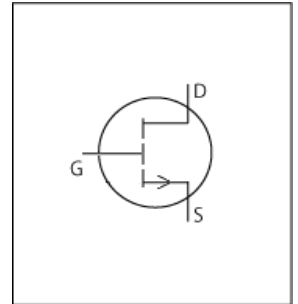


PSpice Model

GaN

Transphorm

TP65H300G4JSGB



Model Information

Model A macro model based on BSIM3 model
Call Name MDC_TP65H300G4JSGB_PS
Pin Assign 3:KS 4:G 5:D 6:D 7:D 8:D 9:S
File List Model Library MDC_TP65H300G4JSGB_PS02.lib
 Model Report MDC_TP65H300G4JSGB_PS.pdf (this file)

Verified Simulator Version PSpice version 17.2
Note

References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version Apr. 12, 2023
- Product name TP65H300G4JSGB
- Company name Transphorm Inc.
- Characteristics IdVds[Vgs], IdVds[Vgs]2, IdVgs[Temp], NormRds(on)Temp[Id], CapacitanceVds[Cname], VgsQg[Vdd], SwitchingLoad[Tname], SwitchingWaveform

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	10	V
Temperature	-55	to	150	deg C

MOSFET

○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

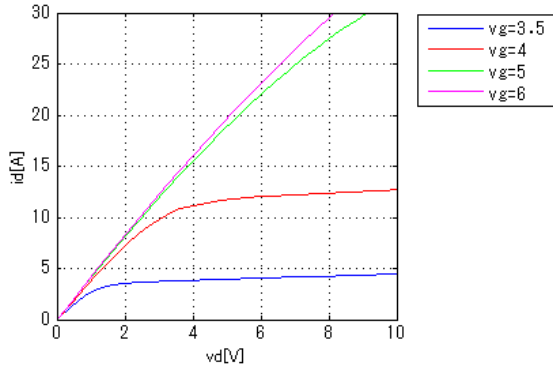
RANK=1

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

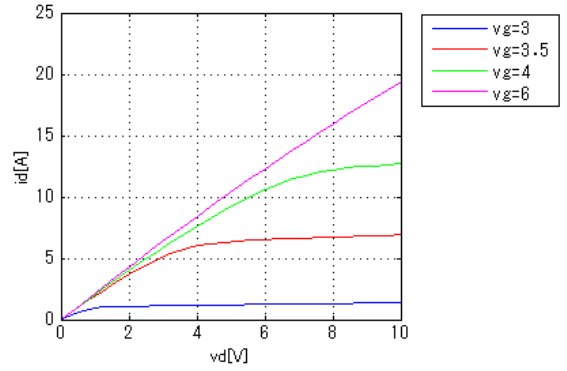
IdVds[Vgs]

Temp = 25degC



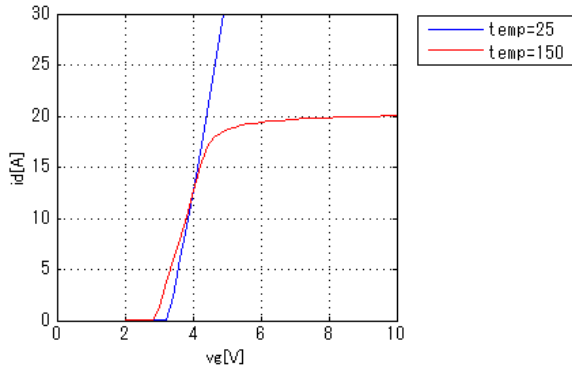
IdVds[Vgs]2

Temp = 150degC



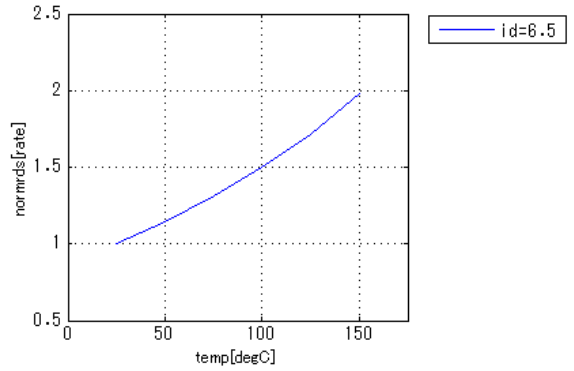
IdVgs[Temp]

Vds = 10V



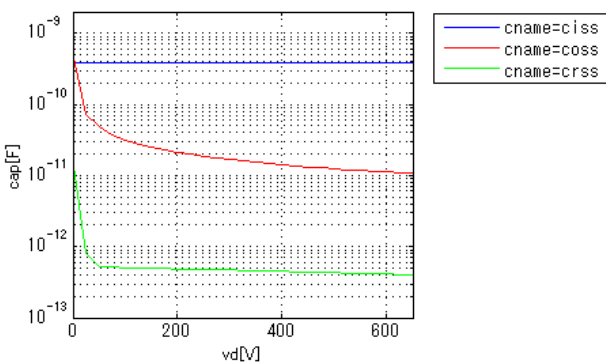
NormRds(on)Temp[Id]

Vgs = 6V



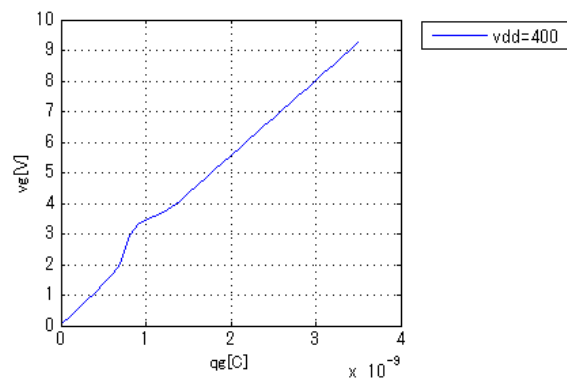
CapacitanceVds[Cname]

freq = 1000000Hz



VgsQg[Vdd]

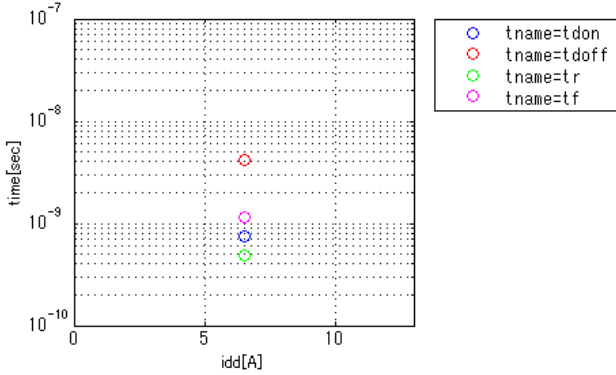
Id = 10A



Simulation results are following.
 Explanatory notes — : simulated

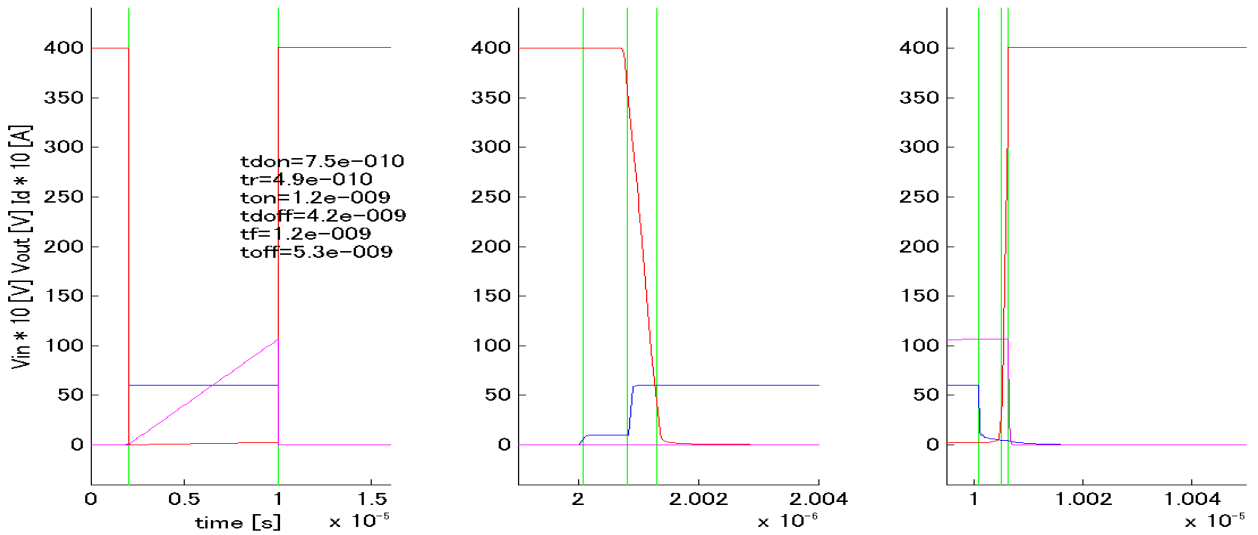
SwitchingLoad[Tname]

vgg = 6V, vdd = 400V, Lload = 0.0003H, RGon = 10ohm, RGon = 2ohm, Temp = 25degC



Switching Waveform (Blue : INPUT Red : OUTPUT Magenta : ID)

vgg = 6V, vdd = 400V, Lload = 0.0003H, RGon = 10ohm, RGon = 2ohm, Temp = 25degC, Id = 6A



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