cmos028fdsoi Technology

Resistors models

DK1.2_RF_mmW

Comparison with DK1.1_RF_mmW model(s)

Please use the bookmark to navigate

General information on Resistors models

- Maximum supply voltage is - V.
- Validity domain is defined as follows:
  - ✔ Drawn gate length varies from 0.4um to 100um.
  - ✔ Drawn transistor width varies from 0.15um to 10um.
  - ✔ Device temperature varies from -40 °C to 125 °C.

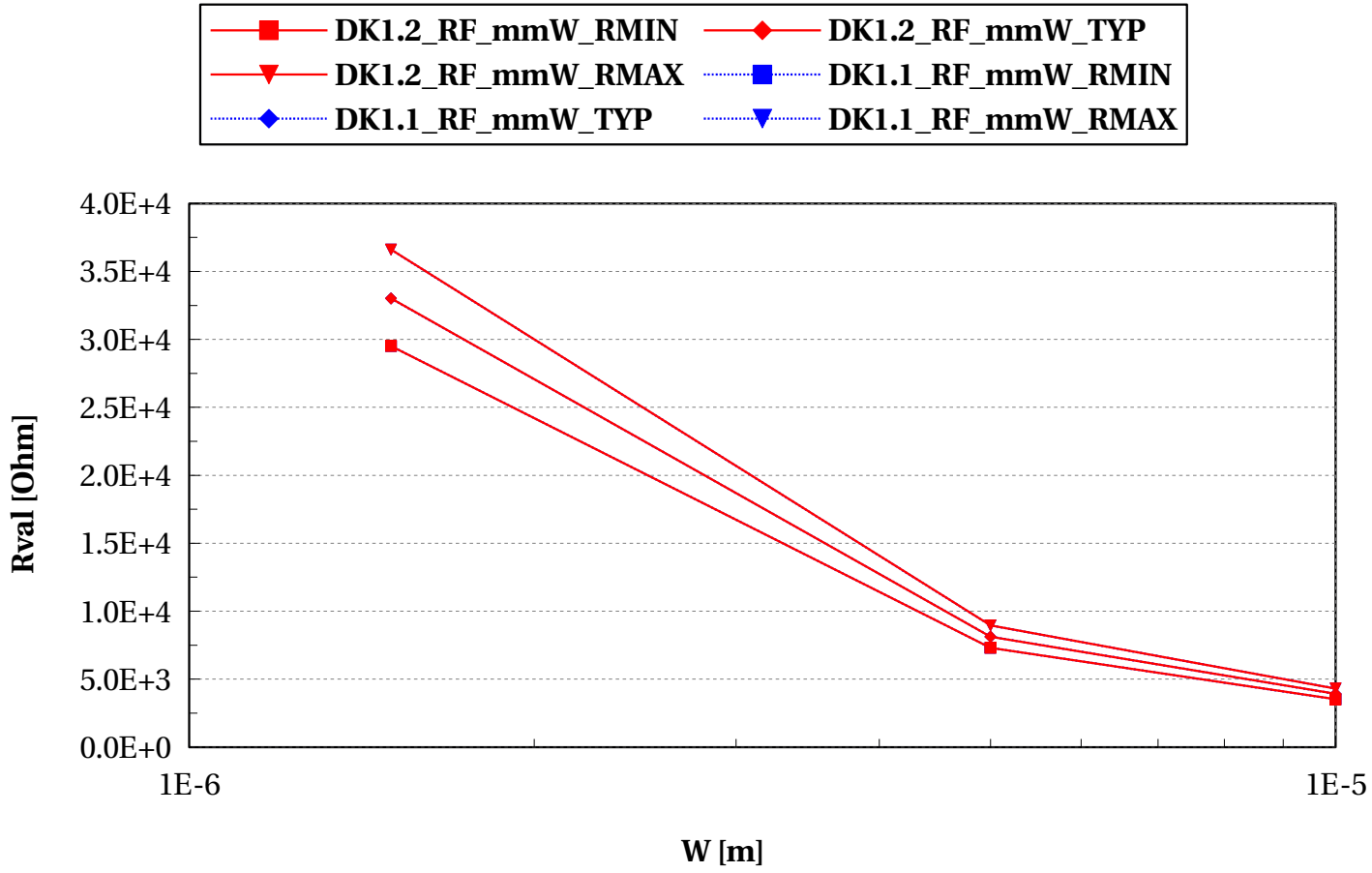
Output parameters definitions

- Model(s): nwres
  - ✔ Rval : Resistance at Vres = 50e-3V

nwres
Electrical characteristics scaling

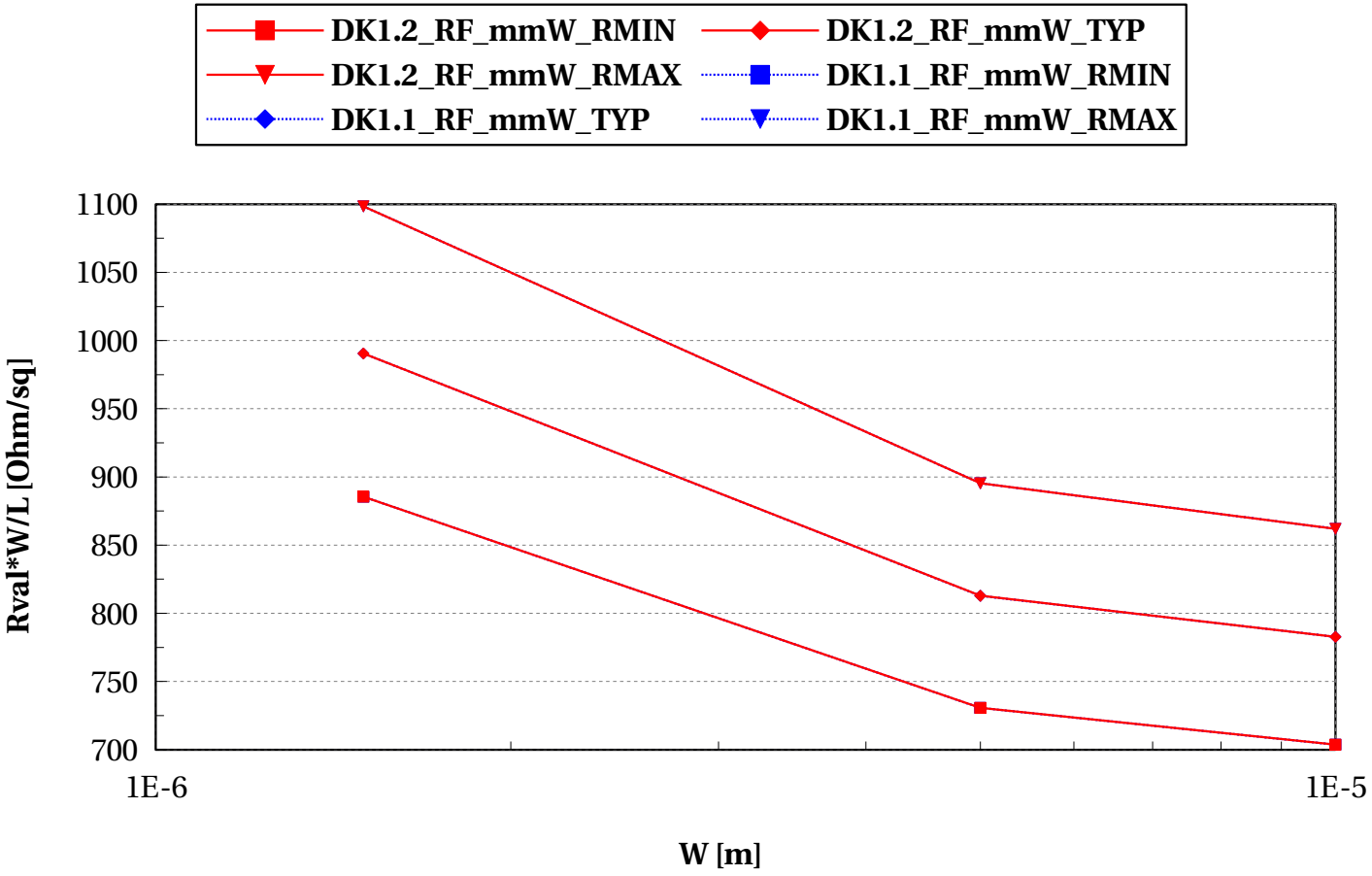
nwres, Rval [Ohm] vs W [m]

Temp==25 and Vres==50e-3 and l==50e-6 and w>0.18e-6

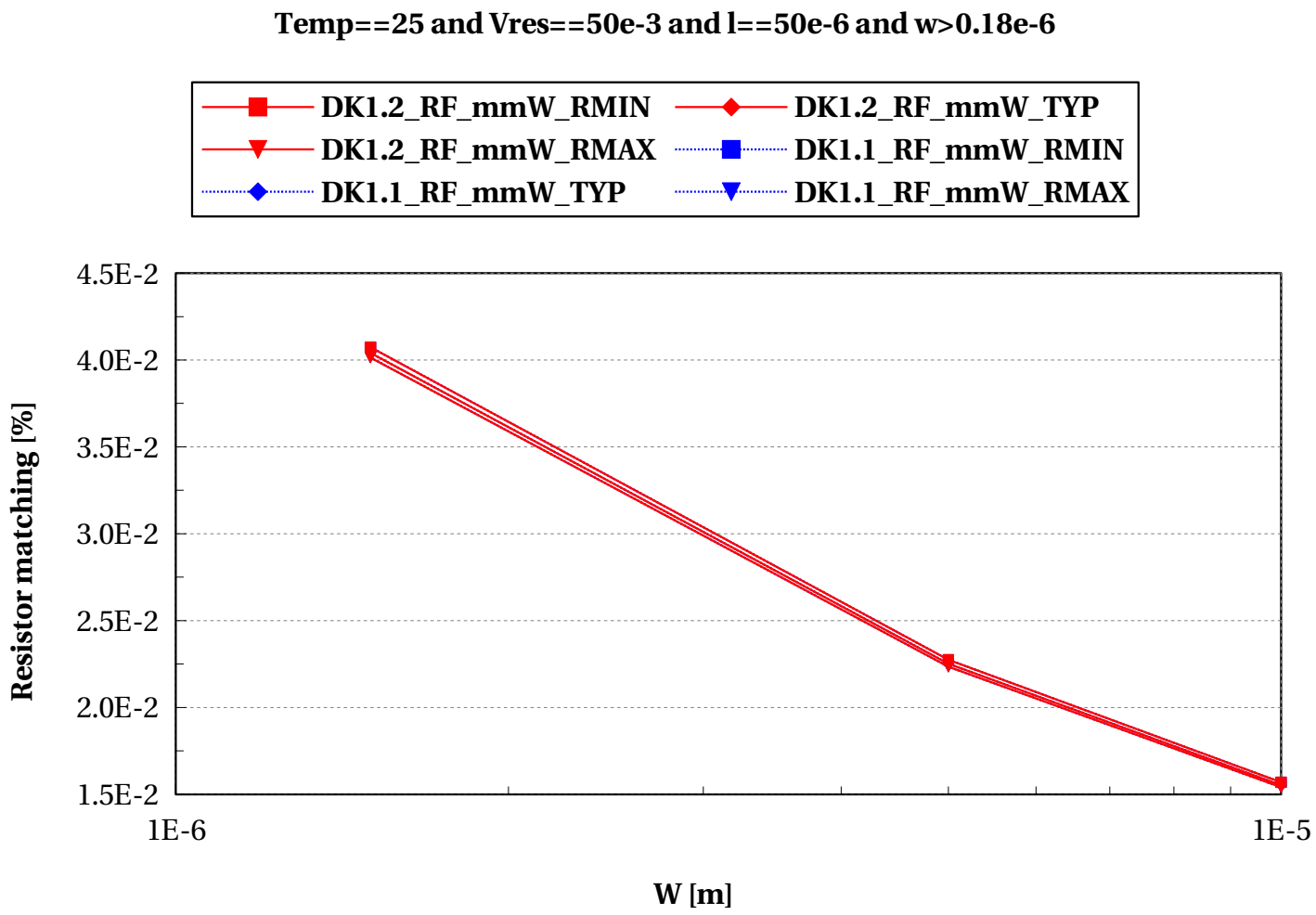


nwres, Rval*W/L [Ohm/sq] vs W [m]

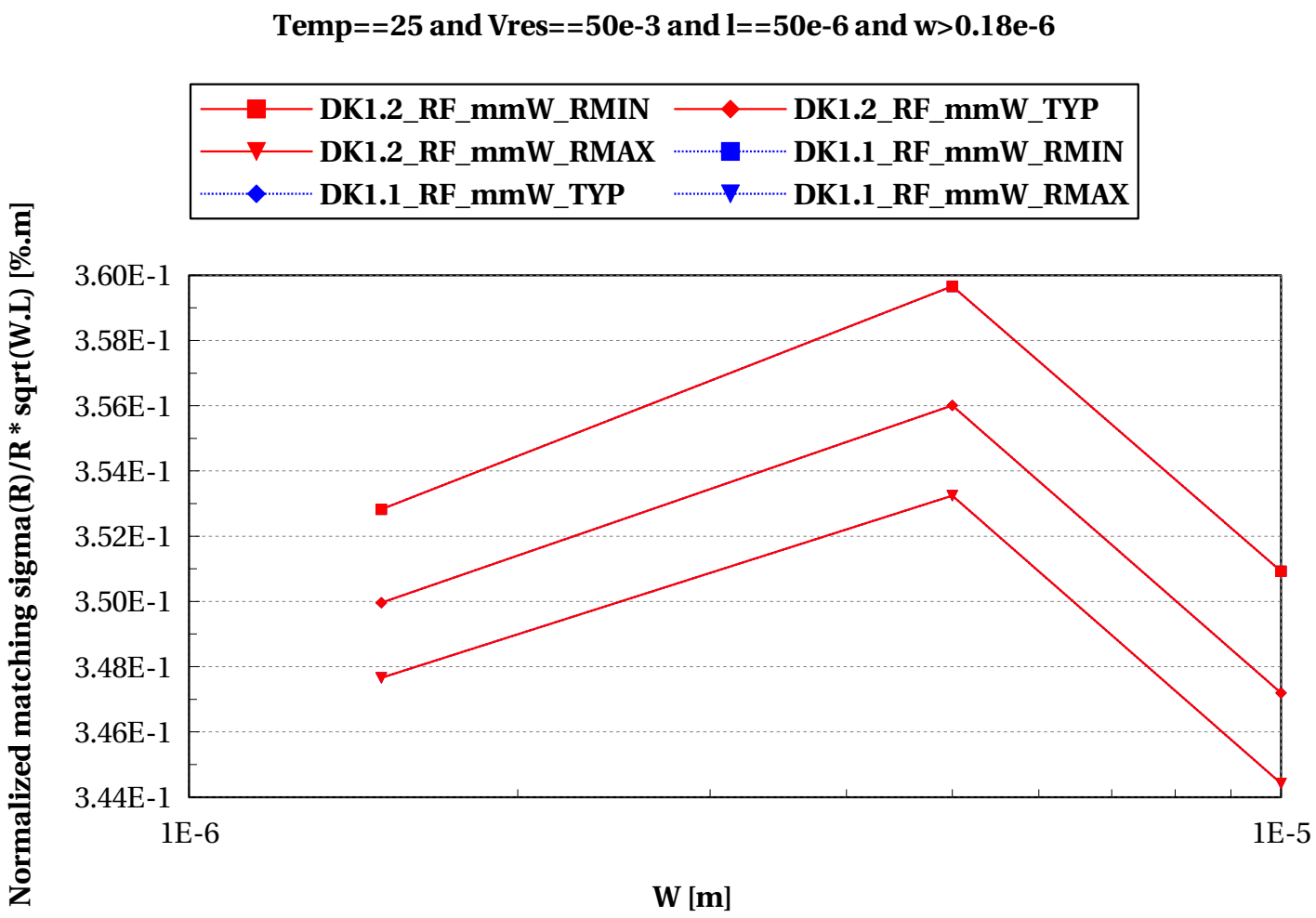
Temp==25 and Vres==50e-3 and l==50e-6 and w>0.18e-6



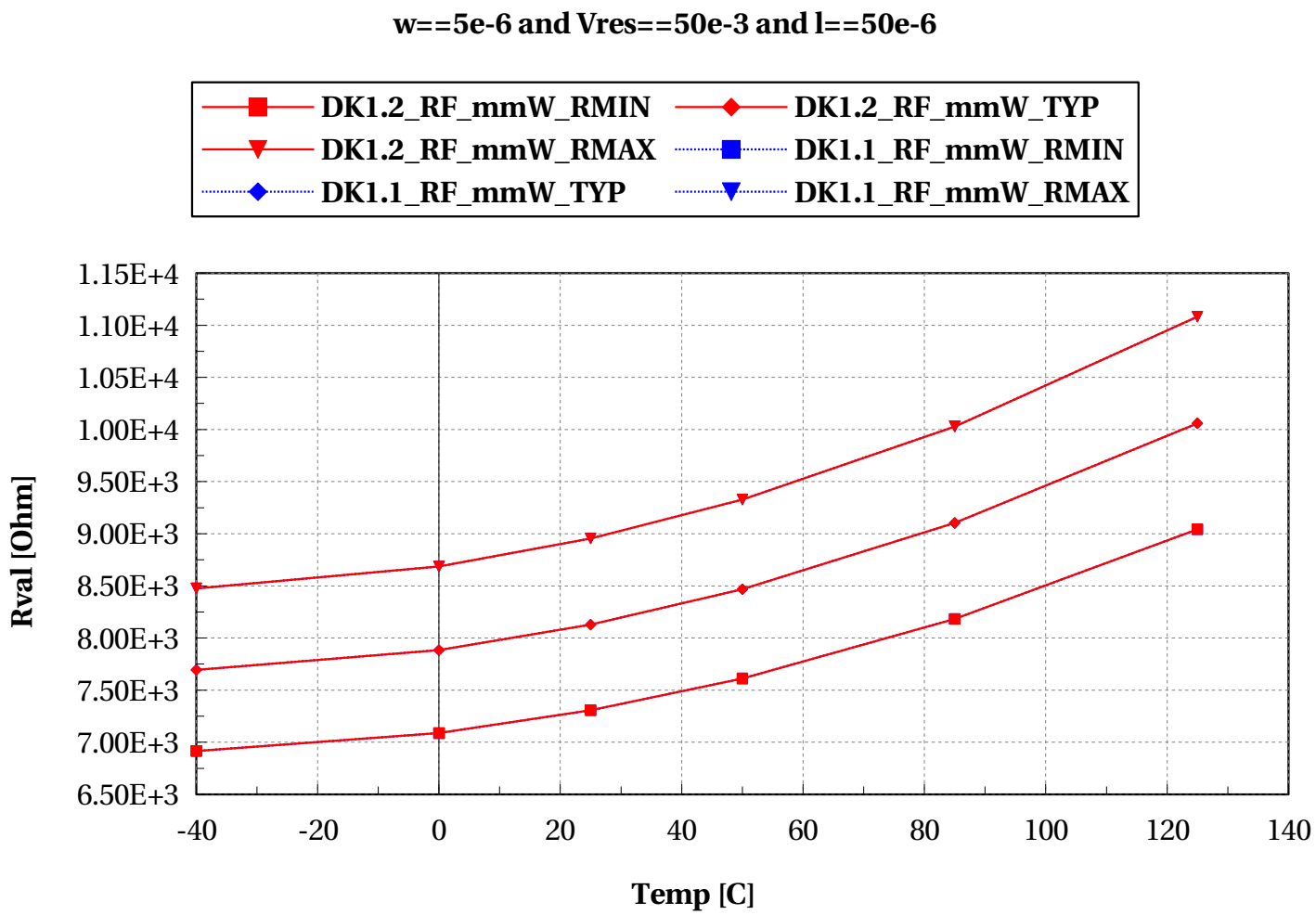
nwres, Resistor matching [%] vs W [m]



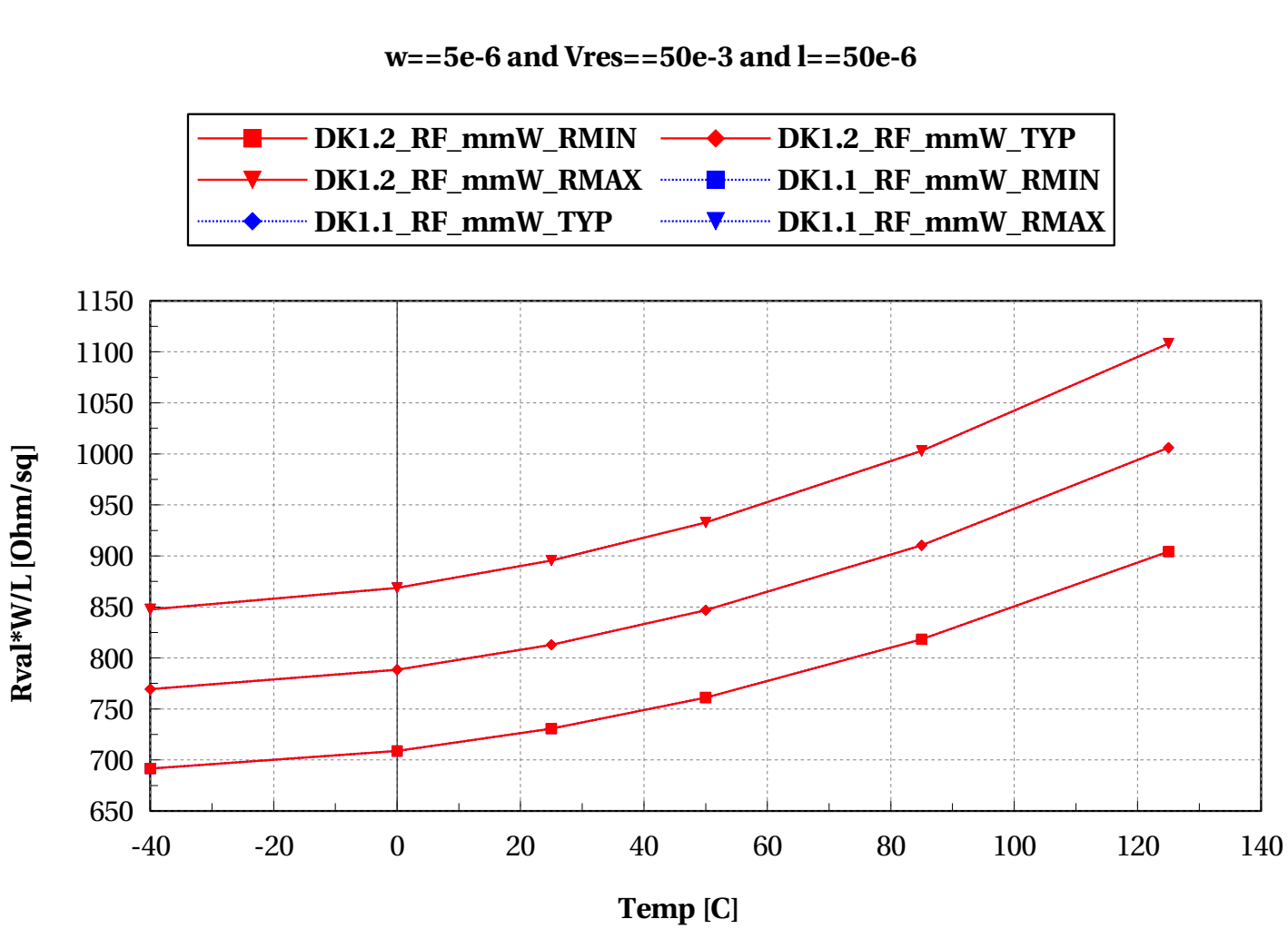
nwres, Normalized matching sigma(R)/R * sqrt(W.L) [%.m] vs W [m]



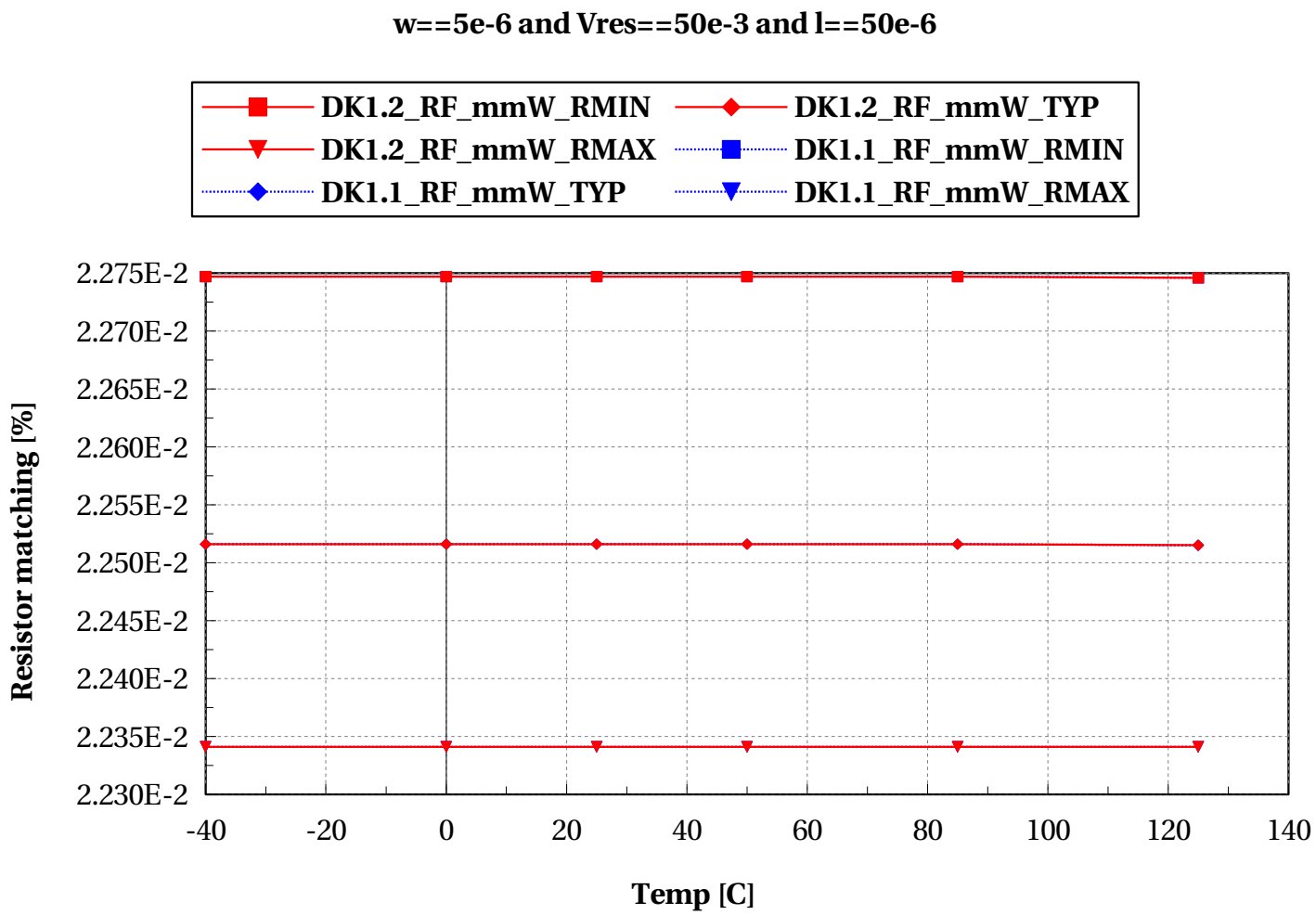
nwres, Rval [Ohm] vs Temp [C]



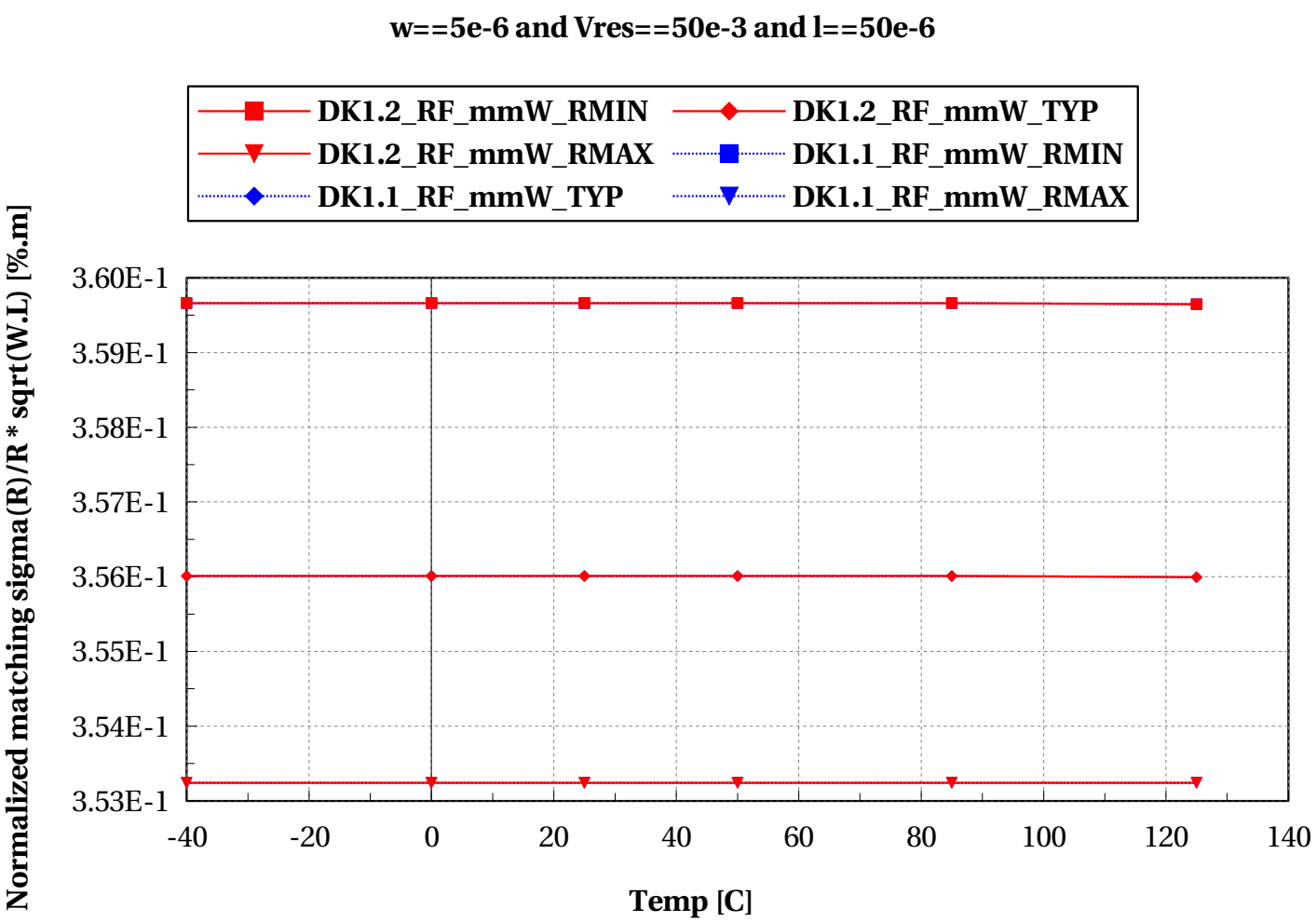
nwres, Rval*W/L [Ohm/sq] vs Temp [C]



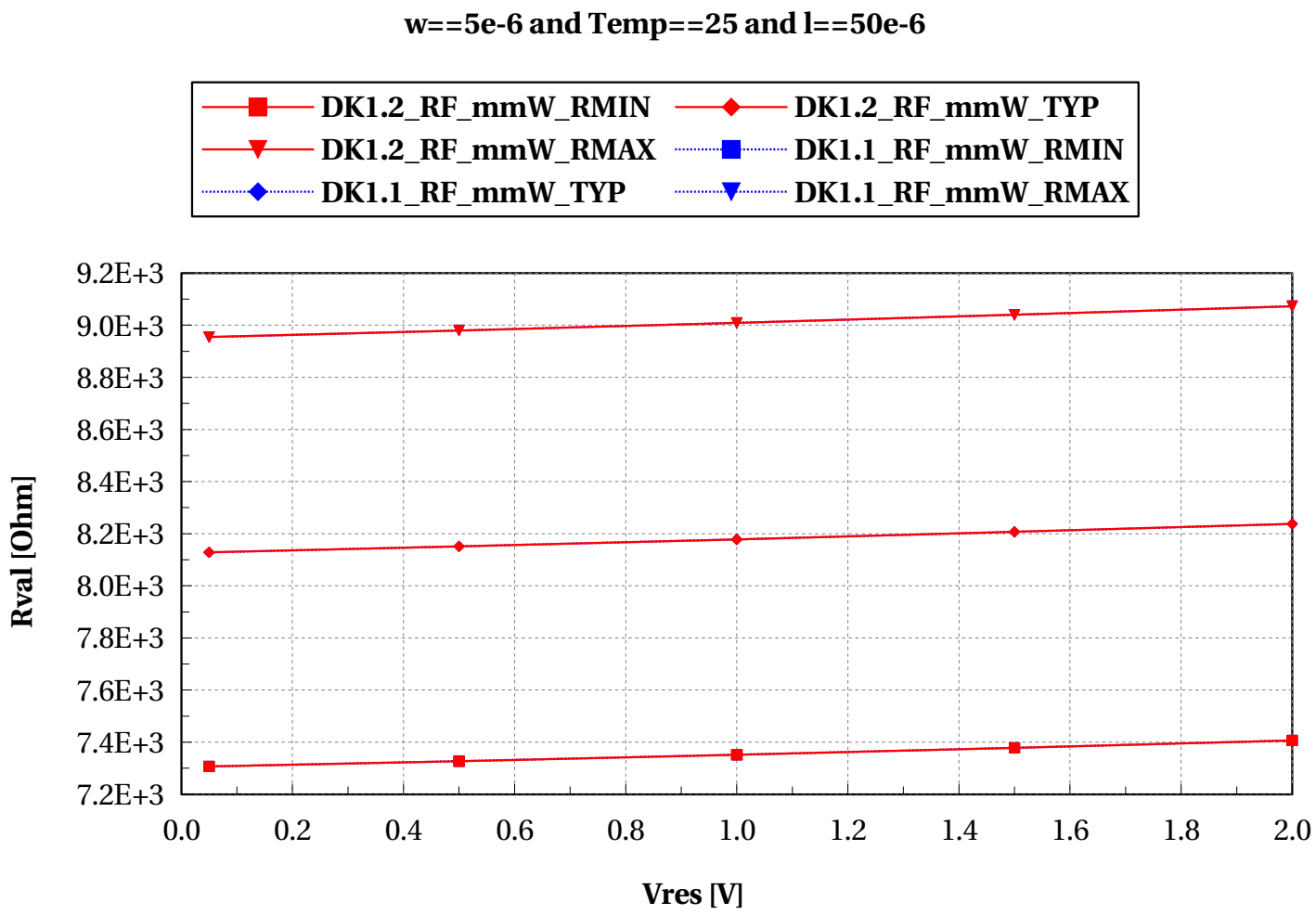
nwres, Resistor matching [%] vs Temp [C]



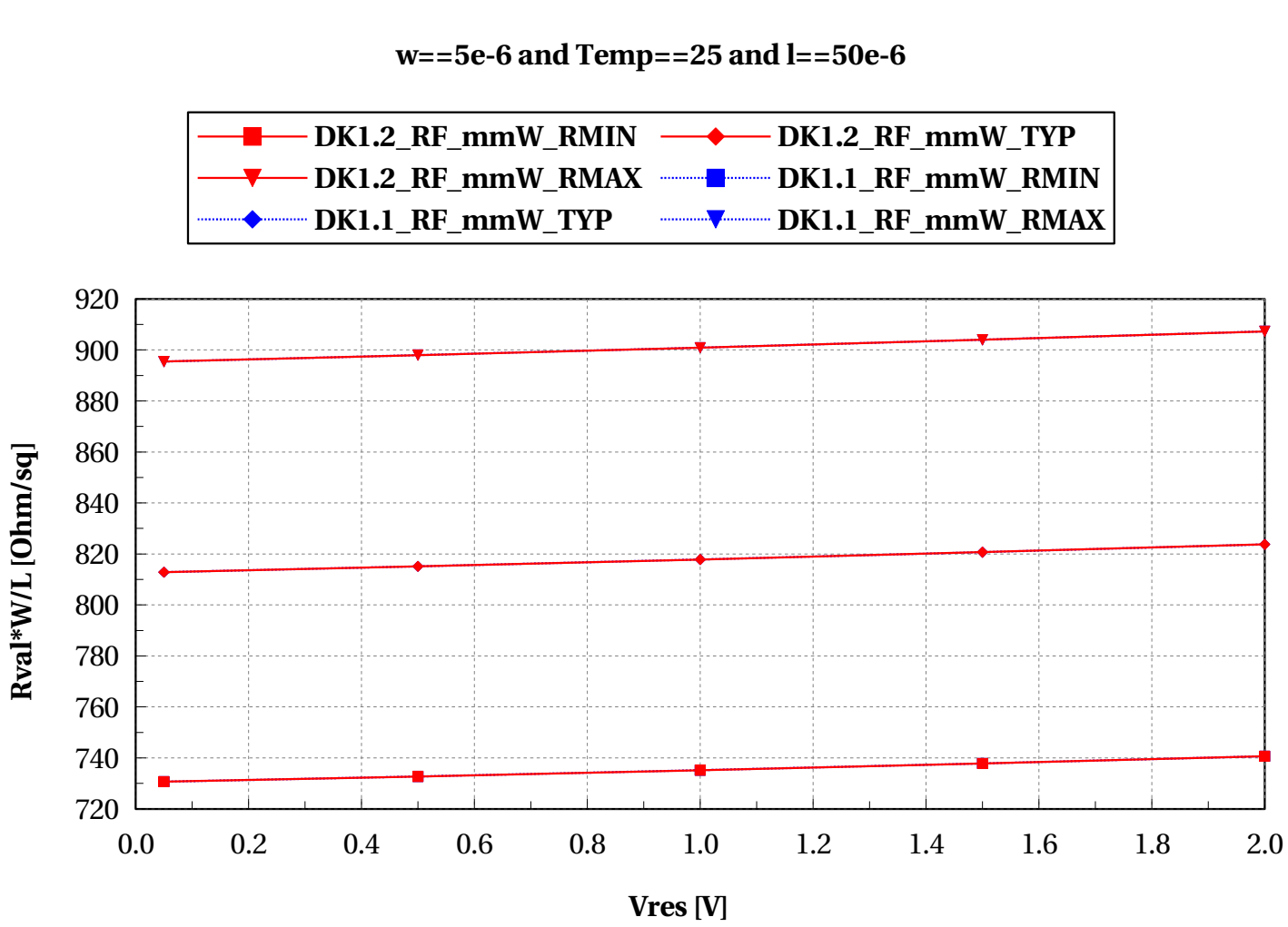
nwres, Normalized matching sigma(R)/R * sqrt(W.L) [%.m] vs Temp [C]



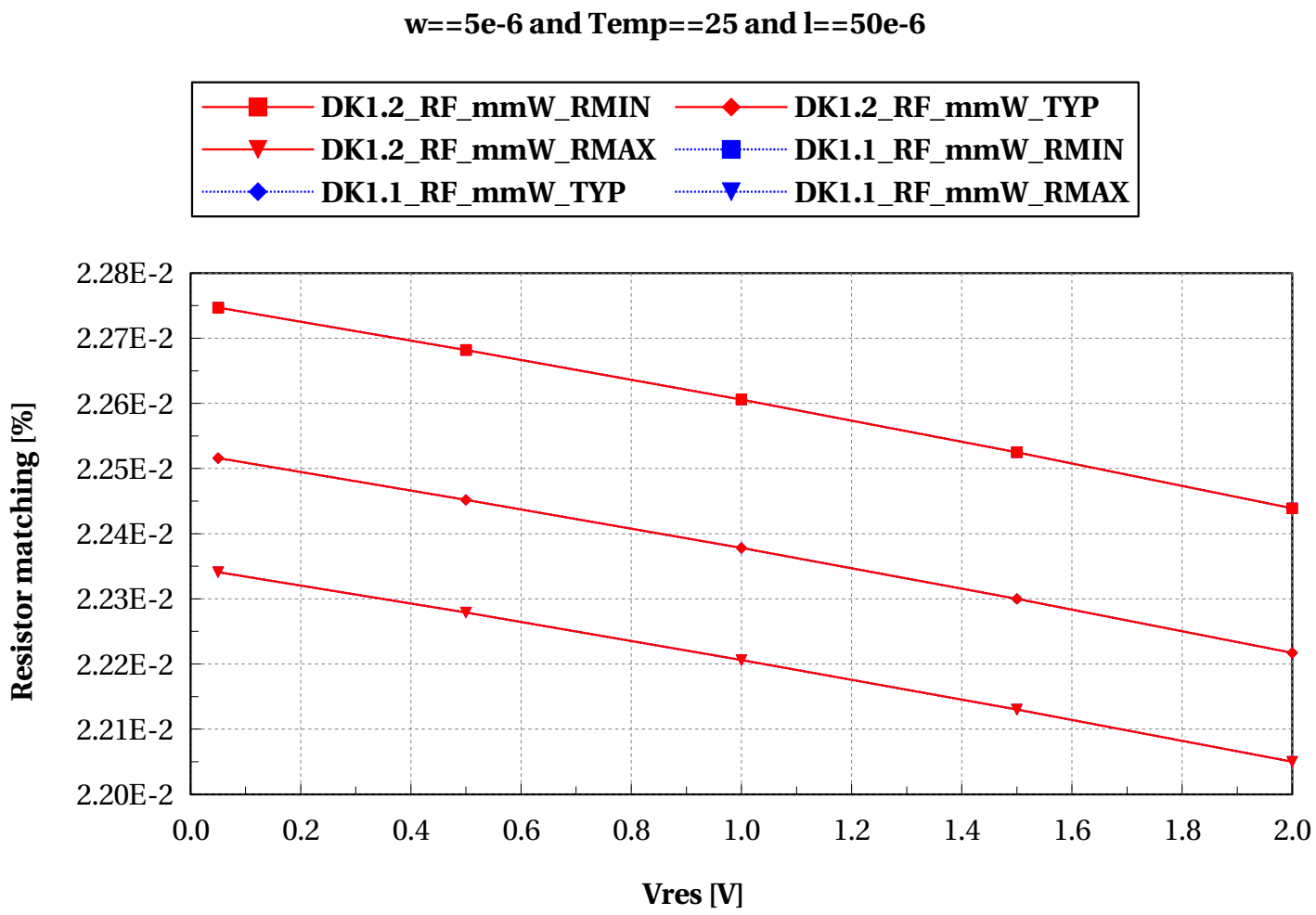
nwres, Rval [Ohm] vs Vres [V]



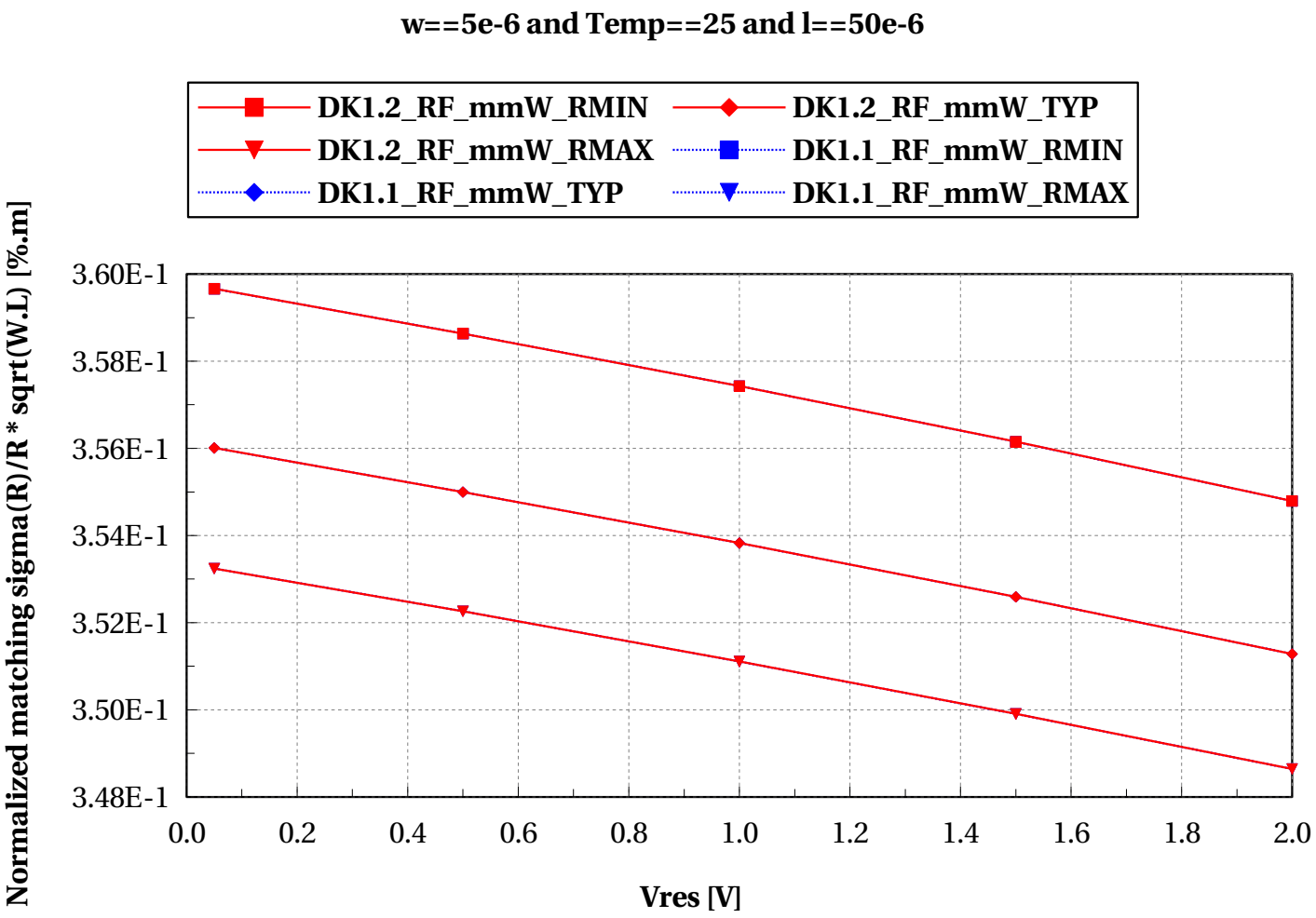
nwres, Rval*W/L [Ohm/sq] vs Vres [V]



nwres, Resistor matching [%] vs Vres [V]



nwres, Normalized matching sigma(R)/R * sqrt(W.L) [%.m] vs Vres [V]



Annex

Conditions of simulations

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

- Model nwres (DK1.2_RF_mmW)
  - ✔ Input Parameters
    - ✘ mc_runs = 1000
    - ✘ vsub1 = 0
    - ✘ temp = 25 °C
    - ✘ vres = 50e-3 V
    - ✘ mc_sens = 0
    - ✘ sbenchlsf_release = Alpha
    - ✘ ams_release = 2018.3
    - ✘ model_version = 1.3.a
    - ✘ mc_nsigma = 3
  - ✔ Sweep Parameters
    - ✘ vres = 0.05, 0.5, 1.0, 1.5, 2.0
    - ✘ temp = 25.0, -40.0, 0.0, 50.0, 85.0, 125.0
  - ✔ Extra parameters
    - ✘ rnwell_dev = 1

- Model nwres (DK1.1_RF_mmW)
  - ✔ Input Parameters
    - ✘ mc_runs = 1000
    - ✘ vsub1 = 0
    - ✘ temp = 25 °C
    - ✘ vres = 50e-3 V
    - ✘ mc_sens = 0
    - ✘ sbenchlsf_release = Alpha
    - ✘ ams_release = 2018.3
    - ✘ model_version = 1.3.a
    - ✘ mc_nsigma = 3
  - ✔ Sweep Parameters
    - ✘ vres = 0.05, 0.5, 1.0, 1.5, 2.0
    - ✘ temp = 25.0, -40.0, 0.0, 50.0, 85.0, 125.0
  - ✔ Extra parameters
    - ✘ rnwell_dev = 1