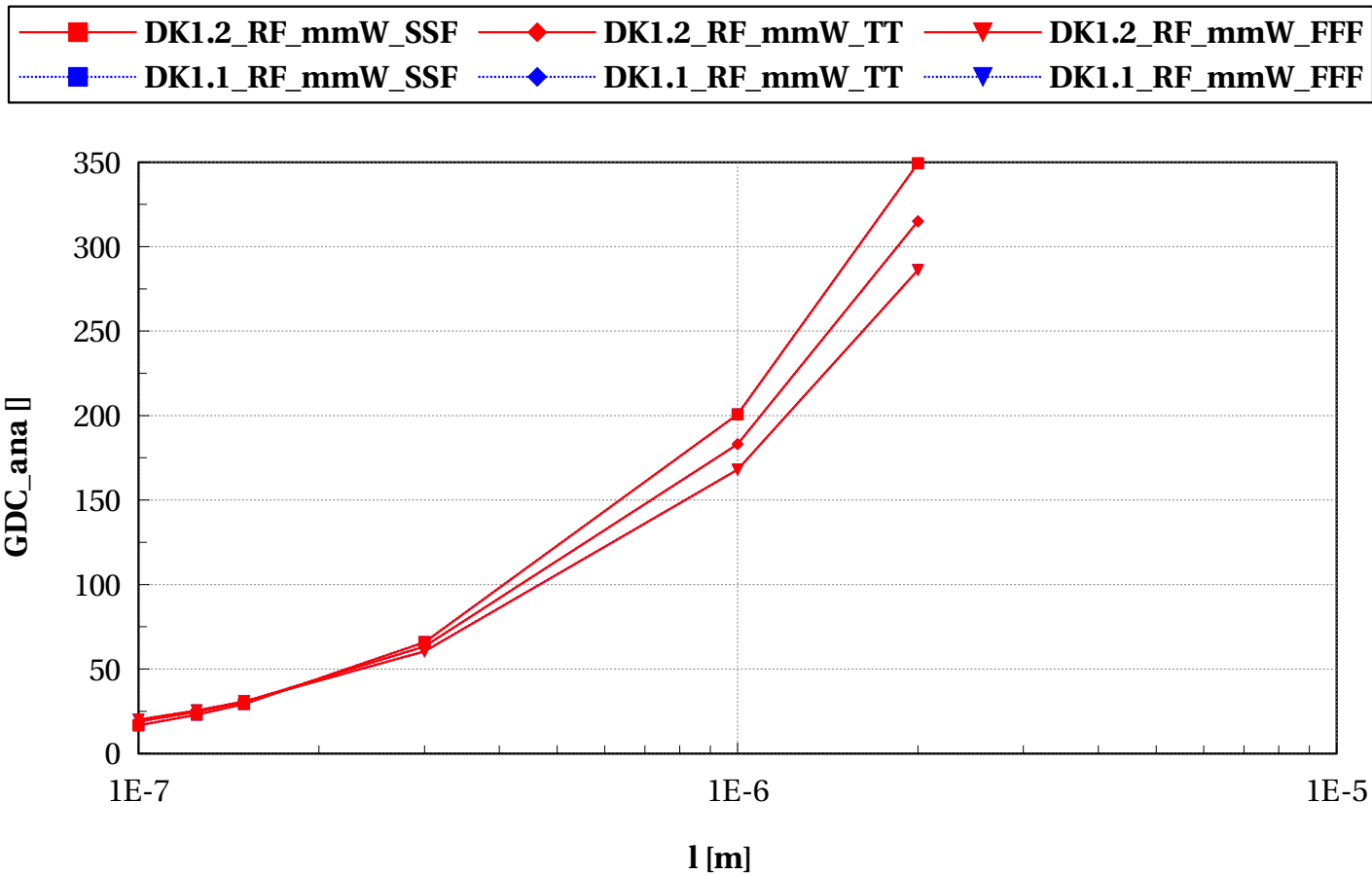
eglvtpfet_rf, Gds_ana/W [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



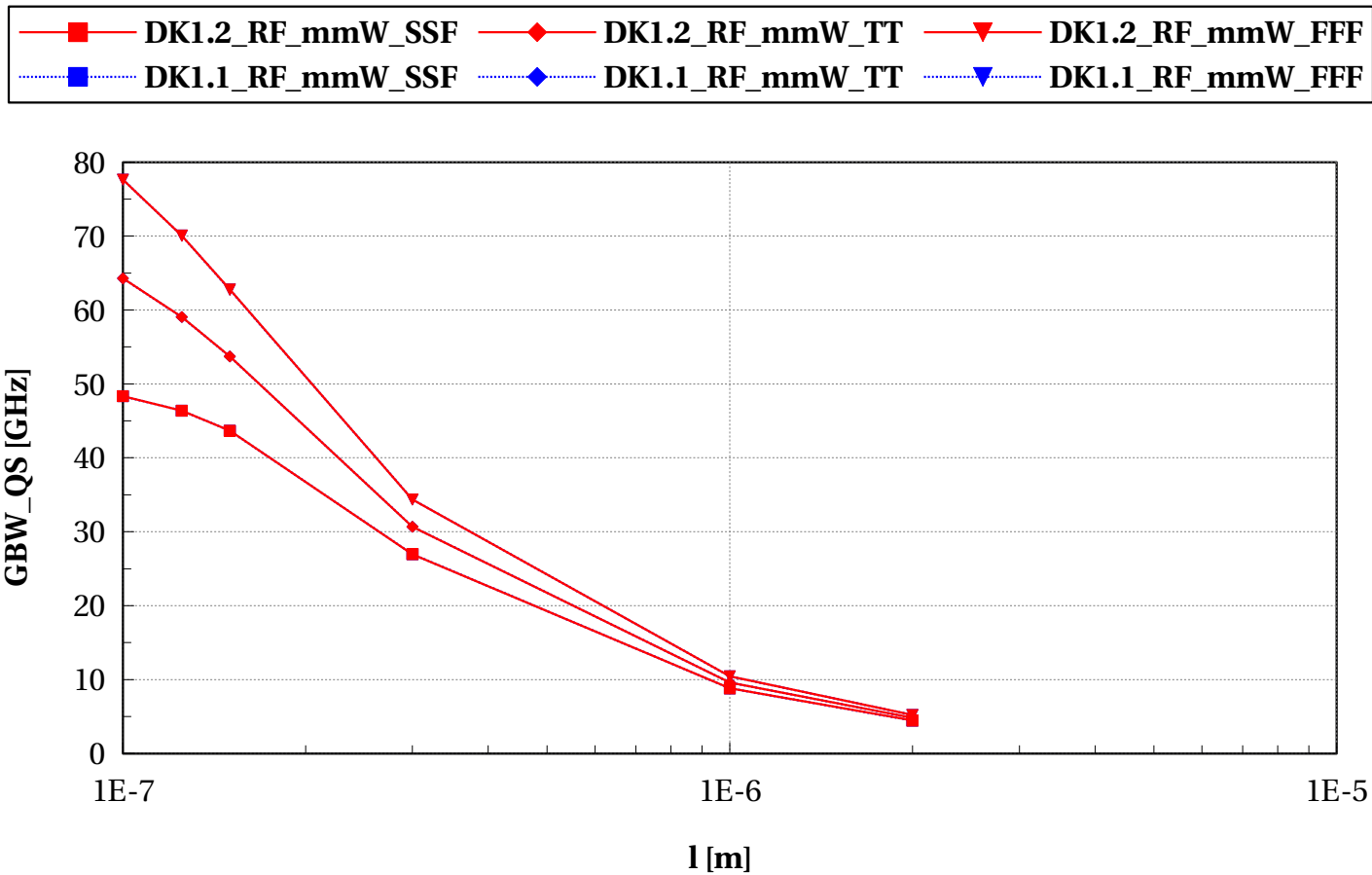
eglvtpfet_rf, GDC_ana [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



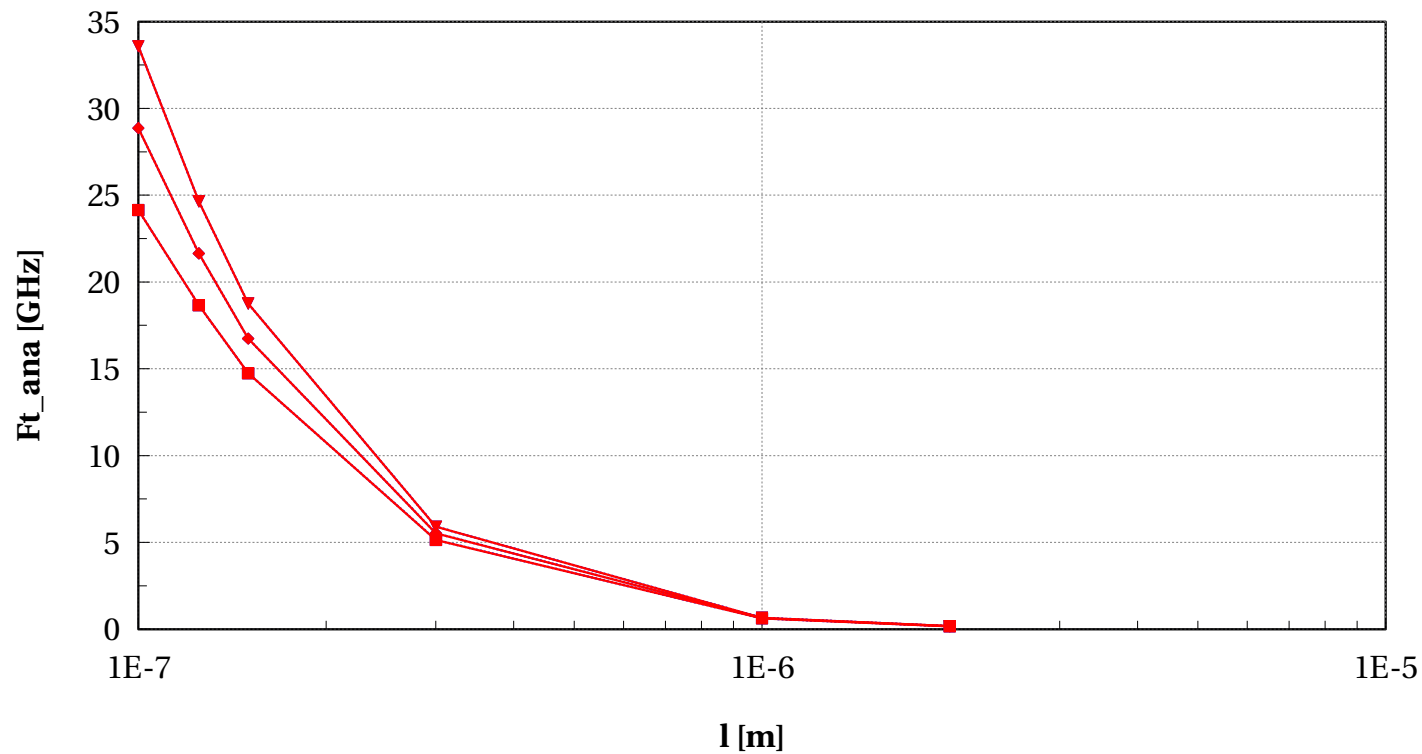
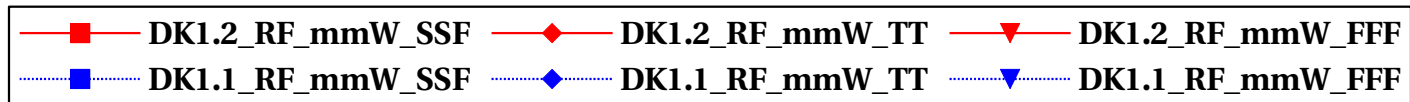
eglvtpfet_rf, GBW_QS [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtpfet_rf, Ft_ana [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



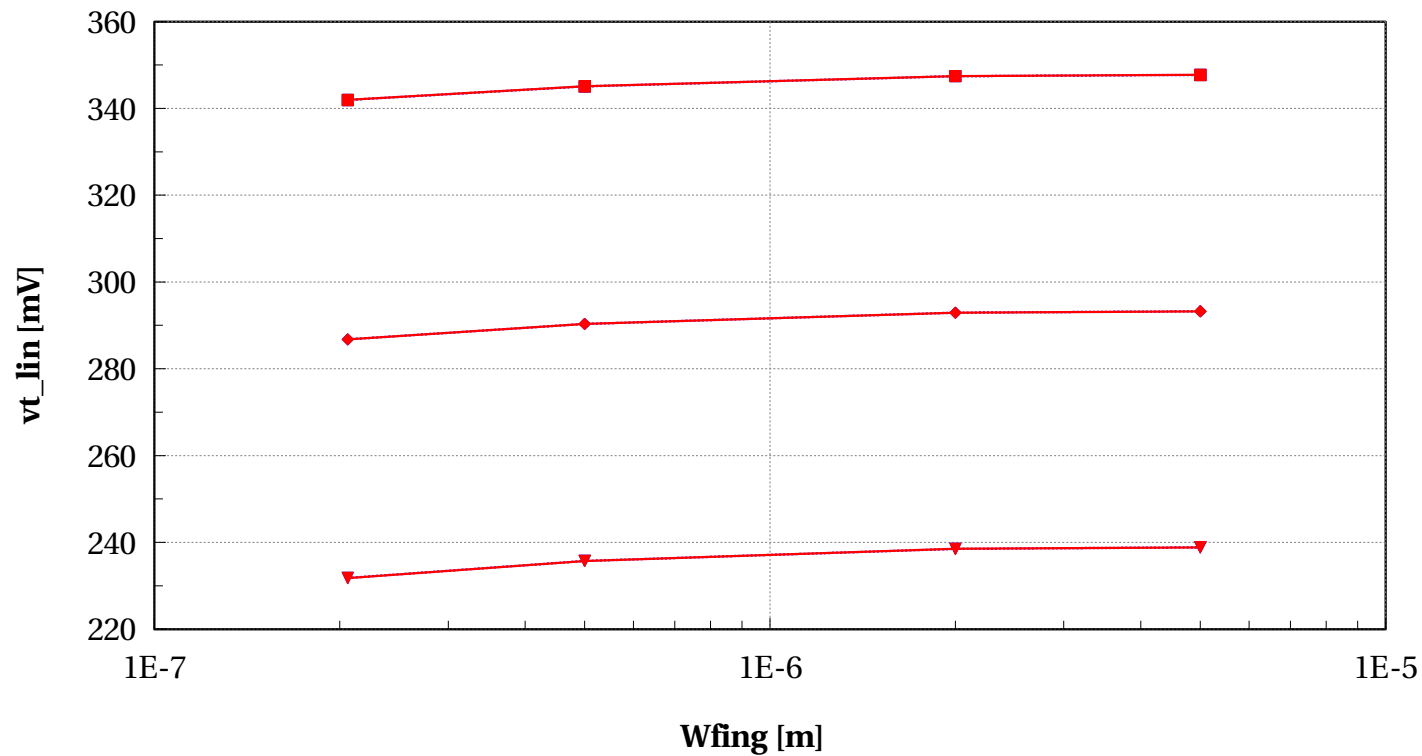
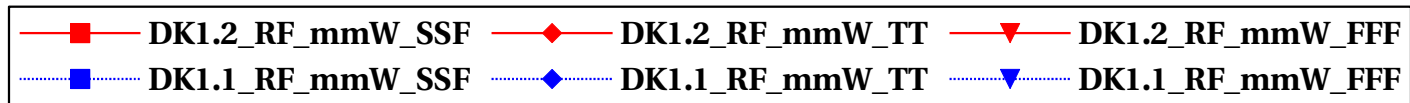
eglvtpfet_rfseg

Electrical characteristics scaling

Scaling versus width $L=150\text{nm}$ - DC

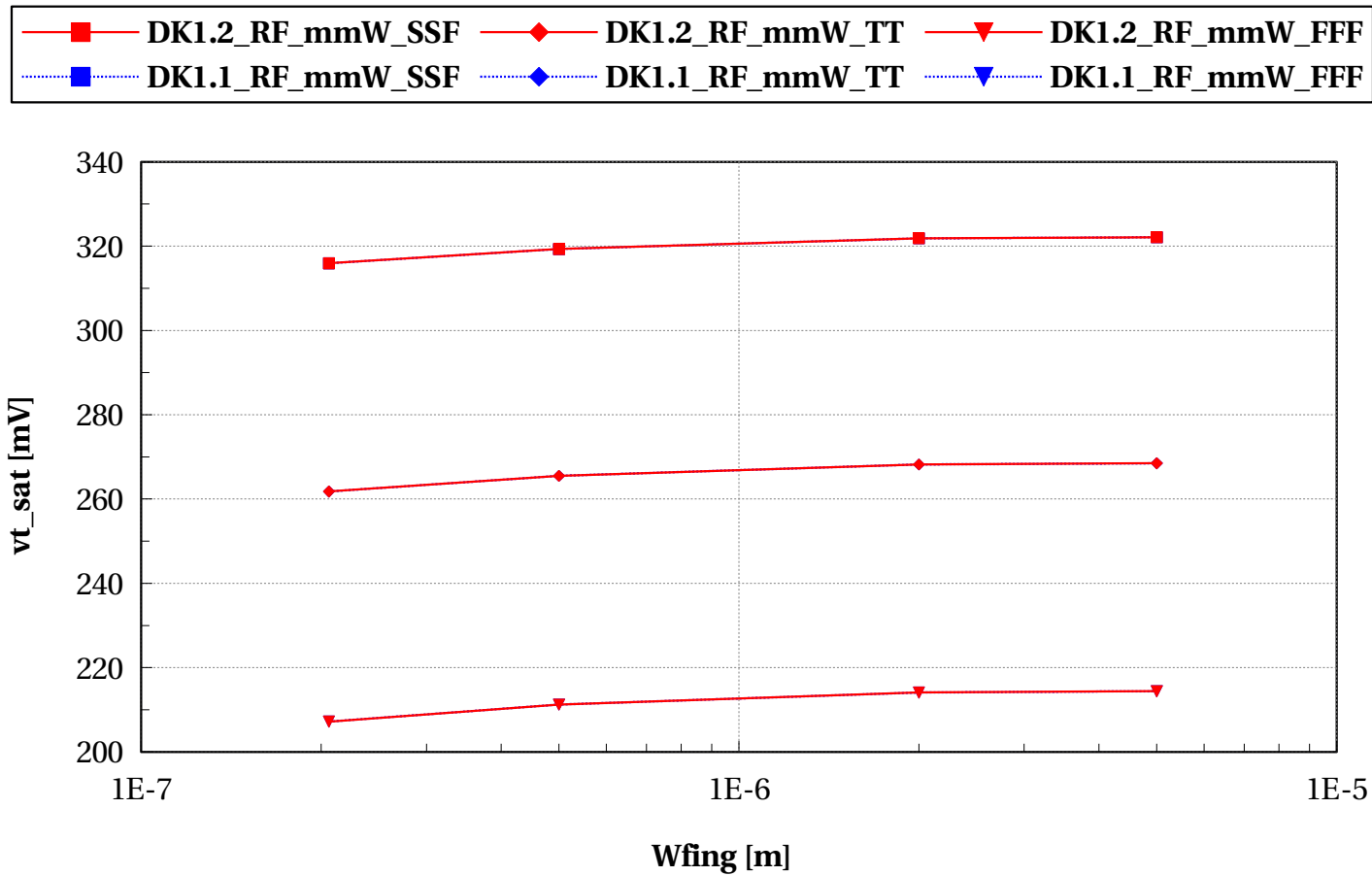
eglvtpfet_rfseg, vt_lin [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



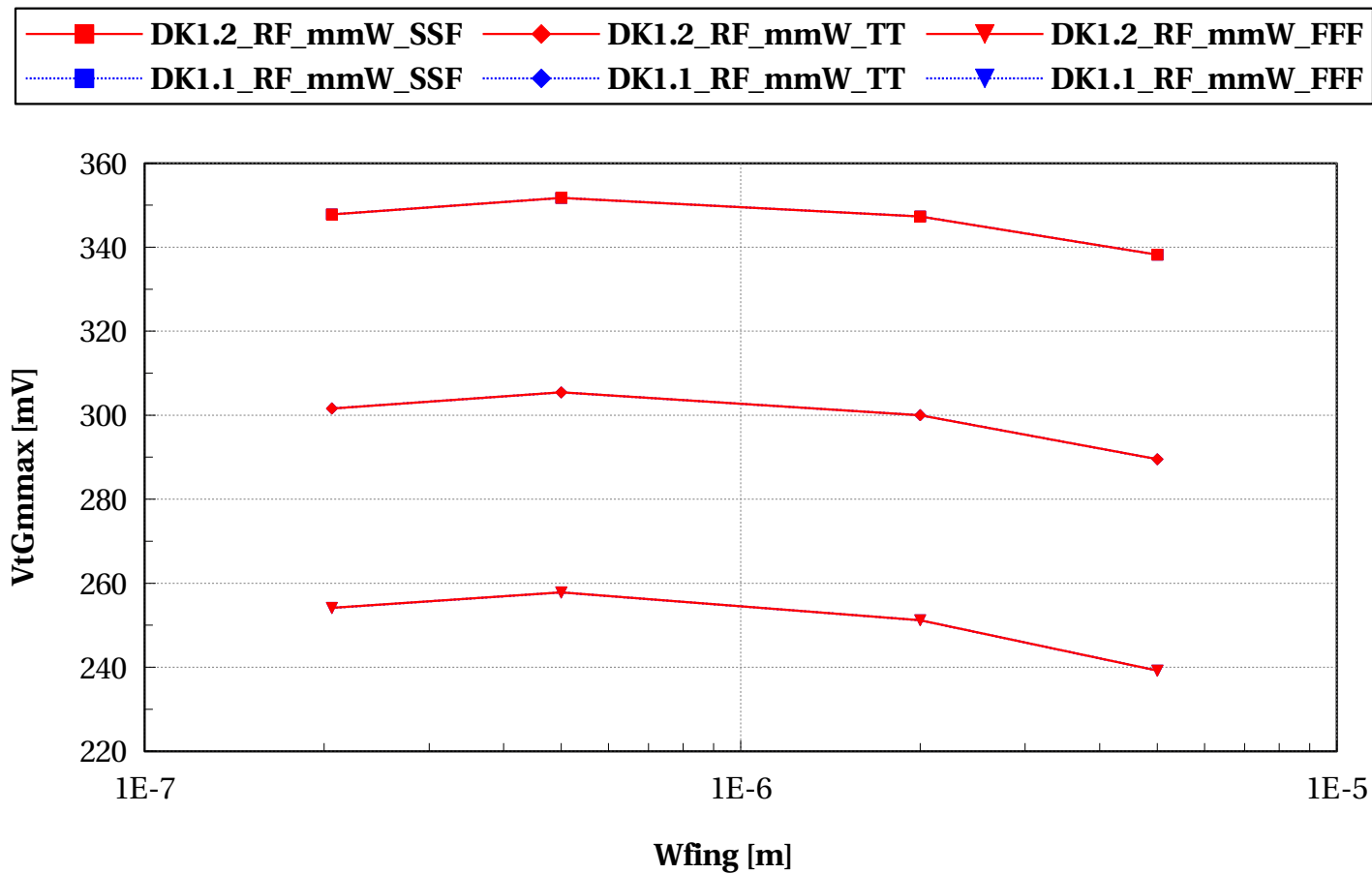
eglvtpfet_rfseg, vt_sat [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



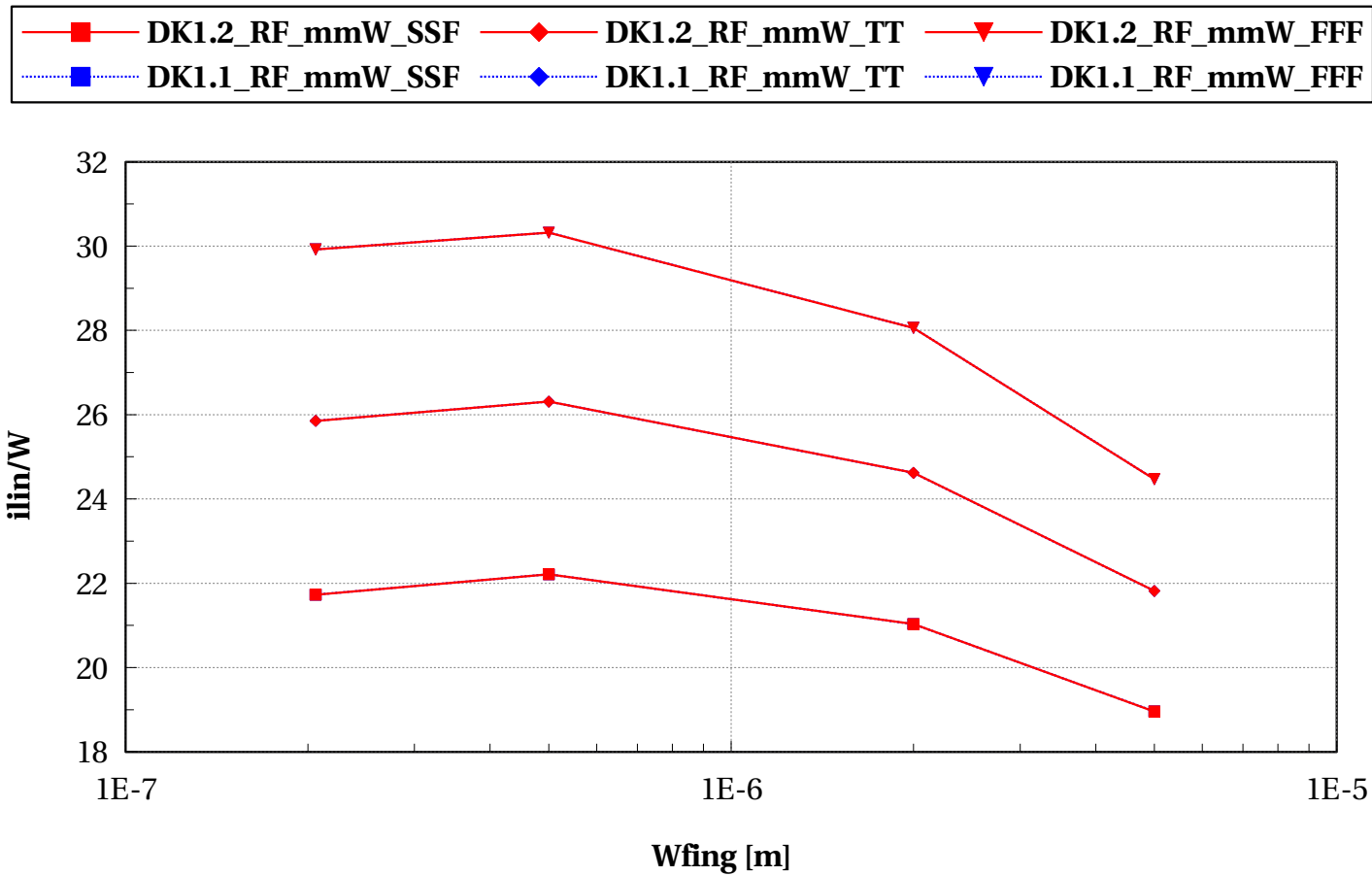
eglvtpfet_rfseg, VtGmmax [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



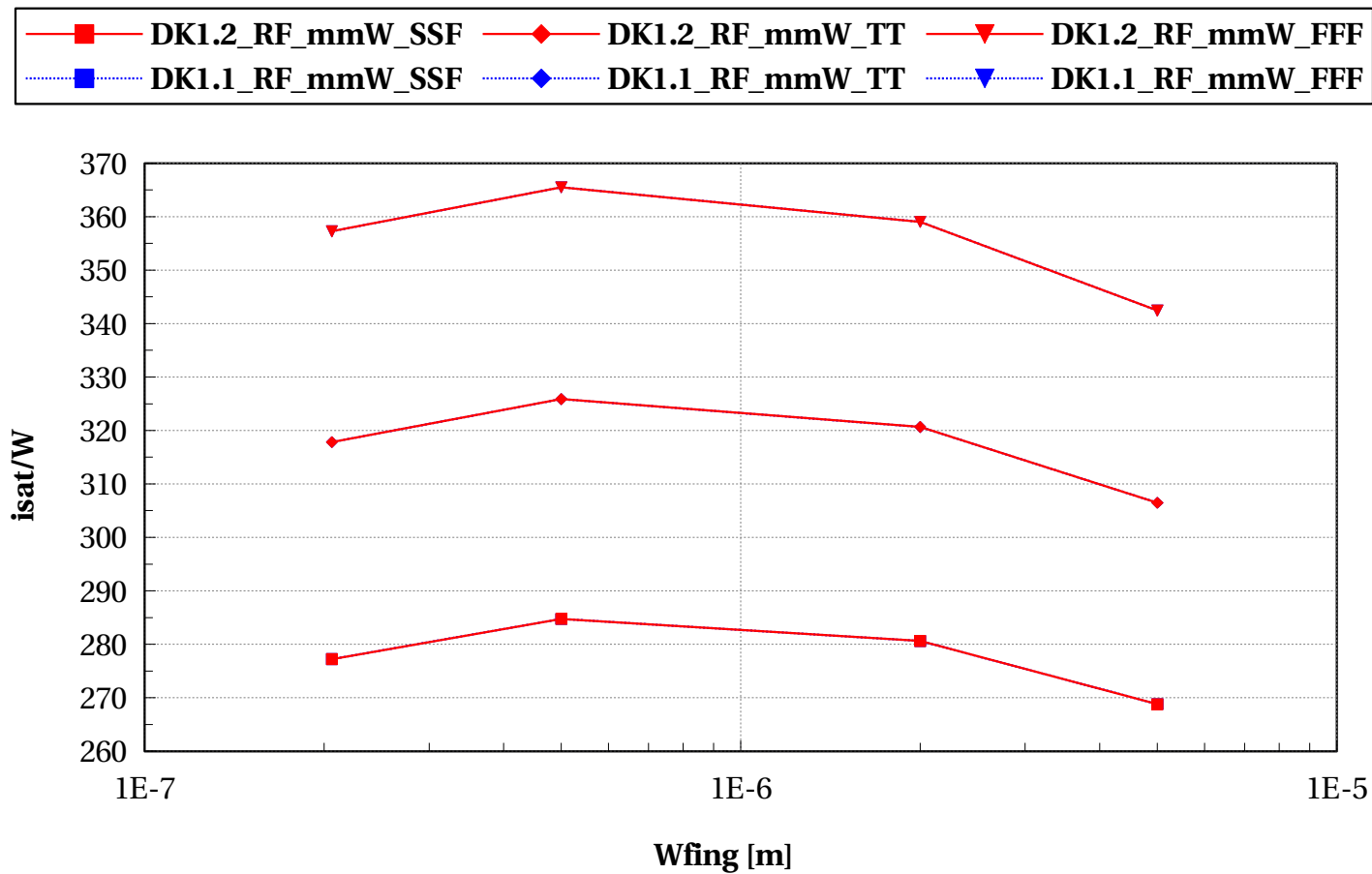
eglvtpfet_rfseg, i_{lin}/W vs W_{fing} [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and $l=150e-9$



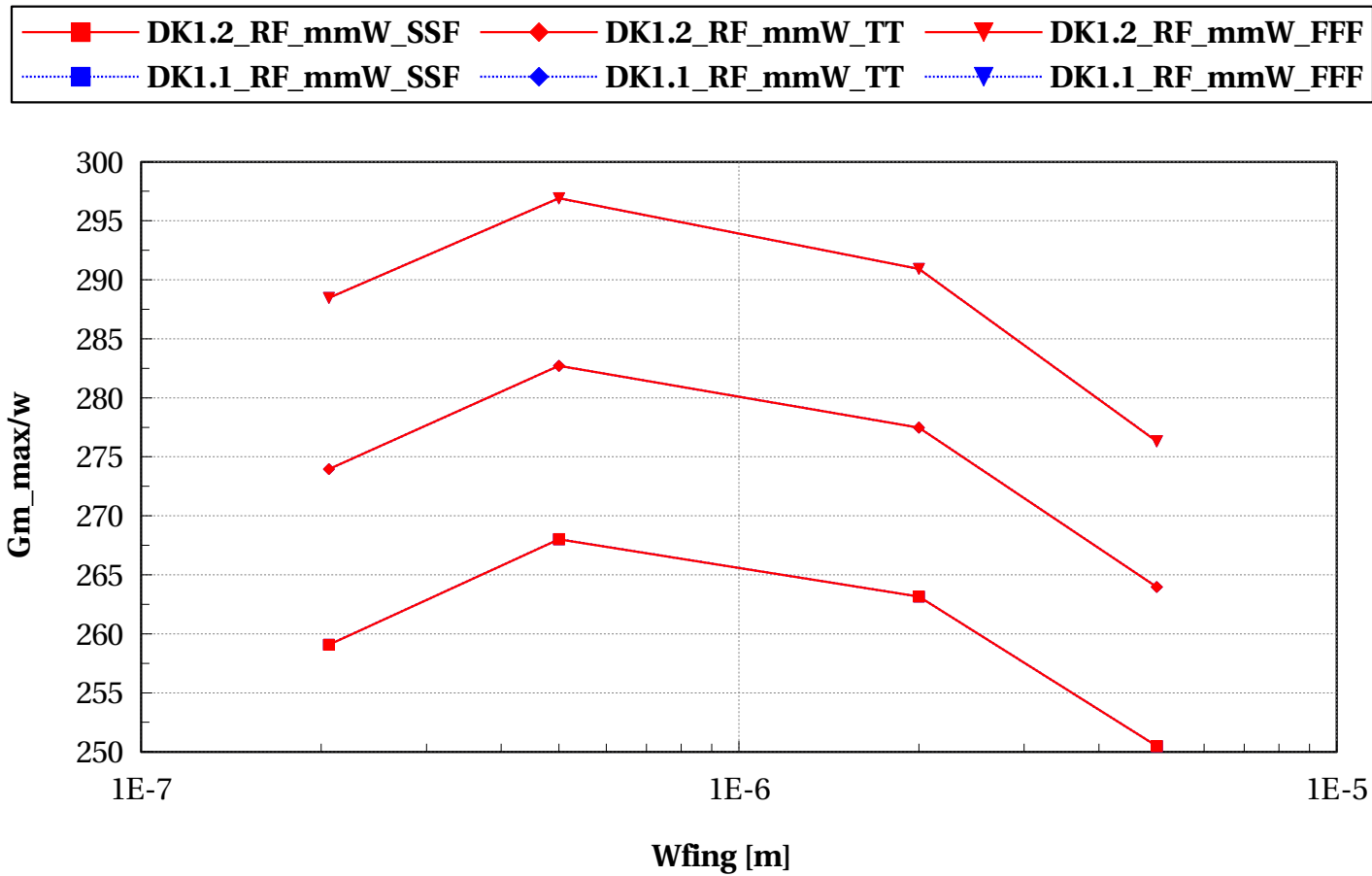
eglvtpfet_rfseg, isat/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtpfet_rfseg, Gm_max/w vs Wfing [m]

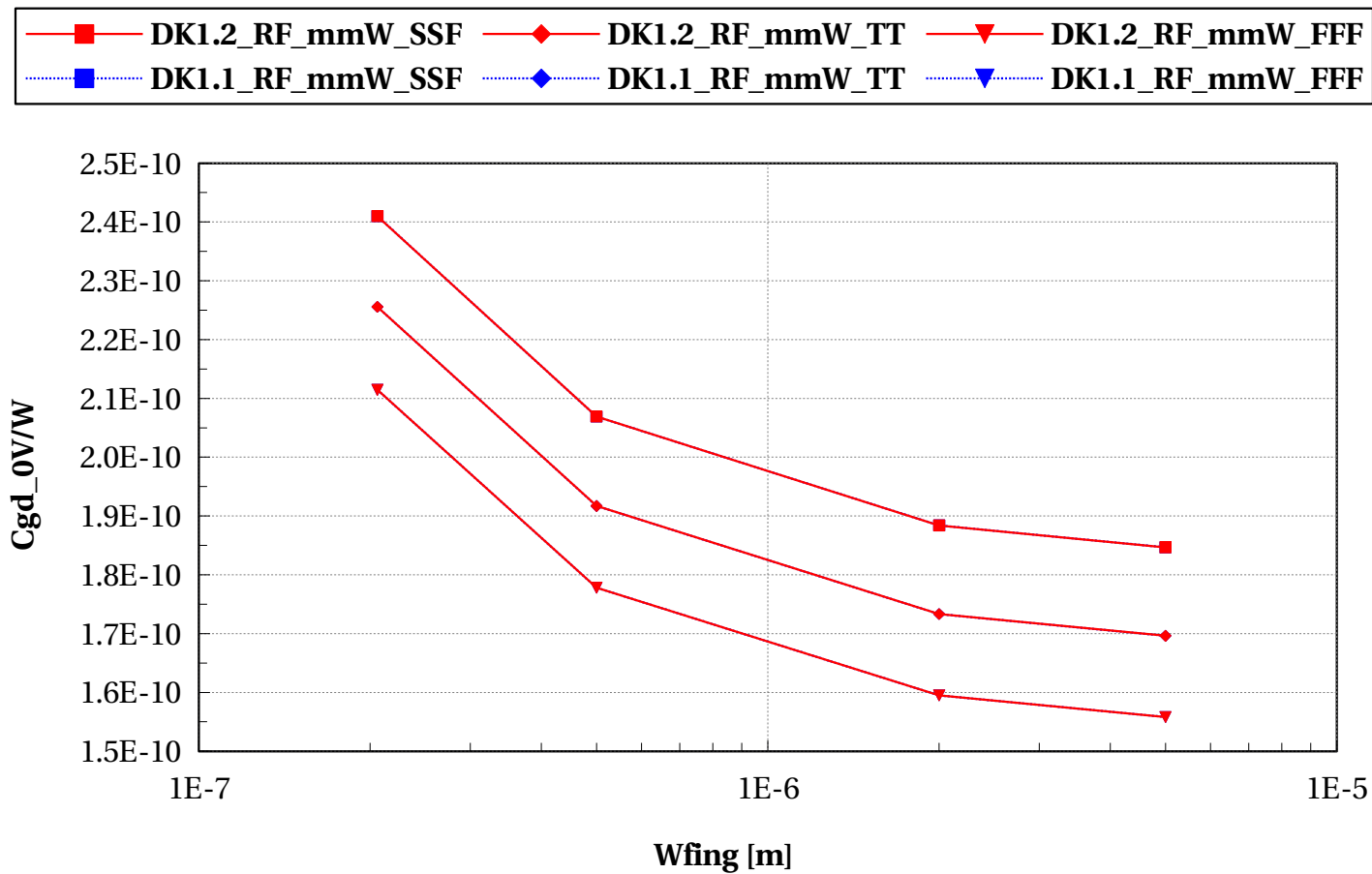
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus width $L=150\text{nm}$ - RF

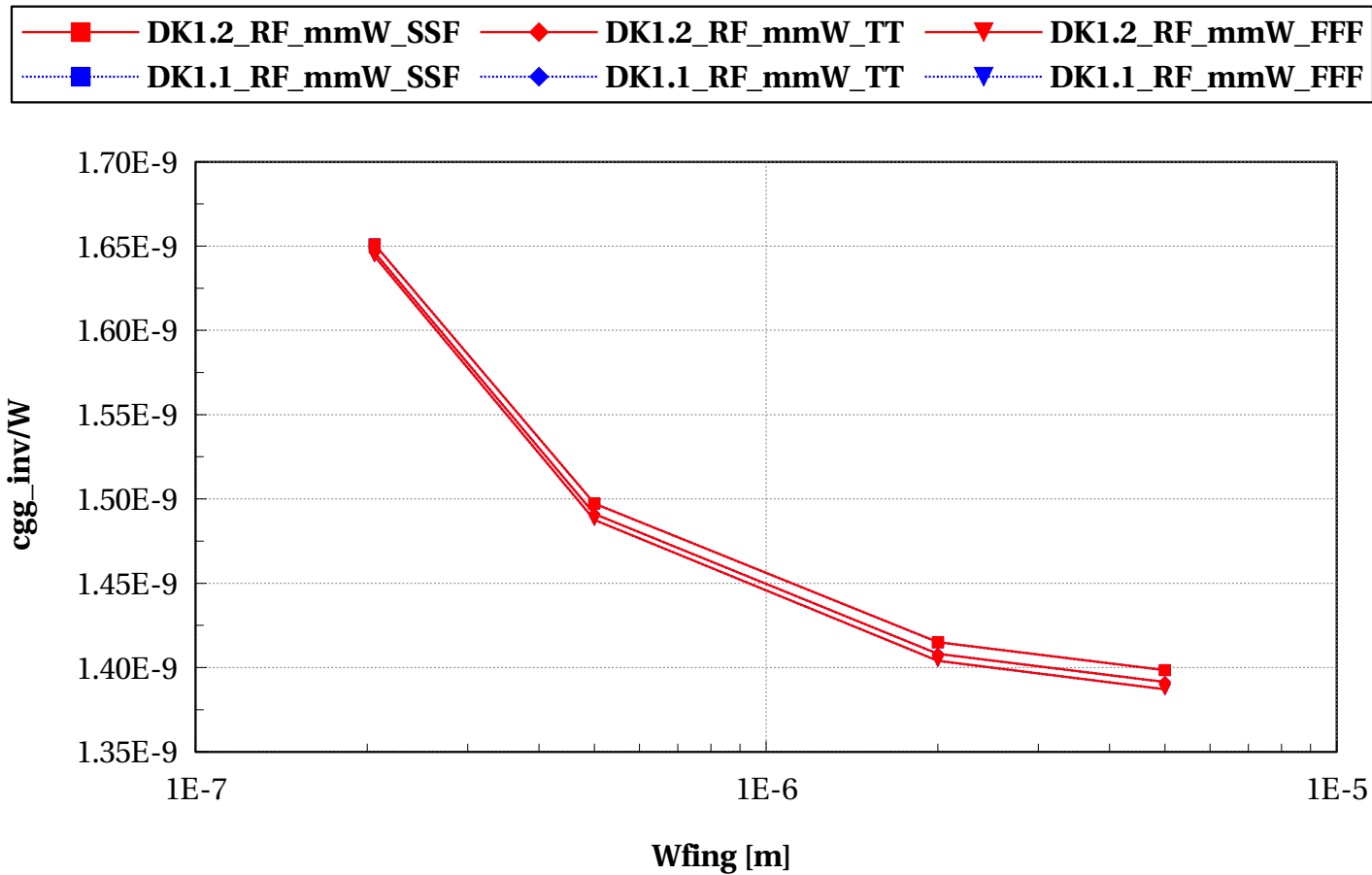
eglvtpfet_rfseg, Cgd_0V/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



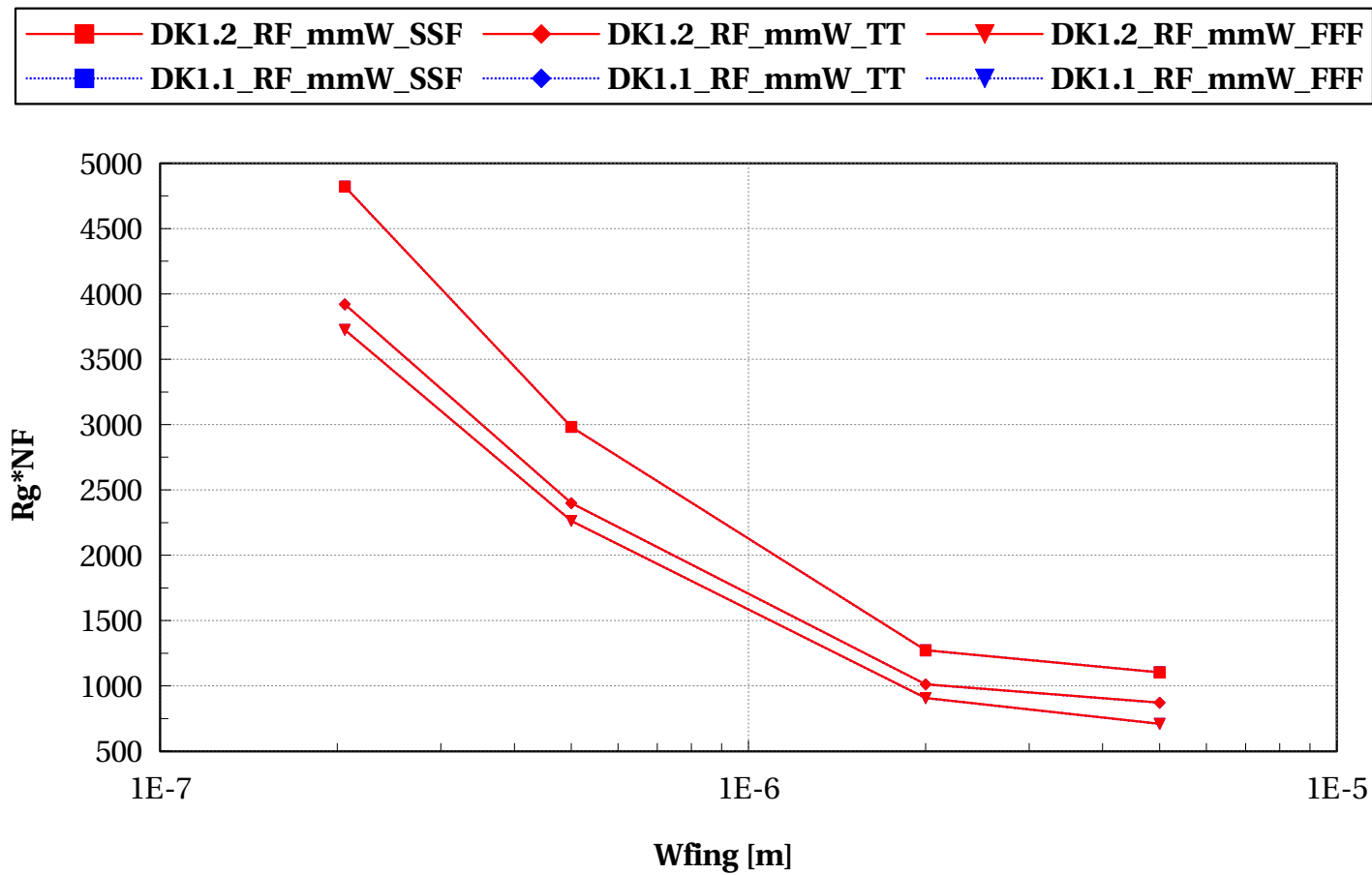
eglvtpfet_rfseg, cgg_inv/W vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



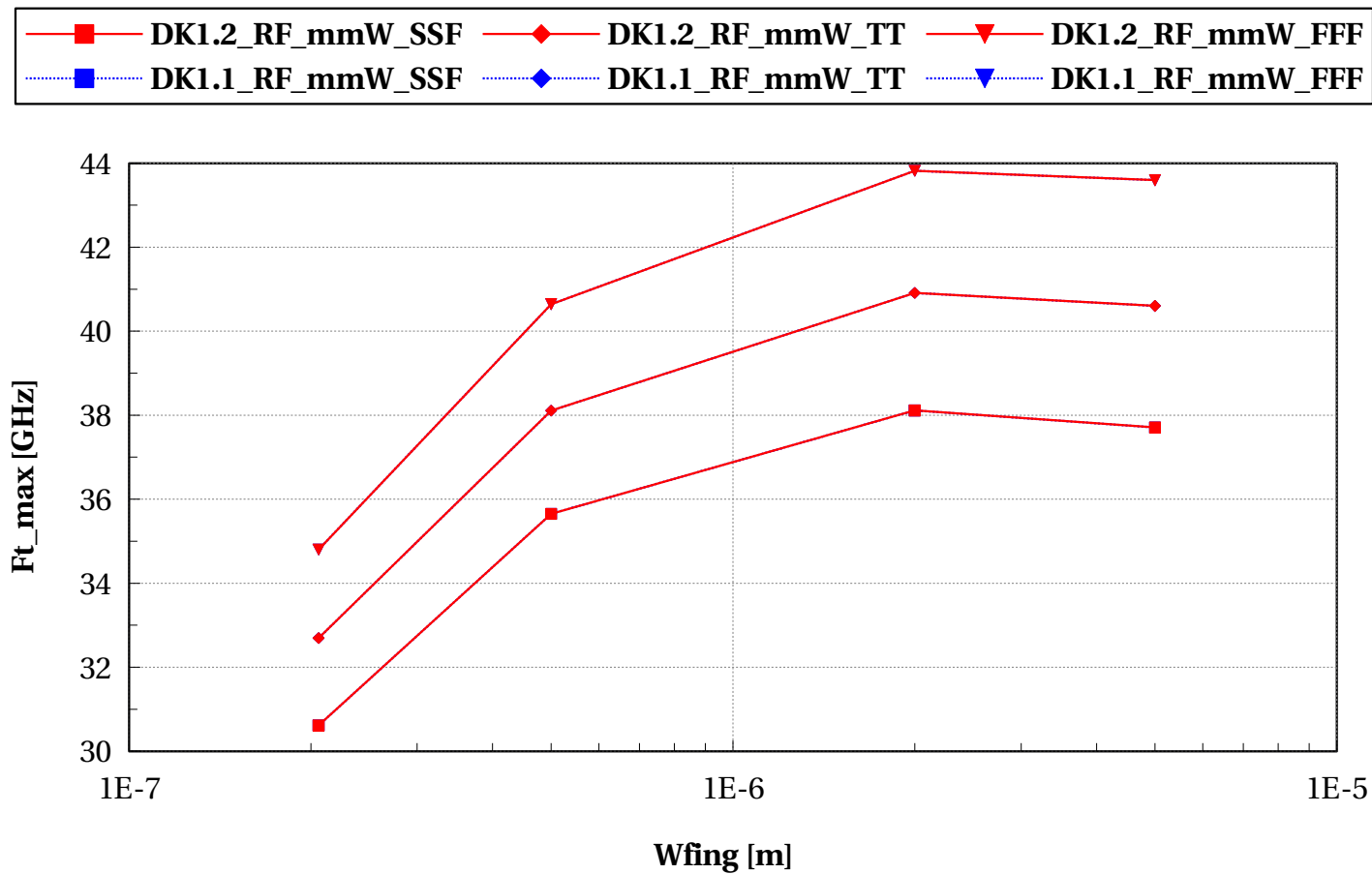
eglvtpfet_rfseg, $R_g \cdot NF$ vs W_{fing} [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and $l=150e-9$



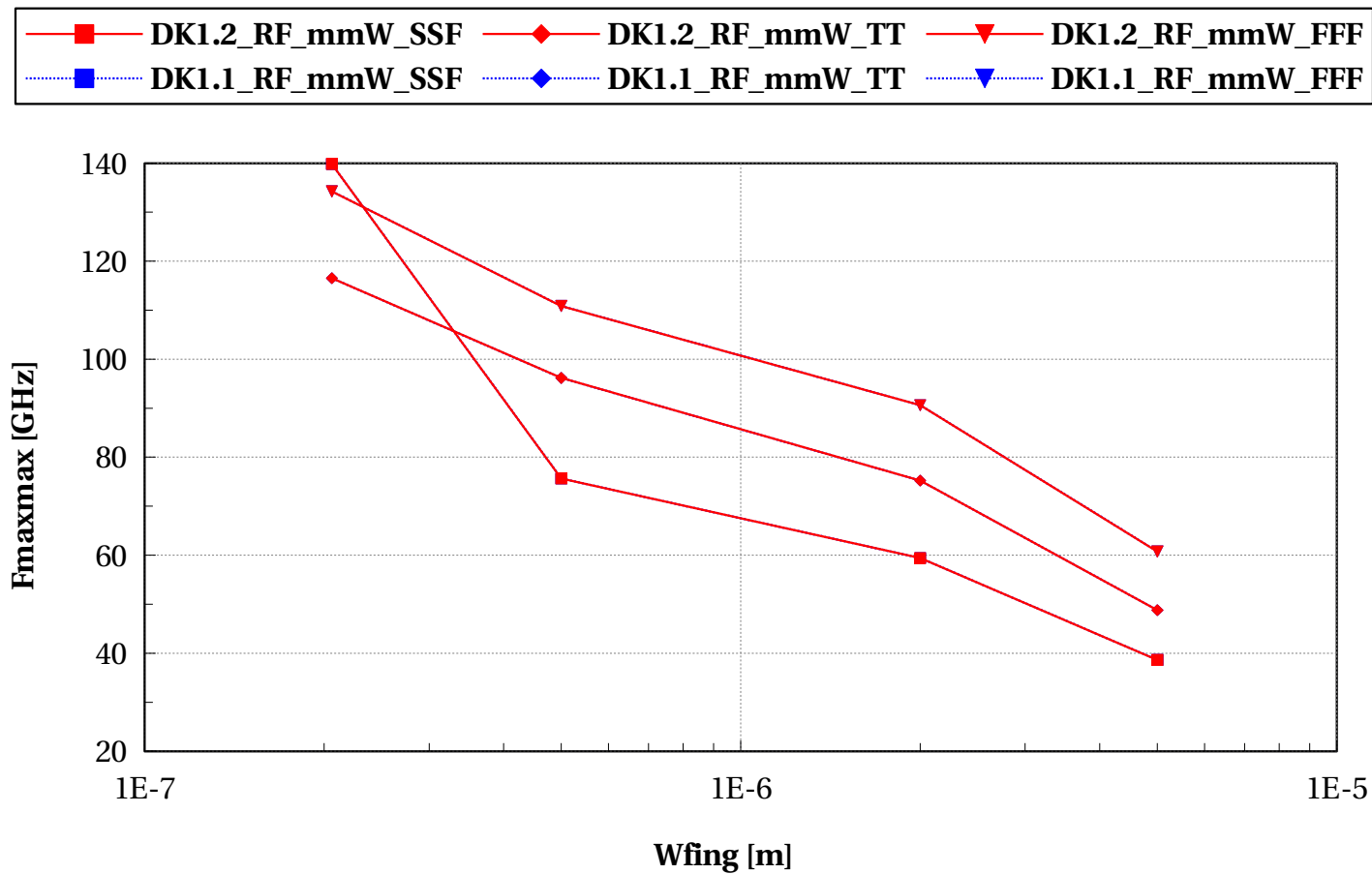
eglvtpfet_rfseg, Ft_max [GHz] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtpfet_rfseg, Fmaxmax [GHz] vs Wfing [m]

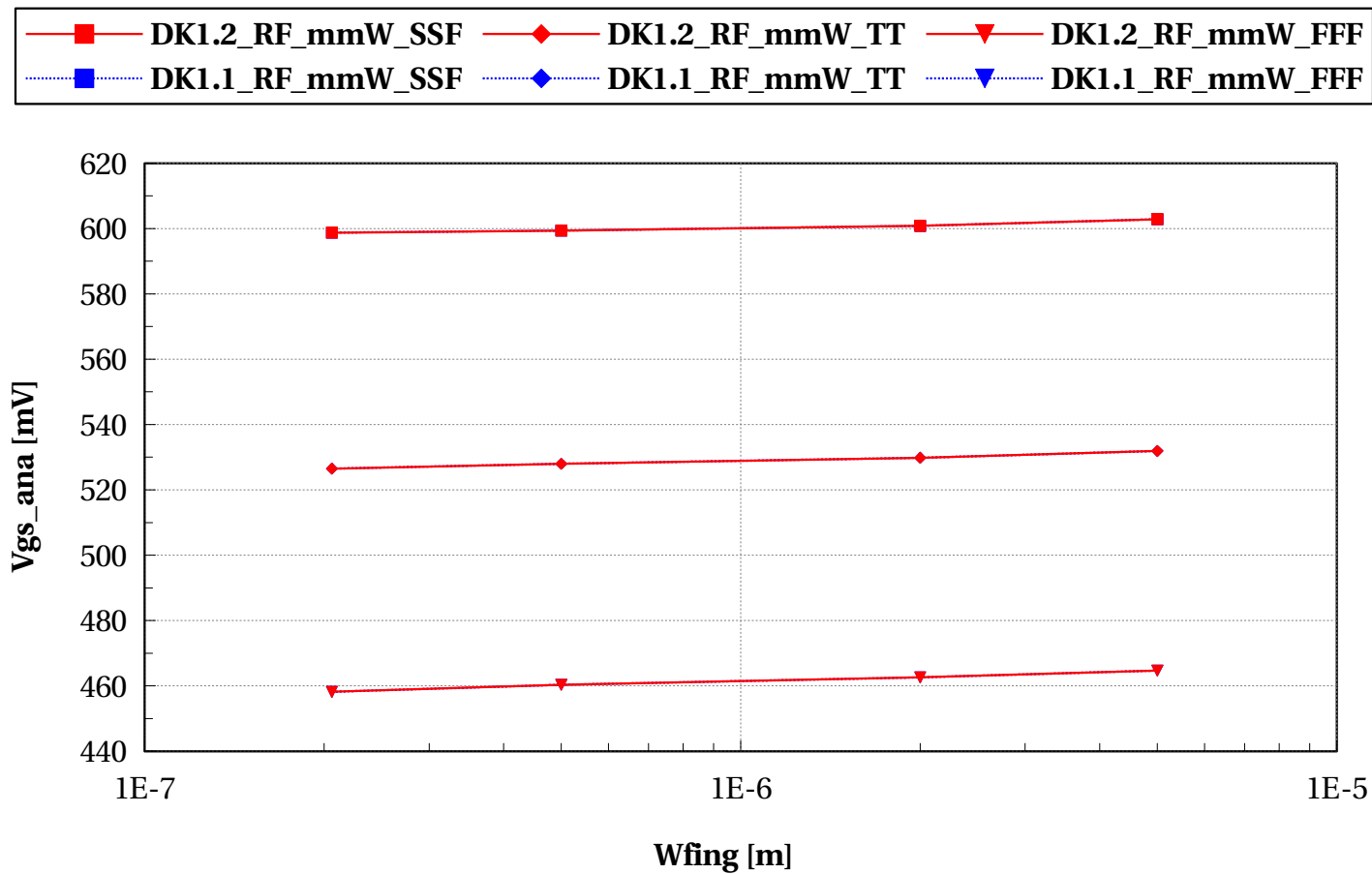
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus width $L=150\text{nm}$ - Analog

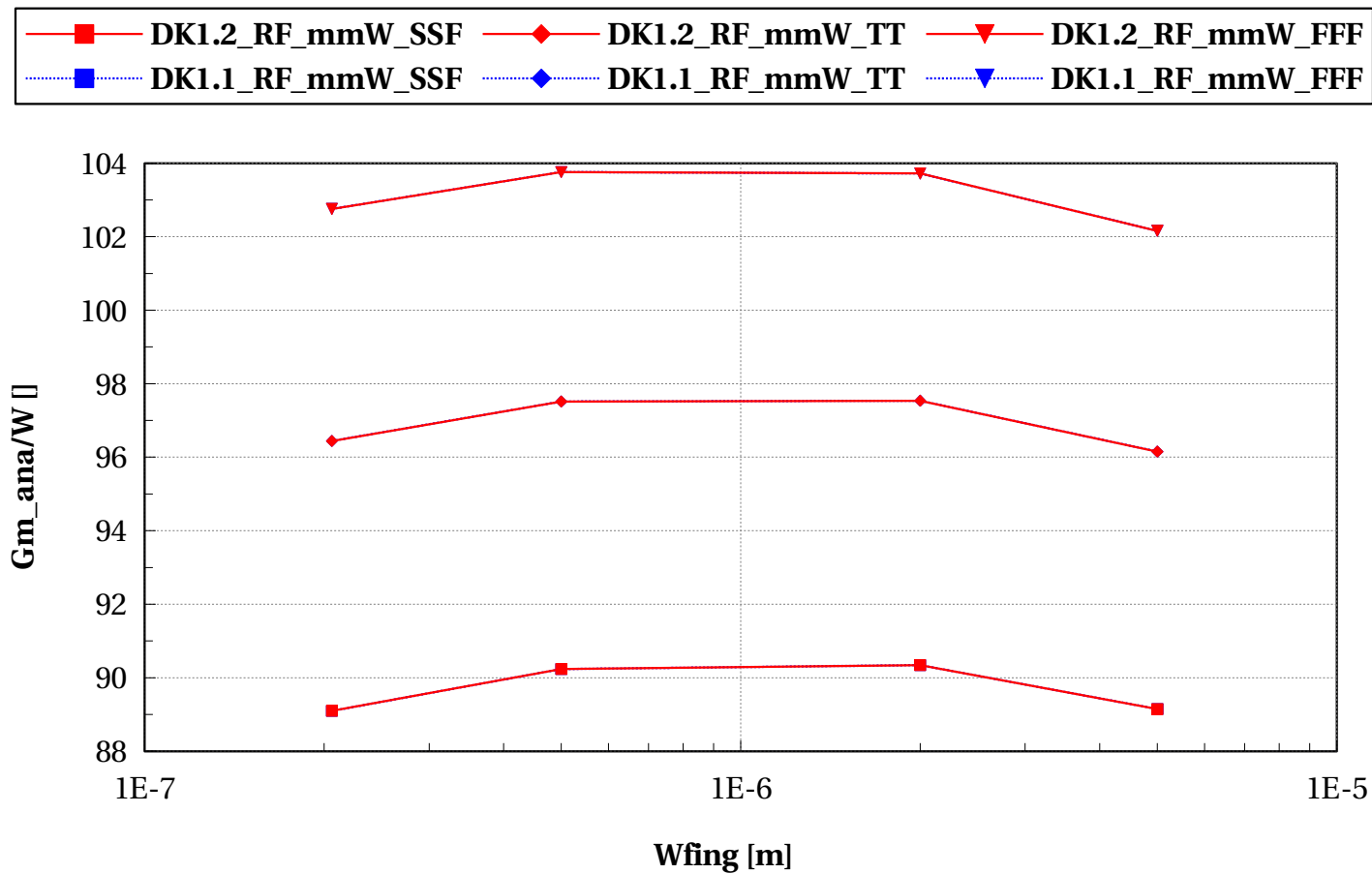
eglvtpfet_rfseg, Vgs_ana [mV] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



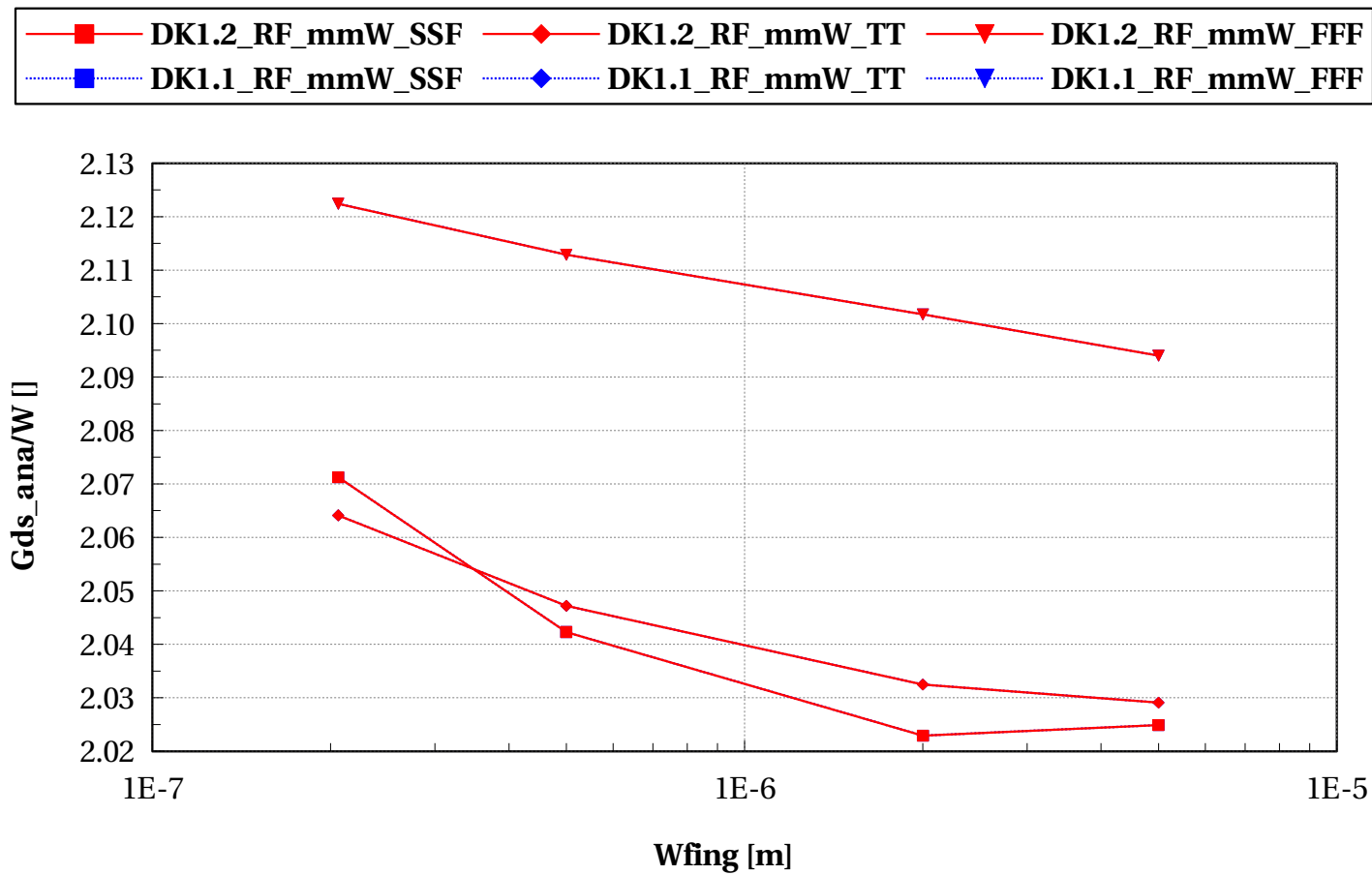
eglvtpfet_rfseg, Gm_ana/W [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



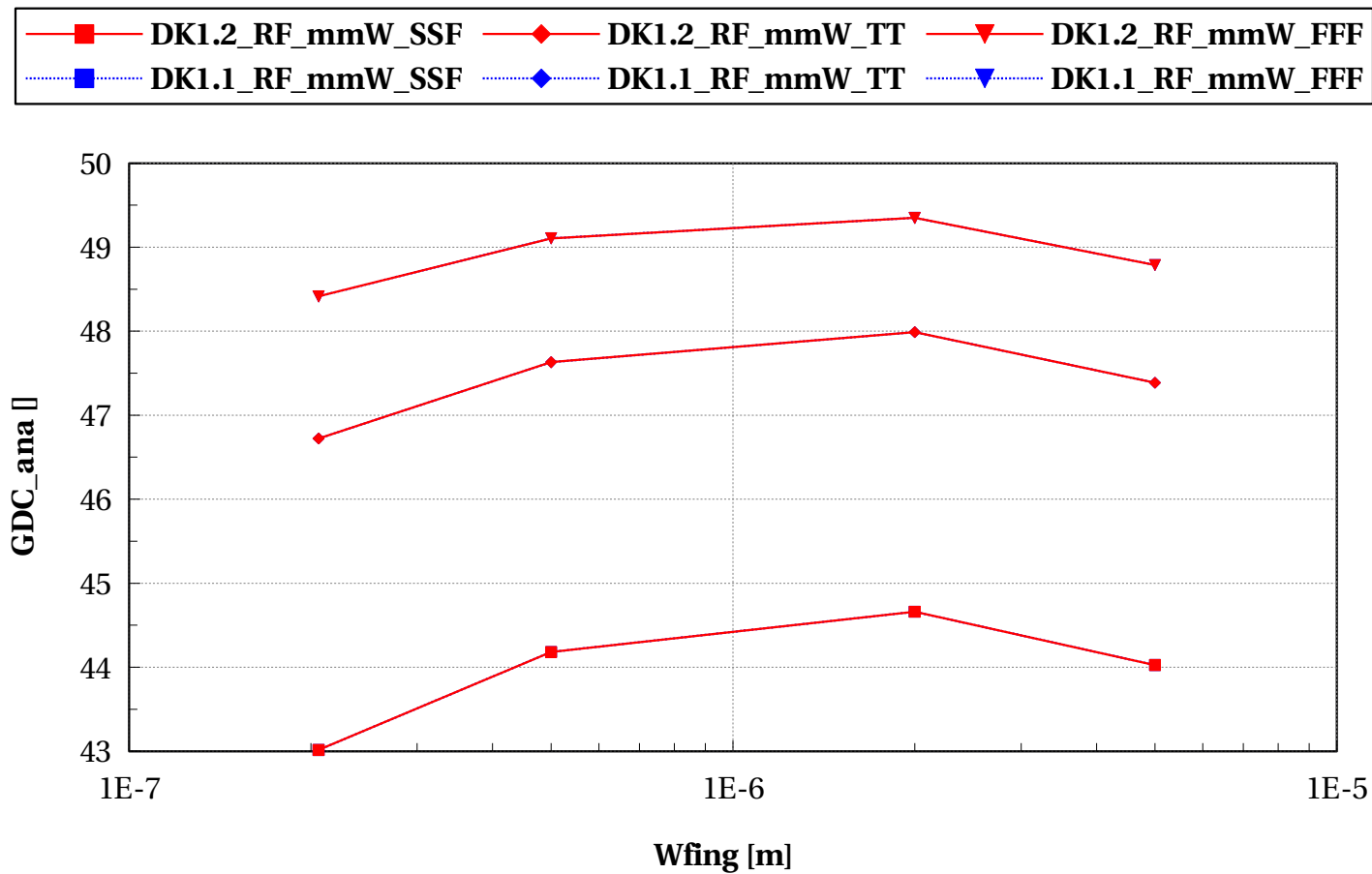
eglvtpfet_rfseg, Gds_ana/W [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



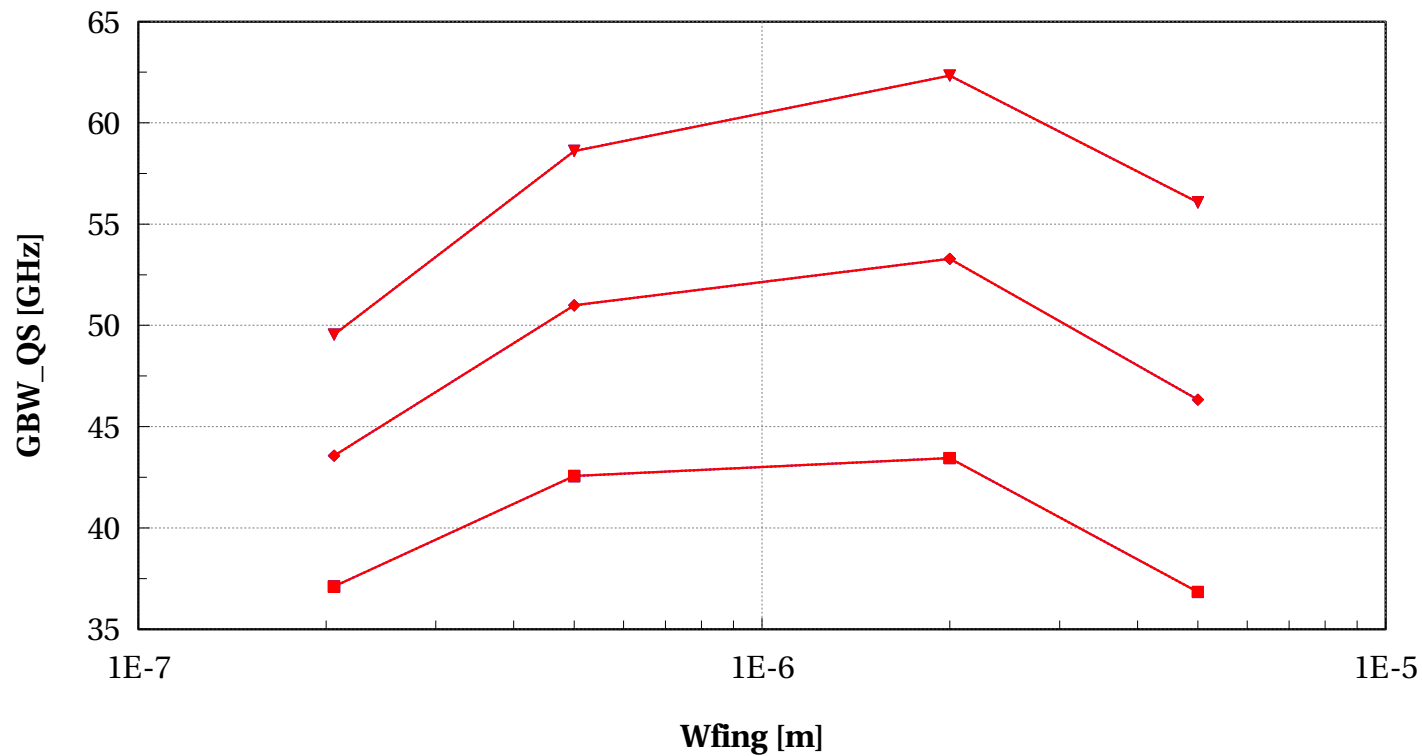
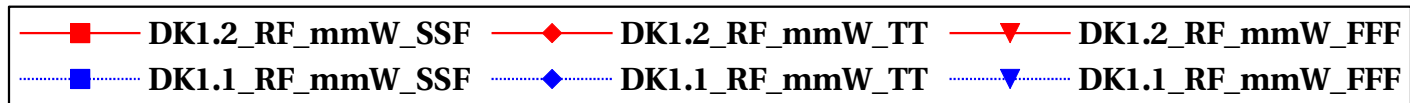
eglvtpfet_rfseg, GDC_ana [] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



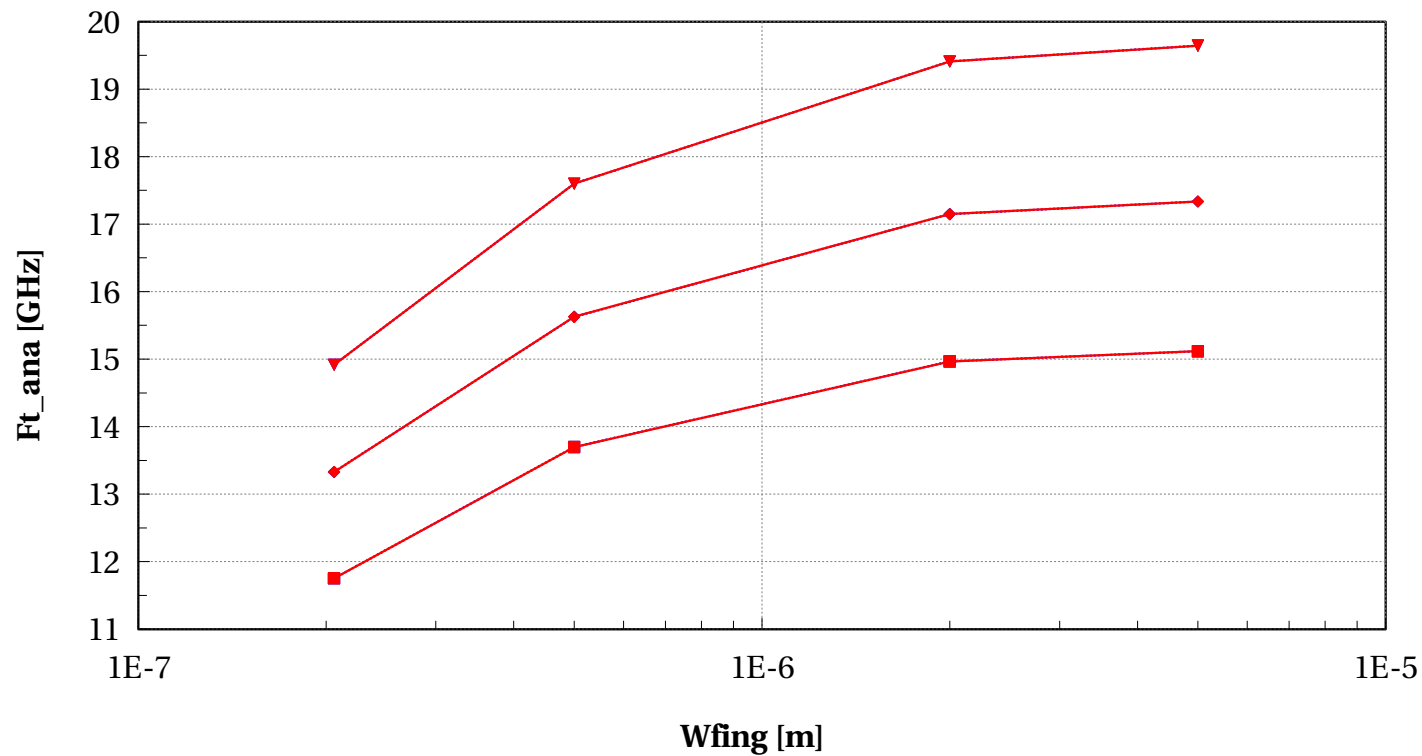
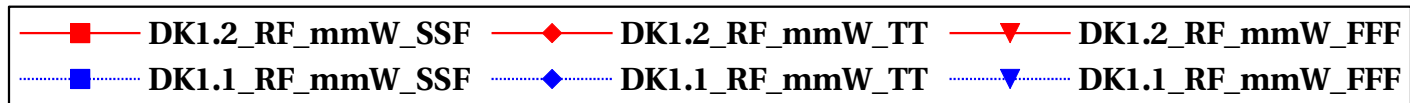
eglvtpfet_rfseg, GBW_QS [GHz] vs Wfing [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



eglvtpfet_rfseg, Ft_ana [GHz] vs Wfing [m]

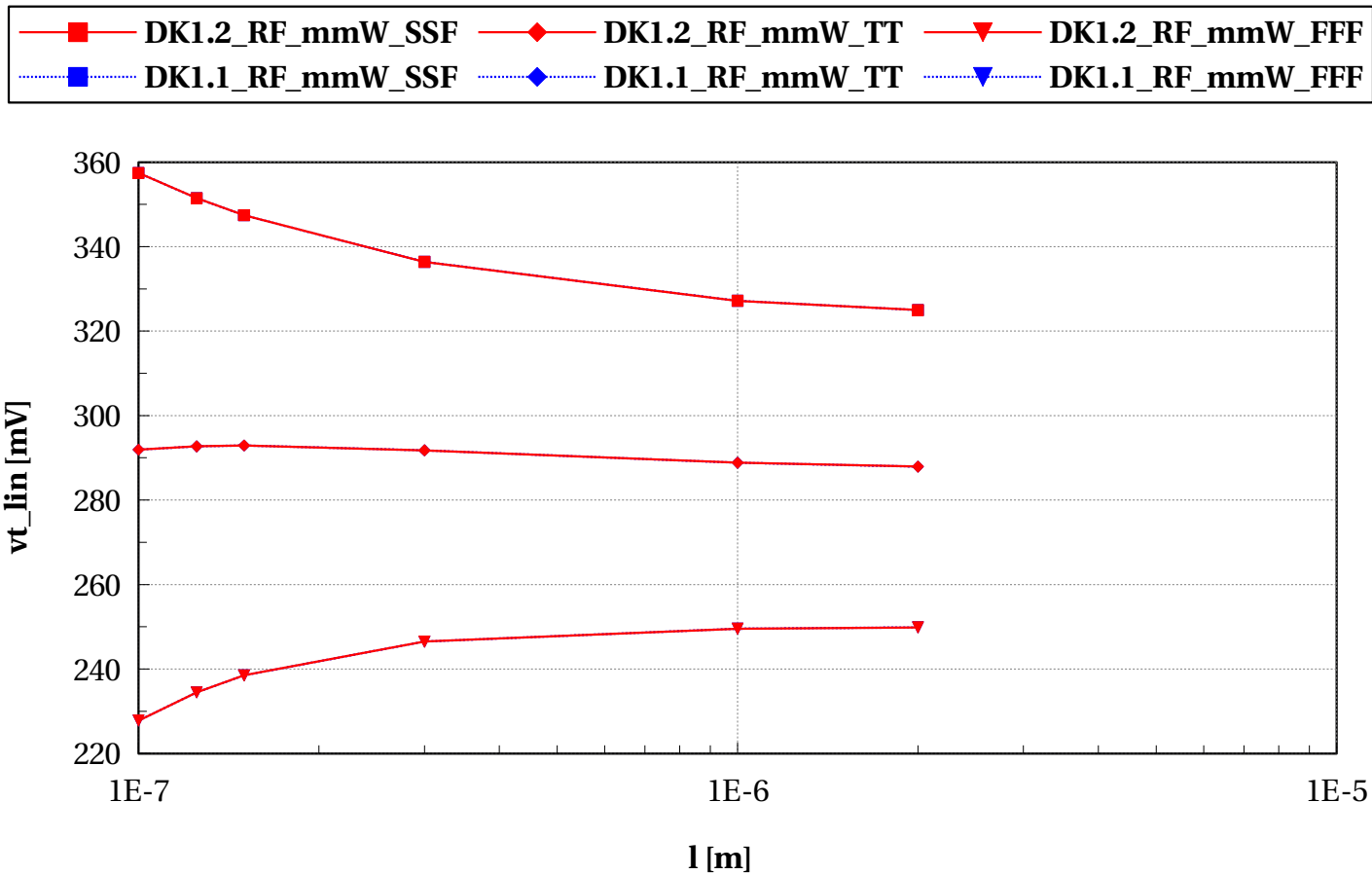
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and l==150e-9



Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - DC

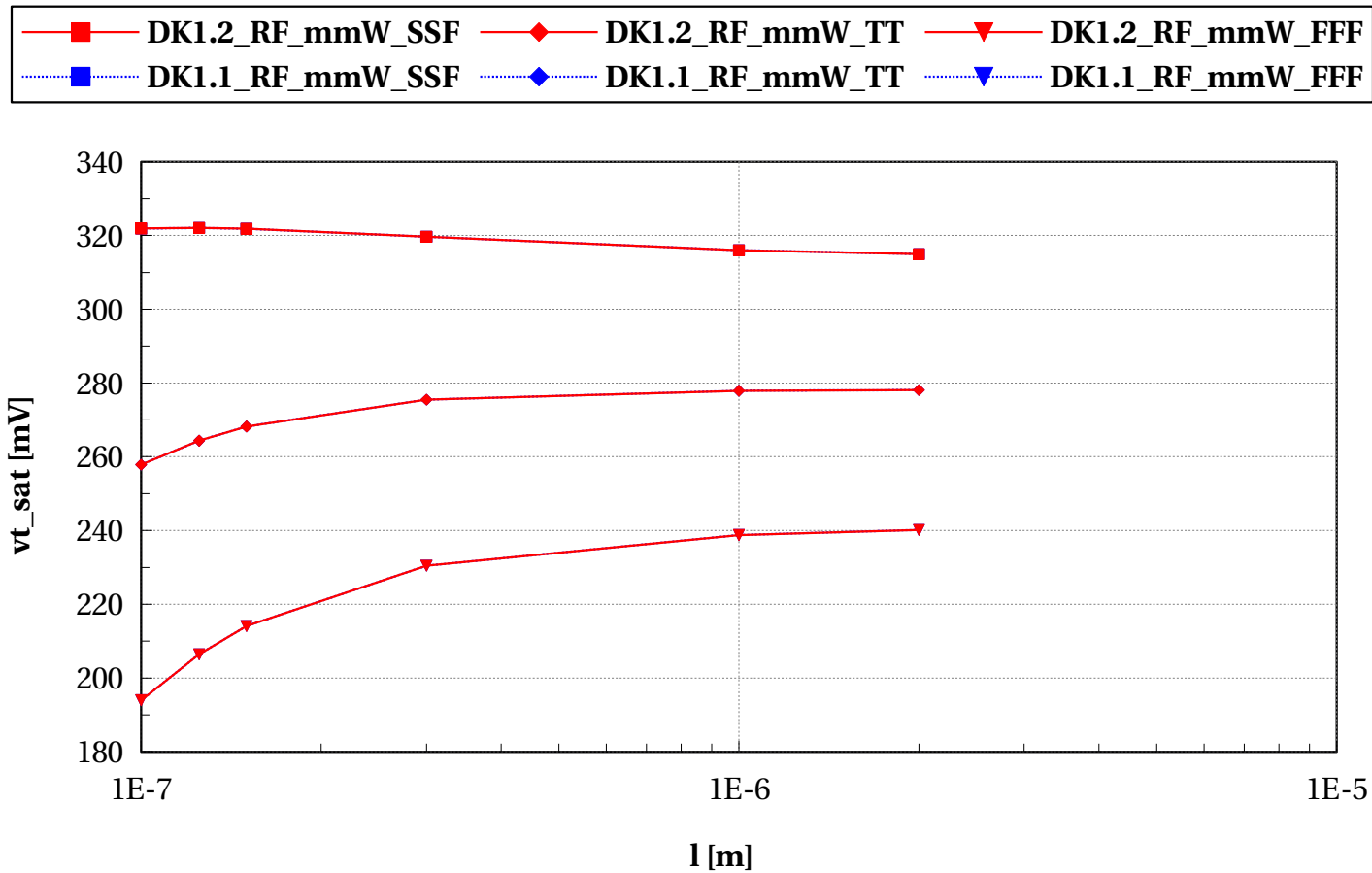
eglvtpfet_rfseg, vt_lin [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfling==2e-6



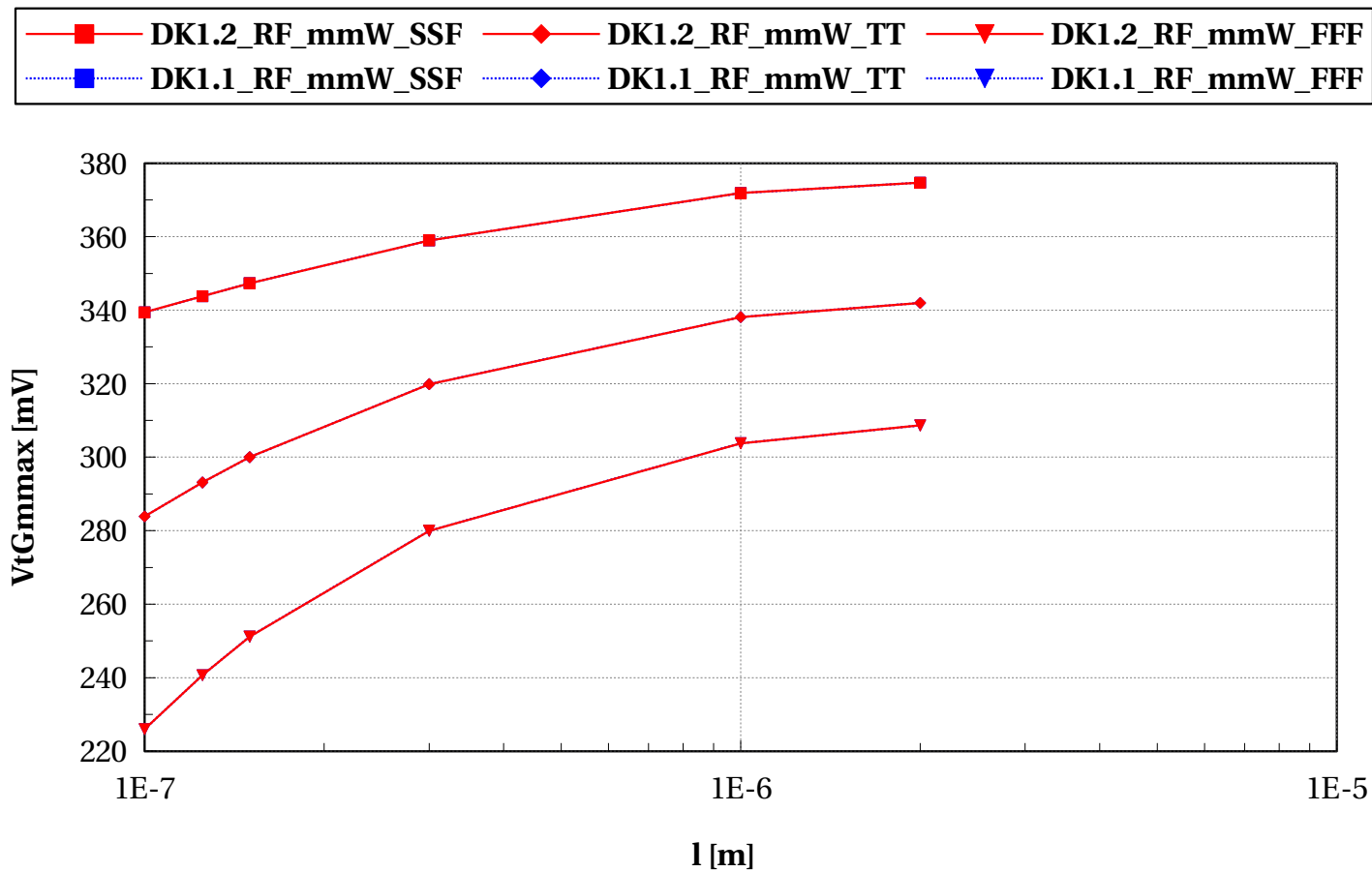
eglvtpfet_rfseg, vt_sat [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



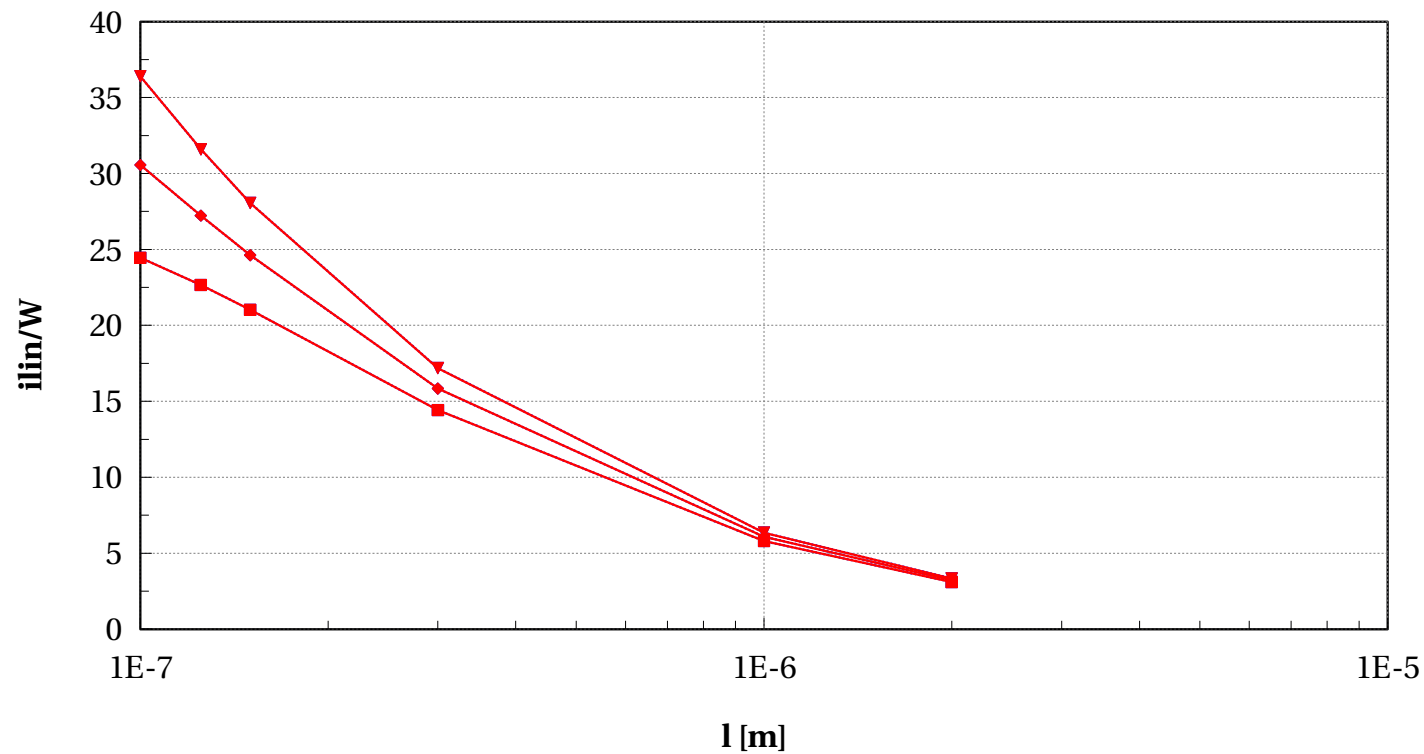
eglvtpfet_rfseg, V_{tGmmax} [mV] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



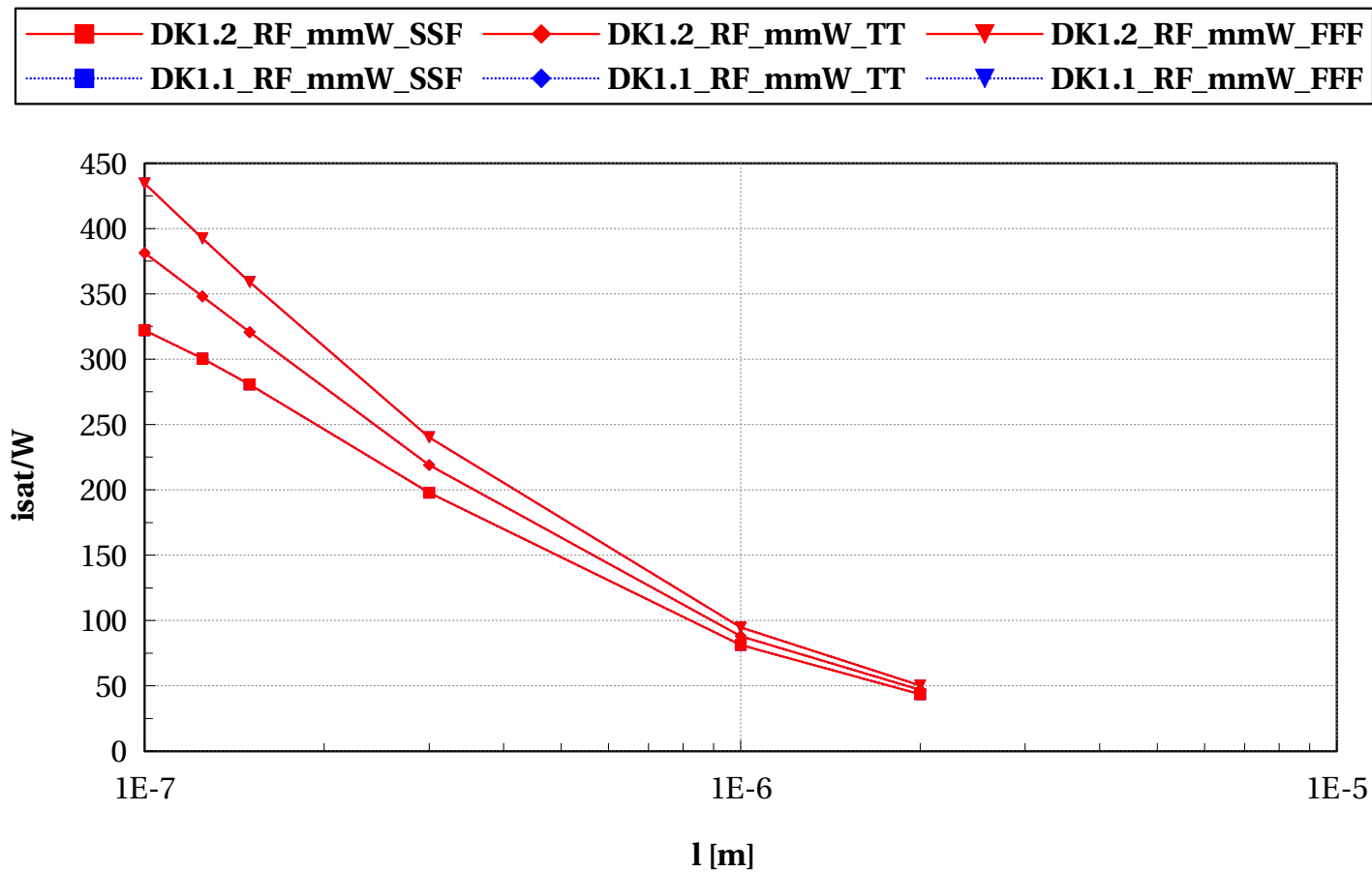
eglvtpfet_rfseg, i_{lin}/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



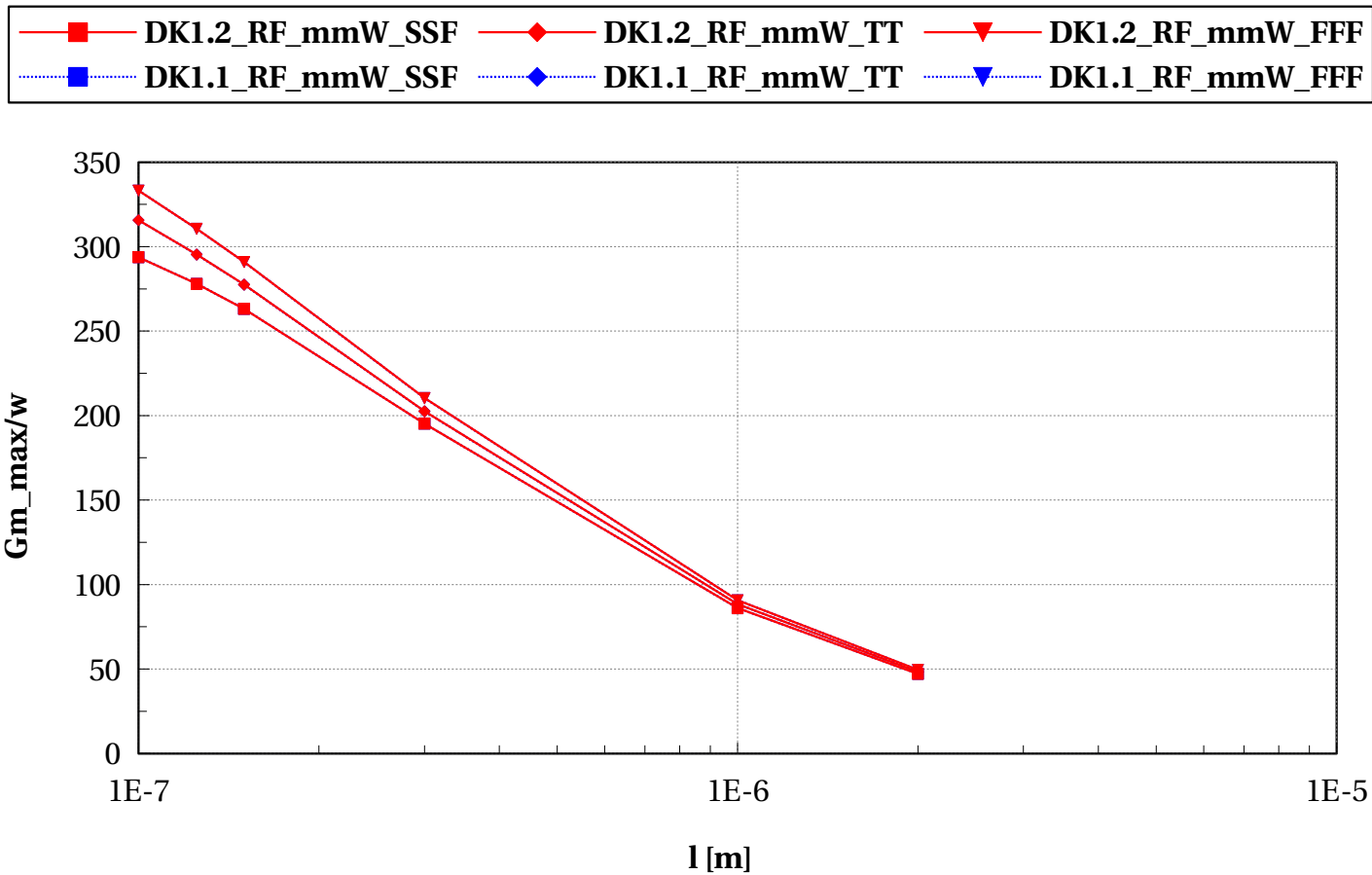
eglvtpfet_rfseg, isat/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtpfet_rfseg, Gm_max/w vs l [m]

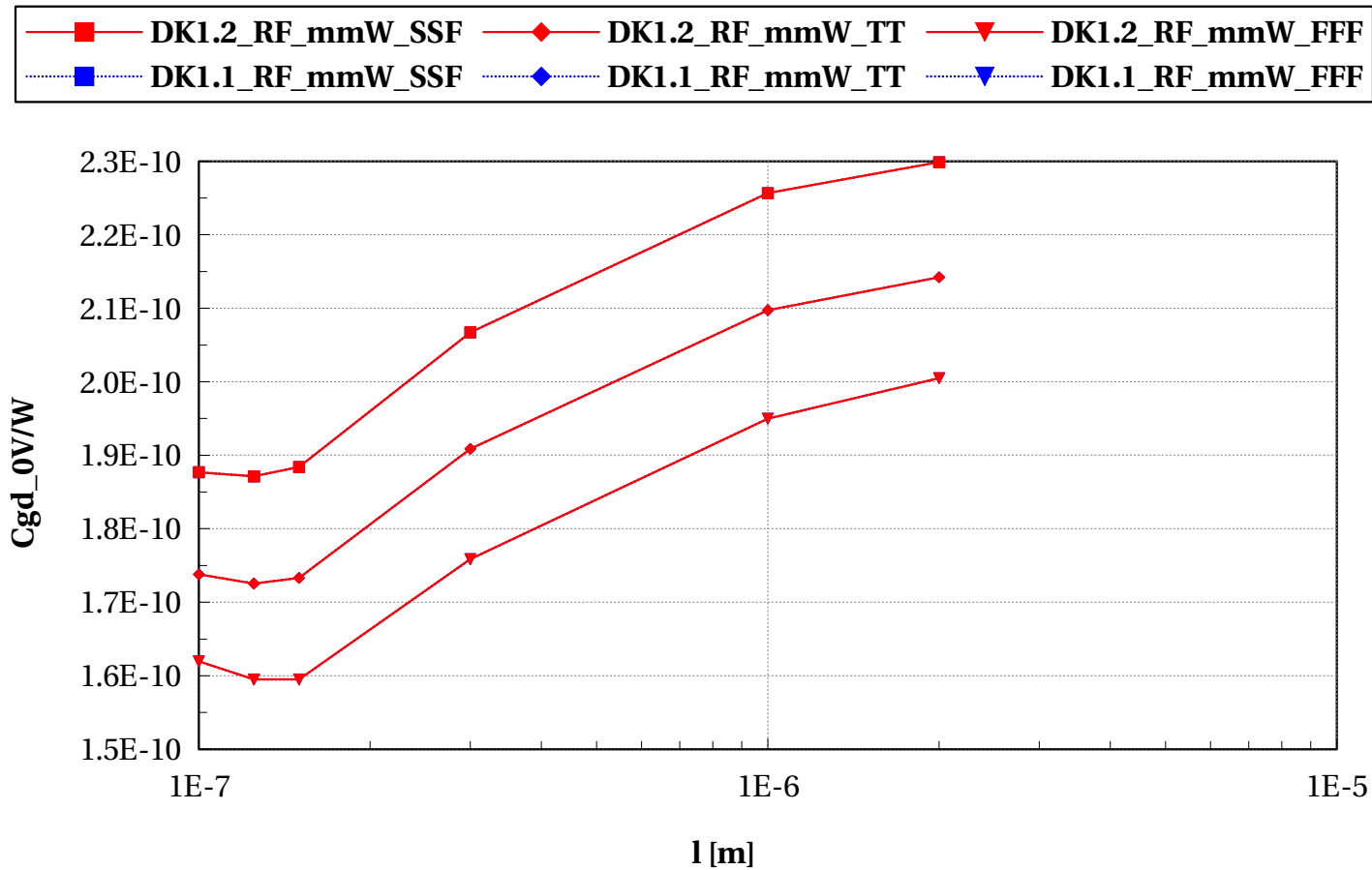
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - RF

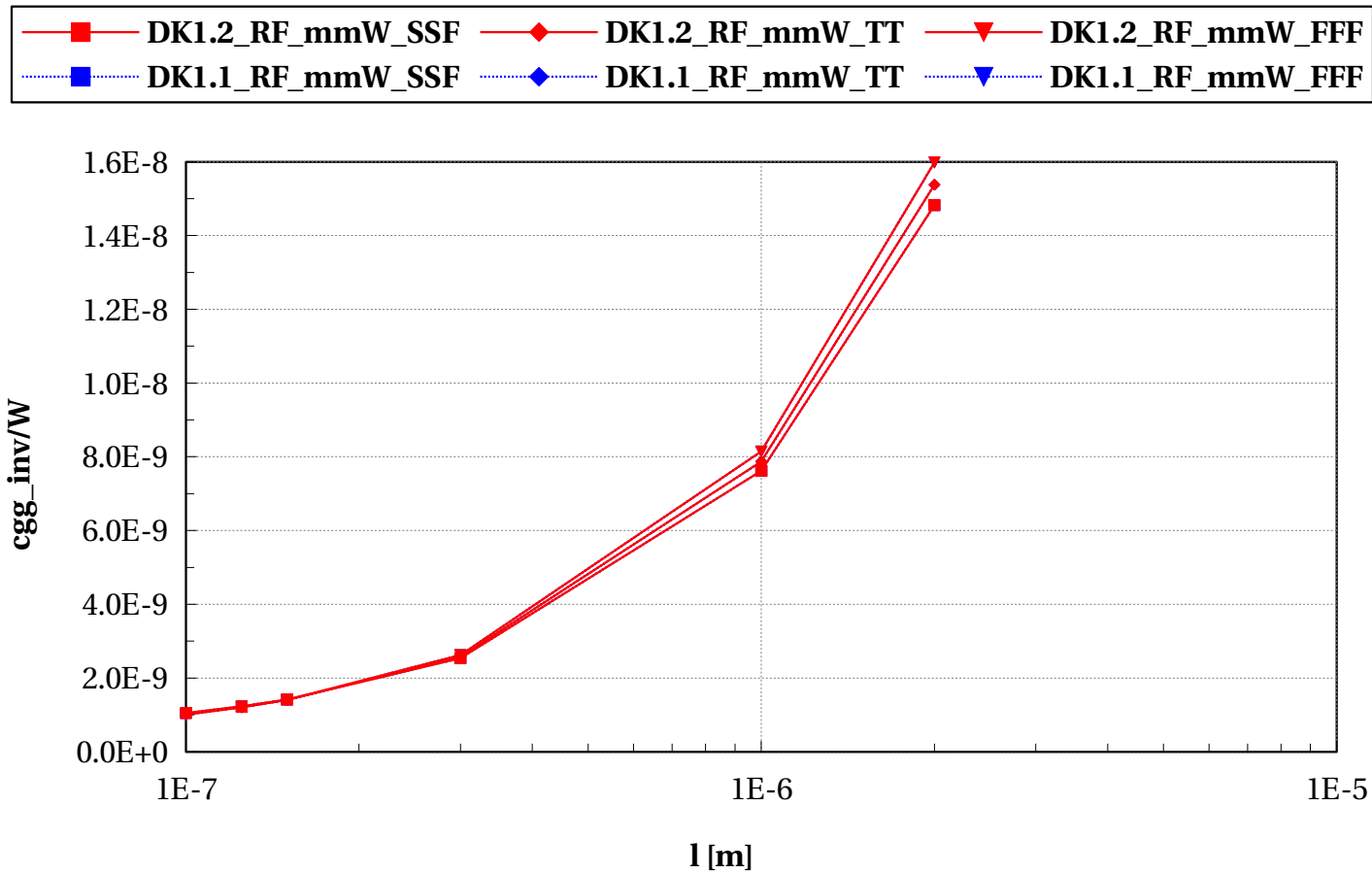
eglvtpfet_rfseg, Cgd_0V/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



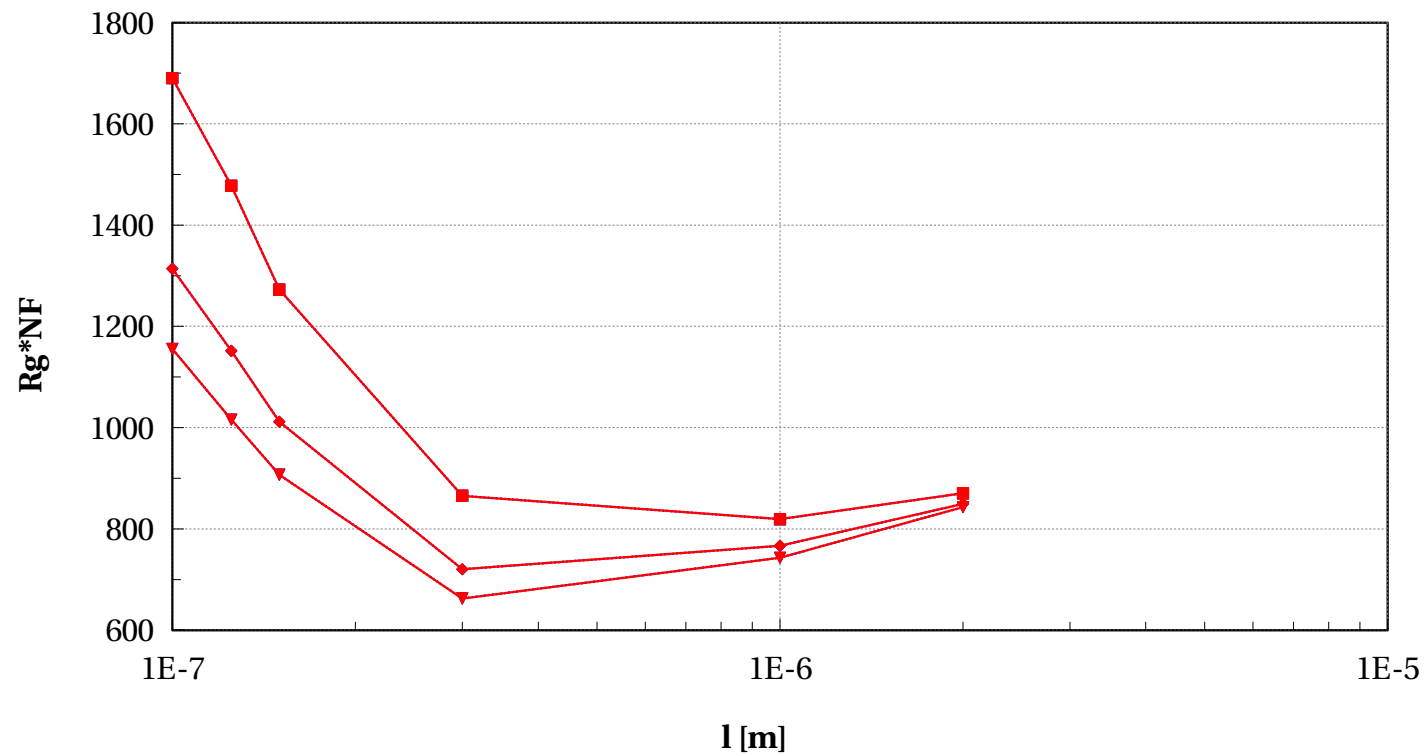
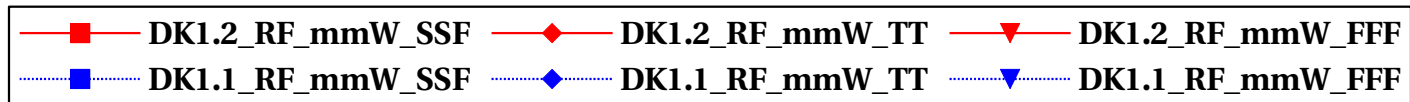
eglvtpfet_rfseg, cgg_inv/W vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



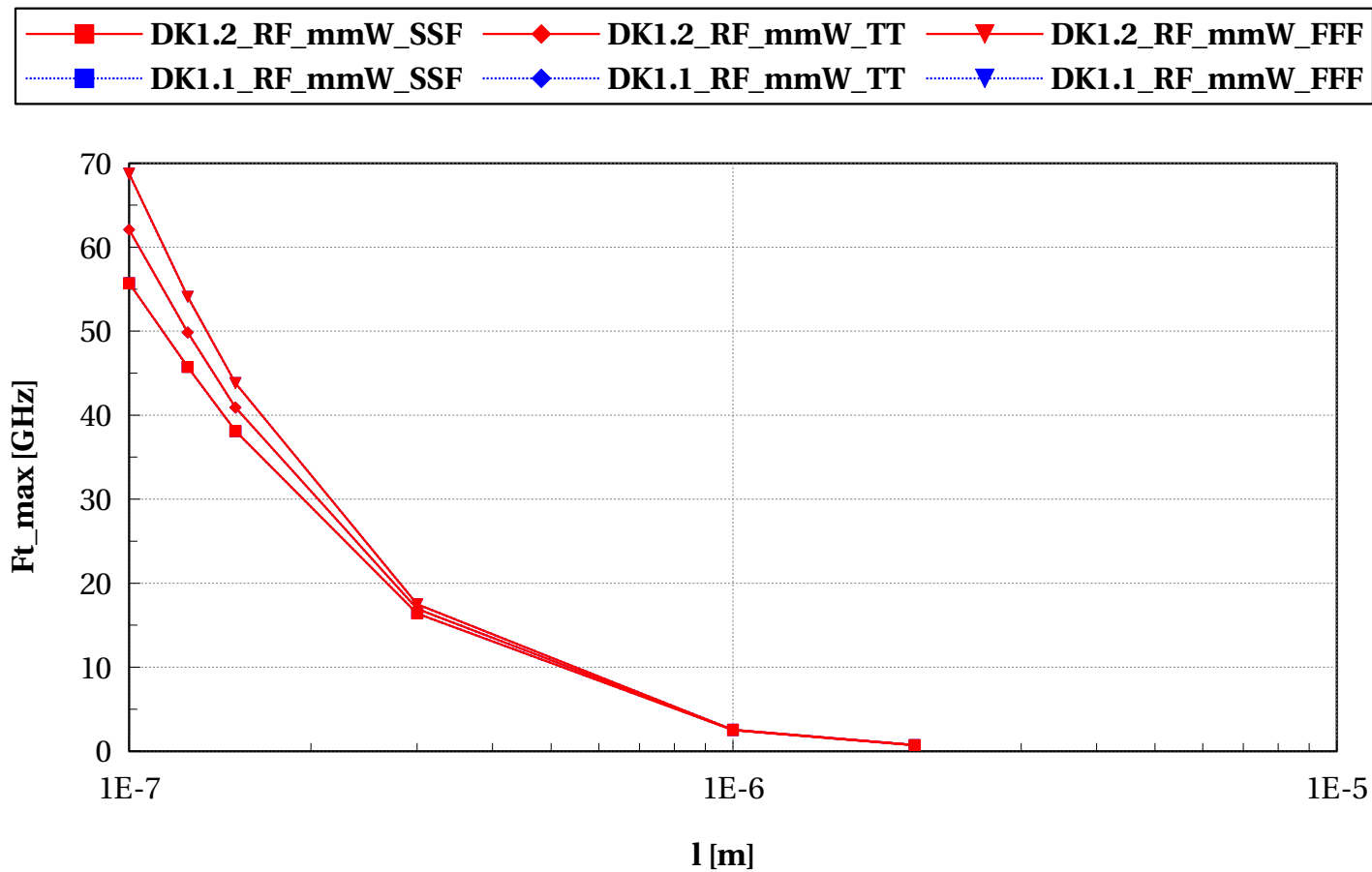
eglvtpfet_rfseg, $R_g * NF$ vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



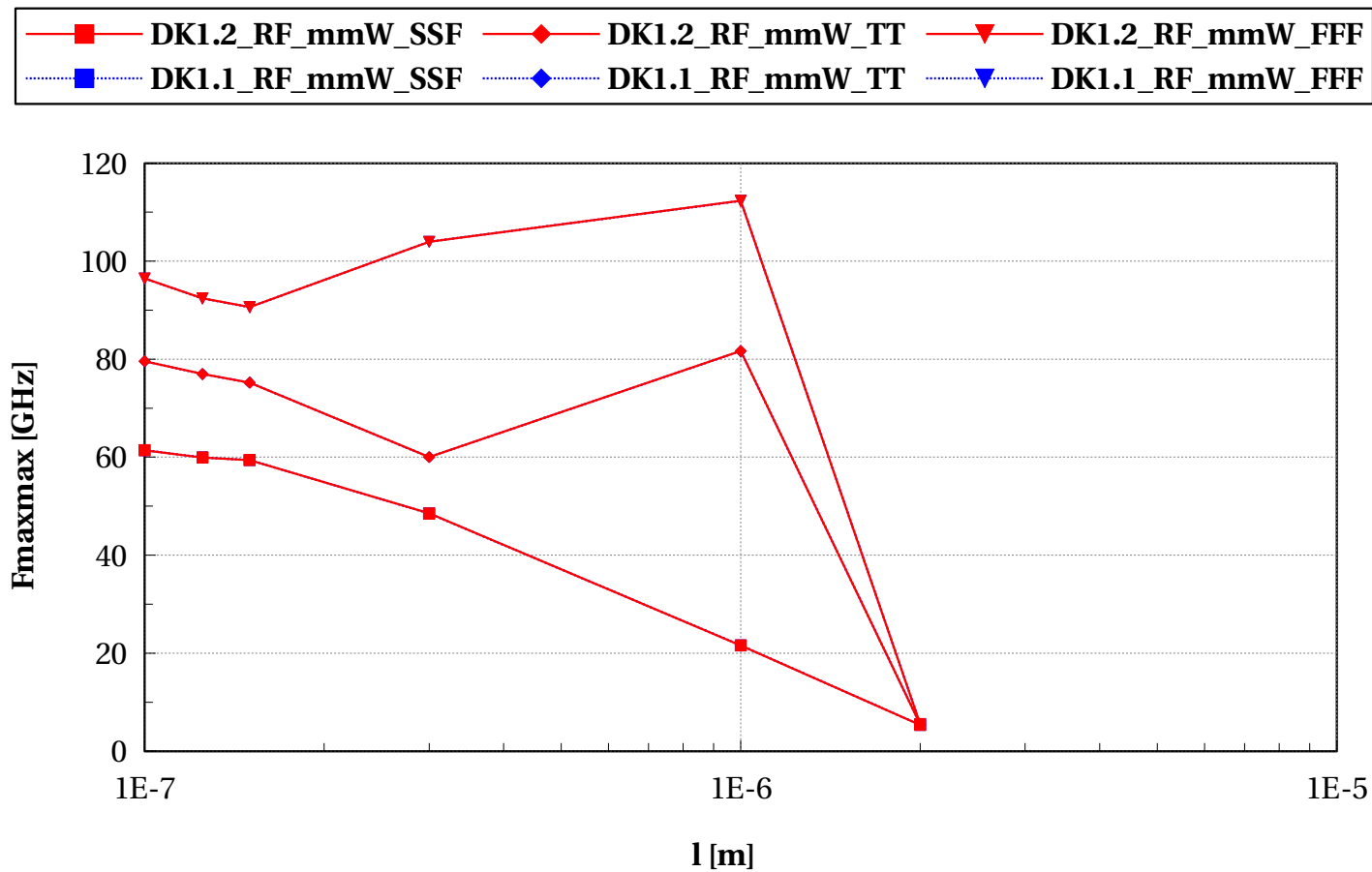
eglvtpfet_rfseg, Ft_max [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtpfet_rfseg, Fmaxmax [GHz] vs l [m]

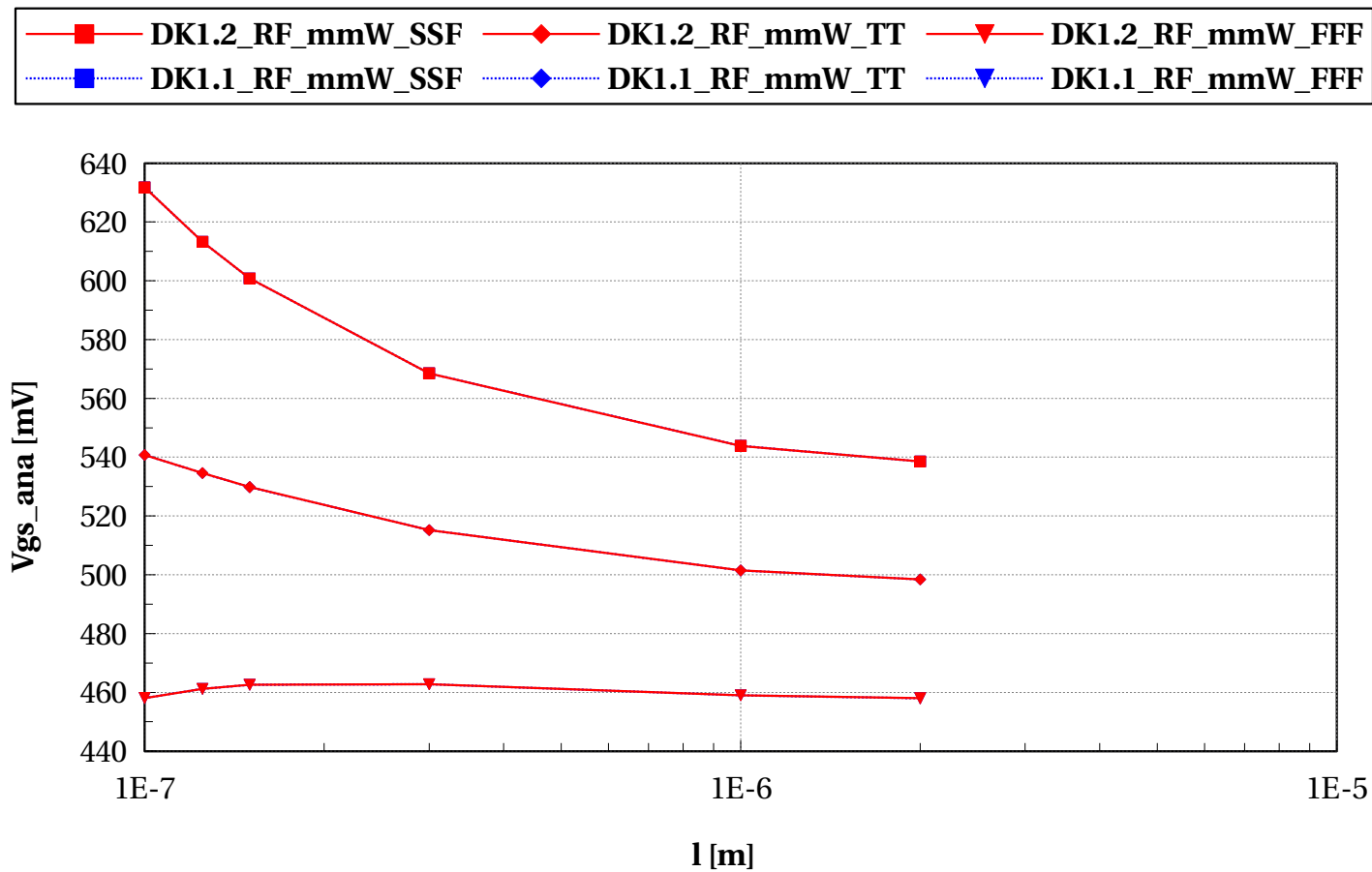
(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



Scaling versus length $W_{\text{fing}}=2\mu\text{m}$ - Analog

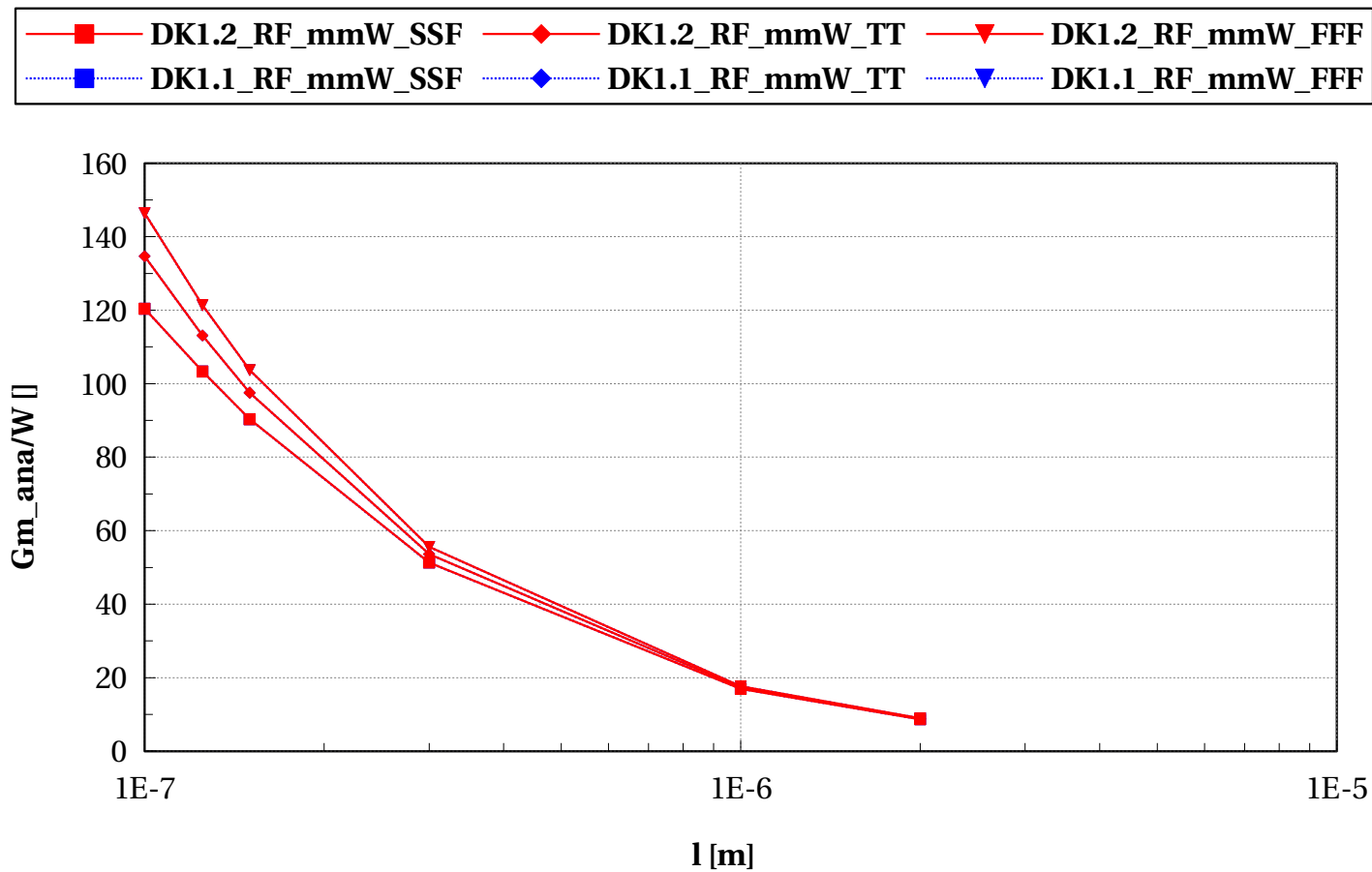
eglvtpfet_rfseg, Vgs_ana [mV] vs I [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



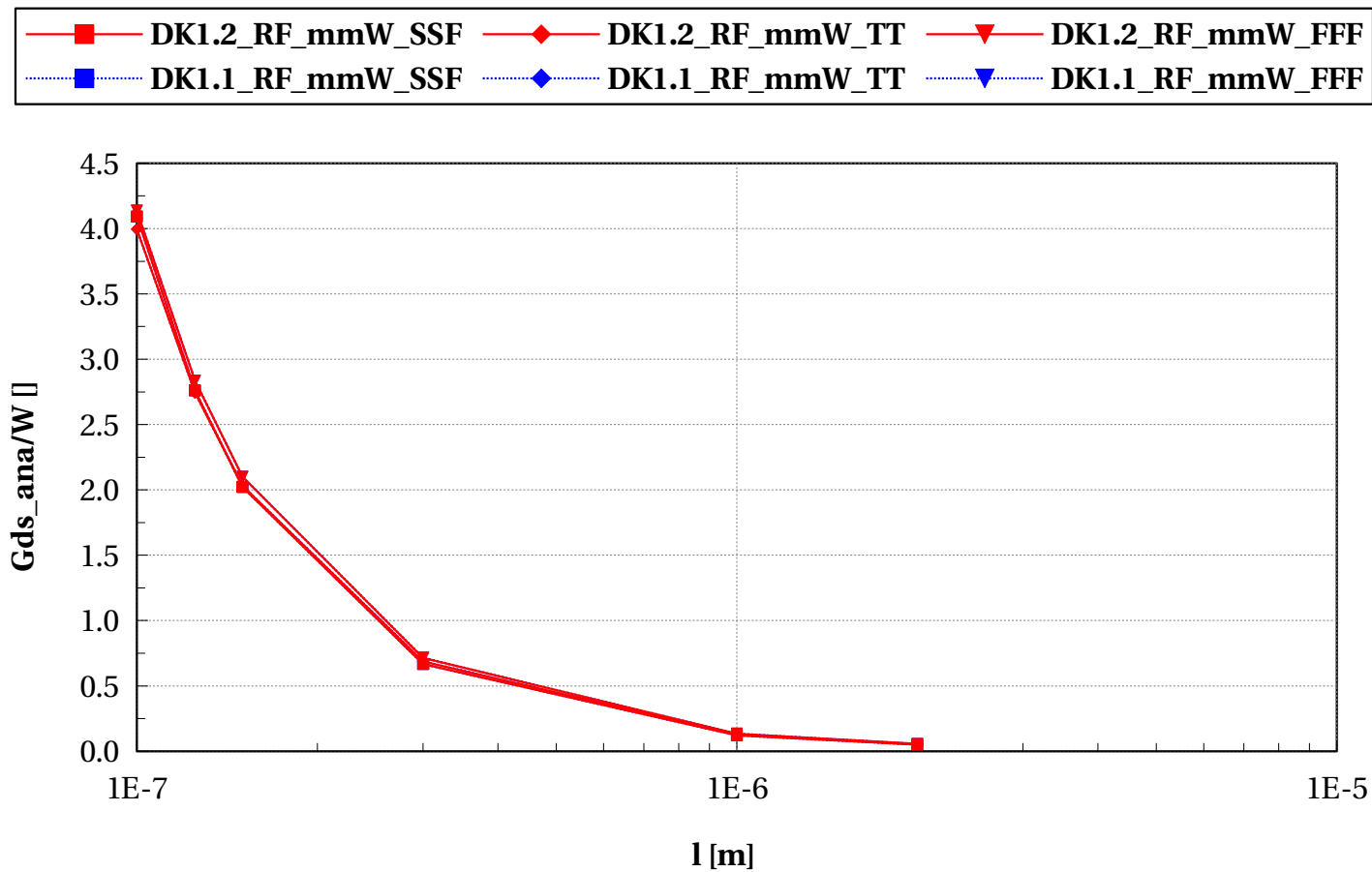
eglvtpfet_rfseg, G_{m_ana}/W [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



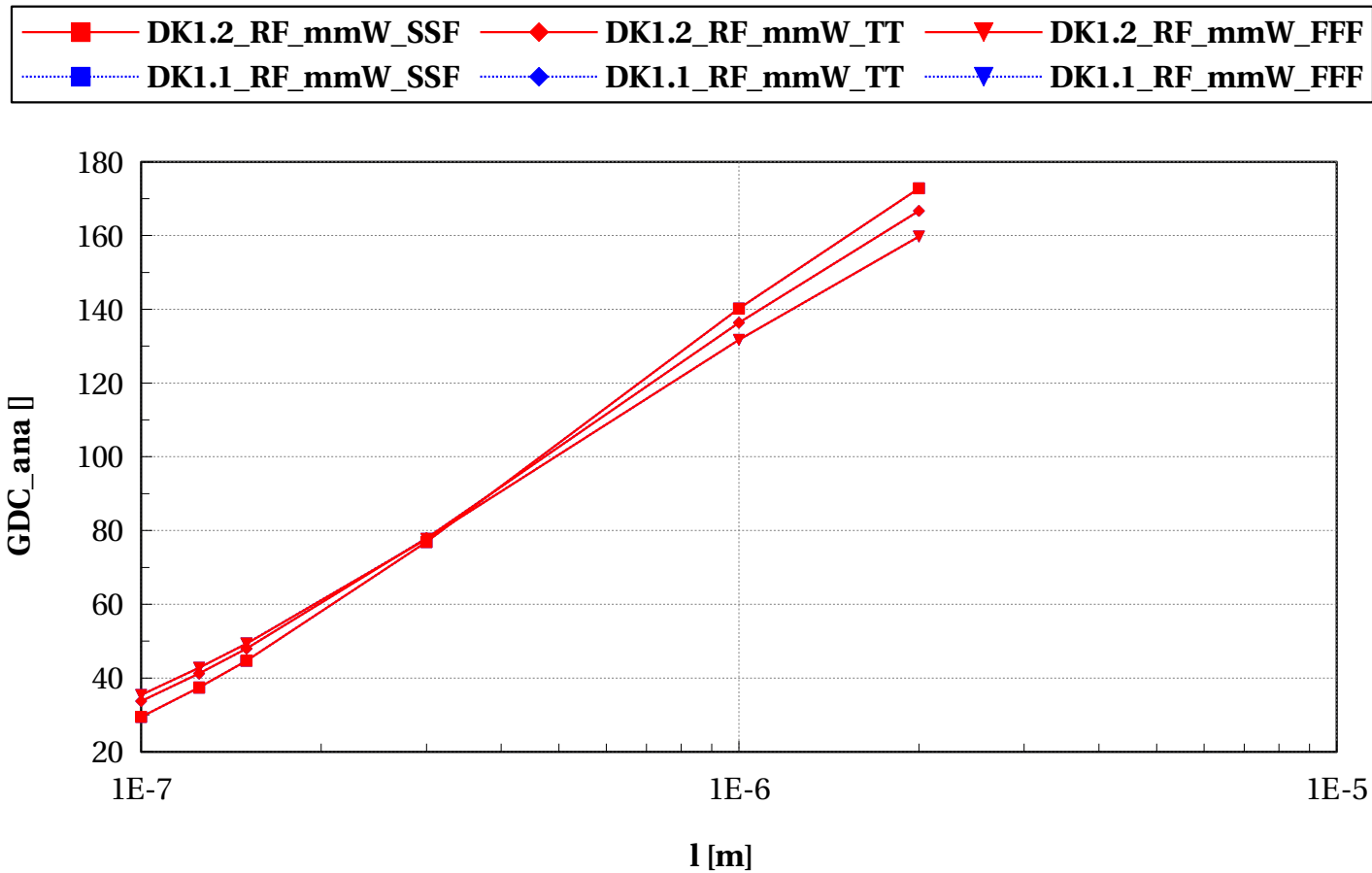
eglvtpfet_rfseg, Gds_ana/W [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



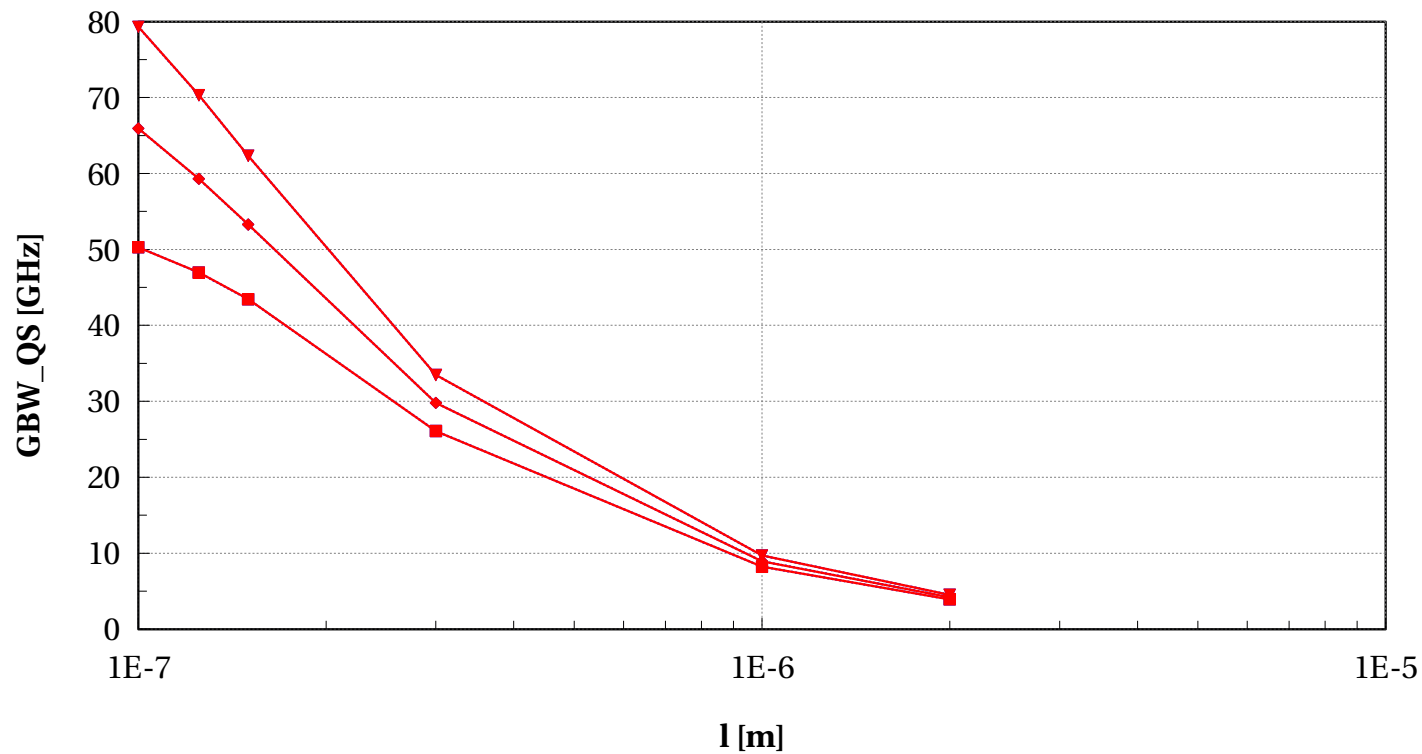
eglvtpfet_rfseg, GDC_ana [] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



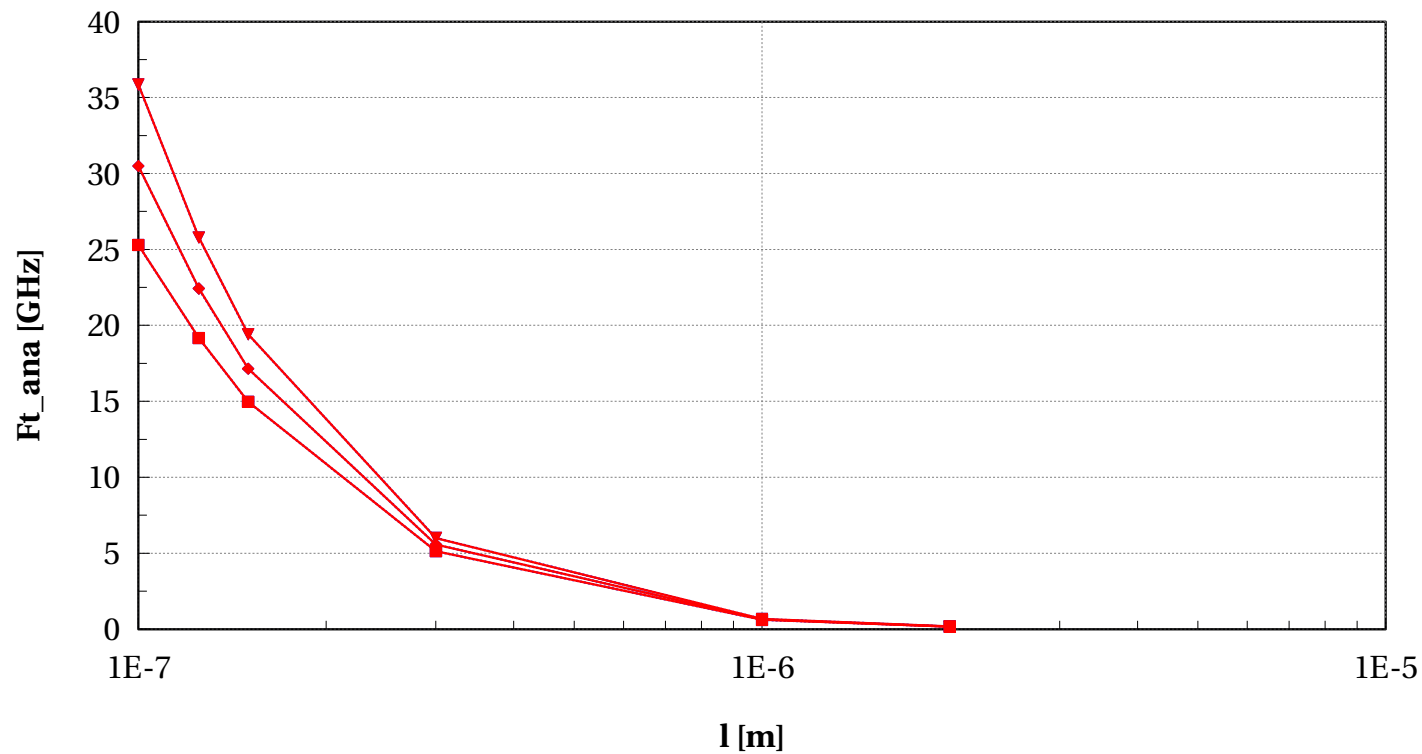
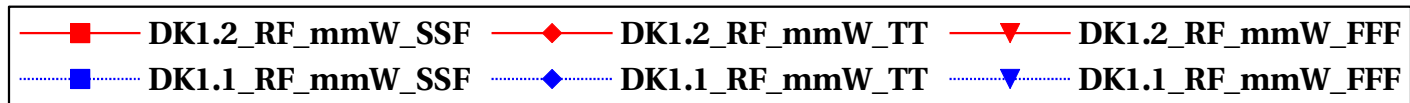
eglvtpfet_rfseg, GBW_QS [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



eglvtpfet_rfseg, Ft_ana [GHz] vs l [m]

(Study=="WScaling_L150n" or Study=="LScaling_W2u") and wfing==2e-6



Annex

Conditions of simulations

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

- Model eglvtnfet_rf (DK1.2_RF_mmW)

- ✓ Input Parameters

- ✗ $v_{ds_ft} = V_{dd}$ V
- ✗ $i_{ana} = 5e-6$ A
- ✗ $v_{ds_cgg} = 0$ V
- ✗ $f_{ext_rg} = 10$ GHz
- ✗ $mc_sens = 0$
- ✗ $v_{ds_lin} = 0.05$ V
- ✗ $i_{vt} = 300e-9$ A
- ✗ $model_version = 1.0.e$
- ✗ $v_{ds_off} = v_{ds_sat}$ V
- ✗ $v_{ds_cgd} = 0$ V
- ✗ $ams_release = 2018.3$
- ✗ $plashrink_iana = 0$
- ✗ $v_{gs_stop} = v_{dd}$ V
- ✗ $dlshrink_i_{vt} = 0$

- ✗ sbenchlsf_release = Alpha
- ✗ vds_sat = Vdd V
- ✗ shrink_iana = 1
- ✗ mc_nsigma = 3
- ✗ shrink_ivt = 1
- ✗ dlshrink_tinv = 0
- ✗ vstep_iana = 0.01 V
- ✗ vgs_start = 0 V
- ✗ plashrink_ivt = 1
- ✗ dlshrink_iana = 0
- ✗ ithslwi = 10e-9 A
- ✗ vds_ana = Vdd/4 V
- ✗ vds_cbd = 0 V
- ✗ vddmax = vdd
- ✗ mc_runs = 500
- ✗ vstep_ivt = 0.005 V
- ✗ vgs_off = 0 V
- ✗ temp = 25 °C
- ✗ f_ext = 100k Hz
- ✗ vbs = 0 V
- ✗ vdd = 1.8 V
- ✗ shrink_tinv = 1
- ✓ Sweep Parameters
- ✓ Extra parameters
 - ✗ eglvt_dev = 1

● Model eglvtnfet_rfseg (DK1.2_RF_mmW)

✓ Input Parameters

- ✗ vds_ft = Vdd V
- ✗ iana = 5e-6 A
- ✗ vds_cgg = 0 V
- ✗ f_ext_rg = 10G Hz
- ✗ mc_sens = 0
- ✗ vds_lin = 0.05 V
- ✗ ivt = 300e-9 A
- ✗ model_version = 1.0.e
- ✗ vds_off = vds_sat V
- ✗ vds_cgd = 0 V
- ✗ ams_release = 2018.3
- ✗ plashrink_iana = 0
- ✗ vgs_stop = vdd V
- ✗ dlshrink_ivt = 0
- ✗ sbenchlsf_release = Alpha
- ✗ vds_sat = Vdd V
- ✗ shrink_iana = 1
- ✗ mc_nsigma = 3
- ✗ shrink_ivt = 1
- ✗ dlshrink_tinv = 0
- ✗ vstep_iana = 0.01 V
- ✗ vgs_start = 0 V
- ✗ plashrink_ivt = 1

- ✗ $\text{dlshrink_iana} = 0$
- ✗ $\text{ithslwi} = 10\text{e-}9 \text{ A}$
- ✗ $\text{vds_ana} = \text{Vdd}/4 \text{ V}$
- ✗ $\text{vds_cbd} = 0 \text{ V}$
- ✗ $\text{vddmax} = \text{vdd}$
- ✗ $\text{mc_runs} = 500$
- ✗ $\text{vstep_ivt} = 0.005 \text{ V}$
- ✗ $\text{vgs_off} = 0 \text{ V}$
- ✗ $\text{temp} = 25 \text{ }^\circ\text{C}$
- ✗ $\text{f_ext} = 100\text{k Hz}$
- ✗ $\text{vbs} = 0 \text{ V}$
- ✗ $\text{vdd} = 1.8 \text{ V}$
- ✗ $\text{shrink_tinv} = 1$
- ✓ Sweep Parameters
- ✓ Extra parameters
 - ✗ $\text{eglv_dev} = 1$
- Model `eglvtpfet_rf` (DK1.2_RF_mmW)
 - ✓ Input Parameters
 - ✗ $\text{vds_ft} = \text{Vdd V}$
 - ✗ $\text{iana} = 2\text{e-}6 \text{ A}$
 - ✗ $\text{vds_cgg} = 0 \text{ V}$
 - ✗ $\text{f_ext_rg} = 10\text{G Hz}$
 - ✗ $\text{mc_sens} = 0$
 - ✗ $\text{vds_lin} = 0.05 \text{ V}$
 - ✗ $\text{ivt} = 70\text{e-}9 \text{ A}$

- ✗ $\text{model_version} = 1.0.e$
- ✗ $\text{vds_off} = \text{vds_sat} \text{ V}$
- ✗ $\text{vds_cgd} = 0 \text{ V}$
- ✗ $\text{ams_release} = 2018.3$
- ✗ $\text{plashrink_iana} = 0$
- ✗ $\text{vgs_stop} = \text{vdd} \text{ V}$
- ✗ $\text{dlshrink_ivt} = 0$
- ✗ $\text{sbenchlsf_release} = \text{Alpha}$
- ✗ $\text{vds_sat} = \text{Vdd} \text{ V}$
- ✗ $\text{shrink_iana} = 1$
- ✗ $\text{mc_nsigma} = 3$
- ✗ $\text{shrink_ivt} = 1$
- ✗ $\text{dlshrink_tinv} = 0$
- ✗ $\text{vstep_iana} = 0.01 \text{ V}$
- ✗ $\text{vgs_start} = 0 \text{ V}$
- ✗ $\text{plashrink_ivt} = 1$
- ✗ $\text{dlshrink_iana} = 0$
- ✗ $\text{ithslwi} = 10e-9 \text{ A}$
- ✗ $\text{vds_ana} = \text{Vdd}/4 \text{ V}$
- ✗ $\text{vds_cbd} = 0 \text{ V}$
- ✗ $\text{vddmax} = \text{vdd}$
- ✗ $\text{mc_runs} = 500$
- ✗ $\text{vstep_ivt} = 0.005 \text{ V}$
- ✗ $\text{vsub1} = 0$
- ✗ $\text{vgs_off} = 0 \text{ V}$

- ✗ temp = 25 °C
- ✗ f_ext = 100k Hz
- ✗ vbs = Vdd V
- ✗ vdd = 1.8 V
- ✗ shrink_tinv = 1
- ✓ Sweep Parameters
- ✓ Extra parameters
 - ✗ eglvt_dev = 1
- Model eglvtpfet_rfseg (DK1.2_RF_mmW)
 - ✓ Input Parameters
 - ✗ vds_ft = Vdd V
 - ✗ iana = 2e-6 A
 - ✗ vds_cgg = 0 V
 - ✗ f_ext_rg = 10G Hz
 - ✗ mc_sens = 0
 - ✗ vds_lin = 0.05 V
 - ✗ ivt = 70e-9 A
 - ✗ model_version = 1.0.e
 - ✗ vds_off = vds_sat V
 - ✗ vds_cgd = 0 V
 - ✗ ams_release = 2018.3
 - ✗ plashrink_iana = 0
 - ✗ vgs_stop = vdd V
 - ✗ dlshrink_ivt = 0
 - ✗ sbenchlsf_release = Alpha

- ✗ $v_{ds_sat} = V_{dd}$ V
- ✗ $shrink_iana = 1$
- ✗ $mc_nsigma = 3$
- ✗ $shrink_ivt = 1$
- ✗ $dlshrink_tinv = 0$
- ✗ $vstep_iana = 0.01$ V
- ✗ $vgs_start = 0$ V
- ✗ $plashrink_ivt = 1$
- ✗ $dlshrink_iana = 0$
- ✗ $ithslwi = 10e-9$ A
- ✗ $vds_ana = V_{dd}/4$ V
- ✗ $vds_cbd = 0$ V
- ✗ $vddmax = vdd$
- ✗ $mc_runs = 500$
- ✗ $vstep_ivt = 0.005$ V
- ✗ $vsub1 = 0$
- ✗ $vgs_off = 0$ V
- ✗ $temp = 25$ °C
- ✗ $f_ext = 100k$ Hz
- ✗ $vbs = V_{dd}$ V
- ✗ $vdd = 1.8$ V
- ✗ $shrink_tinv = 1$
- ✓ Sweep Parameters
- ✓ Extra parameters
 - ✗ $eglv_dev = 1$

● Model eglvtnfet_rf (DK1.1_RF_mmW)

✓ Input Parameters

- ✗ vds_ft = Vdd V
- ✗ iana = 5e-6 A
- ✗ vds_cgg = 0 V
- ✗ f_ext_rg = 10G Hz
- ✗ mc_sens = 0
- ✗ vds_lin = 0.05 V
- ✗ ivt = 300e-9 A
- ✗ model_version = 1.0.d
- ✗ vds_off = vds_sat V
- ✗ vds_cgd = 0 V
- ✗ ams_release = 2018.3
- ✗ plashrink_iana = 0
- ✗ vgs_stop = vdd V
- ✗ dlshrink_ivt = 0
- ✗ sbenchlsf_release = Alpha
- ✗ vds_sat = Vdd V
- ✗ shrink_iana = 1
- ✗ mc_nsigma = 3
- ✗ shrink_ivt = 1
- ✗ dlshrink_tinv = 0
- ✗ vstep_iana = 0.01 V
- ✗ vgs_start = 0 V
- ✗ plashrink_ivt = 1

- ✗ $\text{dlshrink_iana} = 0$
- ✗ $\text{ithslwi} = 10\text{e-}9 \text{ A}$
- ✗ $\text{vds_ana} = \text{Vdd}/4 \text{ V}$
- ✗ $\text{vds_cbd} = 0 \text{ V}$
- ✗ $\text{vddmax} = \text{vdd}$
- ✗ $\text{mc_runs} = 500$
- ✗ $\text{vstep_ivt} = 0.005 \text{ V}$
- ✗ $\text{vgs_off} = 0 \text{ V}$
- ✗ $\text{temp} = 25 \text{ }^\circ\text{C}$
- ✗ $\text{f_ext} = 100\text{k Hz}$
- ✗ $\text{vbs} = 0 \text{ V}$
- ✗ $\text{vdd} = 1.8 \text{ V}$
- ✗ $\text{shrink_tinv} = 1$
- ✓ Sweep Parameters
- ✓ Extra parameters
 - ✗ $\text{eglv_dev} = 0$
 - ✗ $\text{gflag_noisedev_eglv_cmos028fdsoi} = 0$
- Model eglvtnfet_rfseg (DK1.1_RF_mmW)
 - ✓ Input Parameters
 - ✗ $\text{vds_ft} = \text{Vdd V}$
 - ✗ $\text{iana} = 5\text{e-}6 \text{ A}$
 - ✗ $\text{vds_cgg} = 0 \text{ V}$
 - ✗ $\text{f_ext_rg} = 10\text{G Hz}$
 - ✗ $\text{mc_sens} = 0$
 - ✗ $\text{vds_lin} = 0.05 \text{ V}$

- ✗ $ivt = 300e-9 \text{ A}$
- ✗ $model_version = 1.0.d$
- ✗ $vds_off = vds_sat \text{ V}$
- ✗ $vds_cgd = 0 \text{ V}$
- ✗ $ams_release = 2018.3$
- ✗ $plashrink_iana = 0$
- ✗ $vgs_stop = vdd \text{ V}$
- ✗ $dlshrink_ivt = 0$
- ✗ $sbenchlsf_release = \text{Alpha}$
- ✗ $vds_sat = Vdd \text{ V}$
- ✗ $shrink_iana = 1$
- ✗ $mc_nsigma = 3$
- ✗ $shrink_ivt = 1$
- ✗ $dlshrink_tinv = 0$
- ✗ $vstep_iana = 0.01 \text{ V}$
- ✗ $vgs_start = 0 \text{ V}$
- ✗ $plashrink_ivt = 1$
- ✗ $dlshrink_iana = 0$
- ✗ $ithslwi = 10e-9 \text{ A}$
- ✗ $vds_ana = Vdd/4 \text{ V}$
- ✗ $vds_cbd = 0 \text{ V}$
- ✗ $vddmax = vdd$
- ✗ $mc_runs = 500$
- ✗ $vstep_ivt = 0.005 \text{ V}$
- ✗ $vgs_off = 0 \text{ V}$

- ✗ temp = 25 °C
- ✗ f_ext = 100k Hz
- ✗ vbs = 0 V
- ✗ vdd = 1.8 V
- ✗ shrink_tinv = 1
- ✓ Sweep Parameters
- ✓ Extra parameters
 - ✗ eglvt_dev = 0
 - ✗ gflag__noisedev__eglvt__cmos028fdsoi = 0
- Model eglvtpfet_rf (DK1.1_RF_mmW)
 - ✓ Input Parameters
 - ✗ vds_ft = Vdd V
 - ✗ iana = 2e-6 A
 - ✗ vds_cgg = 0 V
 - ✗ f_ext_rg = 10G Hz
 - ✗ mc_sens = 0
 - ✗ vds_lin = 0.05 V
 - ✗ ivt = 70e-9 A
 - ✗ model_version = 1.0.d
 - ✗ vds_off = vds_sat V
 - ✗ vds_cgd = 0 V
 - ✗ ams_release = 2018.3
 - ✗ plashrink_iana = 0
 - ✗ vgs_stop = vdd V
 - ✗ dlshrink_ivt = 0

- ✗ sbenchlsf_release = Alpha
- ✗ vds_sat = Vdd V
- ✗ shrink_iana = 1
- ✗ mc_nsigma = 3
- ✗ shrink_ivt = 1
- ✗ dlshrink_tinv = 0
- ✗ vstep_iana = 0.01 V
- ✗ vgs_start = 0 V
- ✗ plashrink_ivt = 1
- ✗ dlshrink_iana = 0
- ✗ ithslwi = 10e-9 A
- ✗ vds_ana = Vdd/4 V
- ✗ vds_cbd = 0 V
- ✗ vddmax = vdd
- ✗ mc_runs = 500
- ✗ vstep_ivt = 0.005 V
- ✗ vsub1 = 0
- ✗ vgs_off = 0 V
- ✗ temp = 25 °C
- ✗ f_ext = 100k Hz
- ✗ vbs = Vdd V
- ✗ vdd = 1.8 V
- ✗ shrink_tinv = 1
- ✓ Sweep Parameters
- ✓ Extra parameters

- ✗ `eglv_t_dev = 0`
- ✗ `gflag__noisedev__eglv_t_cmos028fdsoi = 0`
- Model `eglvtpfet_rfseg` (DK1.1_RF_mmW)
 - ✓ Input Parameters
 - ✗ `vds_ft = Vdd V`
 - ✗ `iana = 2e-6 A`
 - ✗ `vds_cgg = 0 V`
 - ✗ `f_ext_rg = 10G Hz`
 - ✗ `mc_sens = 0`
 - ✗ `vds_lin = 0.05 V`
 - ✗ `ivt = 70e-9 A`
 - ✗ `model_version = 1.0.d`
 - ✗ `vds_off = vds_sat V`
 - ✗ `vds_cgd = 0 V`
 - ✗ `ams_release = 2018.3`
 - ✗ `plashrink_iana = 0`
 - ✗ `vgs_stop = vdd V`
 - ✗ `dlshrink_ivt = 0`
 - ✗ `sbenchlsf_release = Alpha`
 - ✗ `vds_sat = Vdd V`
 - ✗ `shrink_iana = 1`
 - ✗ `mc_nsigma = 3`
 - ✗ `shrink_ivt = 1`
 - ✗ `dlshrink_tinv = 0`
 - ✗ `vstep_iana = 0.01 V`

- ✗ $v_{gs_start} = 0\text{ V}$
- ✗ $plashrink_ivt = 1$
- ✗ $dlshrink_iana = 0$
- ✗ $ithslwi = 10e-9\text{ A}$
- ✗ $v_{ds_ana} = V_{dd}/4\text{ V}$
- ✗ $v_{ds_cbd} = 0\text{ V}$
- ✗ $v_{ddmax} = v_{dd}$
- ✗ $mc_runs = 500$
- ✗ $v_{step_ivt} = 0.005\text{ V}$
- ✗ $v_{sub1} = 0$
- ✗ $v_{gs_off} = 0\text{ V}$
- ✗ $temp = 25\text{ }^{\circ}\text{C}$
- ✗ $f_{ext} = 100\text{ k Hz}$
- ✗ $v_{bs} = V_{dd}\text{ V}$
- ✗ $v_{dd} = 1.8\text{ V}$
- ✗ $shrink_tinv = 1$
- ✓ Sweep Parameters
- ✓ Extra parameters
 - ✗ $egltv_dev = 0$
 - ✗ $gflag_noisedev_egltv_cmos028fdsoi = 0$