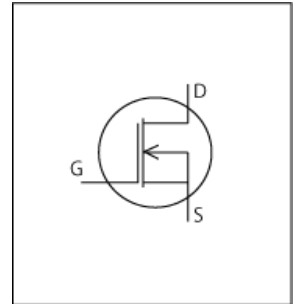


PSpice Model

NMOS

Infineon

IRFH5025TRPBF



Model Information

Model A macro model based on BSIM3 model
Call Name MDC_IRFH5025TRPBF_PS
Pin Assign 1:S 2:S 3:S 4:G 5:D 6:D 7:D 8:D
File List Model Library MDC_IRFH5025TRPBF_PS02.lib
 Model Report MDC_IRFH5025TRPBF_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 May 19,2015
- Product name IRFH5025TRPBF
- Company name Infineon Technologies AG
- Characteristics IdVds[Vgs],IdVds[Vgs]2,IdVgs[Temp],NormRds(on)Temp[Id], CapacitanceVds[Cname],VgsQg[Vdd],VthTemp[Id],Rds(on)Vgs[Temp],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	250	V
Gate-source voltage (DC)	-20	to	20	V
Temperature	-55	to	150	deg C

MOSFET

○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

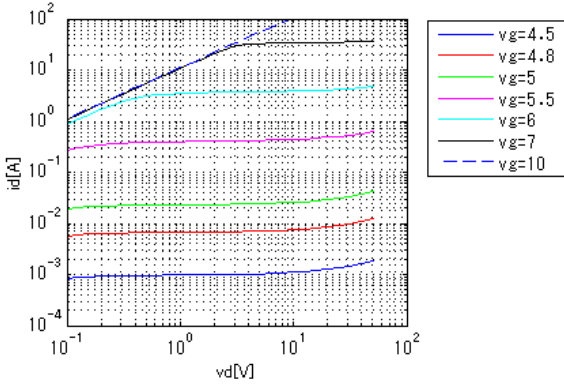
RANK=1

Functions	RANK	Implemented
ID-VDS-VGS	1	○
ID-VGS(Temp)	1	○
RDS(on)	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

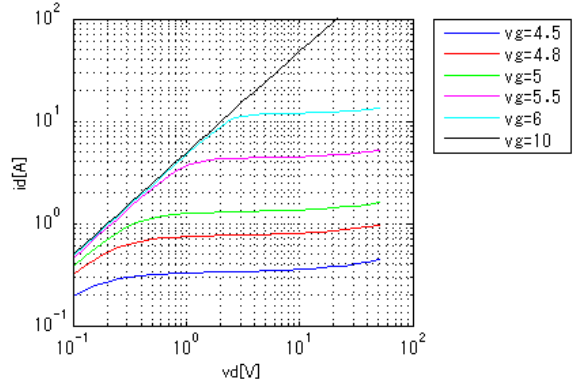
IdVds[Vgs]

Temp = 25degC



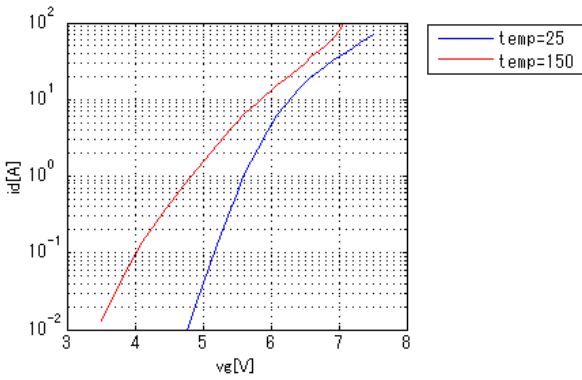
IdVds[Vgs]2

Temp = 150degC



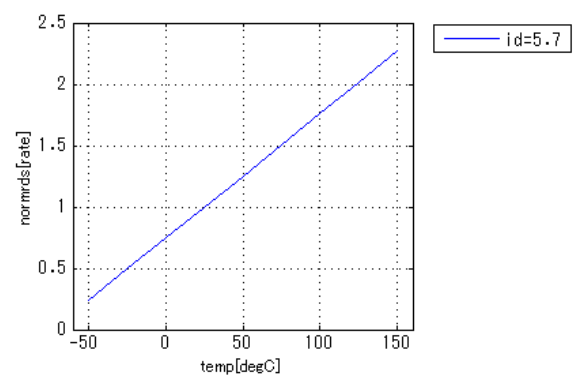
IdVgs[Temp]

Vds = 50V



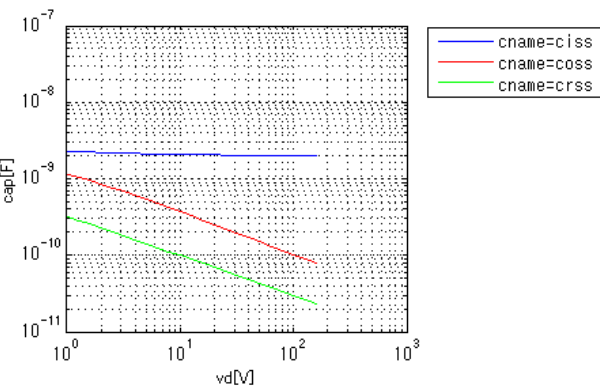
NormRds(on)Temp[Id]

Vgs = 10V



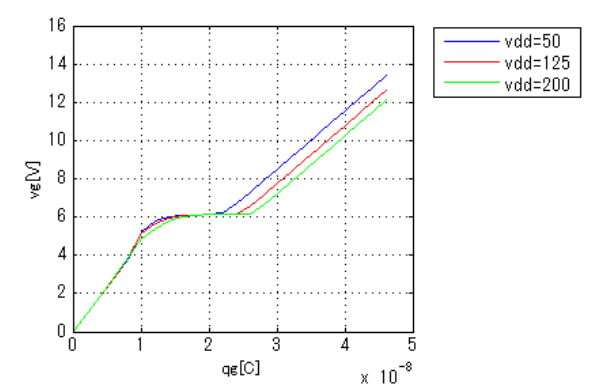
CapacitanceVds[Cname]

freq = 1000000Hz



VgsQg[Vdd]

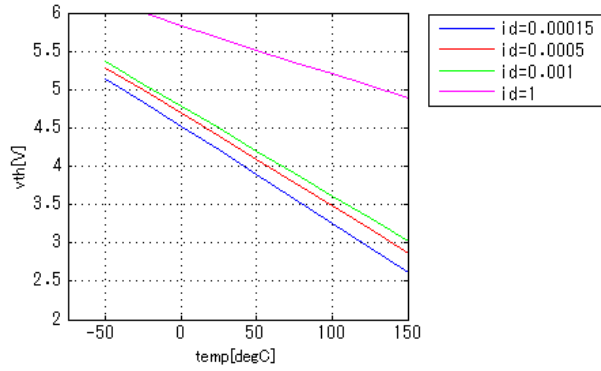
Id = 5.7A



Simulation results are following.
 Explanatory notes — : simulated

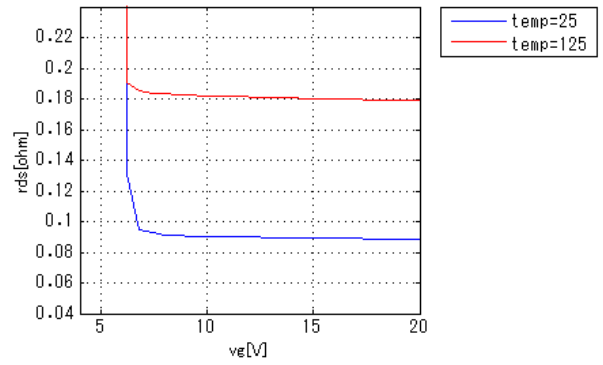
VthTemp[Id]

Vd = Vg



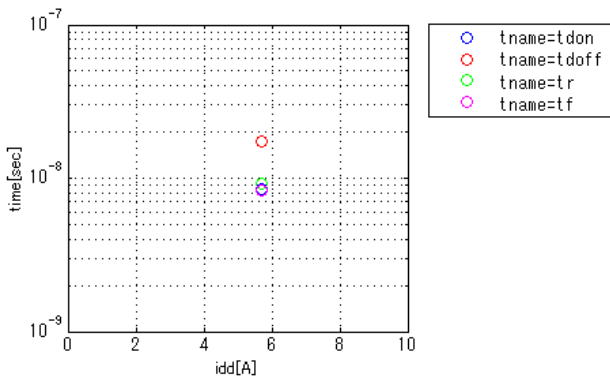
Rds(on)Vgs[Temp]

Id = 5.7A



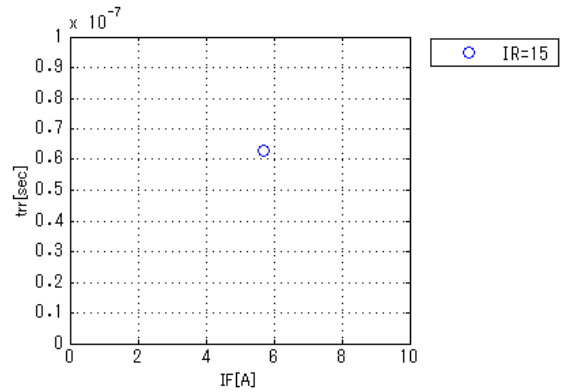
SwitchingIdd[Tname]

vvg = 10V, vdd = 125V, RGG = 1.8ohm



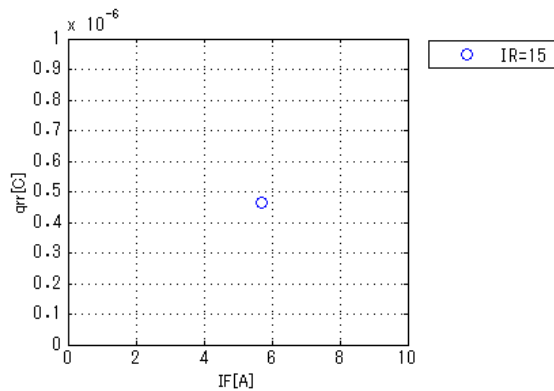
Trrlf[Ir]

vdd = 125V, didt = 500A/us, Temp = 25degC



Qrrlf[Ir]

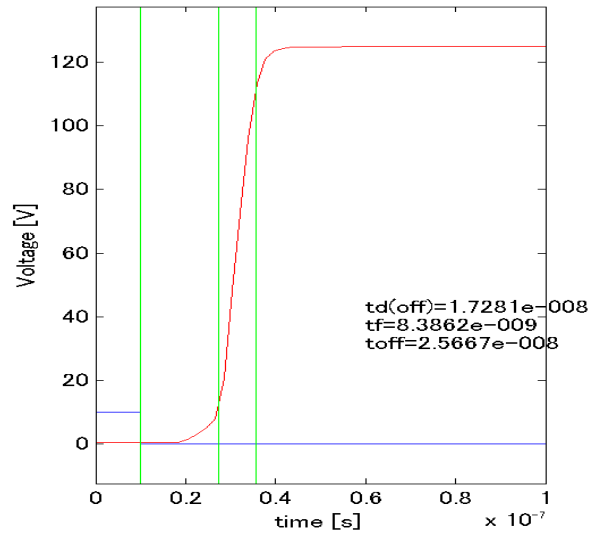
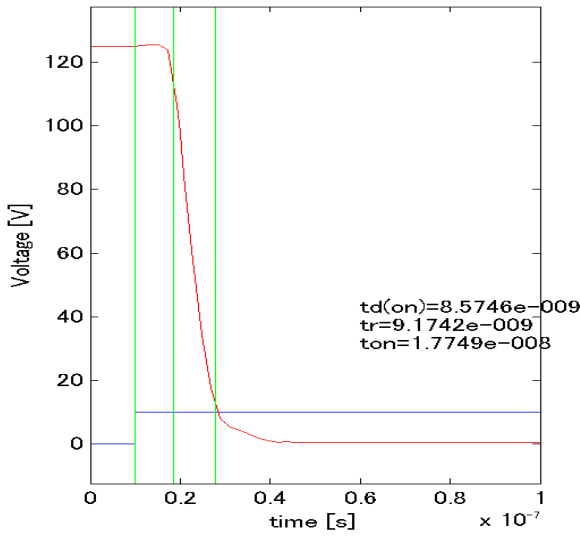
vdd = 125V, didt = 500A/us, Temp = 25degC



Simulation results are following.
 Explanatory notes — : simulated

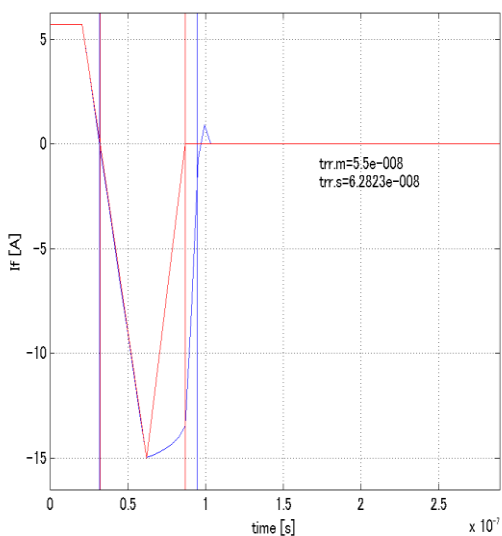
Switching Waveform (Blue : INPUT Red : OUTPUT)

v_{gg} = 10V, v_{cc} = 125V, R_{GG} = 1.8ohm, Temp = 25degC, I_c = 5.7A



Trr Waveform (Red : Datasheet Blue : Simulation)

didt = 500A/us, v_{cc} = 500V, i_f = 5.7A, i_r = 15A



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