CMOS090 technology
DIODE25 models
DK_MIKRON

SPICE Models Benchmarks

June 2010

TR&D / STD / T2D /

Modeling / CM2A

General information on DIODE25 models

Supply voltage (Vdd) is 2.5 V.

Validity domain is defined as follows:

Device temperature varies from -40 ˚C to 150 ˚C.

Vgs, Vds and Vbs vary from 0 V to 2.75 V (i.e. Vdd + 10%).

Conditions of simulation

Simulations were done with Bench v3.6.3sram using Eldo simulator v6.7_1.2.

If not explicitly mentioned elsewhere, temperature is set to temp ° C and Vbs to 0 V.

Output parameters definition

In what follows, M, W and L (all default to 1) designate the number of devices in parallel (i.e. multiplication factor), the total drawn gate width and the drawn gate length, respectively.

- **Cj:** Junction diode capacitance at Vr = 0 V, f = 100k Hz.
- **Ij:** Junction diode leakage current at Vr = 2.5 V.

DNSVT25

Electrical characteristics per geometry

dnsvt25 area=30800 pj=720 @ temp=25

	DIODE25_SLOW	DIODE25_TYP	DIODE25_FAST
Cj [pF]	30.48	27.706	24.932
Ij [fA]	10.214	102.14	1021.4

dnsvt25 area=17820 pj=12042 @ temp=25

	DIODE25_SLOW	DIODE25_TYP	DIODE25_FAST
Cj [pF]	18.332	16.611	14.889
Ij [fA]	127.36	1273.6	12736

DPSVT25

Electrical characteristics per geometry

dpsvt25 area=30800 pj=720 @ temp=25

	DIODE25_SLOW	DIODE25_TYP	DIODE25_FAST
Cj [pF]	33.864	30.782	27.7
Ij [fA]	10.165	101.65	1016.5

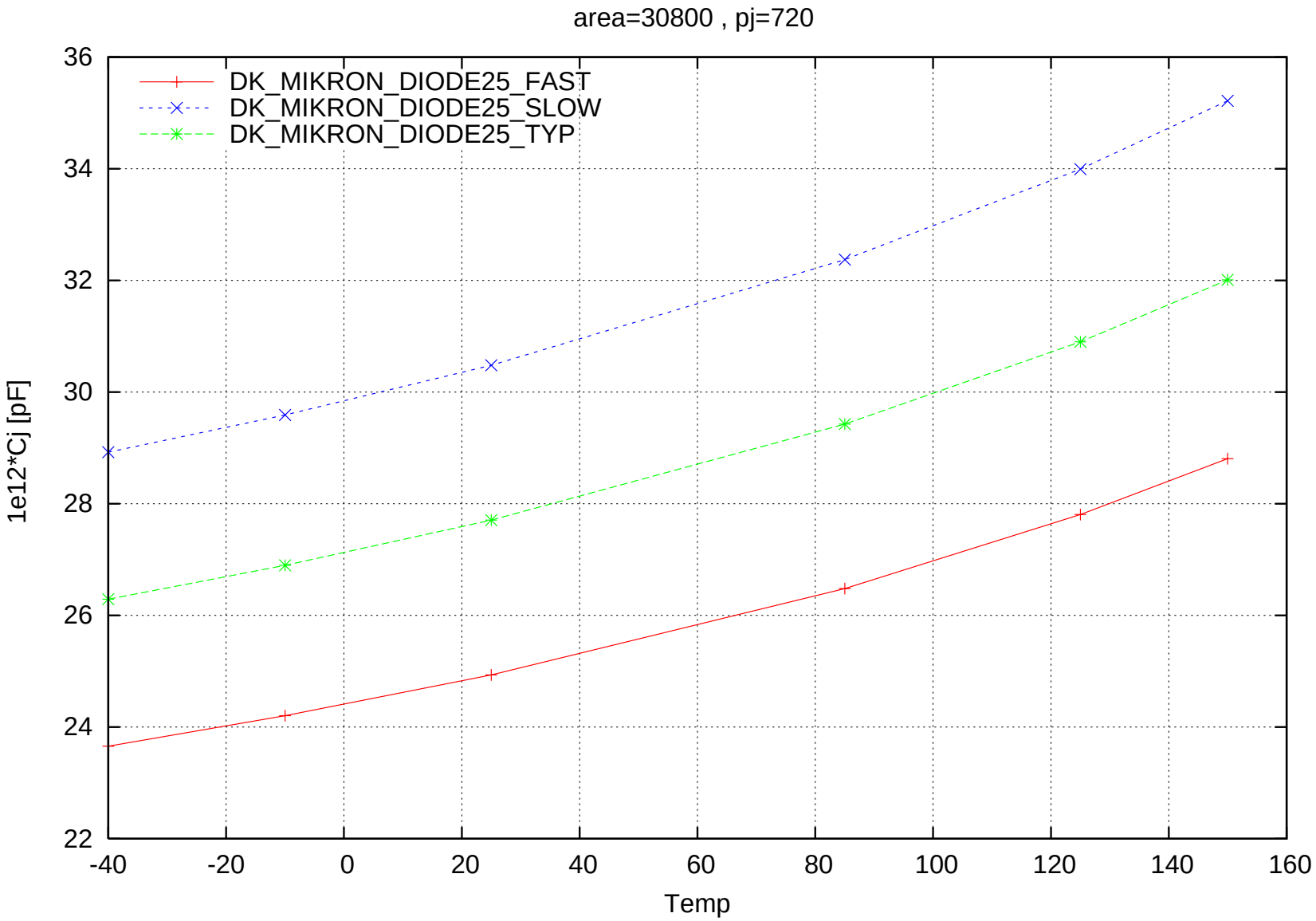
dpsvt25 area=17820 pj=12042 @ temp=25

	DIODE25_SLOW	DIODE25_TYP	DIODE25_FAST
Cj [pF]	20.289	18.39	16.491
Ij [fA]	84.694	846.94	8469.4

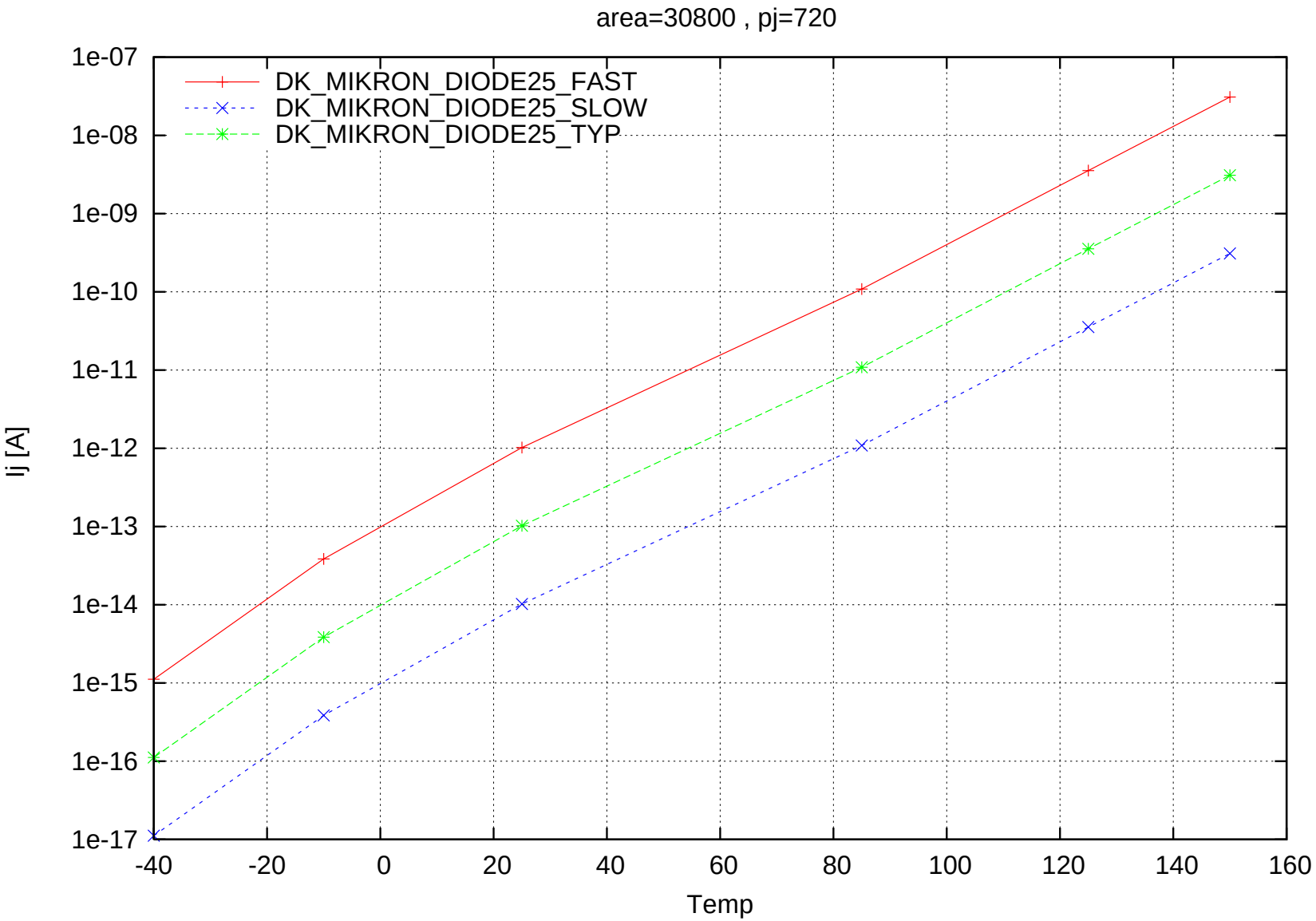
DNSVT25

Electrical characteristics scaling

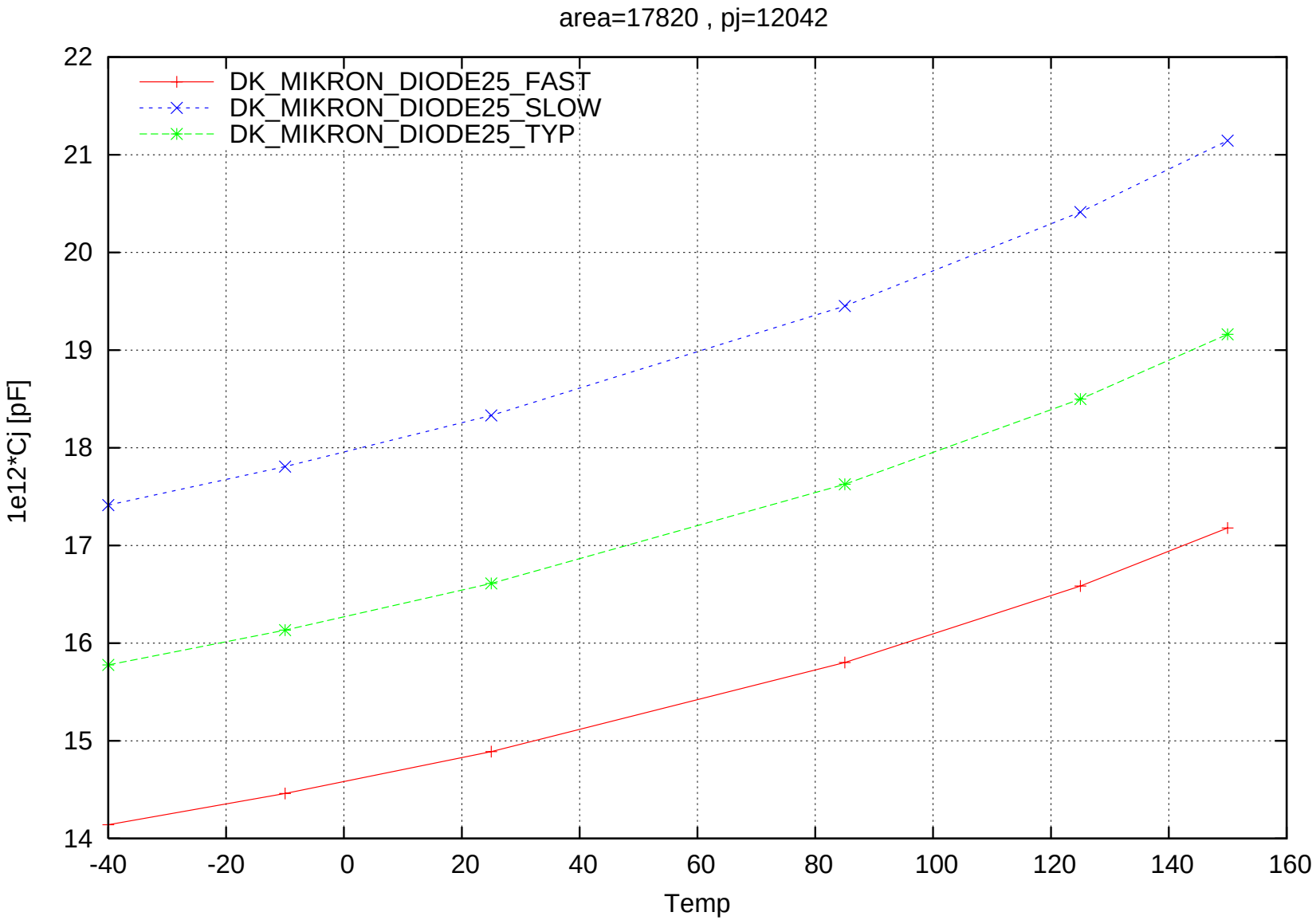
dnsvt25 1e12*Cj [pF] vs. Temp , area=30800 , pj=720



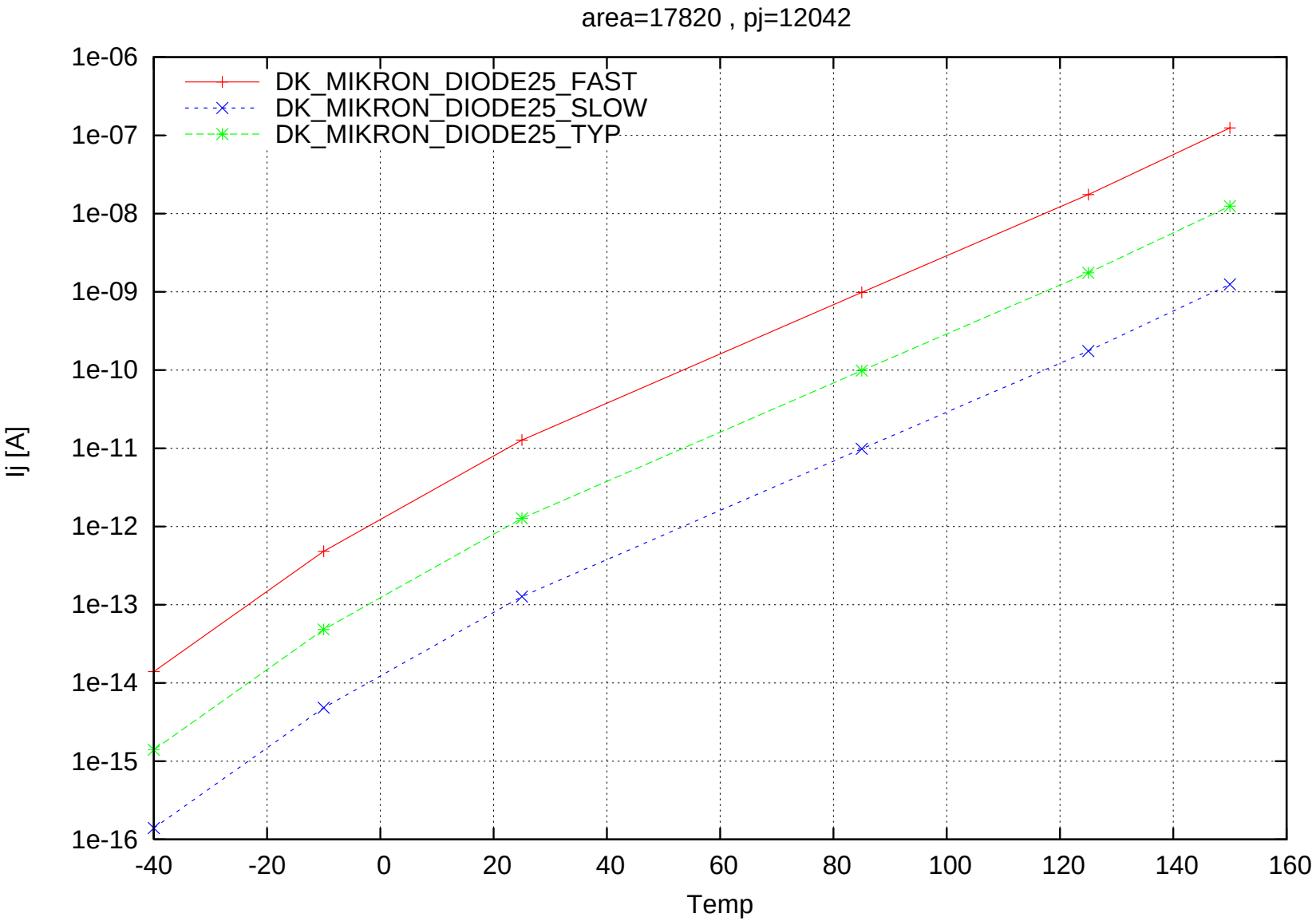
dnsvt25 Ij [A] vs. Temp , area=30800 , pj=720



dnsvt25 1e12*Cj [pF] vs. Temp , area=17820 , pj=12042



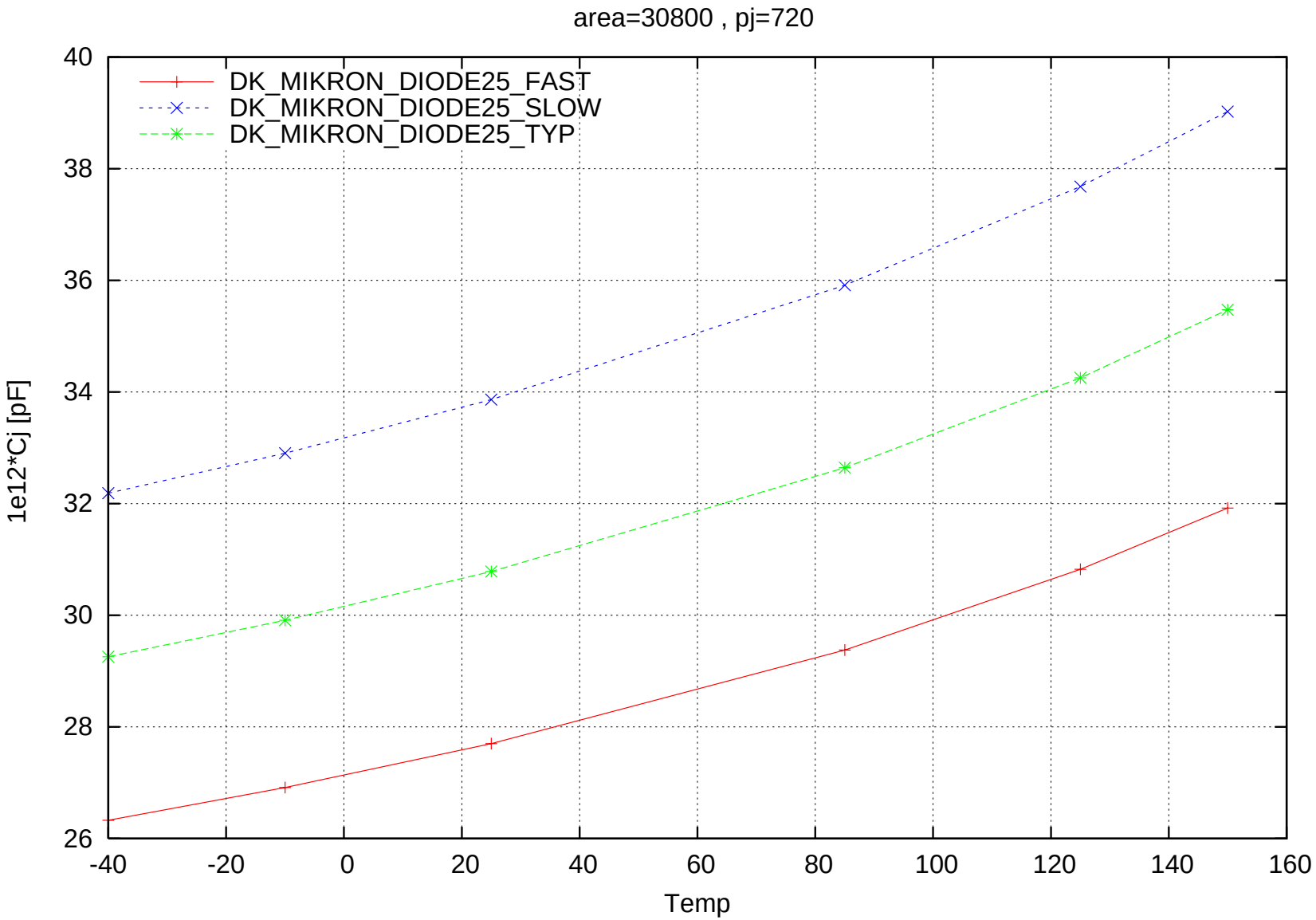
dnsvt25 Ij [A] vs. Temp , area=17820 , pj=12042



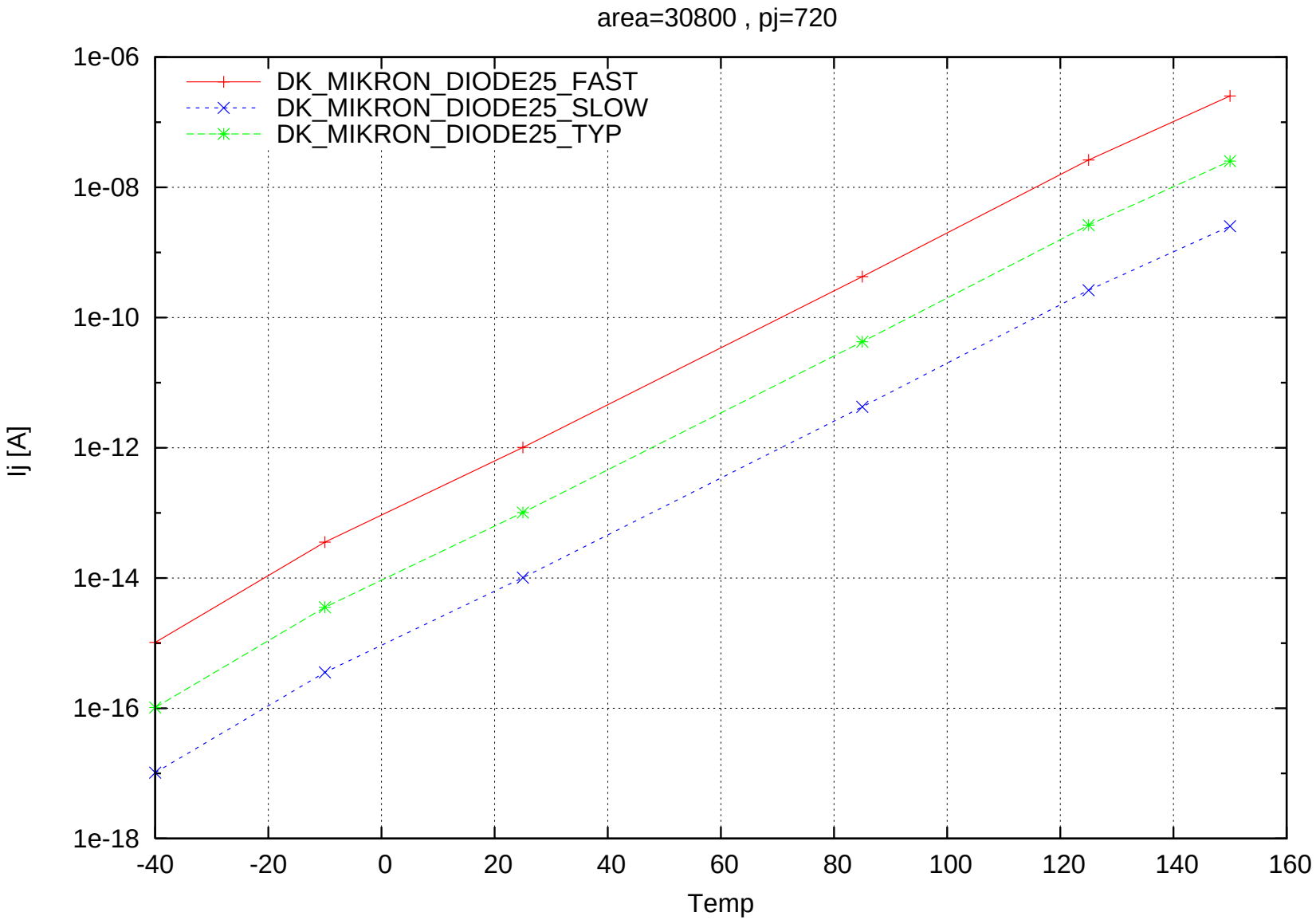
DPSVT25

Electrical characteristics scaling

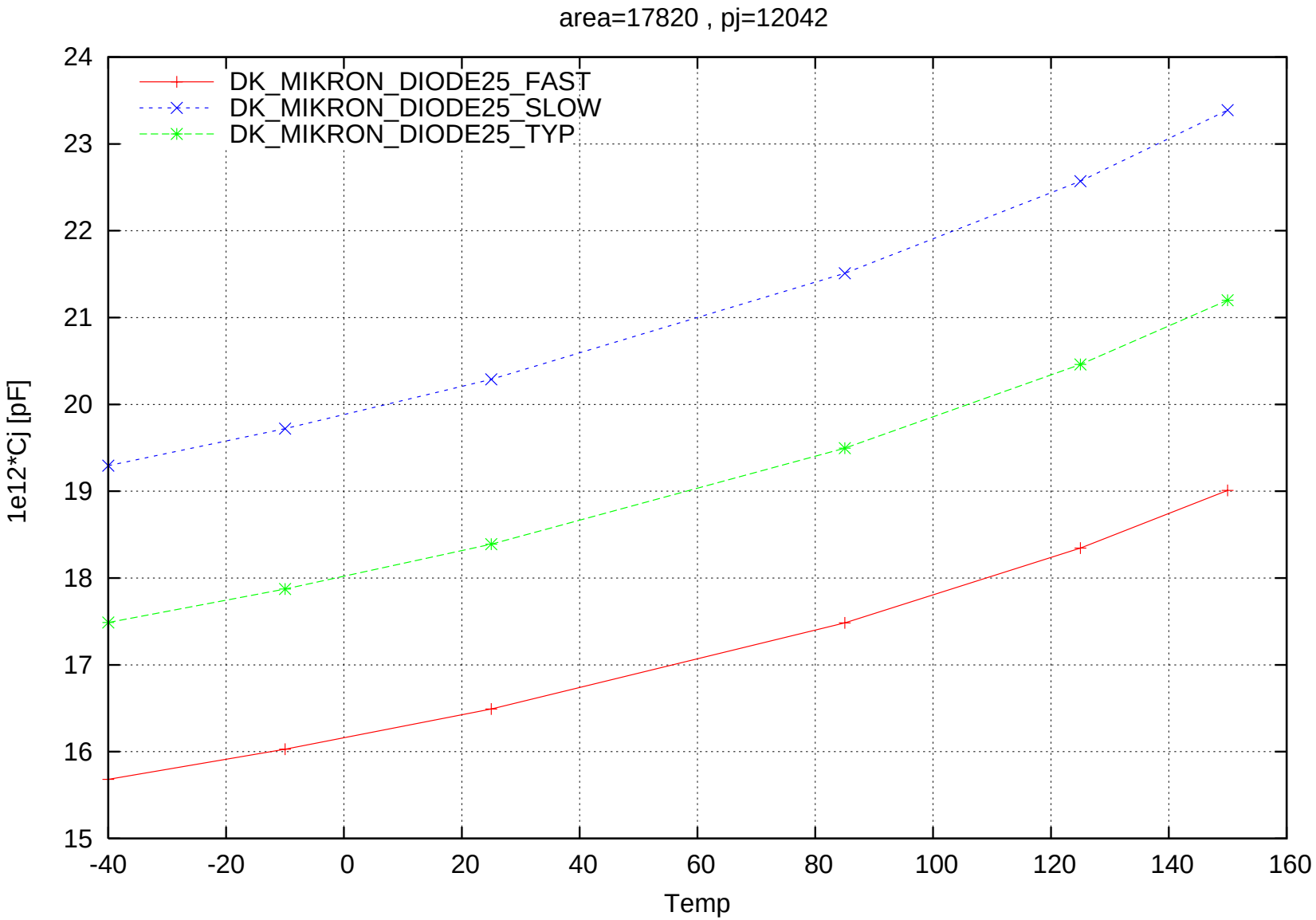
dpsvt25 1e12*Cj [pF] vs. Temp , area=30800 , pj=720



dpsvt25 Ij [A] vs. Temp , area=30800 , pj=720



dpsvt25 1e12*Cj [pF] vs. Temp , area=17820 , pj=12042



dpsvt25 Ij [A] vs. Temp , area=17820 , pj=12042