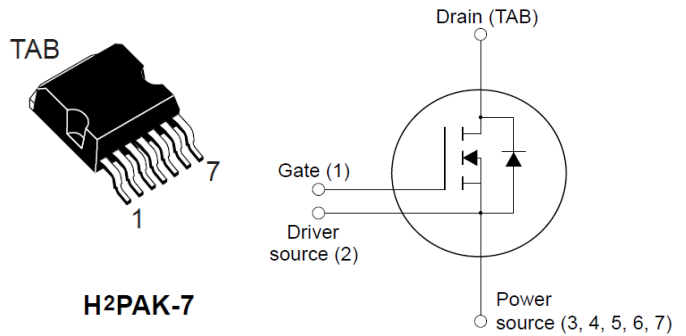


LTspice Model

NMOS

STM

SCT040H65G3AG



Model Information

Model A macro model based on BSIM3 model
Call Name MDC_SCT040H65G3AG_LT
Pin Assign 1:G 2:S 3:S 4:S 5:S 6:S 7:S TAB:D
File List Model Library MDC_SCT040H65G3AG_LT01.lib
 Model Report MDC_SCT040H65G3AG_LT.pdf (this file)

Verified Simulator Version LTspice version XVII
Note

References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version Rev 2 - January 2022
- Product name SCT040H65G3AG
- Company name STMicroelectronics N.V.
- Characteristics IdVds[Vgs], IdVds[Vgs]2, IdVgs[Temp], VgsQg[Vdd], CapacitanceVds[Cname], NormBvTemp{Ir}, NormVthTemp{Id}, NormRds(on)Temp[Vgs], IsVsd[Vgs], IsVsd[Vgs]2, SwitchingIdd[Tname], TrrIf[Ir], QrrIf[Ir], SwitchingWaveform, TrrWaveform

Simulation Range

This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Drain-source voltage (DC)	0	to	650	V
Gate-source voltage (DC)	-10	to	22	V
Temperature	-55	to	175	deg C

MOSFET

○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

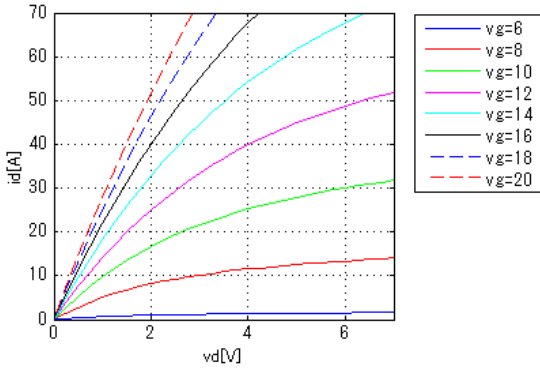
RANK=1

Functions	RANK	Implemented
ID-VDS-VGS	1	○
ID-VGS(Temp)	1	○
RDS(on)	1	○
Capacitance	1	○
Gate Charge	1	○
IS-VSD(Forward)	1	○
Reverse recovery	1	○
Switching(Typ.)	1	○
Bv	1	○
Yfs	1	—
Vth	1	○

Simulation results are following.
 Explanatory notes — : simulated

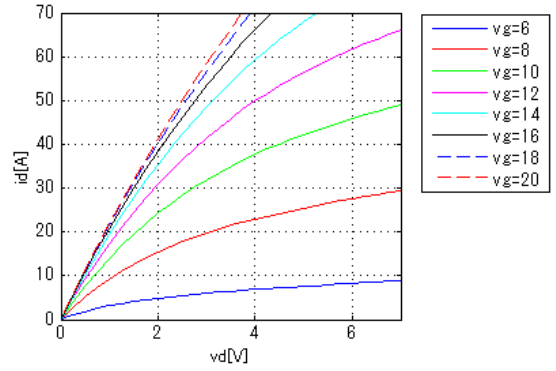
IdVds[Vgs]

Temp = 25degC



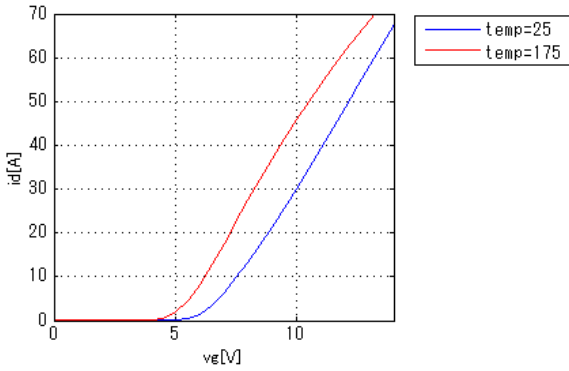
IdVds[Vgs]2

Temp = 175degC



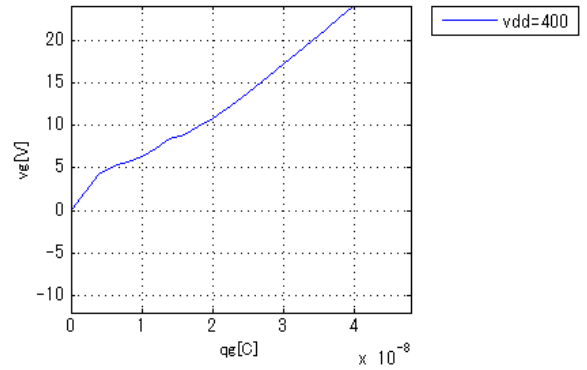
IdVgs[Temp]

Vds = 6V



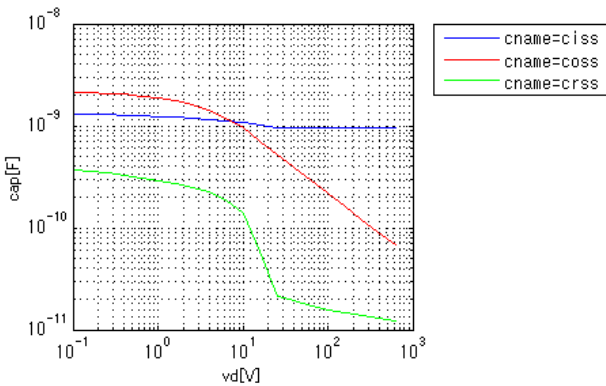
VgsQg[Vdd]

Id = 20A

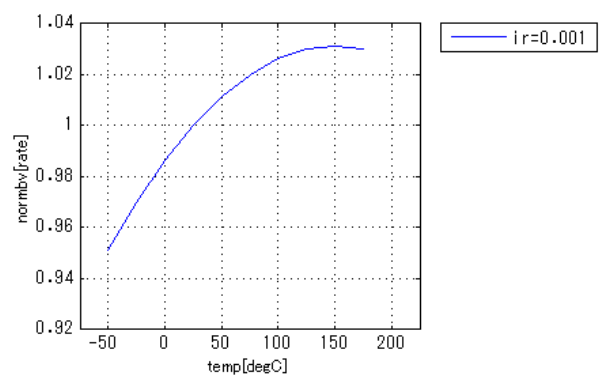


CapacitanceVds[Cname]

freq = 1000000Hz



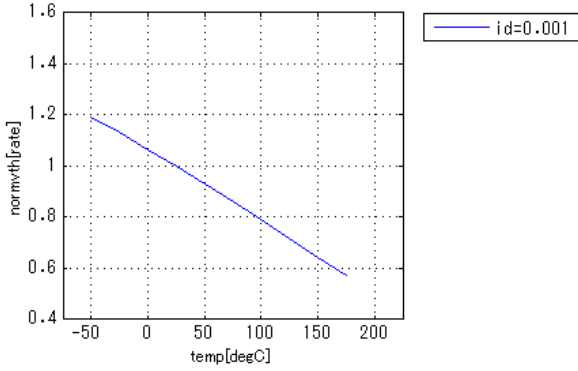
NormBvTemp[Ir]



Simulation results are following.
 Explanatory notes — : simulated

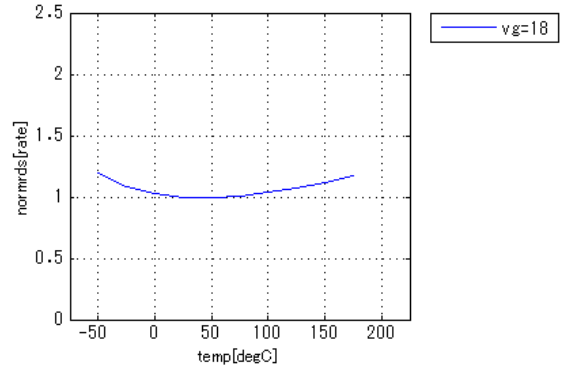
NormVthTemp[Id]

Vd = Vg

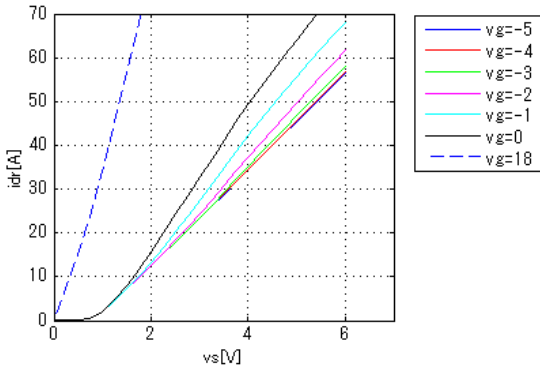


NormRds(on)Temp[Vgs]

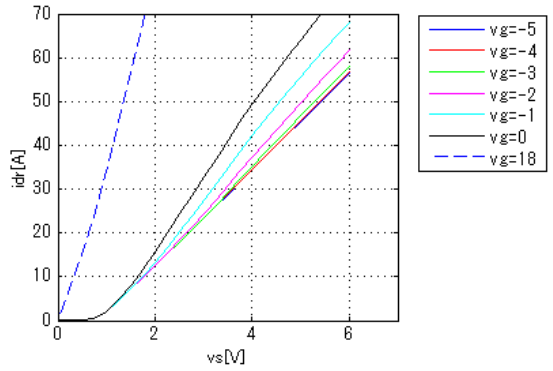
Id = 20A



IsVsd[Vgs]

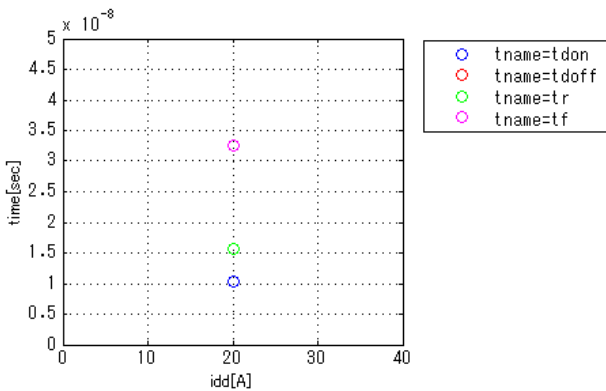


IsVsd[Vgs]2



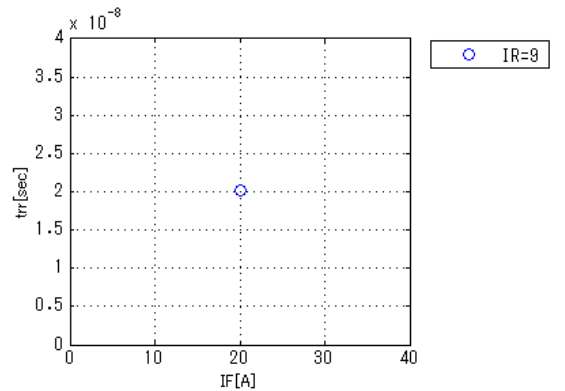
SwitchingIdd[Tname]

vgg = 18V, vdd = 400V, RGG = 15ohm



Trrif[Ir]

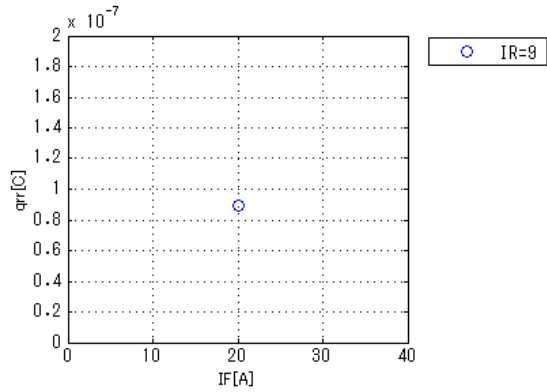
vdd = 400V, didt = 1000A/us, Temp = 25degC



Simulation results are following.
 Explanatory notes — : simulated

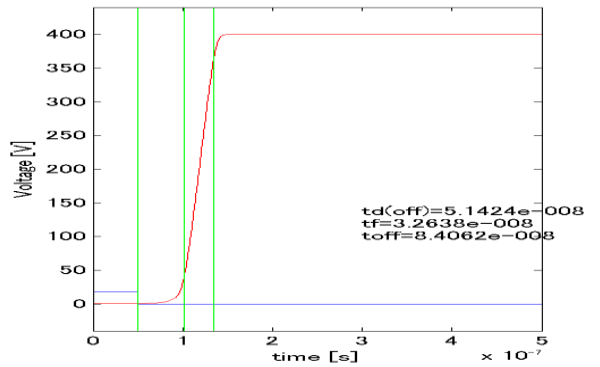
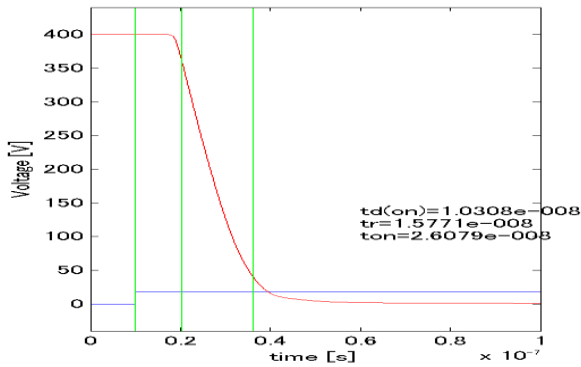
Qrrlf[Ir]

vdd = 400V, didt = 1000A/us, Temp = 25degC



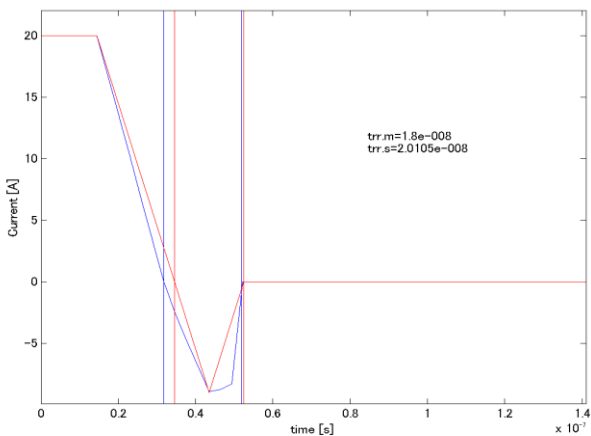
Switching Waveform (Blue : INPUT Red : OUTPUT)

v_{gg} = 18V, v_{cc} = 400V, r_{gg} = 15ohm, temp = 25degC, i_c = 20A



Trr Waveform (Red : Datasheet Blue : Simulation)

didt = 1000A/us, v_{dd} = 400V, i_f = 20A, i_r = 9A



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