tnom: Nominal Temperature in degree Celsius （real, default=27.0）

tbar: Barrier layer thickness （real, default=2. 5e-8）

l：Channel Length （real, default=0. 25e-6）

w:Channel Width （real, default=200. 0e-6）

nf:Number of fingers （integer, default=1）

epsilon: Dielectric Permittivity of AlGaN layer （real, default=10. 66e-11）

voff:Cut-off voltage （real, default=-2. 0）

u0：Low field mobility （real, default=170. 0e-3）

ua:Mobility Degradation coefficient first order （real, default=0. 0e-9）

ub:Mobility Degradation coefficient second order （real, default=0. 0e-18

vsat:Saturation Velocity （real, default=1. 9e5）

delta:Exponent for vdeff （real, default=2.0）

at:Temperature Dependence for saturation velocity （real, default=0.0）

ute:Temperature dependence of mobility （real, default=-05

lambda:Channel Length Modulation Coefficient （real, default=0. 0）

eta0:DIBL Parameter （real, default=1. 0e-9）

vdscale:DIBL Scaling VDs （real, default=5. 0）

kt1：Temperature Dependence for Voff （real default=0. 0e-3

thesat:Velocity Saturation Parameter （real, default=1. 0）

nfactor:Sub-voff Slope parameters （real, default=0. 5）

cdscd:Sub-voff Slope Change due to Drain Voltage （real, default=1. 0e-3）

gamma0i:Schrodinger-Poisson solution parameter （real, default=2. 12e-12

gammali:Schrodinger-Poisson solution parameter （real, default=3. 73e-12

imin:Minimum Drain Current （real, default=1. 0e-15）

shmod:Switch to turn on and off self-heating model （integer, default=1）

rtho:Thermal Resistance （real, default=5. 0）

cth:Thermal Capacitance （real, default=1. 0e-9）

rdsmod:Switch for external source and drain resistances（integer, default=0）

vsataccs:Saturation Velocity for access regi on:Source Side （real, default=50.0E3）

ns0accs：2-DEG Charge Density in per square meter in Source access region(real, default=5.0e17)

ns0accd：2-DEG Charge Density in per square meter in Drain access region （real, default=5. 0e17）

k0accs:Vg dependence parameter of source side region 2DEG charge density(real default=0.0)

k0accd: Vg dependence parameter of drain side access region 2-DEG charge density(real default=0.0)

u0accs: Access region mobility source-side(real default=155e-3)

u0accd:Access region mobility drain-side(real,default=155e-3)

mexpaccs:Exponent for access region resistance model(real,default=2.0)

mexpaccd: Exponent for access region resistance model(real,default=2.0)

Isg:Length of Source-Gate Access Region(real,default=1.0e-6)

Idg:Length of Drain-Gate Access Region or Length of drain side access region(real,default=1.0e-6)

Rsc:Source Contact Resistance(real default=1.0e-4)

Rdc:Drain Contact Resistance(real default=1.0e-4)

kns0: Temperature Dependence for 2-DEG charge density at access region(real,default=0.0)

ats:Temperature Dependence for saturation velocity at access region(real,default=0.0)

utes:Temperature dependence of mobility at access region: Source Side(real default=0.0)

uted:Temperature dependence of mobility at access region: Drain Side(real default=0.0)

krsc:Temperature dependence of Source Contact Resistance(real default=0.0)

krdc:Temperature dependence of Drain Contact Resistance(real default=0.0)

gatemod:Gate current model flag [0: No gate current; 1: Basic model](integer,default=0)

**////////// Gate current Model Parameters (MOD1) //////////**

njgs:Gate-source junction diode current ideality factor(real default=2.5)

njgd: Gate-drain junction diode current ideality factor(real default=2.5)

igsdio:Gate-source junction diode saturation current(real default=1.0)

igddio:Gate-drain junction diode saturation current(real default=1.0)

ktgs:Temperature co-efficient of gate-source junction diode current(real deault=0.0)

ktgd:Temperature coefficient of gate-drain junction diode current(real default=0.0)

trapmod ：Model Switch to turn on and off the dynamic trapping effects 0

////////// Trap Model For RF trapmod=1 //////////

Cdlag：Trap Network capacitance 1.0e-6

Rdlag：Trap Network resistance 1.0e6

Idio：Saturation Current parameter for trap model 1.0e0

Atrapvoff：Voff change due to trapping effects 0.1

Btrapvoff：Voff change with input power due to trapping effects 0.3

atrapeta0 ：DIBL change due to trapping effects 0

btrapeta0：DIBL change with input power due to trapping effects 0.05

atraprs ：Rs change due to trapping effects 0.1

btraprs：Rs change with input power due to trapping effects 0.6

atraprd：Rd change due to trapping effects 0.5

btraprd：Rd change with input power due to trapping effects 0.6

**////////// Trap Model Parameters for Pulse IV trapmod=2 //////////**

rtrap1：Trap Network1 Resistance 1.0 ohm

rtrap2：Trap Network2 Resistance 1.0 ohm

ctrap1：Trap Network1 Capacitance 10.0e-6F

ctrap2：Trap Network2 Capacitance 1.0e-6F

a1：Multiplication factor [1st network] 0.1

vofftr： Trap contribution to voff [2nd network] 1.0e-9

cdscdtr：Trap contribution to cdscd [2nd network] 1.0e-15

eta0tr: Trap contribution to DIBL [2nd network] 1.0e-15

rontr1：Trap contribution to RON [1st network] 1.0e-12

rontr2：Trap contribution to RON [2nd network] 1.0e-13

rontr3：Trap contribution to RON 1.0e-13

**////////// Trap Model Parameters Dynamic On Resistance For Power Devices trapmod=3 //////////**

rtrap3：Trap Network Resistance 1.0 ohm

ctrap3：Trap Network Capacitance 1.0e-4 F

vatrap：Division factor for V[trap1] 10.0

wd：Weak dependence of vdlr1 on Vdg 0.016

vdlr1：Slope for region one 2.0

vdlr2：Slope for region two 20.0

talpha：Temperature dependence Coefficient 1.0

vtb: Break Point for Vdg effect on Von 250.0 V

deltax:Smoothing parameter 0.01

**////////// Field Plate Region Parameters //////////**

fp1mod: Field Plate Model Selector [0: No FP; 1:Gate FP; 2:Source FP;]

fp2mod: Field Plate Model Selector [0: No FP; 1:Gate FP; 2:Source FP;]

fp3mod: Field Plate Model Selector [0: No FP; 1:Gate FP; 2:Source FP;]

fp4mod: Field Plate Model Selector [0: No FP; 1:Gate FP; 2:Source FP;]

iminfp1: Minimum Drain Current FP1 region 1.0e-15 A

vofffp1: voff for FP1 -25.0 V

dfp1: Distance of FP1 from 2-DEG Charge 50.0e-9 m

lfp1: Length of FP1 1.0e-6 m

ktfp1: Temperature Dependence for vofffp1 50.0e-3

u0fp1: FP1 region mobility 100e-3 m^2/(V \* s)

vsatfp1: Saturation Velocity of FP1 region 100e+3 m/s

nfactorfp1: Sub-voff Slope parameters for FP1 0.5

cdscdfp1: Sub-voff Slope Change due to Drain Voltage for FP1 0.0

eta0fp1: DIBL Parameter for FP1 1.0e-9

vdscalefp1: DIBL Scaling VDS for FP1 10.0

gamma0fp1: Schrodinger-Poisson solution parameter for FP1 2.12e-12

gamma1fp1: Schrodinger-Poisson solution parameter for FP1 3.73e-12

iminfp2: Minimum Drain Current FP2 region 1.0e-15 A

vofffp2: voff for FP2 -50.0 V

dfp2: Distance of FP2 from 2-DEG Charge 100.0e-9 m

lfp2: Length of FP2 1.0e-6 m

ktfp2: Temperature Dependence for vofffp2 50.0e-3

u0fp2: Carrier mobility of FP2 region 100e-3 m^2/(V \* s)

vsatfp2: Saturation velocity of FP2 region 100e+3 m/s

nfactorfp2: Sub-voff Slope parameters for FP2 0.5

cdscdfp2: Sub-voff Slope Change due to Drain Voltage for FP2 0.0

eta0fp2: DIBL Parameter for FP2 1.0e-9

vdscalefp2: DIBL Scaling VDS for FP2 10.0 V

gamma0fp2: Schrodinger-Poisson solution parameter for FP2 2.12e-12

gamma1fp2: Schrodinger-Poisson solution parameter for FP2 3.73e-12

iminfp3: Minimum Drain Current FP3 region 1.0e-15 A

vofffp3: voff for FP3 -75.0 V

dfp3: Distance of FP3 from 2-DEG Charge 150.0e-9 m

lfp3: Length of FP3 1.0e-6 m

ktfp3: Temperature Dependence for vofffp3 50.0e-3

u0fp3: FP3 region mobility 100e-3 m^2/(V \* s)

vsatfp3: Saturation Velocity of FP3 region 100e+3 m/s

nfactorfp3: Sub-voff Slope parameters for FP3 0.5

cdscdfp3: Sub-voff Slope Change due to Drain Voltage for FP3 0

eta0fp3: DIBL Parameter for FP3 1.0e-9

vdscalefp3: DIBL Scaling VDS for FP3 10.0 V

gamma0fp3: Schrodinger-Poisson solution parameter for FP3 2.12e-12

gamma1fp3: Schrodinger-Poisson solution parameter for FP3 3.73e-12

iminfp4: Minimum Drain Current FP4 region 1.0e-15 A

vofffp4: voff for FP4 -100.0 V

dfp4: Distance of FP4 from 2-DEG Charge 200.0e-9 m

lfp4 : Length of FP4 1.0e-6 m

ktfp4: Temperature Dependence for vofffp4 50.0e-3

u0fp4: FP4 region mobility 100e-3 m^2/(V \* s)

vsatfp4: Saturation Velocity of FP4 region 100e+3 m/s

nfactorfp4: Sub-voff Slope parameters for FP4 0.5

cdscdfp4: Sub-voff Slope Change due to Drain Voltage for FP4 0.0

eta0fp4: DIBL Parameter for FP4 1.0e-9

vdscalefp4: DIBL Scaling VDS for FP4 10V

gamma0fp4: Schrodinger-Poisson solution parameter for FP4 2.12e-12

gamma1fp4: Schrodinger-Poisson solution parameter for FP4 3.73e-12

////////// Capacitance Parameters //////////

cgso: Gate-source overlap capacitance 0.0e-18 F

cgdo: Gate-drain overlap capacitance 0.0e-18 F

cdso: Cds capacitance parameter 0.0e-18 F

cgdl: Vds bias dependence of parasitic gate drain overlap capacitance 0.0e-15 F

vdsatcv: Saturation voltage on drain side in CV Model 100V

cbdo: Substrate capacitance parameter 0.0e-15 F

cbso: Substrate capacitance parameter 0.0e-15 F

cbgo: Substrate capacitance parameter 0.0e-15 F

cfg: Fringing capacitance parameter 0.0e-18 F

cfd: Fringing capacitance parameter 0.0e-18 F

cfgd: Fringing capacitance parameter 0.0e-13 F

cfgdsm: Capacitance smoothing parameter 1.0e-24 F

cfgd0: Fringing capacitance parameter 0.0e-12 F

cj0: Zero bias depletion capacitance 0.0e-15 F

vbi: Built in potential 0.9 V

ktvbi: Temperature dependence of built-in potential 0

ktcfg: Temperature dependence of Fringing capacitance 0.0e-3

ktcfgd: Temperature dependence of Fringing capacitance 0.0e-3

mz: Grading factor of depletion capacitance 0.5

aj: Limiting factor of depletion capacitance in forward bias region 100.0e-3

dj: Fitting parameter 1.0

////////// Quantum Mechanical Effects //////////

Adosi: Quantum mechanical effect pre-factor cum switch in inversion 0.0

Bdosi: Charge centroid parameter-slope of CV curve under QME in inversion 1.0

qm0i: Charge centroid parameter - starting point for QME in inversion 1.0e-3

adosfp1: Quantum mechanical effect pre-factor cum switch in inversion 0.0

bdosfp1:Charge centroid parameter - slope of CV curve under QME in inversion 1.0

qm0fp1: Charge centroid parameter - starting point for QME in inversion 1.0e-3

adosfp2 : Quantum mechanical effect pre-factor cum switch in inversion 0.0

bdosfp2: Charge centroid parameter - slope of CV curve under QME in inversion 1.0

qm0fp2:Charge centroid parameter - starting point for QME in inversion 1.0e-3

adosfp3: Quantum mechanical effect pre-factor cum switch in inversion 0.0

bdosfp3: Charge centroid parameter - slope of CV curve under QME in inversion 1.0

qm0fp3: Charge centroid parameter - starting point for QME in inversion 1.0e-3

adosfp4: Quantum mechanical effect pre-factor cum switch in inversion 0.0

bdosfp4: Charge centroid parameter - slope of CV curve under QME in inversion 1.0

qm0fp4: Charge centroid parameter - starting point for QME in inversion 1.0e-3

////////// Cross Coupling Capacitance Parameters //////////

cfp1scale: Coupling of charge under FP1 0.0

cfp2scale: Coupling of charge under FP2 0.0

cfp3scale: Coupling of charge under FP3 0.0

cfp4scale: Coupling of charge under FP4 0.0

csubscalei: Sub Capacitance scaling parameter 0.0

csubscale1: Sub Capacitance scaling parameter 0.0

csubscale2: Sub Capacitance scaling parameter 0.0

csubscale3: Sub Capacitance scaling parameter 0.0

csubscale4: Sub Capacitance scaling parameter 0.0

////////// Gate Resistance Parameters //////////

Rgatemod: Switch to turn on/off gate Resistance 0

Xgw: Distance from gate contact centre to dev edge 0.0

Ngcon: Number of gate contacts 1

Rshg: Gate sheet resistance 1.0e-3 ohm/square

////////// Noise Model Parameters //////////

Fnmod: Switch to turn Flicker Noise Model ON [fnmod=1] or OFF [fnmod=0] 0

Tnmod: Switch to turn Thermal Noise Model ON [tnmod=1] or OFF [tnmod=0] 0

noia: Flicker Noise parameter 15.0e-12

noib: Flicker Noise parameter 0.0

noic: Flicker Noise parameter 0.0

ef: Exponent of frequency---Determines slope in log plot 1

tnsc: Thermal noise scaling parameter 1.0e27

////////// gdsmin For Convergence //////////

Gdsmin: Convergence Parameter 1.0e-12 S