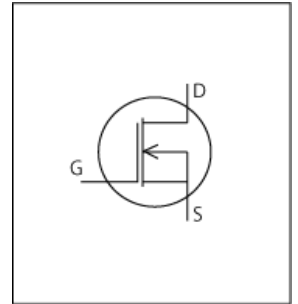


# PSpice Model

## NMOS

## ON

## NTB45N06T4G



### Model Information

**Model** A macro model based on BSIM3 model  
**Call Name** MDC\_NTB45N06T4G\_PS  
**Pin Assign** 1:G 2:D 3:S 4:D  
**File List** Model Library MDC\_NTB45N06T4G\_PS01.lib  
 Model Report MDC\_NTB45N06T4G\_PS.pdf (this file)

**Verified Simulator Version** PSpice version 16.6  
**Note**

### References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version Unknown
- Product name NTB45N06T4G
- Company name ON Semiconductor.
- Characteristics IdVgs[Temp], IdVds[Vgs], Rds(on)Id[Temp], Rds(on)Id[Vgs], Rds(on)Temp[Id], Ciss, Coss, Crss, VgsQg[Vdd], IsVsd[Temp], tdon, tdoff, tf, tr

### Simulation Range

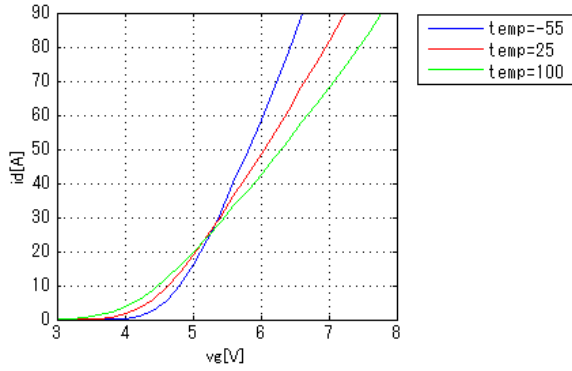
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Drain-source voltage (DC)	0	to	60	V
Gate-source voltage (DC)	0	to	20	V
Temperature	-55	to	175	deg C

Simulation results are following.  
 Explanatory notes — : simulated

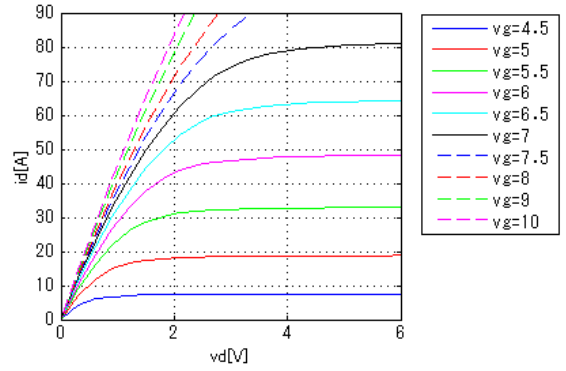
**IdVgs[Temp]**

Vds = 10V



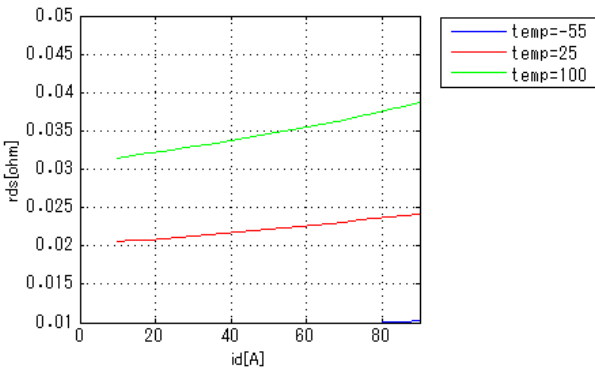
**IdVds[Vgs]**

Temp. = 25deg C

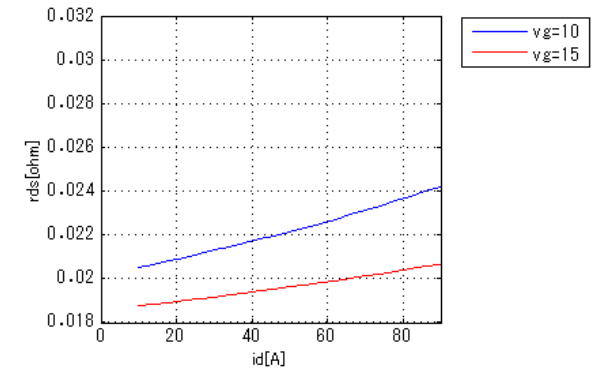


**Rds(on)Id[Temp]**

Vgs = 10V

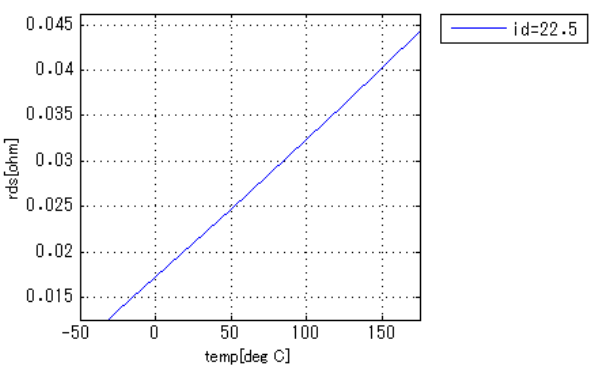


**Rds(on)Id[Vgs]**



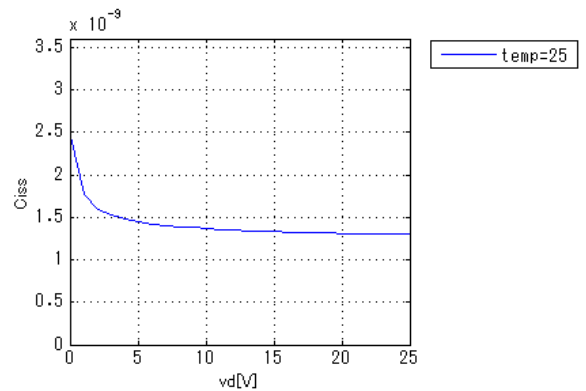
**Rds(on)Temp[Id]**

Vgs = 10V



**Ciss**

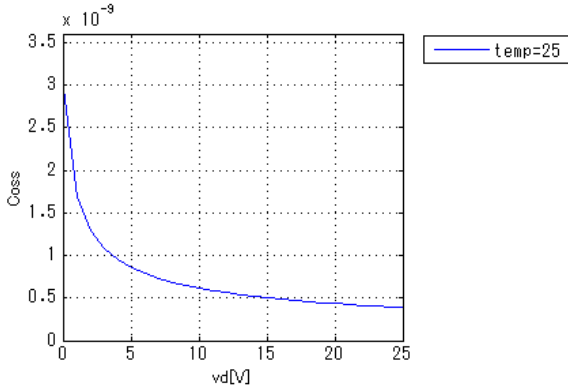
Freq. = 1MHz



Simulation results are following.  
 Explanatory notes — : simulated

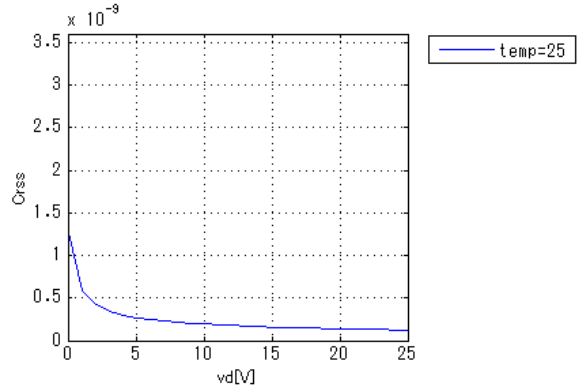
**Coss**

Freq. = 1MHz



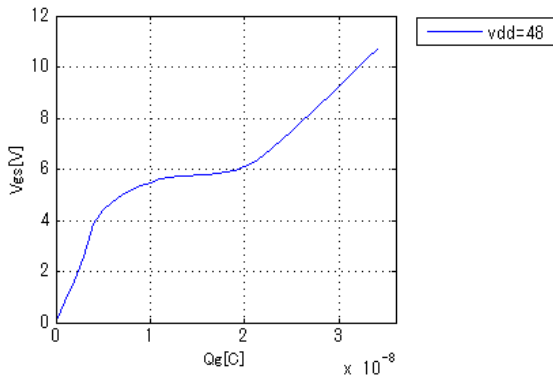
**Crss**

Freq. = 1MHz

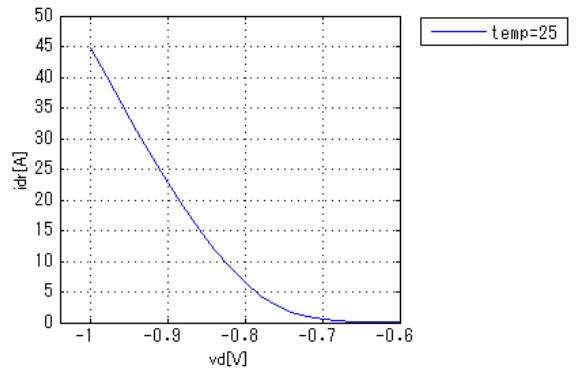


**VgsQg[Vdd]**

Id = 45A

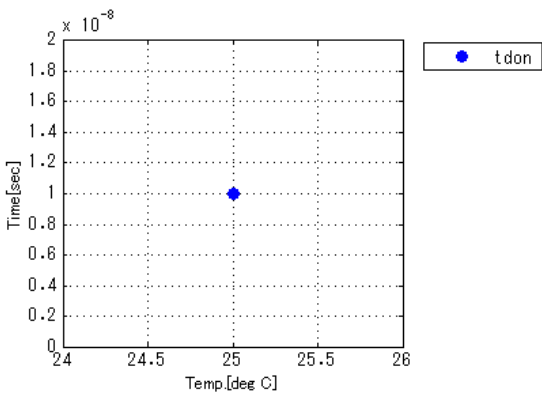


**IsVsd[Temp]**



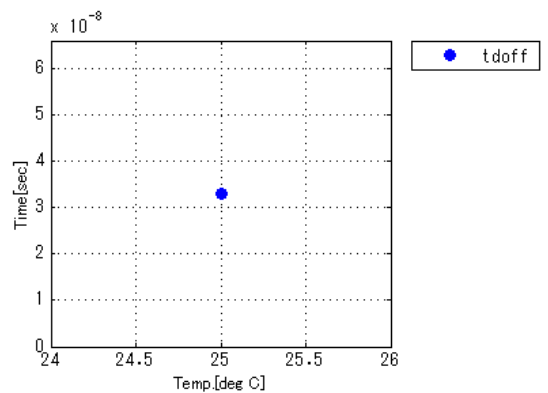
**tdon**

Vdd = 30V, Id = 45A, +Vg = 10V, -Vg = 0V, Rg = 0.001ohm



**tdoff**

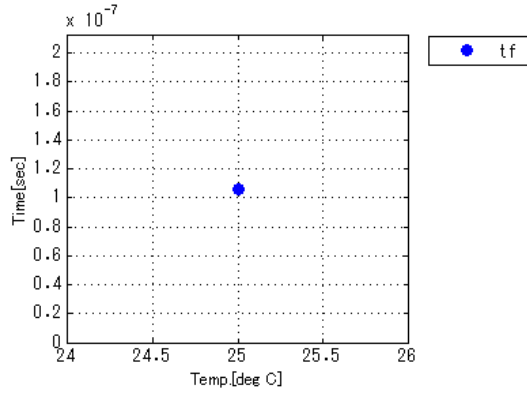
Vdd = 30V, Id = 45A, +Vg = 10V, -Vg = 0V, Rg = 0.001ohm



Simulation results are following.  
 Explanatory notes — : simulated

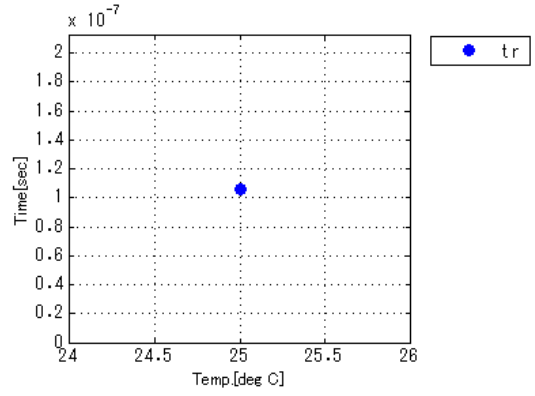
**tf**

Vdd = 30V, Id = 45A, +Vg = 10V, -Vg = 0V, Rg = 0.001ohm



**tr**

Vdd = 30V, Id = 45A, +Vg = 10V, -Vg = 0V, Rg = 0.001ohm



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