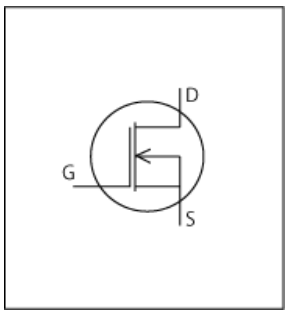
LTspice Model
NMOS
Potens
PDD6988-5



Model Information

Model	A macro model based on BSIM3 model	
Call Name	MDC_PDD6988-5_LT	
Pin Assign	1:D 2:G 3:S	
File List	Model Library	MDC_PDD6988-5_LT02.lib
	Model Report	MDC_PDD6988-5_LT.pdf (this file)
Verified Simulator Version		LTspice version XVII
Note		

References

The information which was used for modeling is as follow:

[Data Sheet]

- ●Date/Version: Unknown
- ●Product name: PDD6988-5
- ●Company name: Potens Semiconductor
- ●Characteristics: NormRds(on)Temp[Id],NormVthTemp[ID],VgsQg[Vdd],IdVds [Vgs],Rds(on)Id[Vgs],CapacitanceVds[Cname],SwitchingIdd[Tname],TrrIf[Ir],QrrIf[Ir],VsdIs[Temp],VthTemp[Id],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	65	V
Gate-source voltage (DC)	-12	to	20	V
Temperature	-55	to	150	deg C

MOSFET

○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

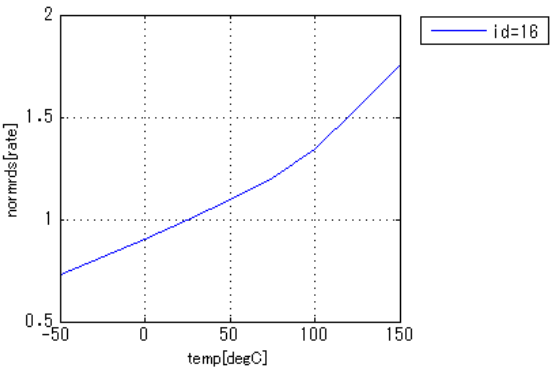
RANK=1

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

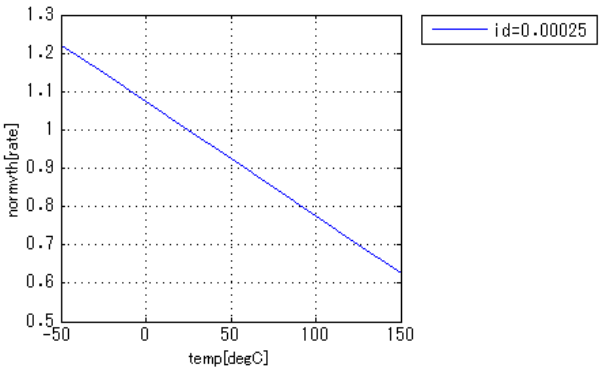
NormRds(on)Temp[Id]

Vgs = 10V



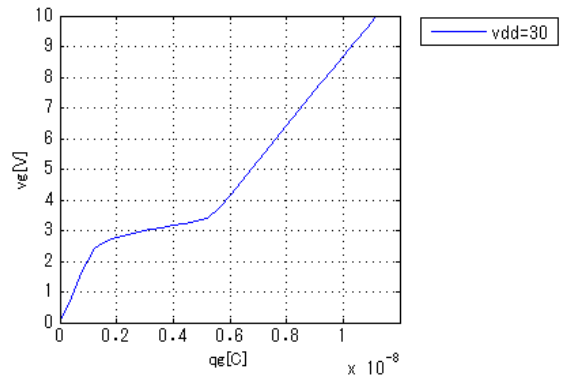
NormVthTemp[Id]

Vd = Vg



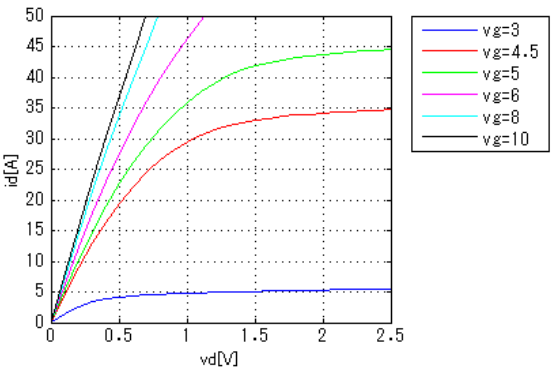
VgsQg[Vdd]

Id = 12A



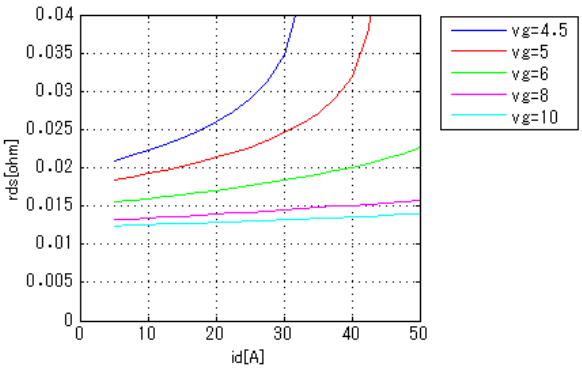
IdVds[Vgs]

Temp = 25degC



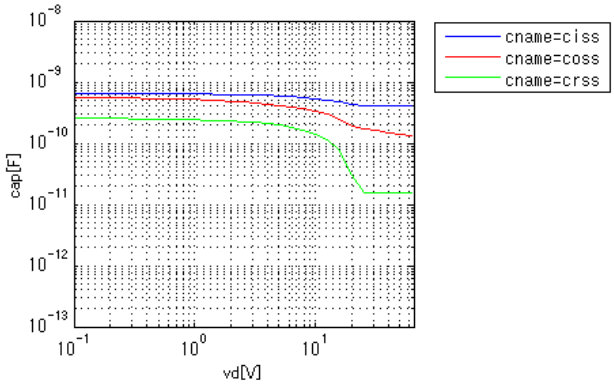
Rds(on)Id[Vgs]

Temp = 25degC



CapacitanceVds[Cname]

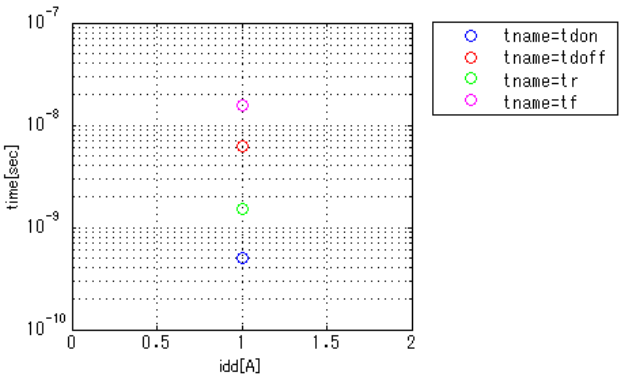
freq = 1000000Hz



Simulation results are following.
Explanatory notes — : simulated

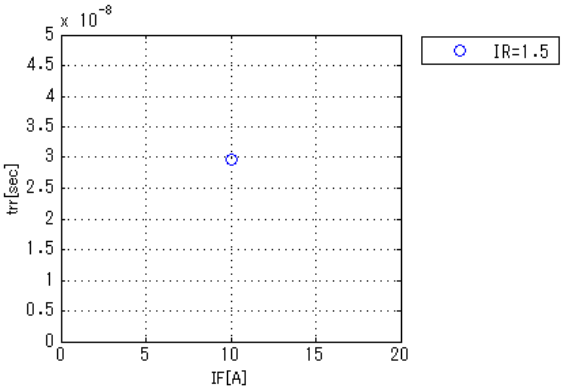
SwitchingIdd[Tname]

vgg = 10V, vdd = 30V, RGG = 3.3ohm



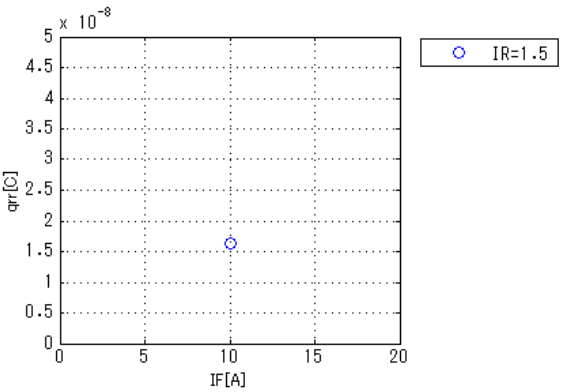
TrrIf[Ir]

vdd = 30V, didt = 100A/us, Temp = 25degC



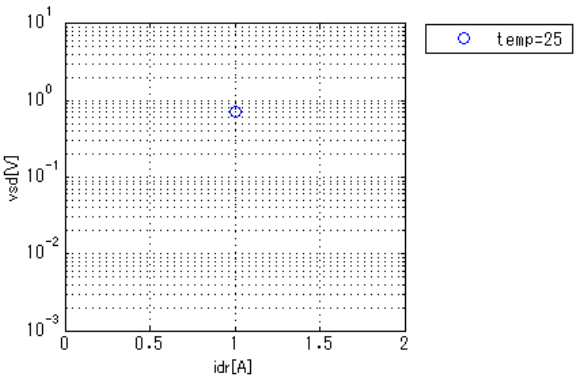
QrrIf[Ir]

vdd = 30V, didt = 100A/us, Temp = 25degC



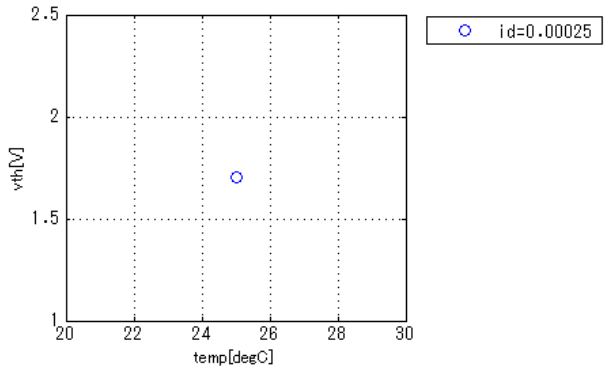
VsdIs[Temp]

vg = 0V



VthTemp[Id]

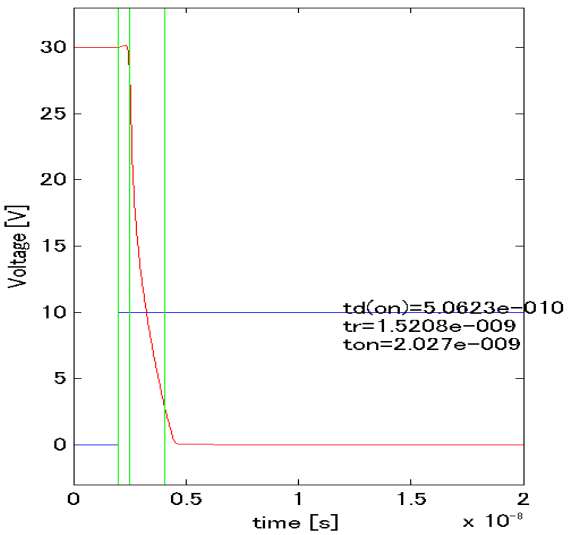
Vd = Vg

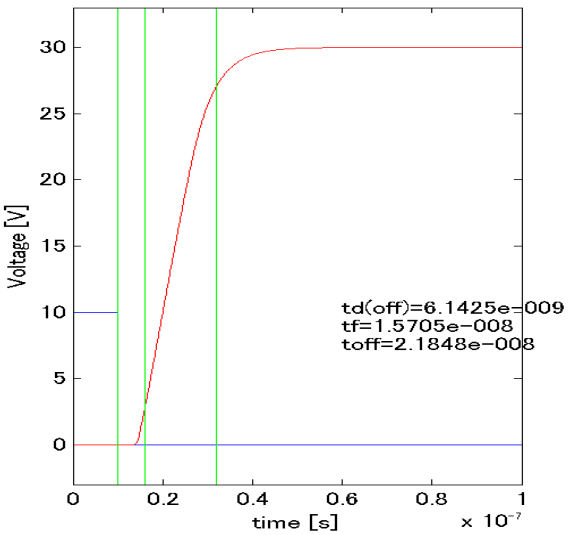


Simulation results are following.
Explanatory notes — : simulated

Switching Waveform (Blue : INPUT Red : OUTPUT)

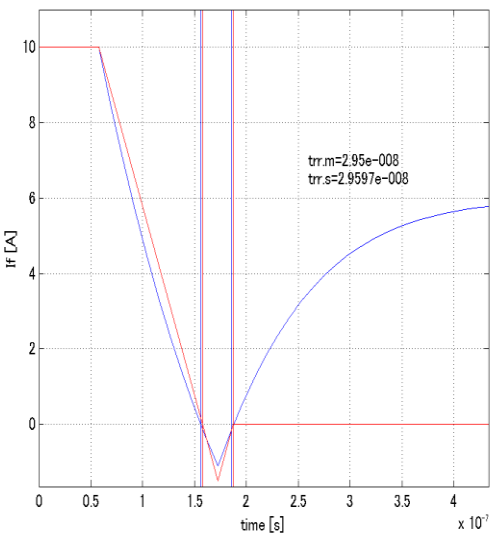
vgg = 10V, vdd = 30V, RGG = 3.3ohm, Temp = 25degC, Id = 1A





Trr Waveform (Red : Datasheet Blue : Simulation)

didt = 100A/us, vcc = 30V, if = 10A, ir = 1.5A



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