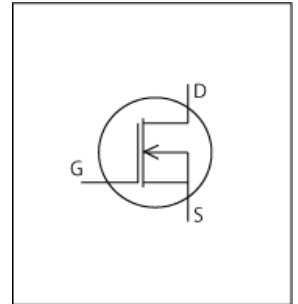


# PSpice Model

## NMOS

### Infineon

### IPZ40N04S5-8R4



### Model Information

**Model** A macro model based on BSIM3 model  
**Call Name** MDC\_IPZ40N04S5-8R4\_PS  
**Pin Assign** 1:S 2:S 3:S 4:G 5:D 6:D 7:D 8:D  
**File List** Model Library MDC\_IPZ40N04S5-8R4\_PS01.lib  
 Model Report MDC\_IPZ40N04S5-8R4\_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 2015-07-27 Rev1.1
- Product name IPZ40N04S5-8R4
- Company name Infineon Technologies AG
- Characteristics IdVds[Vgs],Rds(on)Id[Vgs],IdVgs[Temp],Rds(on)Temp[Vgs], VthTemp[Id],CapacitanceVds[Cname],IsVsd[Temp],BvTemp[ir],VgsQg[Vdd],SwitchingIdd[Tname],TrrIf[Ir],QrrIf[Ir],SwitchingWaveform,TrrQrrWaveform

### Simulation Range

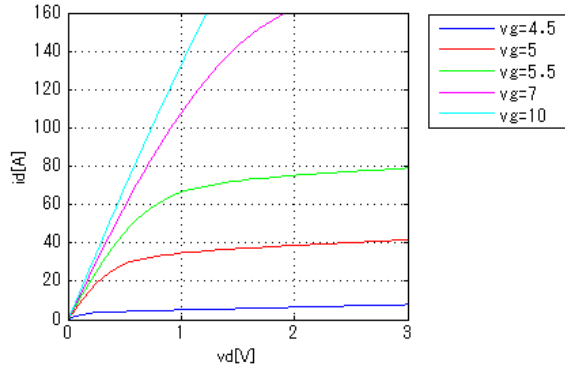
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

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

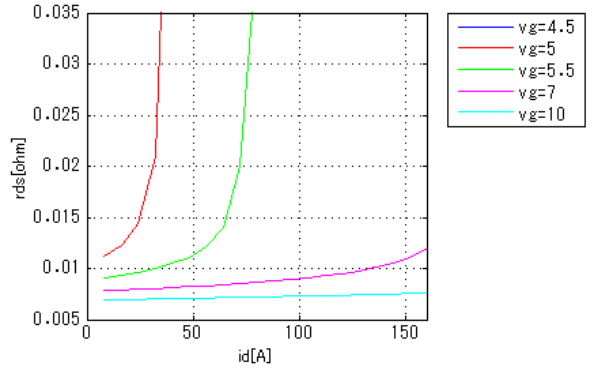
Simulation results are following.  
 Explanatory notes — : simulated

**IdVds[Vgs]**

Temp. = 25degC

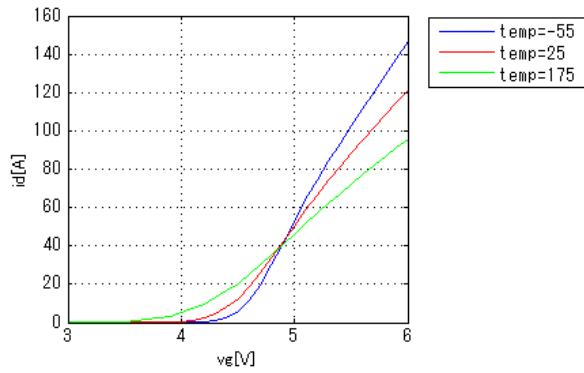


**Rds(on)Id[Vgs]**



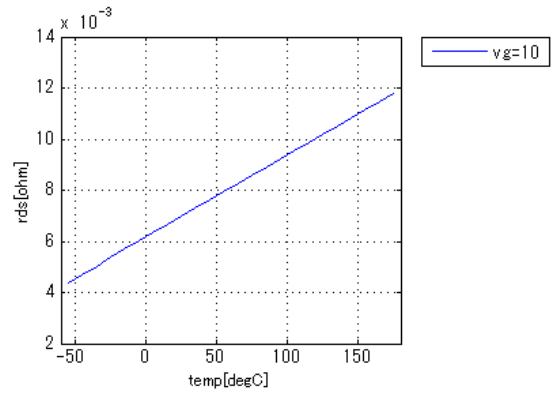
**IdVgs[Temp]**

Vds = 6V



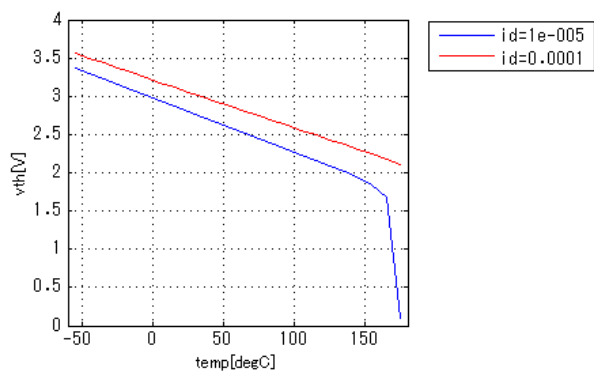
**Rds(on)Temp[Vgs]**

Id = 20A



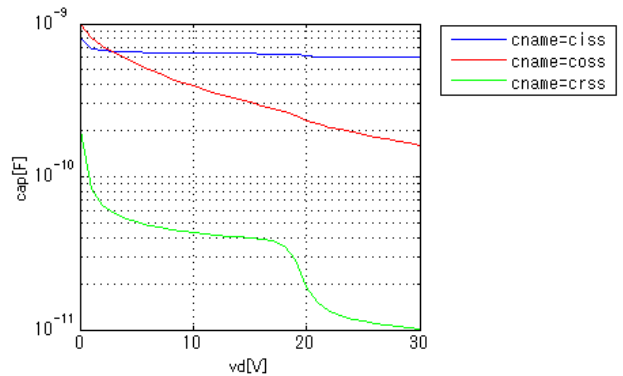
**VthTemp[Id]**

Vd = Vg



**CapacitanceVds[Cname]**

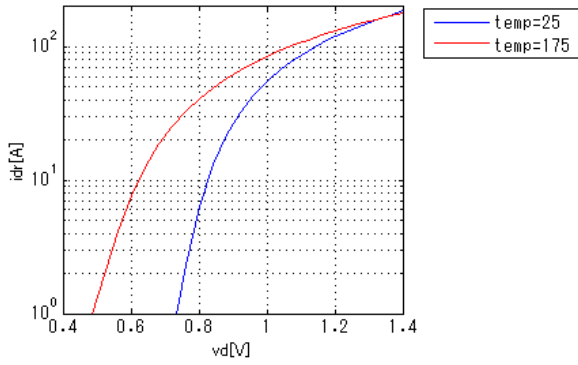
freq = 1000000Hz



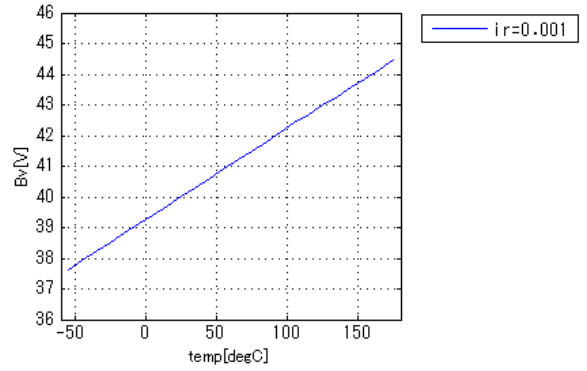
Simulation results are following.  
 Explanatory notes — : simulated

**IsVsd[Temp]**

vg = 0V

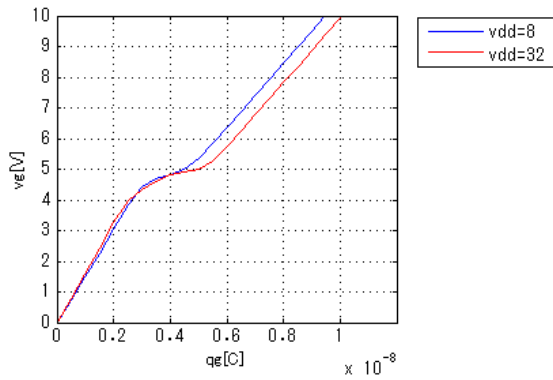


**BvTemp[ir]**



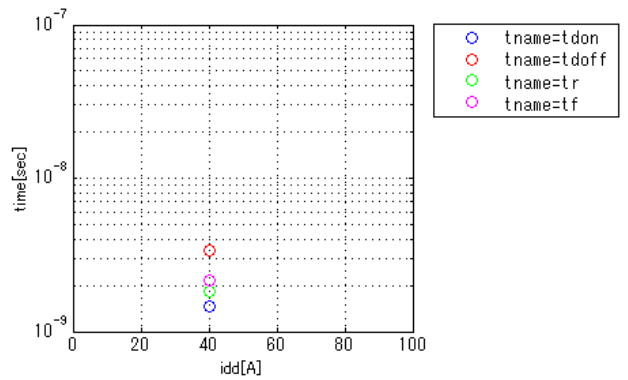
**VgsQg[Vdd]**

Id = 40A



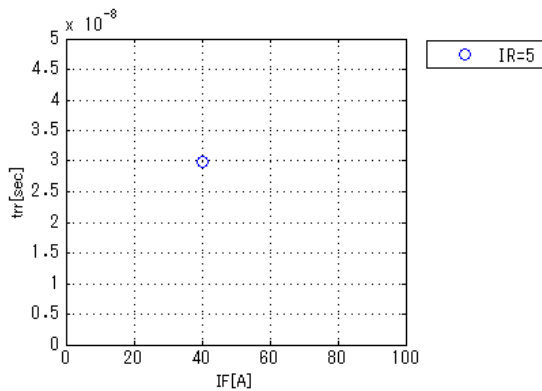
**SwitchingIdd[Tname]**

vgg = 10V, vdd = 20V, RGG = 3.5ohm



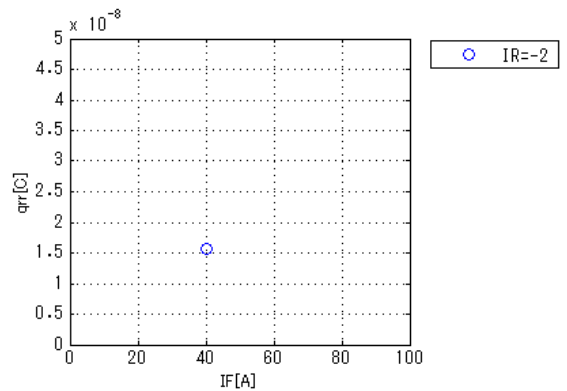
**Trrlf[Ir]**

vdd = 20V, didt = 100A/us



**Qrrlf[Ir]**

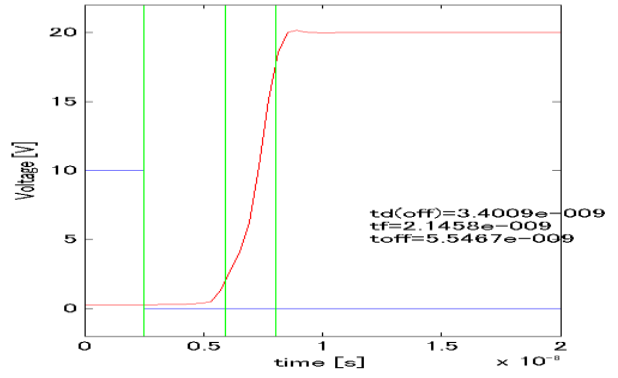
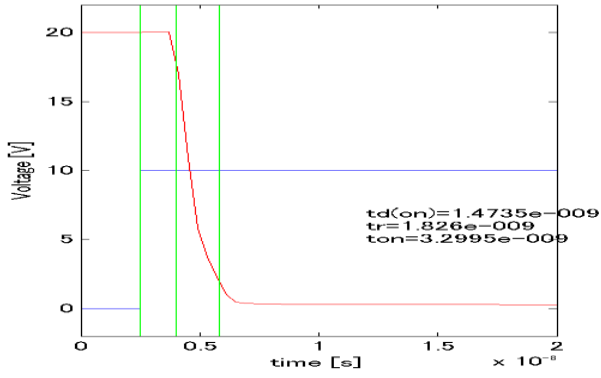
vdd = 20V, didt = 100A/us



Simulation results are following.  
 Explanatory notes — : simulated

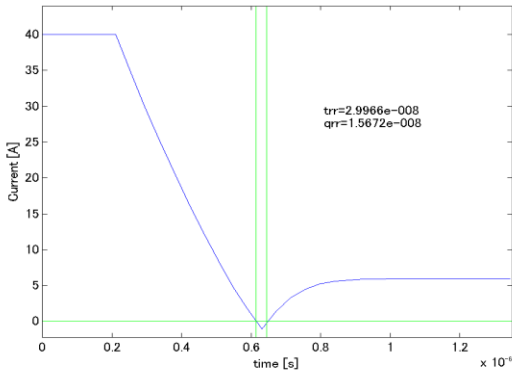
**SwitchingWaveform**

Blue : INPUT Red : OUTPUT



**TrrQrrWaveform**

vdd = 20V, didt = 100A/us



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