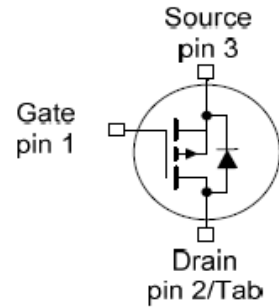


## PSpice Model PMOS Infineon IPD50P04P4L-11



### Model Information

<b>Model</b>	A macro model based on BSIM3 model		
<b>Call Name</b>	MDC_IPD50P04P4L-11_PS		
<b>Pin Assign</b>	1:G 2:D 3:S		
<b>File List</b>	Model Library	MDC_IPD50P04P4L-11_PS01.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],Vt hTemp[Id],CapacitanceVds[Cname],IsVsd[Temp],BvTemp[ir],VgsQg[Vdd],SwitchingIdd[Tname],Trrlf[Ir],Qrrlf[Ir],Switching Waveform,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

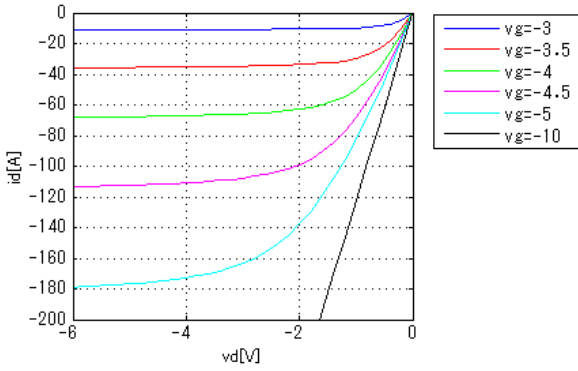
RANK=1

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

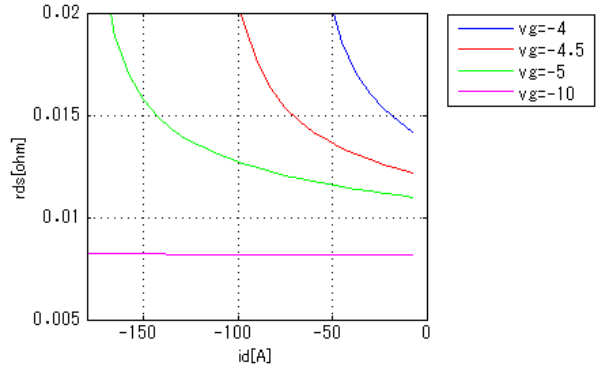
**IdVds[Vgs]**

Temp = 25degC



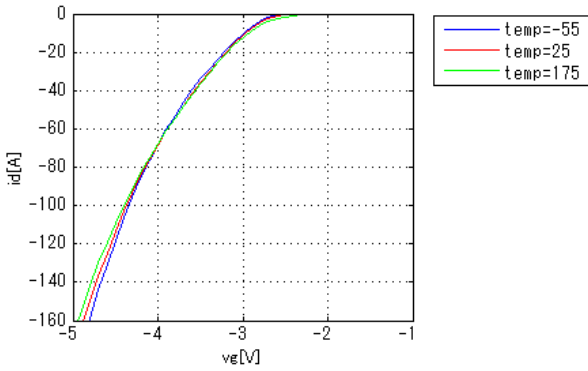
**Rds(on)Id[Vgs]**

Temp = 25degC



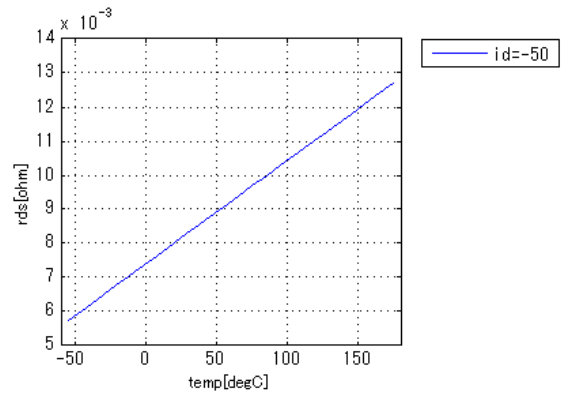
**IdVgs[Temp]**

Vds = -6V



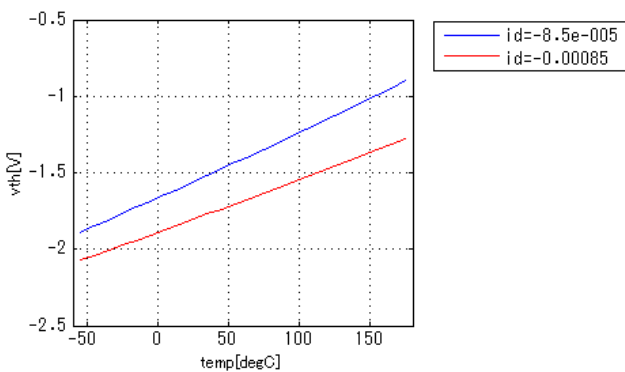
**Rds(on)Temp[Id]**

Vgs = -10V



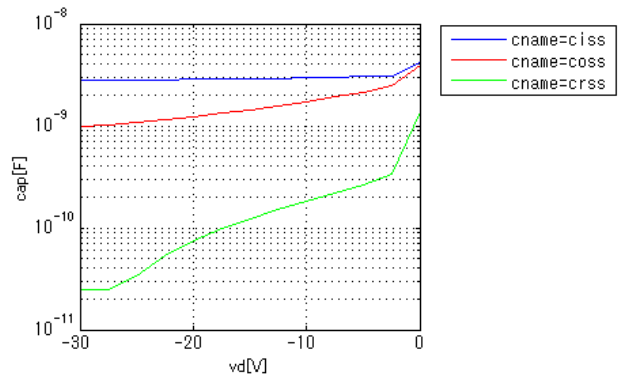
**VthTemp[Id]**

Vd = Vg



**CapacitanceVds[Cname]**

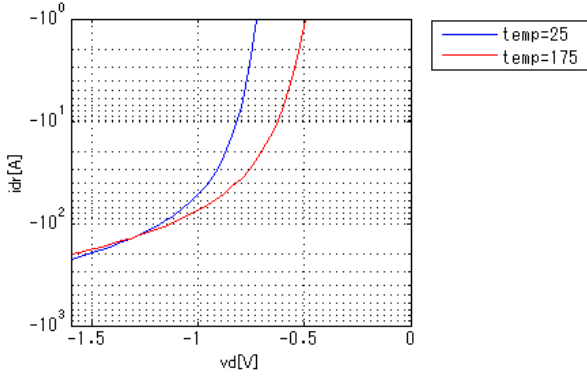
freq = 1000000Hz



Simulation results are following.  
 Explanatory notes — : simulated

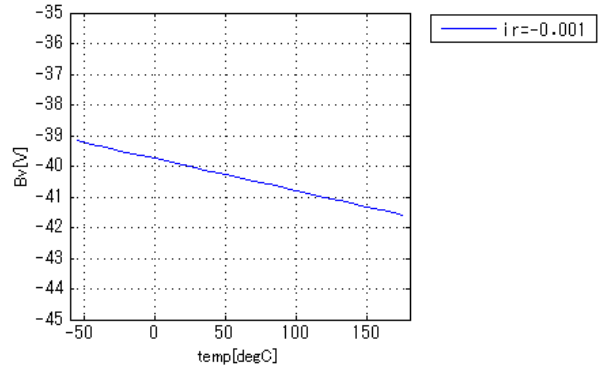
**IsVsd[Temp]**

vg = 0V



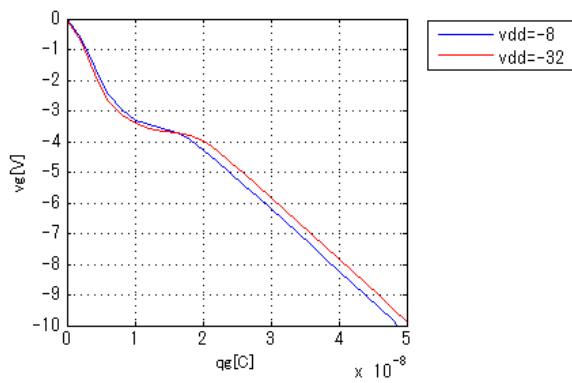
**BvTemp[ir]**

ir = -0.001A



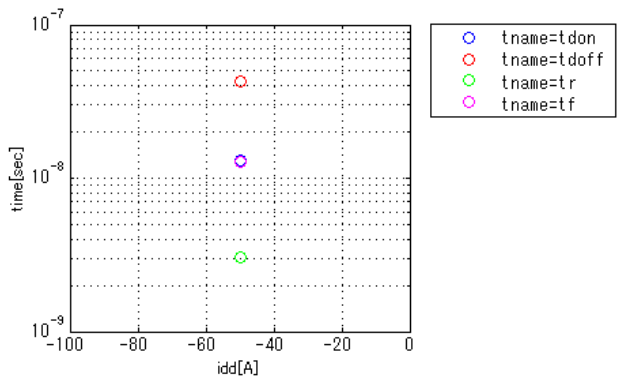
**VgsQg[Vdd]**

Id = -50A



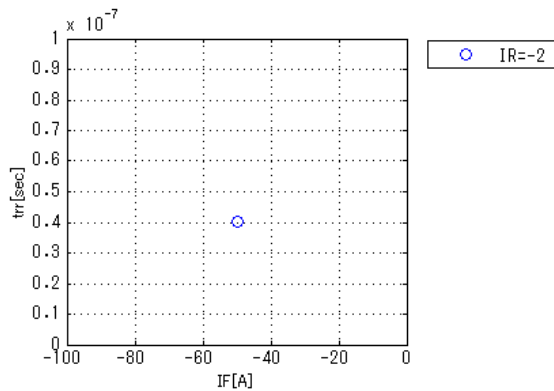
**SwitchingIdd[Tname]**

vgg = -10V, vdd = -50V, RGG = 3.5ohm



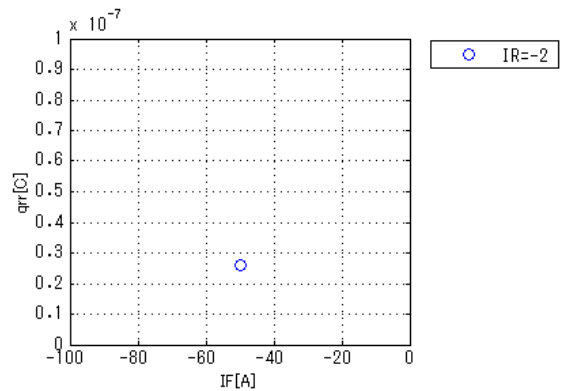
**Trrlf[Ir]**

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



**Qrrlf[Ir]**

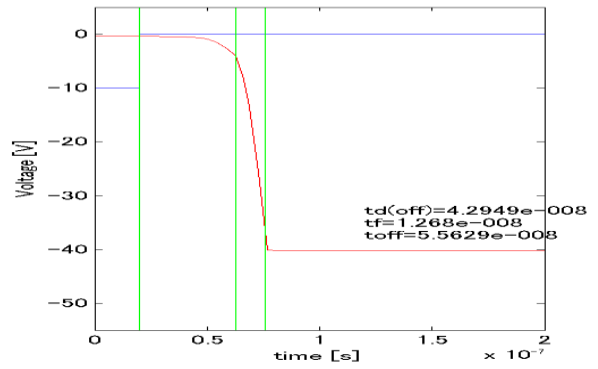
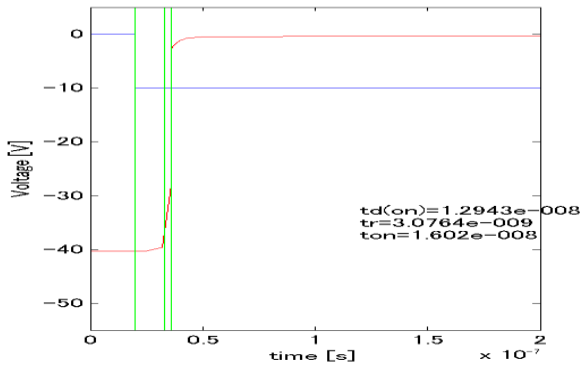
vdd = -20V, didt = 100A/us, Temp = 25degC



Simulation results are following.  
 Explanatory notes — : simulated

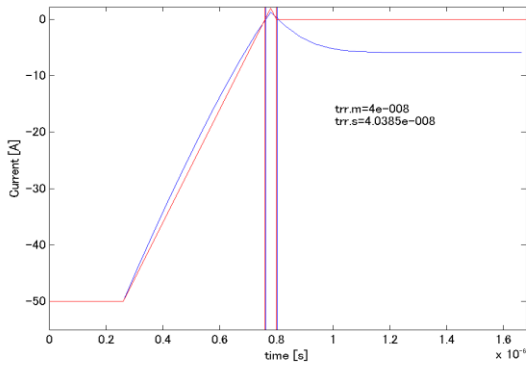
**Switching Waveform ( Blue : INPUT Red : OUTPUT )**

v<sub>gg</sub> = -10V, v<sub>dd</sub> = -50V, R<sub>GG</sub> = 3.5ohm, Temp = 25degC, I<sub>dd</sub> = -50A



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

didt = 100A/us, v<sub>dd</sub> = -20V, i<sub>f</sub> = -50A, i<sub>r</sub> = -2A



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MoDeCH Inc.

Head Office

Location: 5-15 Yokoyama-cho, Hachioji-Shi, Tokyo 192-0081, Japan

Tel:+81-42-656-3360

E-Mail:[model-on-support@modech.co.jp](mailto:model-on-support@modech.co.jp)

URL:<http://www.modech.com/en/>