cmos028fdsoi Technology

CMOM models

DK1.2_RF_mmW

Comparison with DK1.1_RF_mmW model(s)

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General information on CMOM models

● Maximum supply voltage is - V.

● Validity domain is defined as follows:

✔ Device temperature varies from -40 °C to 125 °C.

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Output parameters definitions

● Model(s): cmom_6U1x_2T8x_LB_sh_acc, cmom_6U1x_2T8x_LB_wo_via_sh_acc

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cmom_6U1x_2T8x_LB_sh_acc
Electrical characteristics per geometry

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cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=100e-9, wfinger_mx=100e-9, mtlfrbot=1, mtlfrtop=2, mtlconbot=1, mtlcontop=2, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	0.92 0.0%	0.71 0.0%	1.12 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	0.71 0.0%	0.55 0.0%	0.86 0.0%

cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=100e-9, wfinger_mx=100e-9, mtlfrbot=1, mtlfrtop=3, mtlconbot=1, mtlcontop=3, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.35 0.0%	1.07 0.0%	1.59 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.04 0.0%	0.83 0.0%	1.23 0.0%

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cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=100e-9, wfinger_mx=100e-9, mtlfrbot=1, mtlfrtop=4, mtlconbot=1, mtlcontop=4, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.77 0.0%	1.44 0.0%	2.06 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.37 0.0%	1.11 0.0%	1.59 0.0%

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cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=100e-9, wfinger_mx=100e-9, mtlfrbot=1, mtlfrtop=5, mtlconbot=1, mtlcontop=5, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	CMIN	TT	CMAX
Cval [pF]	1.81 0.0%	2.19 0.0%	2.53 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.39 0.0%	1.69 0.0%	1.95 0.0%

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cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=80e-9, wfinger_mx=80e-9, mtlfrbot=1, mtlfrtop=2, mtlconbot=1, mtlcontop=2, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	0.86 0.0%	0.65 0.0%	1.06 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.04 0.0%	0.79 0.0%	1.28 0.0%

cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=80e-9, wfinger_mx=80e-9, mtlfrbot=1, mtlfrtop=3, mtlconbot=1, mtlcontop=3, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.27 0.0%	1 0.0%	1.52 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.53 0.0%	1.21 0.0%	1.83 0.0%

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cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=80e-9, wfinger_mx=80e-9, mtlfrbot=1, mtlfrtop=4, mtlconbot=1, mtlcontop=4, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

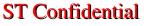|	TT	CMIN	CMAX
Cval [pF]	1.68 0.0%	1.36 0.0%	1.97 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	2.03 0.0%	1.64 0.0%	2.37 0.0%

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cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=80e-9, wfinger_mx=80e-9, mtlfrbot=1, mtlfrtop=5, mtlconbot=1, mtlcontop=5, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	CMIN	TT	CMAX
Cval [pF]	1.71 0.0%	2.09 0.0%	2.42 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	2.07 0.0%	2.52 0.0%	2.92 0.0%

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cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=50e-9, wfinger_mx=50e-9, mtlfrbot=1, mtlfrtop=2, mtlconbot=1, mtlcontop=2, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	0.83 0.0%	0.61 0.0%	1.06 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	2.56 0.0%	1.88 0.0%	3.26 0.0%

cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=50e-9, wfinger_mx=50e-9, mtlfrbot=1, mtlfrtop=3, mtlconbot=1, mtlcontop=3, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.26 0.0%	0.98 0.0%	1.56 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	3.9 0.0%	3.02 0.0%	4.81 0.0%

cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=50e-9, wfinger_mx=50e-9, mtlfrbot=1, mtlfrtop=4, mtlconbot=1, mtlcontop=4, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.7 0.0%	1.36 0.0%	2.05 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	5.25 0.0%	4.19 0.0%	6.33 0.0%

cmom_6U1x_2T8x_LB_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=50e-9, wfinger_mx=50e-9, mtlfrbot=1, mtlfrtop=5, mtlconbot=1, mtlcontop=5, short_bus=0, temp=25
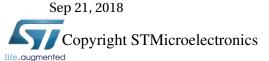
DK1.2_RF_mmW wrt DK1.1_RF_mmW

	CMIN	TT	CMAX
Cval [pF]	1.73 0.0%	2.14 0.0%	2.54 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	5.35 0.0%	6.59 0.0%	7.85 0.0%

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cmom_6U1x_2T8x_LB_wo_via_sh_acc
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cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=100e-9, wfinger_mx=100e-9, mtlfrbot=1, mtlfrtop=2, mtlconbot=1, mtlcontop=2, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	0.95 0.0%	0.73 0.0%	1.18 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacefinger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	0.73 0.0%	0.56 0.0%	0.91 0.0%

cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=100e-9, wfinger_mx=100e-9, mtlfrbot=1, mtlfrtop=3, mtlconbot=1, mtlcontop=3, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.36 0.0%	1.06 0.0%	1.66 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacefinger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.05 0.0%	0.82 0.0%	1.28 0.0%

cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=100e-9, wfinger_mx=100e-9, mtlfrbot=1, mtlfrtop=4, mtlconbot=1, mtlcontop=4, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.77 0.0%	1.4 0.0%	2.12 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.36 0.0%	1.08 0.0%	1.64 0.0%

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cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=100e-9, wfinger_mx=100e-9, mtlfrbot=1, mtlfrtop=5, mtlconbot=1, mtlcontop=5, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	CMIN	TT	CMAX
Cval [pF]	1.73 0.0%	2.18 0.0%	2.6 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.34 0.0%	1.68 0.0%	2 0.0%

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cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=80e-9, wfinger_mx=80e-9, mtlfrbot=1, mtlfrtop=2, mtlconbot=1, mtlcontop=2, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	0.85　0.0%	0.65　0.0%	1.04　0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacefinger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.02　0.0%	0.79　0.0%	1.25　0.0%

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cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=80e-9, wfinger_mx=80e-9, mtlfrbot=1, mtlfrtop=3, mtlconbot=1, mtlcontop=3, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.21 0.0%	0.95 0.0%	1.46 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.46 0.0%	1.15 0.0%	1.76 0.0%

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cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=80e-9, wfinger_mx=80e-9, mtlfrbot=1, mtlfrtop=4, mtlconbot=1, mtlcontop=4, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.58 0.0%	1.26 0.0%	1.88 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.9 0.0%	1.52 0.0%	2.27 0.0%

cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=80e-9, wfinger_mx=80e-9, mtlfrbot=1, mtlfrtop=5, mtlconbot=1, mtlcontop=5, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	CMIN	TT	CMAX
Cval [pF]	1.56 0.0%	1.94 0.0%	2.3 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	1.88 0.0%	2.34 0.0%	2.77 0.0%

cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=50e-9, wfinger_mx=50e-9, mtlfrbot=1, mtlfrtop=2, mtlconbot=1, mtlcontop=2, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [fF]	703.6 0.0%	551.9 0.0%	843.1 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	2.17 0.0%	1.7 0.0%	2.6 0.0%

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cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=50e-9, wfinger_mx=50e-9, mtlfrbot=1, mtlfrtop=3, mtlconbot=1, mtlcontop=3, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.01 0.0%	0.81 0.0%	1.19 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	3.12 0.0%	2.5 0.0%	3.68 0.0%

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cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=50e-9, wfinger_mx=50e-9, mtlfrbot=1, mtlfrtop=4, mtlconbot=1, mtlcontop=4, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	TT	CMIN	CMAX
Cval [pF]	1.32 0.0%	1.07 0.0%	1.54 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacefinger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	4.07 0.0%	3.31 0.0%	4.75 0.0%

cmom_6U1x_2T8x_LB_wo_via_sh_acc @ nf_dirx=200, nf_diry=200, spacefinger_mx=50e-9, wfinger_mx=50e-9, mtlfrbot=1, mtlfrtop=5, mtlconbot=1, mtlcontop=5, short_bus=0, temp=25

DK1.2_RF_mmW wrt DK1.1_RF_mmW

	CMIN	TT	CMAX
Cval [pF]	1.33 0.0%	1.63 0.0%	1.88 0.0%
Cval*1e15/ ((nf_dirx*(spacefinger_mx*1e6+ wfinger_mx*1e6)*nf_diry*(spacef inger_mx*1e6+wfinger_mx*1e6)))/(0.9*0.9) []	4.1 0.0%	5.02 0.0%	5.81 0.0%

Annex

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Conditions of simulations

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

● Model cmom_6U1x_2T8x_LB_sh_acc (DK1.2_RF_mmW)
  ✔ Input Parameters
    ✘ mc_runs = 1000
    ✘ vsub1 = 0
    ✘ temp = 25 °C
    ✘ vsub2 = 0
    ✘ mc_sens = 0
    ✘ vj = 0.05 V
    ✘ f_ext = 1e9 Hz
    ✘ sbenchlsf_release = Alpha
    ✘ ams_release = 2018.3
    ✘ model_version = 1.0
    ✘ mc_nsigma = 3
  ✔ Sweep Parameters
  ✔ Extra parameters
    ✘ cmom_6u1x_2t8x_lb_dev = 0

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- ✘ cmom_6u1x_2t8x_lb_wo_via_dev = 0
- ● Model cmom_6U1x_2T8x_LB_wo_via_sh_acc (DK1.2_RF_mmW)
  - ✔ Input Parameters
    - ✘ mc_runs = 1000
    - ✘ vsub1 = 0
    - ✘ temp = 25 °C
    - ✘ vsub2 = 0
    - ✘ mc_sens = 0
    - ✘ vj = 0.05 V
    - ✘ f_ext = 1e9 Hz
    - ✘ sbenchlsf_release = Alpha
    - ✘ ams_release = 2018.3
    - ✘ model_version = 1.0
    - ✘ mc_nsigma = 3
  - ✔ Sweep Parameters
  - ✔ Extra parameters
    - ✘ cmom_6u1x_2t8x_lb_dev = 0
    - ✘ cmom_6u1x_2t8x_lb_wo_via_dev = 0
- ● Model cmom_6U1x_2T8x_LB_sh_acc (DK1.1_RF_mmW)
  - ✔ Input Parameters
    - ✘ mc_runs = 1000
    - ✘ vsub1 = 0
    - ✘ temp = 25 °C
    - ✘ vsub2 = 0
    - ✘ mc_sens = 0

- ✗ vj = 0.05 V
- ✗ f_ext = 1e9 Hz
- ✗ sbenchlsf_release = Alpha
- ✗ ams_release = 2018.3
- ✗ model_version = 1.0
- ✗ mc_nsigma = 3
- ✔ Sweep Parameters
- ✔ Extra parameters
  - ✗ cmom_6u1x_2t8x_lb_dev = 0
  - ✗ cmom_6u1x_2t8x_lb_wo_via_dev = 0
- ● Model cmom_6U1x_2T8x_LB_wo_via_sh_acc (DK1.1_RF_mmW)
  - ✔ Input Parameters
    - ✗ mc_runs = 1000
    - ✗ vsub1 = 0
    - ✗ temp = 25 °C
    - ✗ vsub2 = 0
    - ✗ mc_sens = 0
    - ✗ vj = 0.05 V
    - ✗ f_ext = 1e9 Hz
    - ✗ sbenchlsf_release = Alpha
    - ✗ ams_release = 2018.3
    - ✗ model_version = 1.0
    - ✗ mc_nsigma = 3
  - ✔ Sweep Parameters
  - ✔ Extra parameters

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✘ cmom_6u1x_2t8x_lb_dev = 0

✘ cmom_6u1x_2t8x_lb_wo_via_dev = 0

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