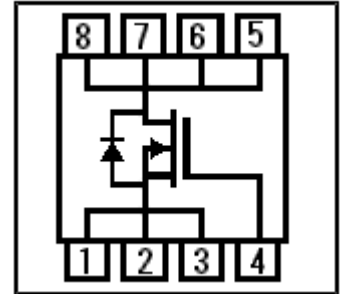


# PSpice Model

## NMOS

### Infineon

### IAUAN04S7N008



### Model Information

**Model** A macro model based on BSIM3 model  
**Call Name** MDC\_IAUAN04S7N008\_PS  
**Pin Assign** 1:S 2:S 3:S 4:G 5:D 6:D 7:D 8:D  
**File List** Model Library MDC\_IAUAN04S7N008\_PS02.lib  
 Model Report MDC\_IAUAN04S7N008\_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 2023-05-30 Rev 1.0
- Product name IAUAN04S7N008
- Company name Infineon Technologies AG
- Characteristics IdVds[Vgs],Rds(on)Id[Vgs],IdVgs[Temp],Rds(on)Temp[Vgs],Rds(on)Temp[Vgs]2,VthTemp[Id],CapacitanceVds[Cname],Isvsd[Temp],BvTemp[ir],VgsQg[Vdd],SwitchingIdd[Tname],Trrlf[Ir],Qrrlf[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	40	V
Gate-source voltage (DC)	-20	to	20	V
Temperature	-55	to	175	deg C

## MOSFET

○ : Implemented  
× : Not Implemented  
— : Not applicable

Model Functions Table

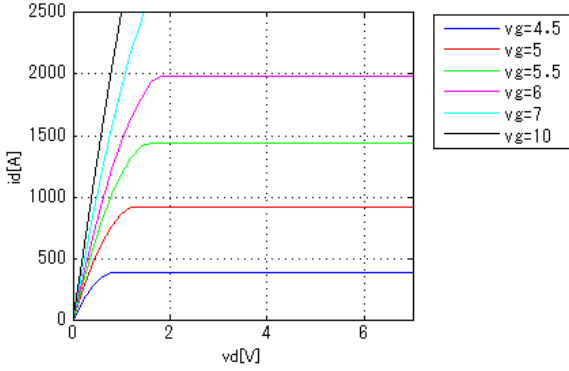
RANK=1

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

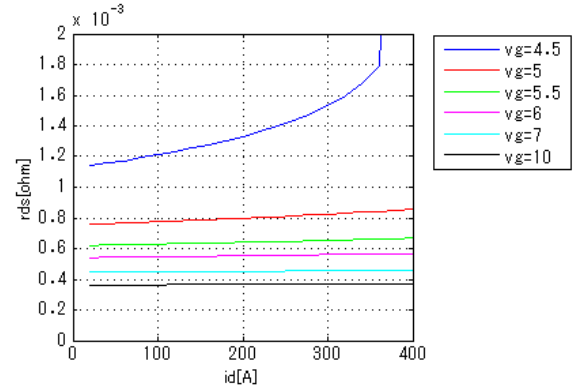
**IdVds[Vgs]**

Temp = 25degC



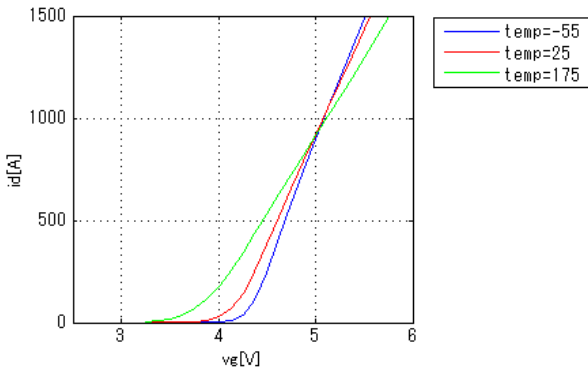
**Rds(on)Id[Vgs]**

Temp = 25degC



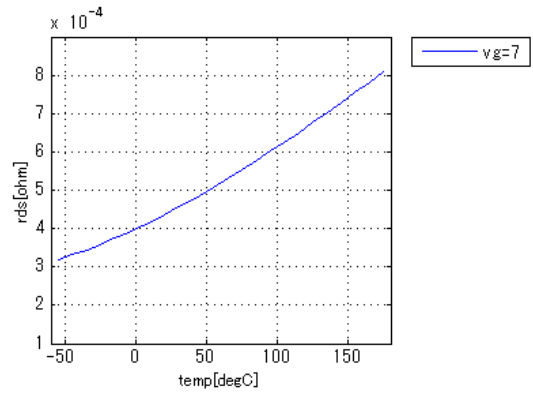
**IdVgs[Temp]**

Vds = 6V



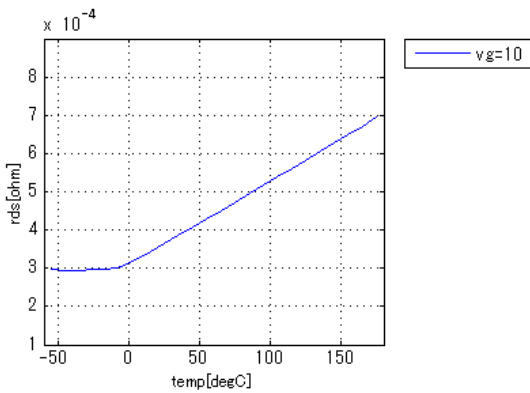
**Rds(on)Temp[Vgs]**

Id = 44A



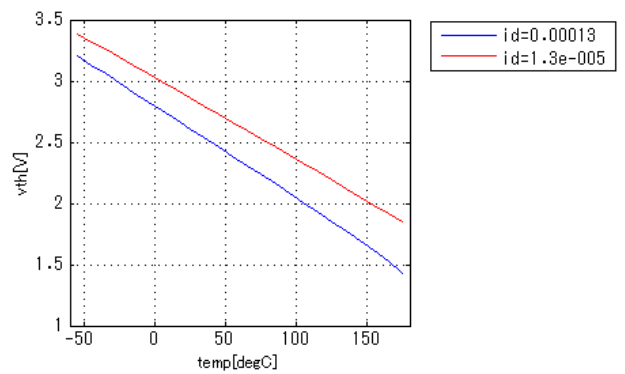
**Rds(on)Temp[Vgs]2**

Id = 88A



**VthTemp[Id]**

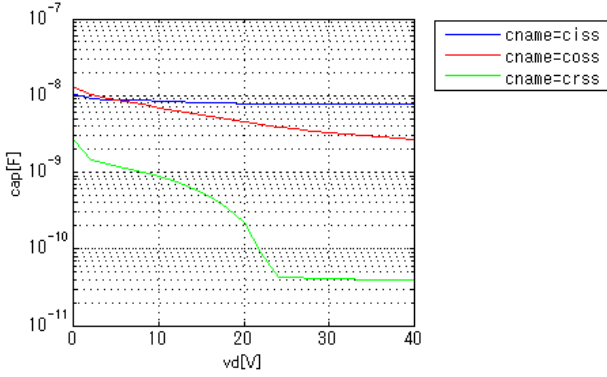
Vd = Vg



Simulation results are following.  
 Explanatory notes — : simulated

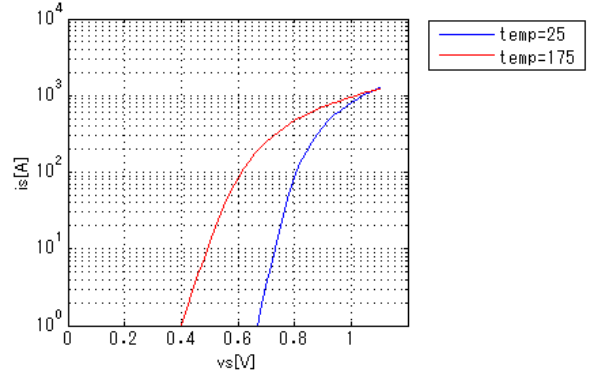
**CapacitanceVds[Cname]**

freq = 1000000Hz



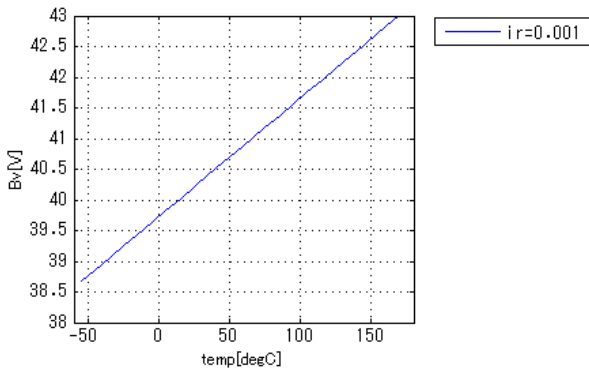
**IsVsd[Temp]**

vg = 0V



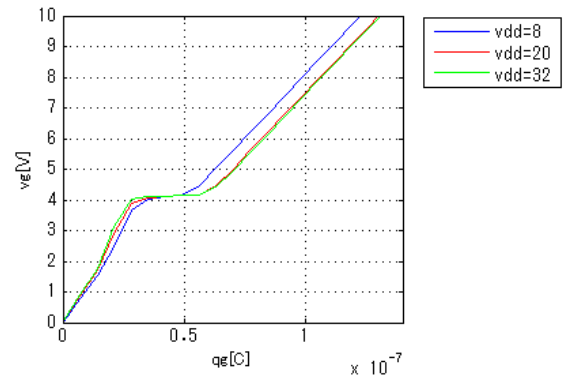
**BvTemp[ir]**

ir = 0.001A



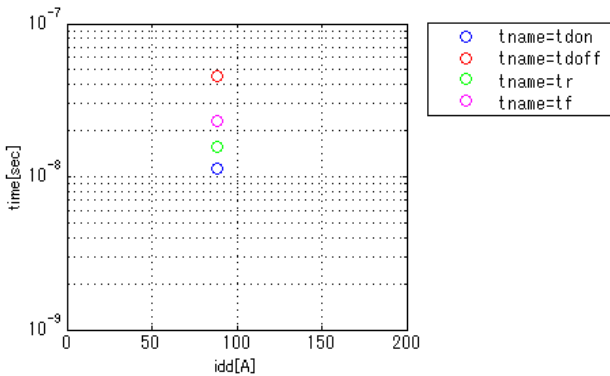
**VgsQg[Vdd]**

Id = 88A



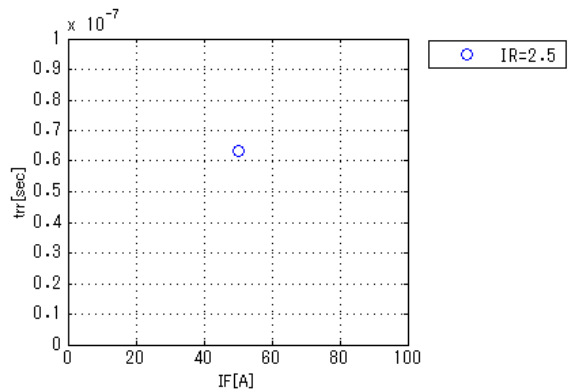
**SwitchingIdd[Tname]**

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



**TrrIf[Ir]**

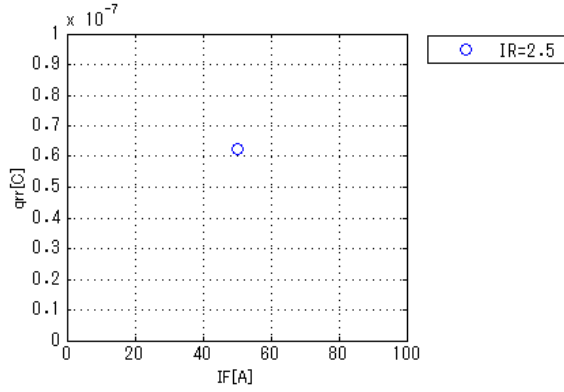
vdd = 20V, didt = 100A/us, Temp = 25degC



Simulation results are following.  
 Explanatory notes — : simulated

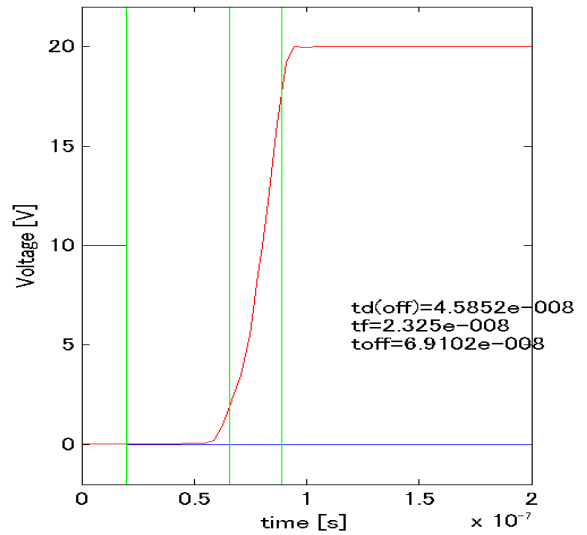
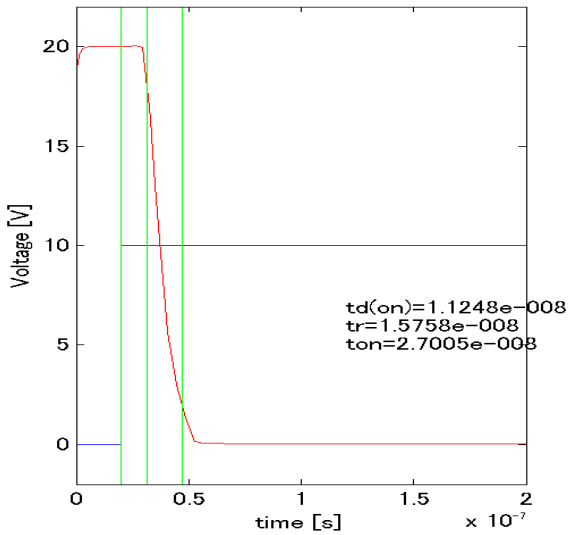
**Qrrlf[Ir]**

vdd = 20V, didt = 100A/us, Temp = 25degC



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

v<sub>gg</sub> = 10V, v<sub>dd</sub> = 20V, R<sub>GG</sub> = 3.5ohm, Temp = 25degC, I<sub>dd</sub> = 88A

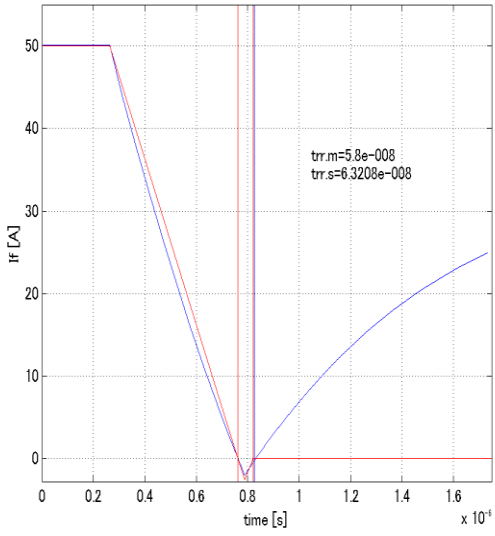


Simulation results are following.

Explanatory notes — : simulated

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

didt = 100A/us, vcc = 20V, if = 50A, ir = 2.5A



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