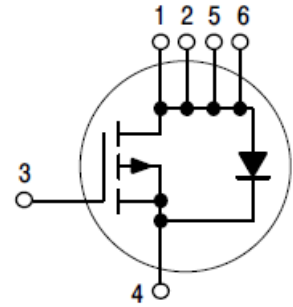
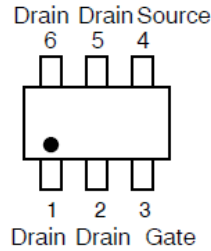


# LTspice Model PMOS ON NTGS3136PT1G

## PIN ASSIGNMENT



## Model Information

**Model** A macro model based on BSIM3 model  
**Call Name** MDC\_NTGS3136PT1G\_LT  
**Pin Assign** 1:D 2:D 3:G 4:S 5:D 6:D  
**File List** Model Library MDC\_NTGS3136PT1G\_LT02.lib  
 Model Report MDC\_NTGS3136PT1G\_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 May, 2019 Rev. 2
- Product name NTGS3136PT1G
- Company name ON Semiconductor.
- Characteristics IdVds[Vgs], IdVgs[Temp], Rds(on)Vgs[Temp], Rds(on)Id[Vgs], NormRds(on)Temp[Id], CapacitanceVds[Cname], VgsQg[Vdd], VdsQg[Vdd], IsVsd[Temp], VthTemp[Id], SwitchingIdd[Tname], TrrIf[Ir], SwitchingWaveform, TrrWaveform

## 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	-20	V
Gate-source voltage (DC)	8	to	-8	V
Temperature	-55	to	150	deg C

## MOSFET

○ : Implemented  
× : Not Implemented  
— : Not applicable

Model Functions Table

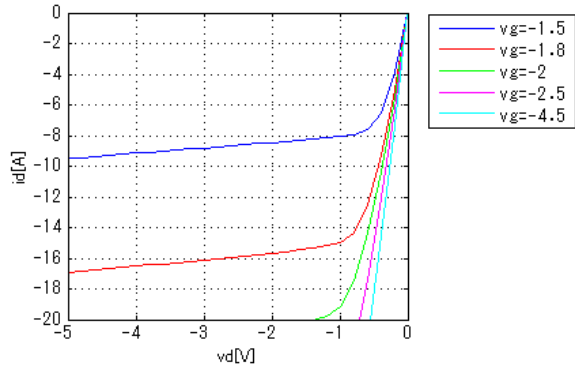
RANK=1

Functions	RANK	Implemented
ID-VDS-VGS	1	○
ID-VGS(Temp)	1	○
RDS(on)-VGS-ID	1	—
RDS(on)-VGS-Temp	1	○
RDS(on)-ID-VGS	1	○
RDS(on)-ID-Temp	1	—
RDS(on)-Temp-VGS	1	—
RDS(on)-Temp-ID	1	○
Capacitance	1	○
Gate Charge	1	○
IS-VSD(Forward)	1	○
Reverse recovery	1	○
Switching(Typ.)	1	○
Bv-Temp	1	—
Yfs-ID-Temp	1	—

Simulation results are following.  
 Explanatory notes — : simulated

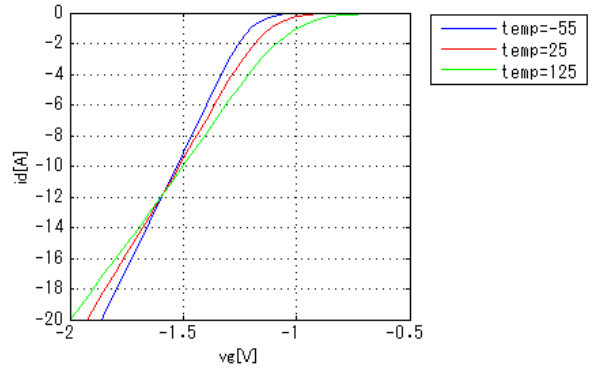
**IdVds[Vgs]**

Temp = 25degC



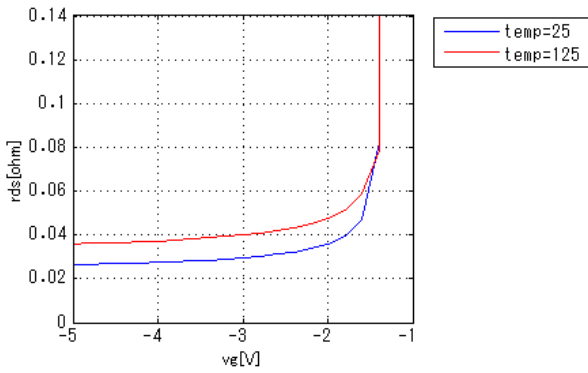
**IdVgs[Temp]**

Vds = -5V



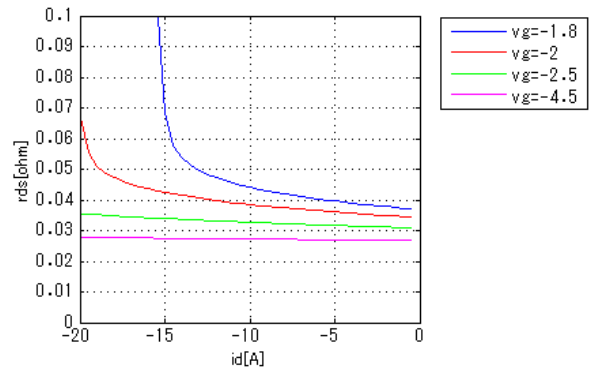
**Rds(on)Vgs[Temp]**

Id = -5.1A



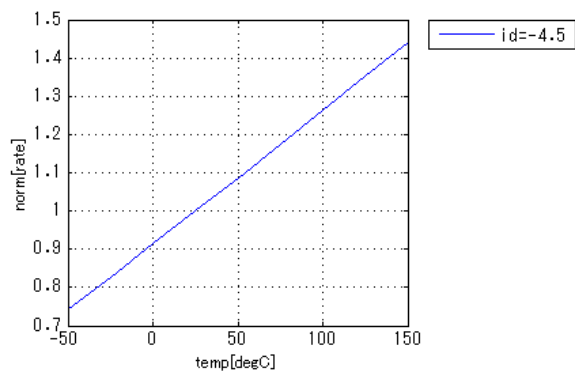
**Rds(on)Id[Vgs]**

Temp = 25degC



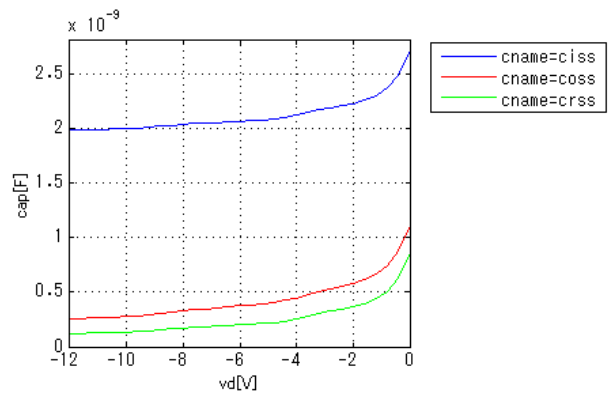
**NormRds(on)Temp[Id]**

Vgs = -5.1V



**CapacitanceVds[Cname]**

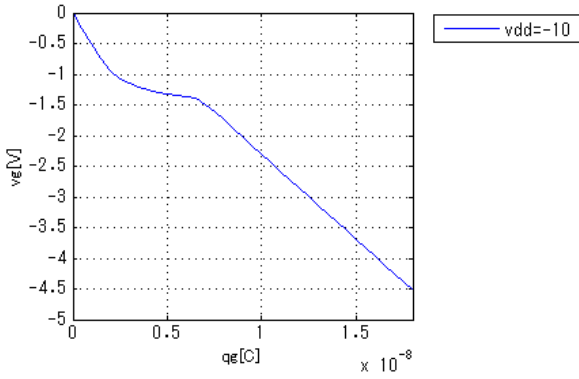
freq = 1000000Hz



Simulation results are following.  
 Explanatory notes — : simulated

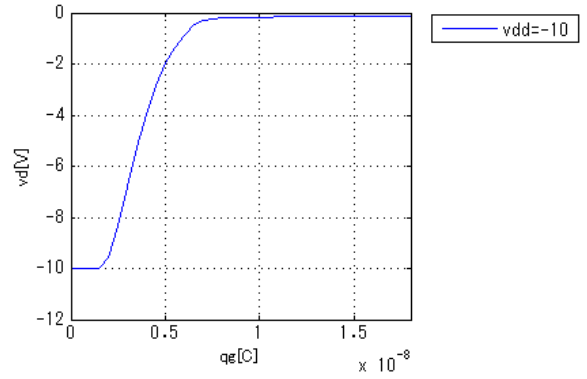
**VgsQg[Vdd]**

Id = -5.1A



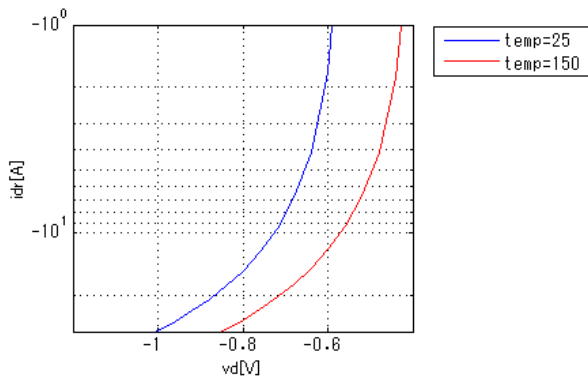
**VdsQg[Vdd]**

Id = -5.1A



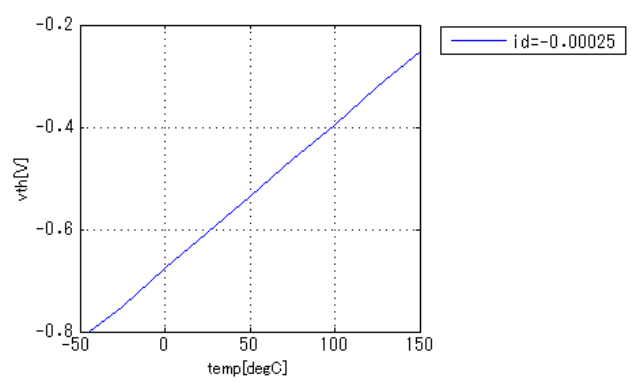
**IsVsd[Temp]**

vg = 0V



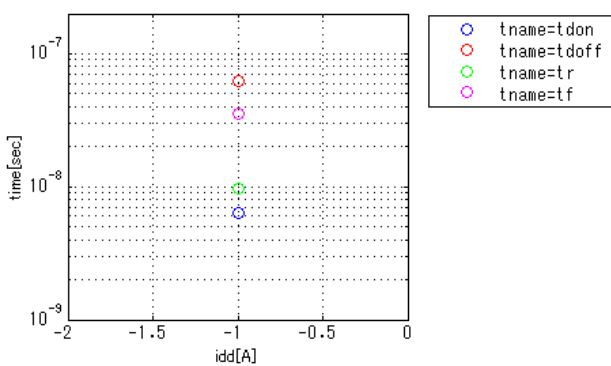
**VthTemp[Id]**

Vd = Vg



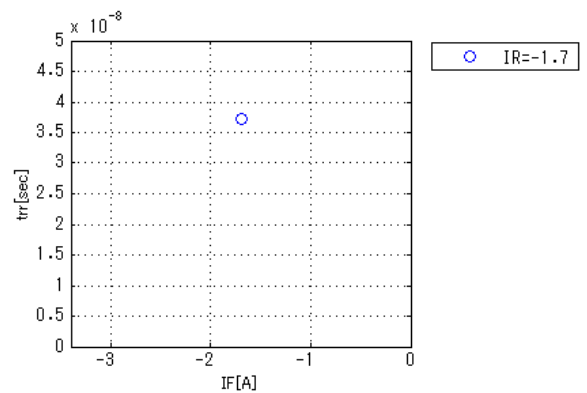
**SwitchingIdd[Tname]**

vgg = -4.5V, vdd = -10V, RGG = 6ohm



**TrrIf[Ir]**

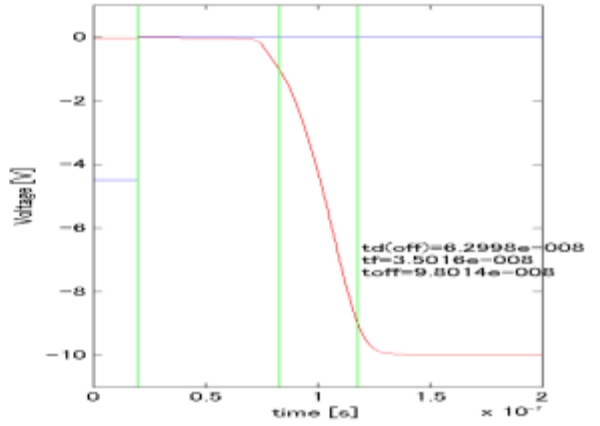
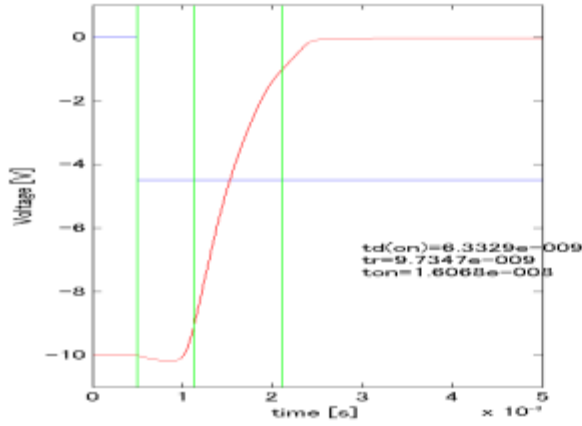
vdd = -5V, didt = 100A/us, Temp = 25degC



Simulation results are following.  
 Explanatory notes — : simulated

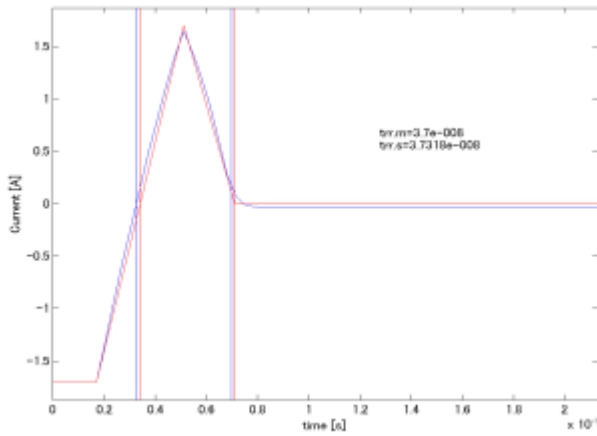
**Switching Waveform (Blue : INPUT Red : OUTPUT)**

v<sub>gg</sub> = -4.5V, v<sub>dd</sub> = -10V, R<sub>GG</sub> = 6ohm, i<sub>dd</sub> = -1A



**Trr Waveform (Red : Datasheet Blue : Simulation)**

v<sub>dd</sub> = -5V, didt = 100A/us, Temp = 25degC, I<sub>F</sub> = -1.7A



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