



CMOS028FDSOI Technology

MIM CAPACITOR models

DK1.2_RF_mmW

Comparison with DK1.1_RF_mmW model(s)

Spice Models Benchmark

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General information on models

- Maximum supply voltage is - V.
- Validity domain is defined as follows:

Output parameters definitions

- Model(s): cmim16acc_acc
 - ✓ Cj : Junction capacitance at $V_j = 0V$, $f = 1e3Hz$.

cmim16acc_acc

Electrical characteristics per geometry

cmim16acc_acc @ w=3e-6, l=3e-6, soa=0, relax=0, f_ext=1000.0, temp=25.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	CMIN	TYP	CMAX
1e3/(W*L)*Cj []	12.55 0.0%	14.73 0.0%	17.21 0.0%
Cj [fF]	113 0.0%	132.6 0.0%	154.9 0.0%

cmim16acc_acc @ w=10e-6, l=10e-6, soa=0, relax=0, f_ext=1000.0, temp=25.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	CMIN	TYP	CMAX
1e3/(W*L)*Cj []	13.27 0.0%	15.34 0.0%	17.65 0.0%
Cj [pF]	1.33 0.0%	1.53 0.0%	1.77 0.0%

cmim16acc_acc @ w=140e-6, l=140e-6, soa=0, relax=0, f_ext=1000.0, temp=25.0

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	CMIN	TYP	CMAX
1e3/(W*L)*Cj []	13.56 0.0%	15.58 0.0%	17.83 0.0%
Cj [pF]	265.8 0.0%	305.4 0.0%	349.5 0.0%

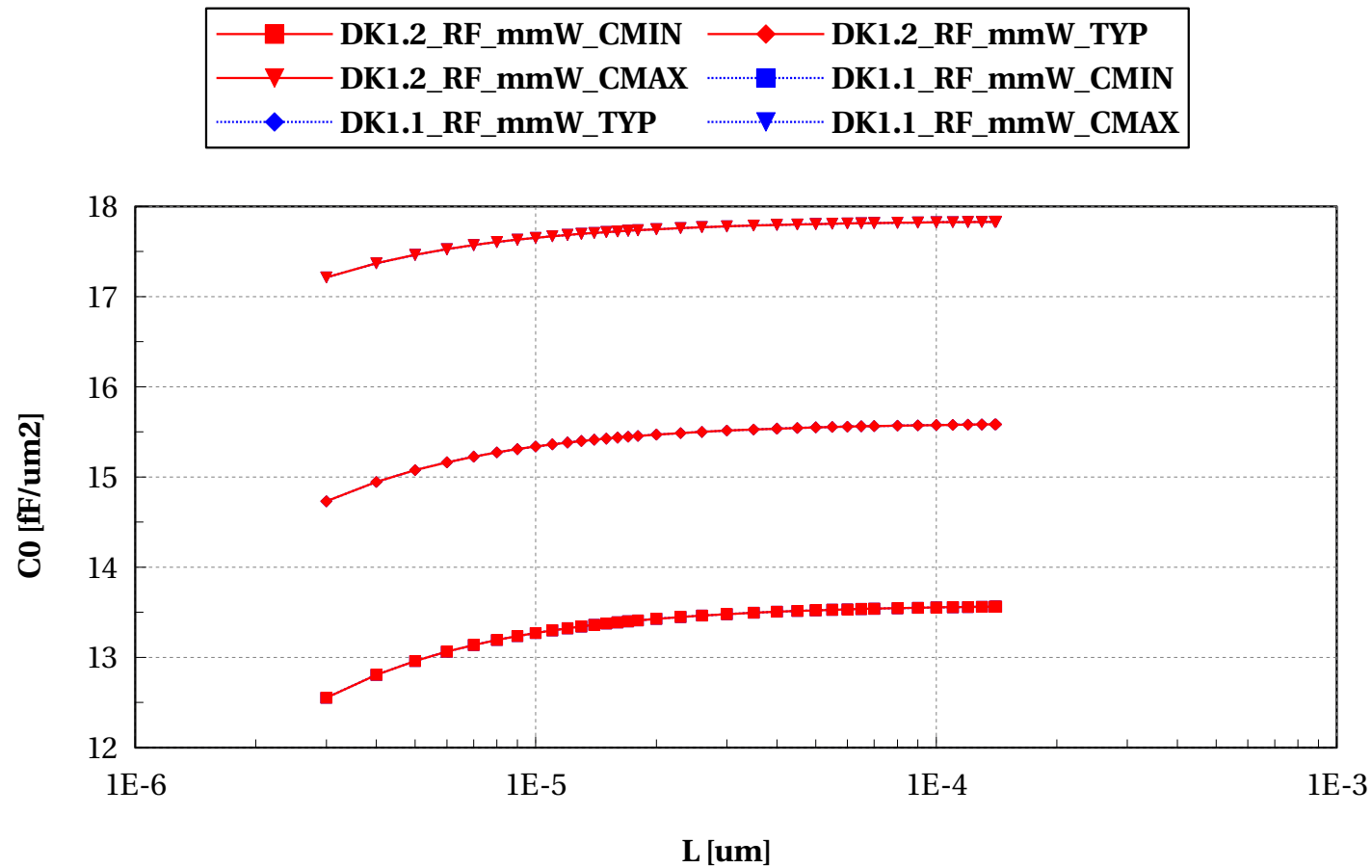
cmim16acc_acc

Electrical characteristics scaling

C_j vs L(=W) @ Temp=25

cmim16acc_acc, C0 [fF/um2] vs L [um]

Temp==25



Annex

Conditions of simulations

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

- Model cmim16acc_acc (DK1.2_RF_mmW)
 - ✓ Input Parameters
 - ✗ mc_runs = 1000
 - ✗ vsub1 = 0
 - ✗ temp = 25 °C
 - ✗ mc_sens = 0
 - ✗ vj = 0 V
 - ✗ f_ext = 1e3 Hz
 - ✗ sbenchlsf_release = Alpha
 - ✗ ams_release = 2018.3
 - ✗ model_version = 1.0
 - ✗ mc_nsigma = 3
 - ✓ Sweep Parameters
 - ✗ temp = -30.0, -10.0, 25.0, 60.0, 85.0, 125.0
 - ✓ Extra parameters
 - ✗ cmim16acc_dev = 1

- Model cmim16acc_acc (DK1.1_RF_mmW)
 - ✓ Input Parameters
 - ✗ mc_runs = 1000
 - ✗ vsub1 = 0
 - ✗ temp = 25 °C
 - ✗ mc_sens = 0
 - ✗ vj = 0 V
 - ✗ f_ext = 1e3 Hz
 - ✗ sbenchlsf_release = Alpha
 - ✗ ams_release = 2018.3
 - ✗ model_version = 1.0
 - ✗ mc_nsigma = 3
 - ✓ Sweep Parameters
 - ✗ temp = -30.0, -10.0, 25.0, 60.0, 85.0, 125.0
 - ✓ Extra parameters
 - ✗ cmim16acc_dev = 1