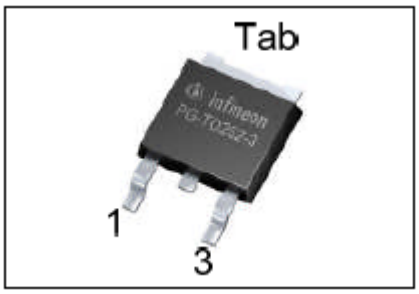
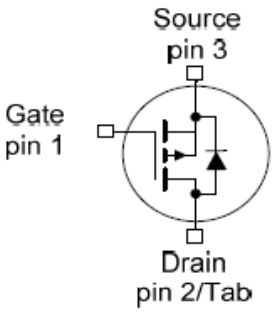
PSpice Model
PMOS
Infineon
IPD50P04P4L-11





Model Information

Model	A macro model based on BSIM3 model	
Call Name	MDC_IPD50P04P4L-11_PS	
Pin Assign	1:G 2:D 3:S	
File List	Model Library	MDC_IPD50P04P4L-11_PS02.lib
	Model Report	MDC_IPD50P04P4L-11_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 06.08.2010 Rev. 1.0
- ●Product name IPD50P04P4L-11
- ●Company name Infineon Technologies AG
- ●Characteristics IdVds[Vgs],Rds(on)Id[Vgs],IdVgs[Temp],Rds(on)Temp[Id],VthTemp[Id],CapacitanceVds[Cname],IsVsd[Temp],BvTemp[ir],VgsQg[Vdd],SwitchingIdd[Tname],TrrIf[Ir],QrrIf[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)	16	to	-16	V
Temperature	-55	to	175	deg C

MOSFET

○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

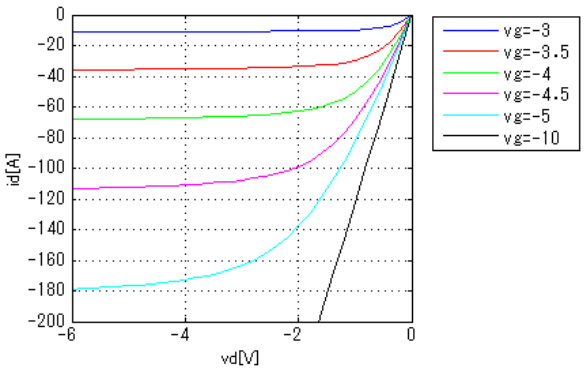
RANK=1

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

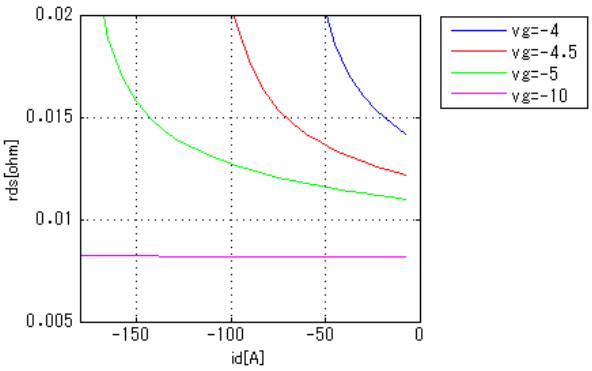
IdVds[Vgs]

Temp = 25degC



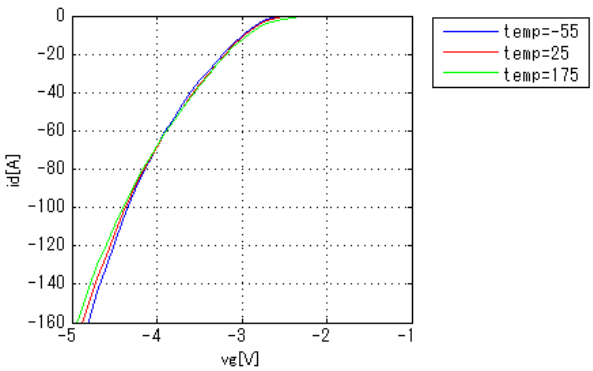
Rds(on)Id[Vgs]

Temp = 25degC



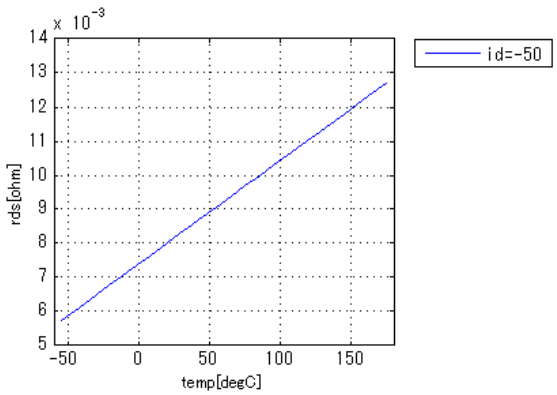
IdVgs[Temp]

Vds = -6V



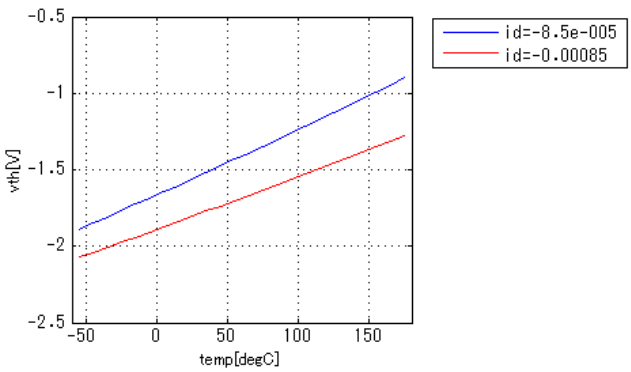
Rds(on)Temp[Id]

Vgs = -10V



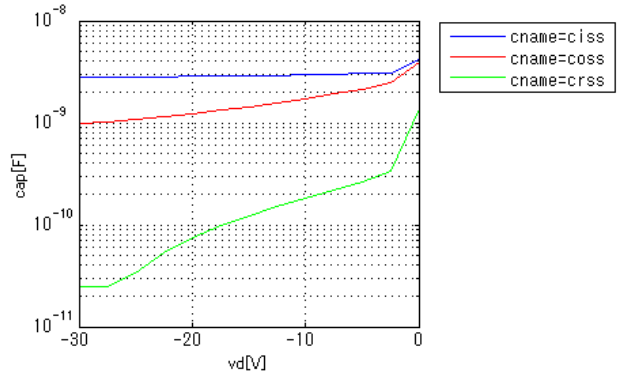
VthTemp[Id]

Vd = Vg



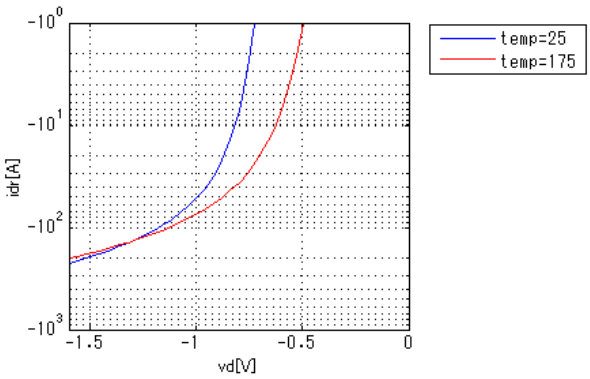
CapacitanceVds[Cname]

freq = 1000000Hz

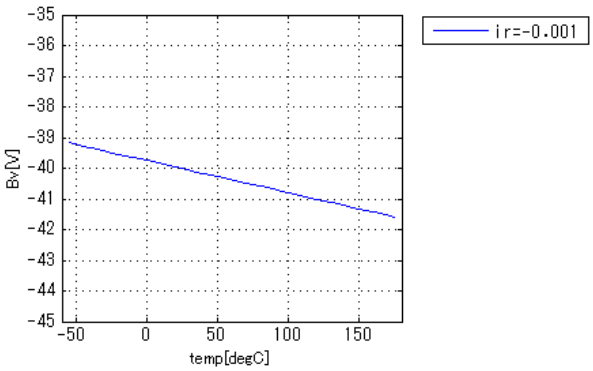


Simulation results are following.
Explanatory notes — : simulated

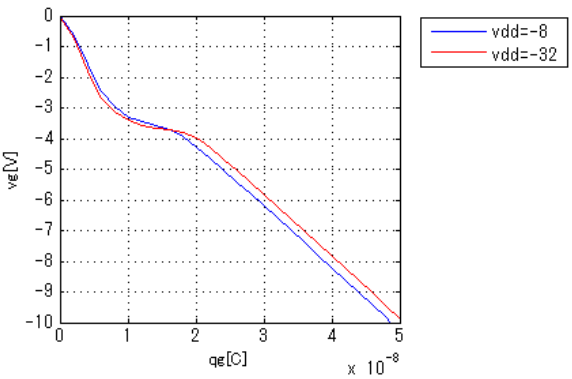
IsVsd[Temp]
vg = 0V



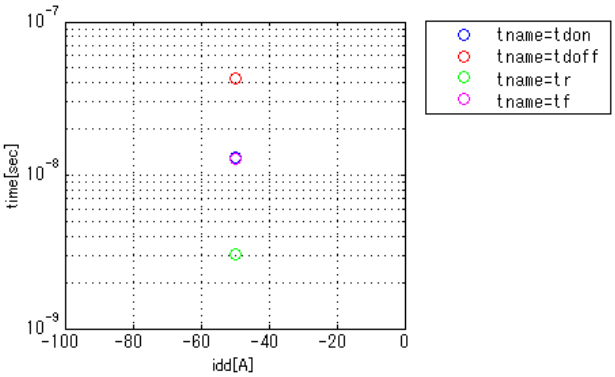
BvTemp[ir]
ir = -0.001A



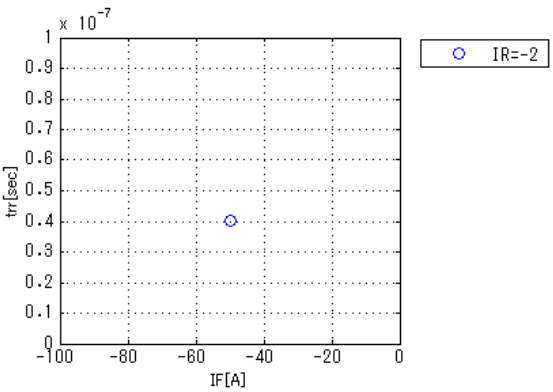
VgsQg[Vdd]
Id = -50A



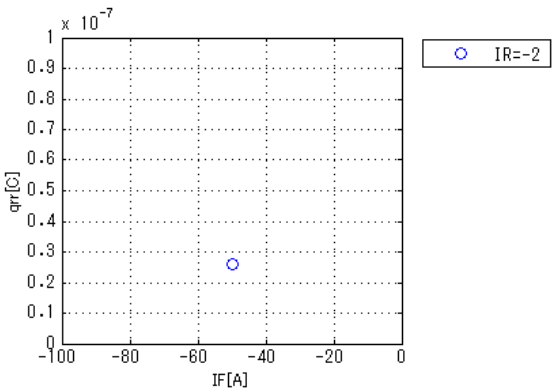
SwitchingIdd[Tname]
vgg = -10V, vdd = -50V, RGG = 3.5ohm



TrrIf[Ir]
vdd = -20V, didt = 100A/us, Temp = 25degC



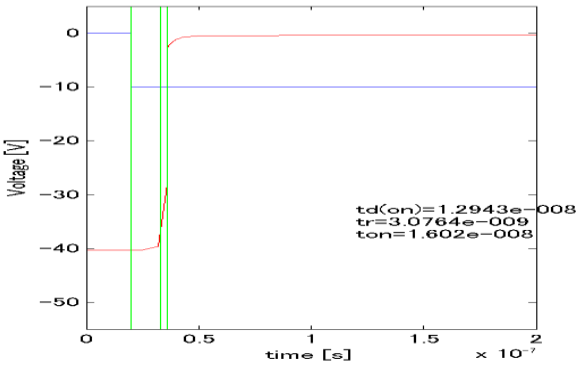
QrrIf[Ir]
vdd = -20V, didt = 100A/us, Temp = 25degC

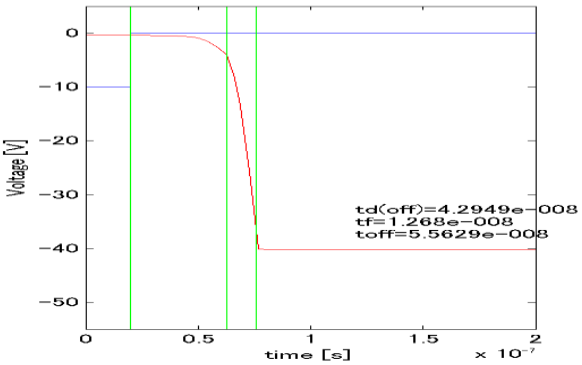


Simulation results are following.
Explanatory notes — : simulated

Switching Waveform (Blue : INPUT Red : OUTPUT)

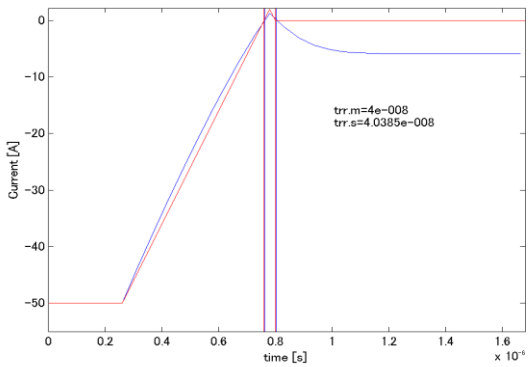
vgg = -10V, vdd = -50V, RGG = 3.5ohm, Temp = 25degC, Idd = -50A





Trr Waveform (Red : Datasheet Blue : Simulation)

didt = 100A/us, vdd = -20V, if = -50A, ir = -2A



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