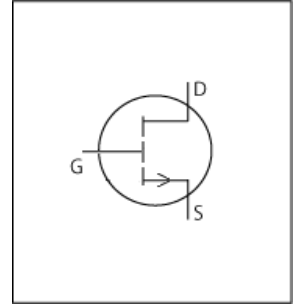


# LTspice Model

## GaN

## Transphorm

## TP65H300G4JSGB



### Model Information

**Model** A macro model based on BSIM3 model  
**Call Name** MDC\_TP65H300G4JSGB\_LT  
**Pin Assign** 3:KS 4:G 5:D 6:D 7:D 8:D 9:S  
**File List** Model Library MDC\_TP65H300G4JSGB\_LT02.lib  
 Model Report MDC\_TP65H300G4JSGB\_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 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

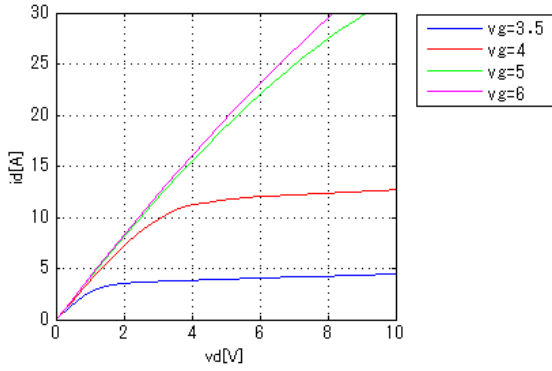
RANK=1

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

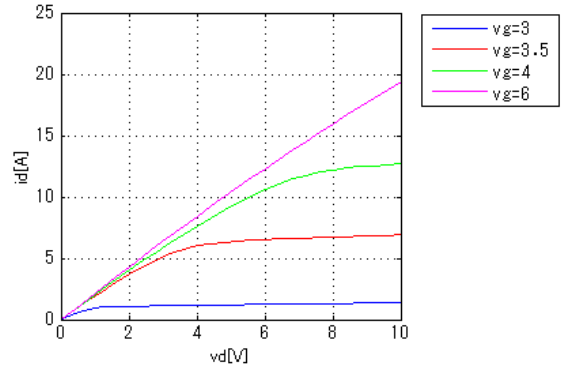
**IdVds[Vgs]**

Temp = 25degC



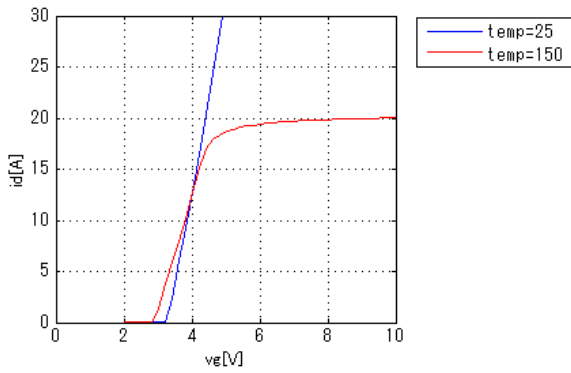
**IdVds[Vgs]2**

Temp = 150degC



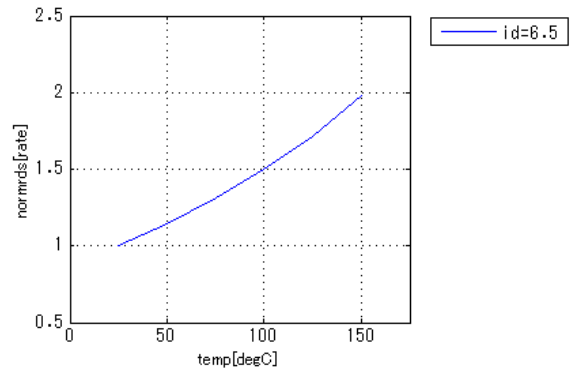
**IdVgs[Temp]**

Vds = 10V



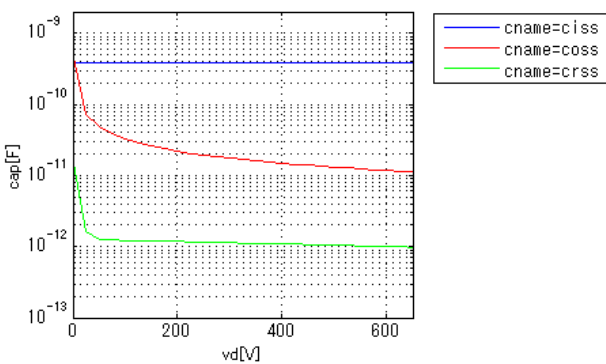
**NormRds(on)Temp[Id]**

Vgs = 6V



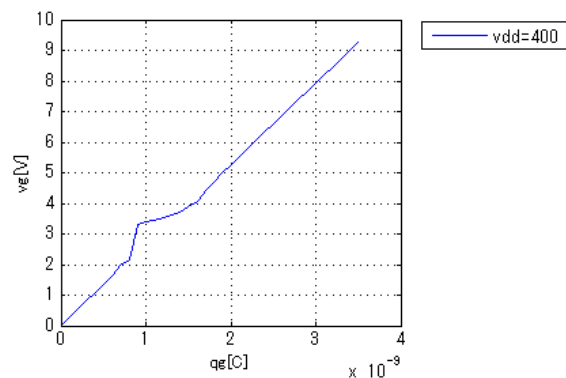
**CapacitanceVds[Cname]**

freq = 1000000Hz



**VgsQg[Vdd]**

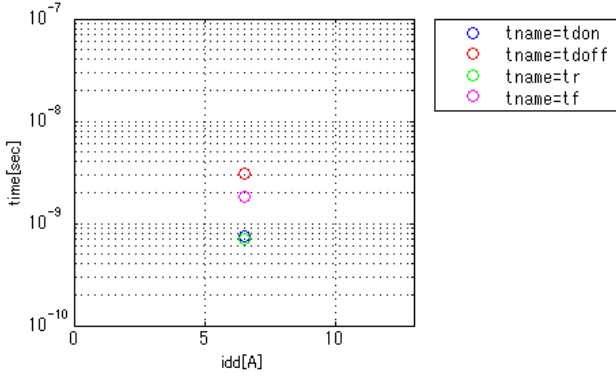
Id = 10A



Simulation results are following.  
 Explanatory notes — : simulated

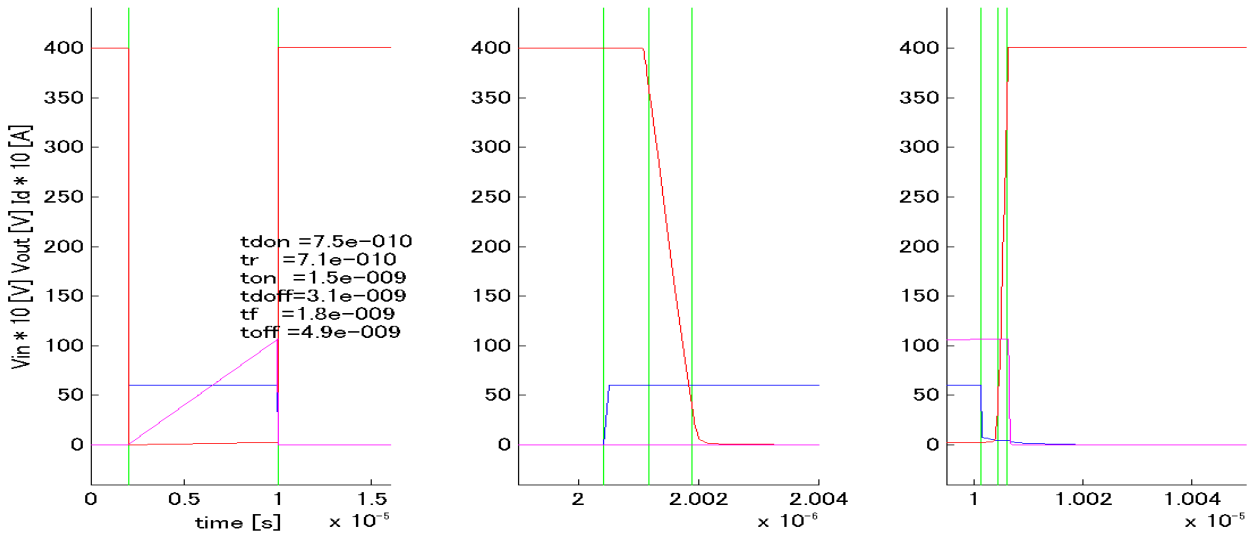
**SwitchingLoad[Tname]**

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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