

# PSpice Model

## GaN

## GaN Systems

## GS-065-011-1-L

### Model Information

**Model** An original macro model  
**Call Name** MDC\_GS-065-011-1-L\_PS  
**Pin Assign** 1:NC 2:NC 3:S 4:G 5:D 6:S  
**File List** Model Library MDC\_GS-065-011-1-L\_PS01.lib  
 Model Report MDC\_GS-065-011-1-L\_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 Rev 220708
- Product name GS-065-011-1-L
- Company name GaN Systems
- Characteristics IdVds[Vgs], IdVds[Vgs]2, Rds(on)Id[Vgs], Rds(on)Id[Vgs]2, IdVds[temp], VgsQg[Vdd], CapacitanceVds[Cname], IdVgs[Temp], NormRds(on)Temp[Id], SwitchingLload[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)	-20	to	10	V
Temperature	-55	to	150	deg C

## MOSFET

○ : Implemented  
× : Not Implemented  
— : Not applicable

Model Functions Table

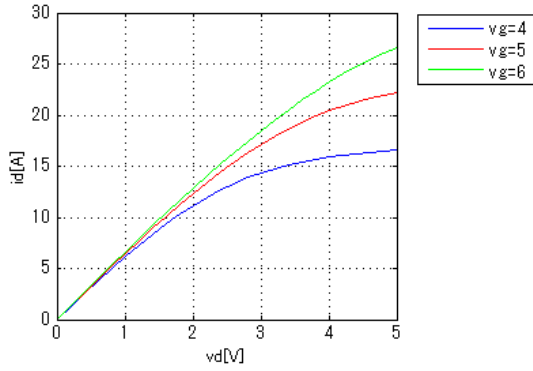
RANK=1

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

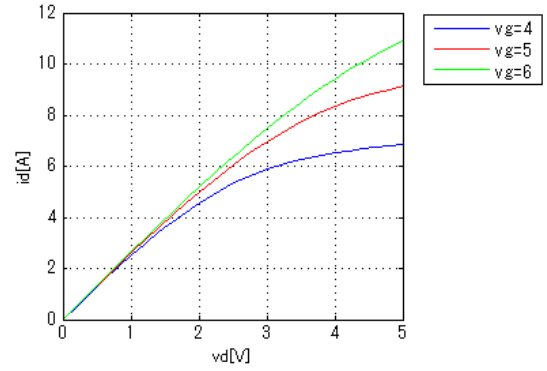
**IdVds[Vgs]**

Temp = 25degC



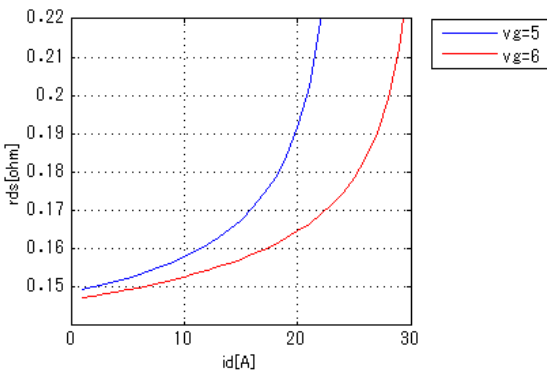
**IdVds[Vgs]2**

Temp = 150degC



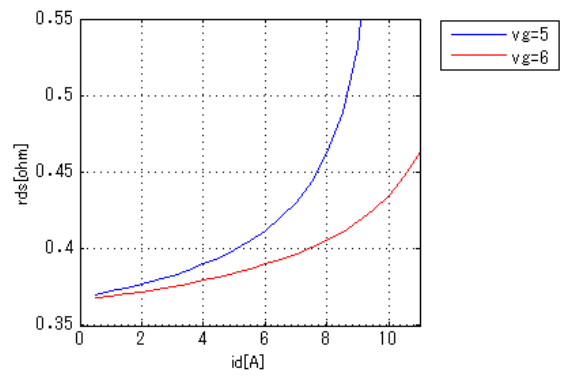
**Rds(on)Id[Vgs]**

Temp = 25degC



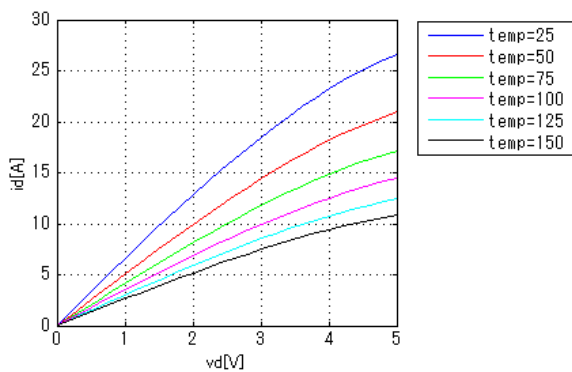
**Rds(on)Id[Vgs]2**

Temp = 150degC



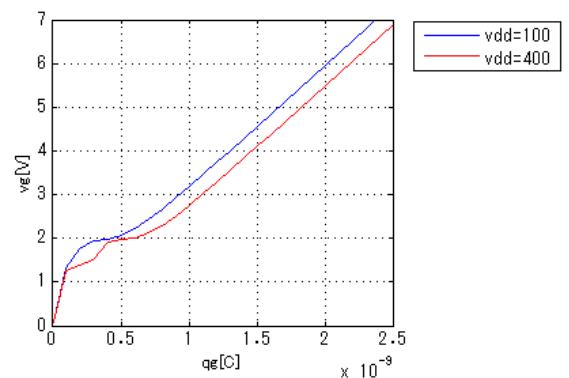
**IdVds[temp]**

vg = 6V



**VgsQg[Vdd]**

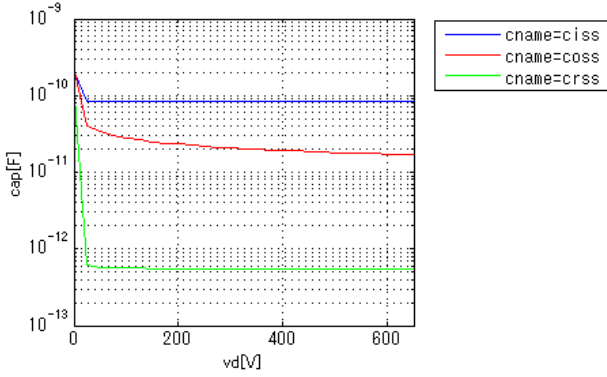
Id = 3.2A



Simulation results are following.  
 Explanatory notes — : simulated

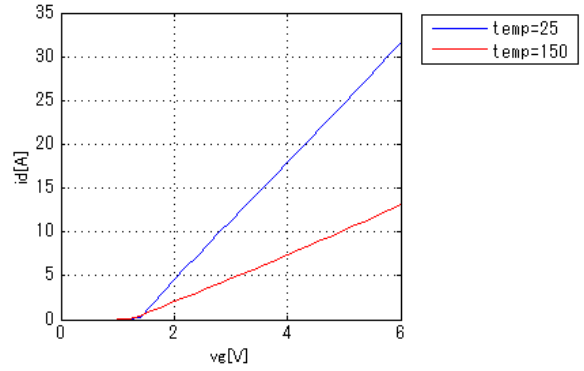
**CapacitanceVds[Cname]**

freq = 1000000Hz



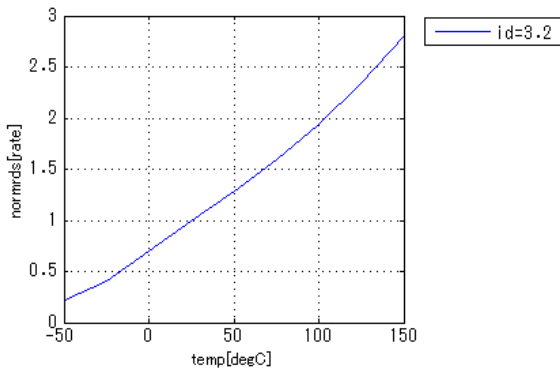
**IdVgs[Temp]**

Vds = 10V



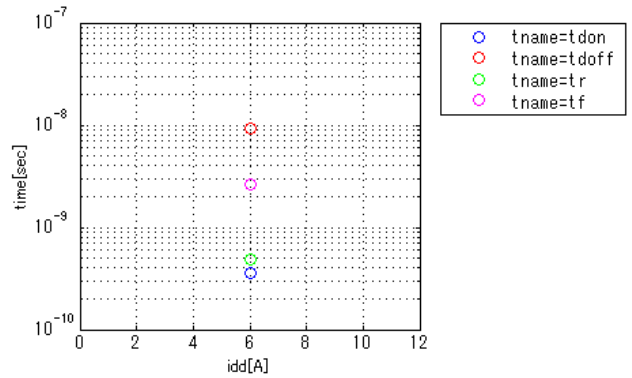
**NormRds(on)Temp[Id]**

Vgs = 6V



**SwitchingLload[Tname]**

vgg = 6V, vdd = 400V, Lload = 0.0003H, RGon = 15ohm, RGon = 2ohm

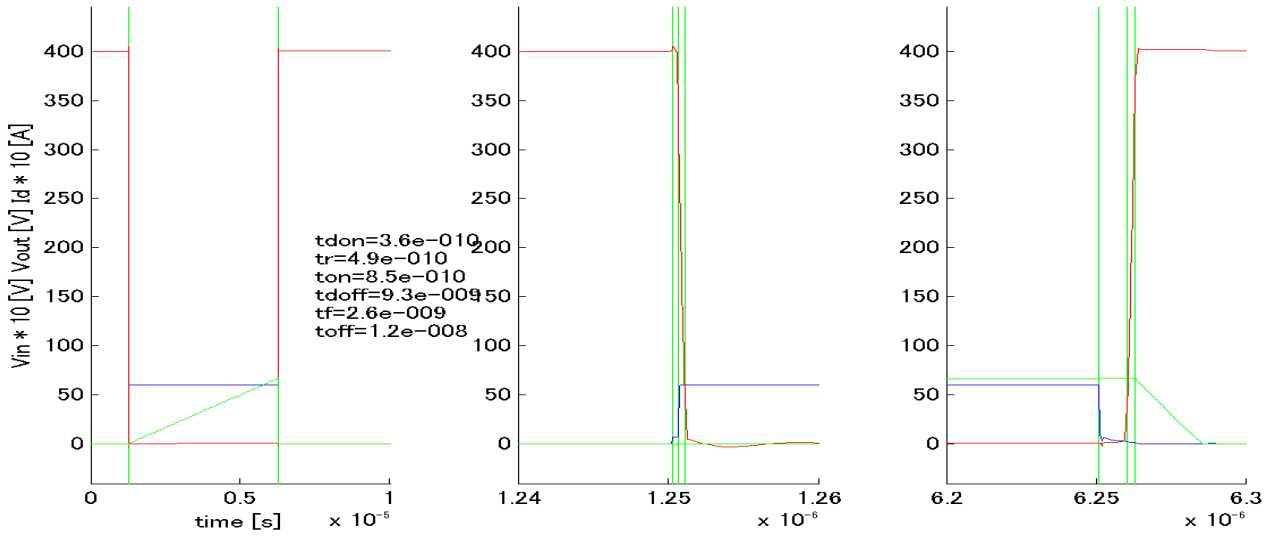


Simulation results are following.

Explanatory notes — : simulated

**Switching Waveform ( Blue : INPUT Red : OUTPUT Green : Current )**

vgg = 6V, vcc = 400V, Lload = 300uH, Lp = 9nH, Rgon = 15ohm, Rgoff = 2ohm, Temp = 25degC, Id = 6A



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