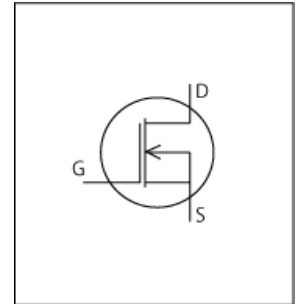


# PSpice Model

## NMOS

## ON

## NVMTS0D4N04C



### Model Information

**Model** A macro model based on BSIM3 model  
**Call Name** MDC\_NVMTS0D4N04C\_PS  
**Pin Assign** 1:G 2:S 3:S 4:S 5:D 6:D 7:D 8:D  
**File List** Model Library MDC\_NVMTS0D4N04C\_PS01.lib  
 Model Report MDC\_NVMTS0D4N04C\_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 March, 2020 Rev. 5
- Product name NVMTS0D4N04C
- Company name ON Semiconductor.
- Characteristics IdVds[Vgs], IdVgs[Temp], Rds(on)Vgs[Temp], Rds(on)Id[Vgs], Rds(on)Temp[Vgs], IdVds[temp], CapacitanceVds[Cname], VgsQg[Vdd], SwitchingRg[Tname], IsVsd[Temp], TrrIf[Ir], QrrIf[Ir], SwitchingWaveform, TrrQrrWaveform

### Simulation Range

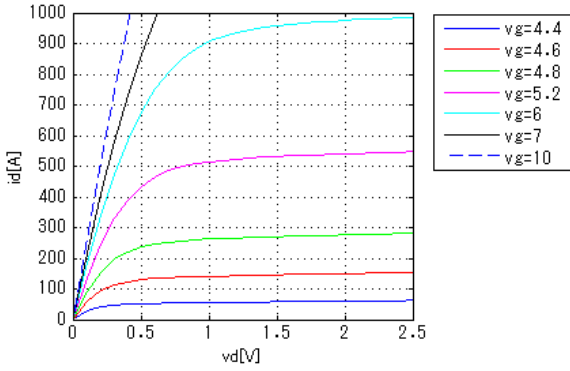
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Drain-source voltage (DC)	0	to	40	V
Gate-source voltage (DC)	-20	to	20	V
Temperature	-55	to	175	deg C

Simulation results are following.  
 Explanatory notes — : simulated

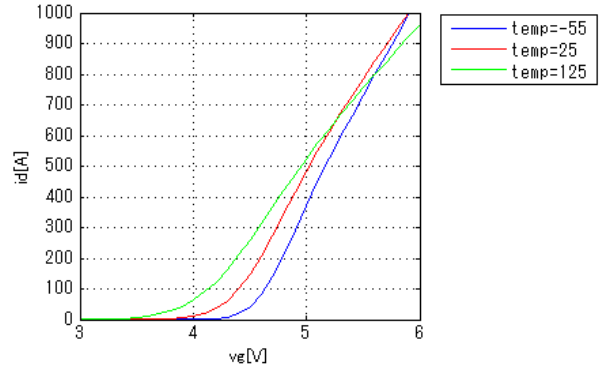
**IdVds[Vgs]**

Temp. = 25degC



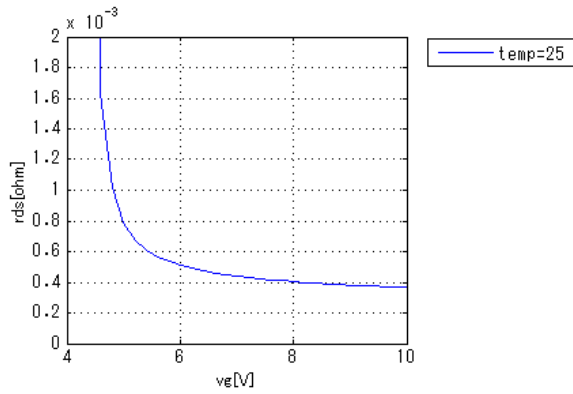
**IdVgs[Temp]**

Vds = 10V

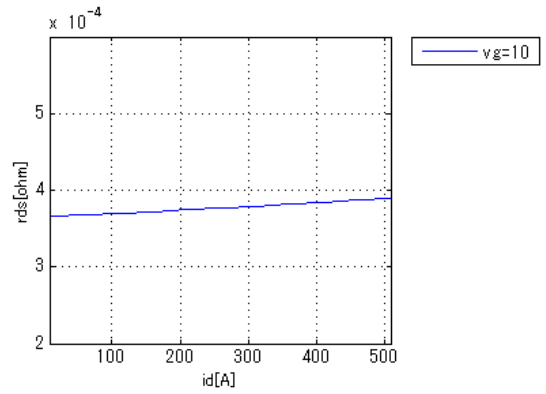


**Rds(on)Vgs[Temp]**

Id = 50A

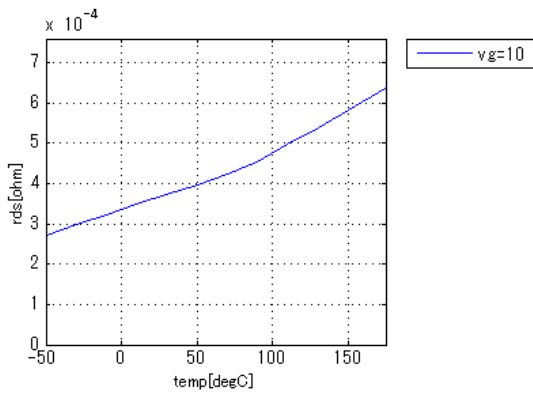


**Rds(on)Id[Vgs]**



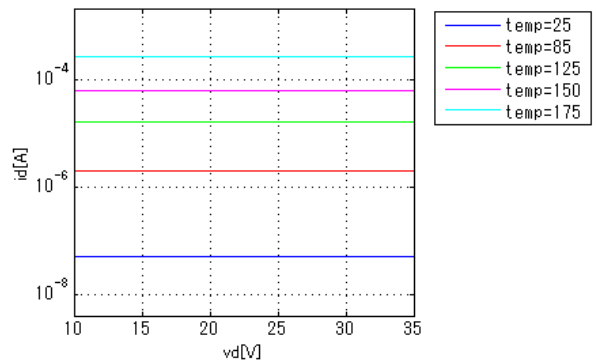
**Rds(on)Temp[Vgs]**

Id = 50A



**IdVds[temp]**

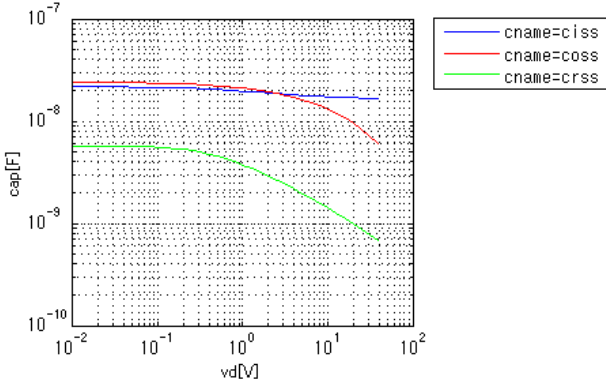
vg = 0V



Simulation results are following.  
 Explanatory notes — : simulated

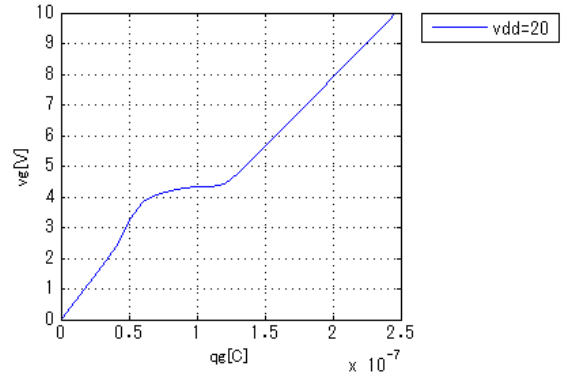
**CapacitanceVds[Cname]**

freq = 1000000Hz



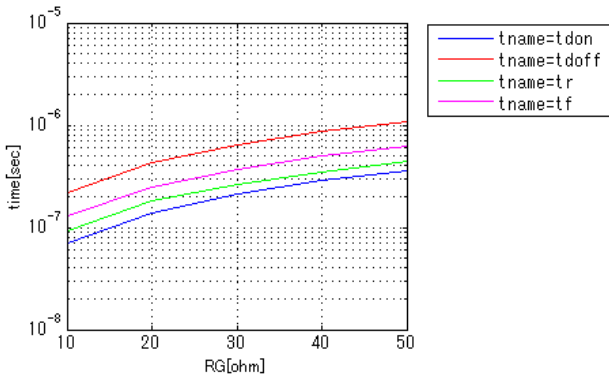
**VgsQg[Vdd]**

Id = 50A



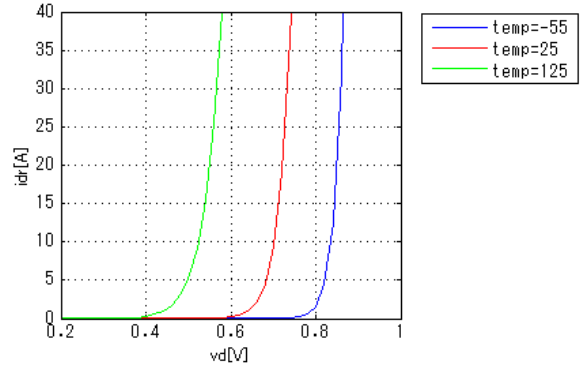
**SwitchingRg[Tname]**

vgg = 10V, vdd = 20V, idd = 50A



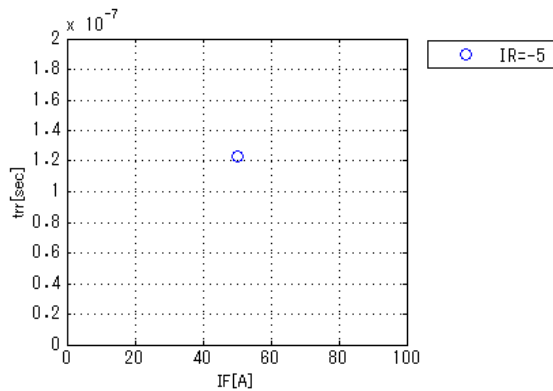
**IsVsd[Temp]**

vg = 0V



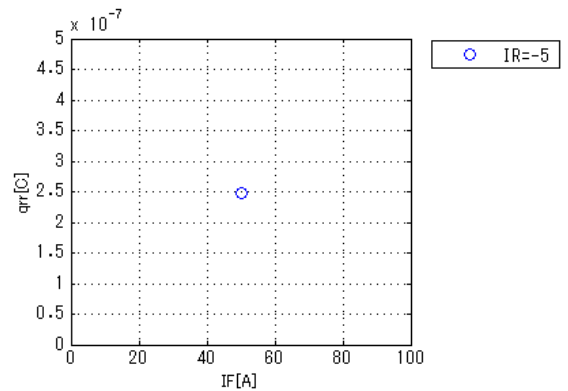
**Trrlf[Ir]**

vdd = 20V, didt = 100A/us



**Qrrlf[Ir]**

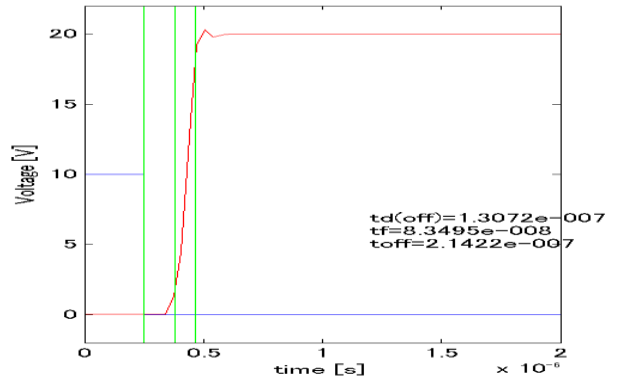
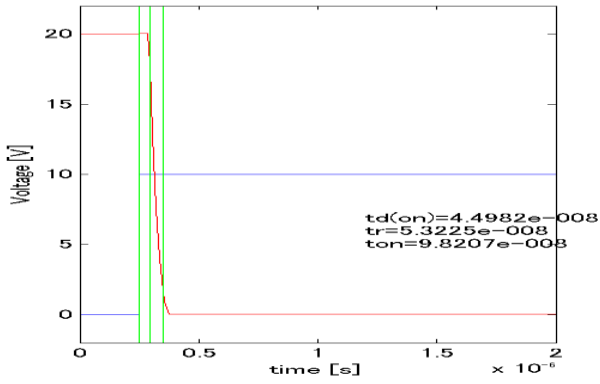
vdd = 20V, didt = 100A/us



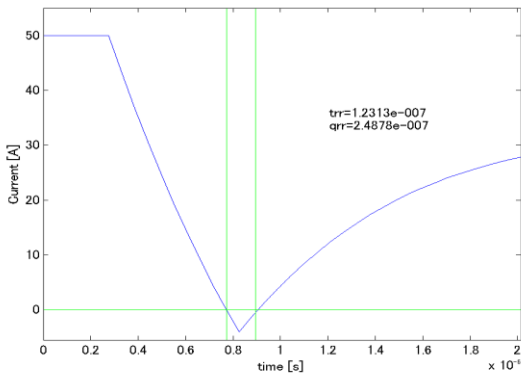
Simulation results are following.  
 Explanatory notes — : simulated

### Switching Waveform

Blue : INPUT Red : OUTPUT



### Trr Qrr Waveform



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