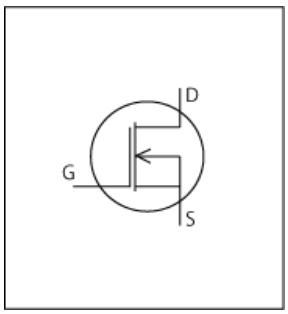
LTspice Model
NMOS
Infineon
IPP65R190C7



Model Information

Model	A macro model based on BSIM3 model	
Call Name	MDC_IPP65R190C7_LT	
Pin Assign	1:G 2:D 3:S	
File List	Model Library	MDC_IPP65R190C7_LT01.lib
	Model Report	MDC_IPP65R190C7_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: Rev. 2.1, 2013-10-17
- ●Product name: IPP65R190C7
- ●Company name: Infineon Technologies AG
- ●Characteristics: IdVds[Vgs],IdVds[Vgs]2,Rds(on)Id[Vgs],Rds(on)Temp[Id],IdVgs[Temp],VgsQg[Vdd],IsVsd[Temp],BvTemp[ir],CapacitanceVds[Cname],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	650	V
Gate-source voltage (DC)	-20	to	20	V
Temperature	-55	to	150	deg C

MOSFET

○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

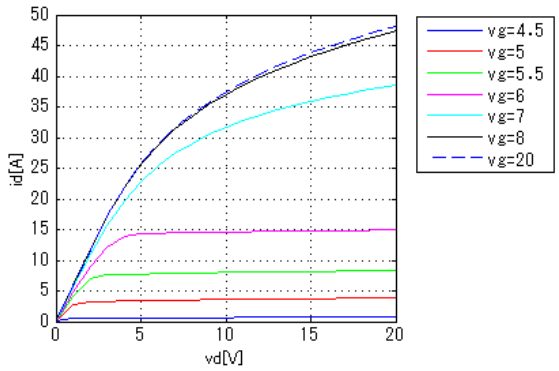
RANK=1

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

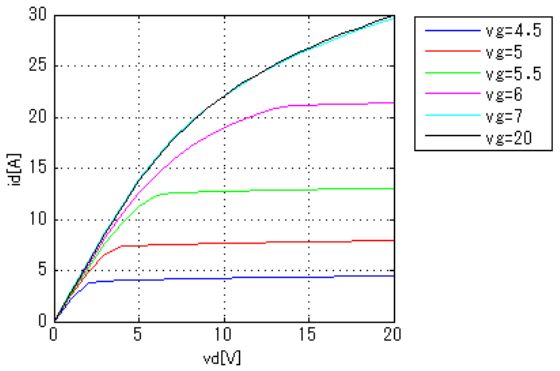
IdVds[Vgs]

Temp = 25degC



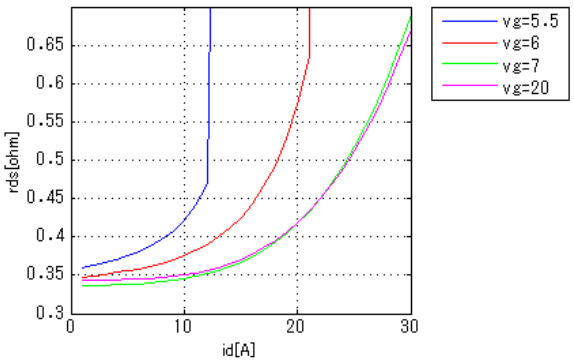
IdVds[Vgs]2

Temp = 125degC



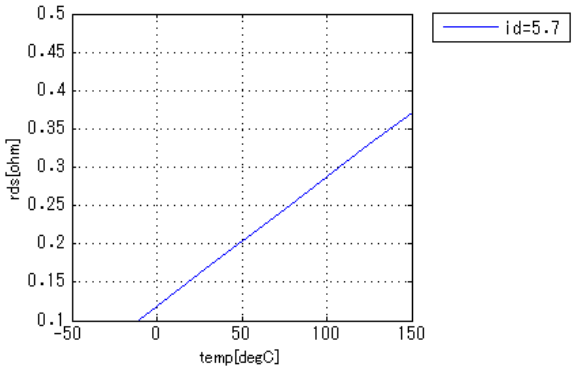
Rds(on)Id[Vgs]

Temp = 125degC



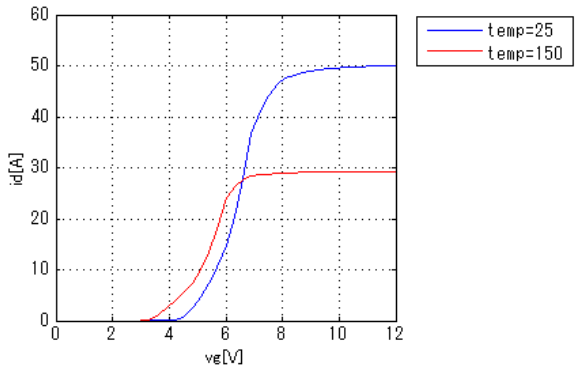
Rds(on)Temp[Id]

Vgs = 10V



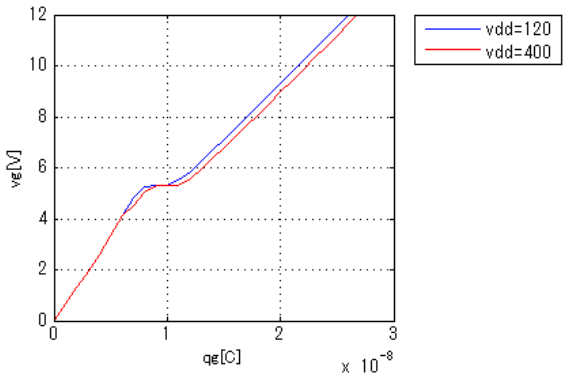
IdVgs[Temp]

Vds = 20V



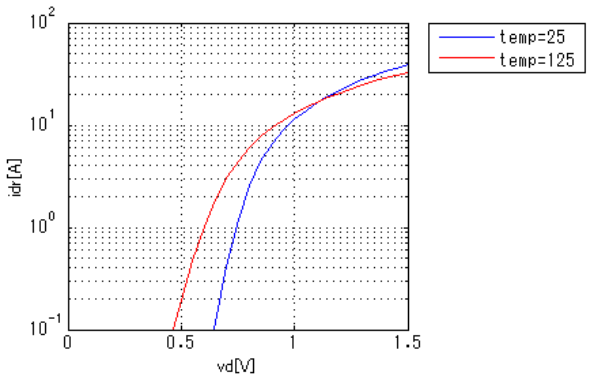
VgsQg[Vdd]

Id = 5.7A

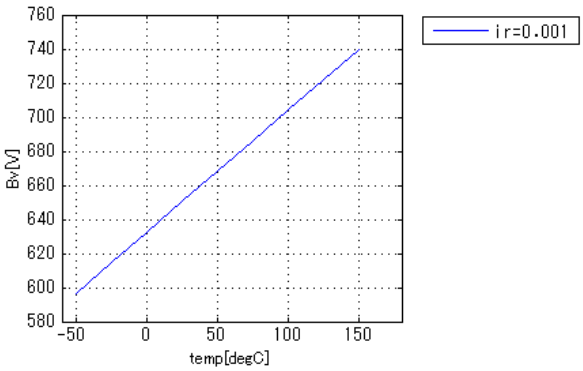


Simulation results are following.
Explanatory notes — : simulated

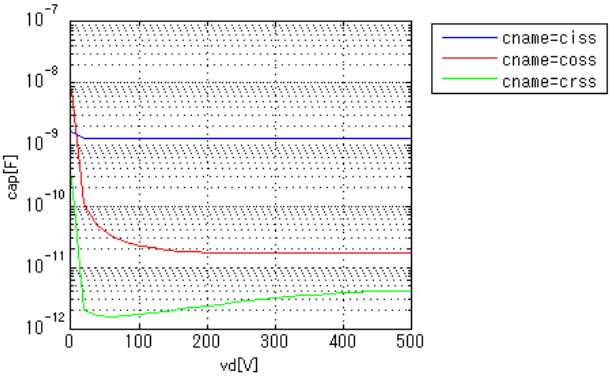
IsVsd[Temp]
vg = 0V



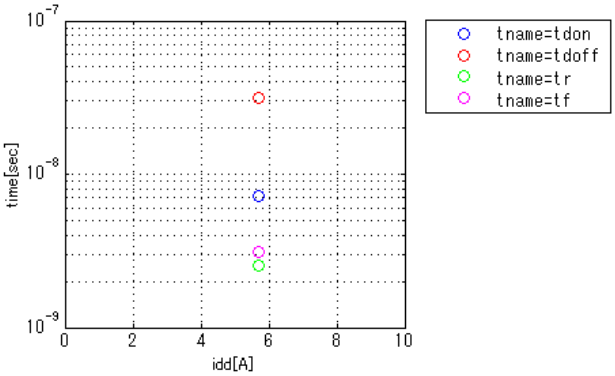
BvTemp[ir]
ir = 0.001A



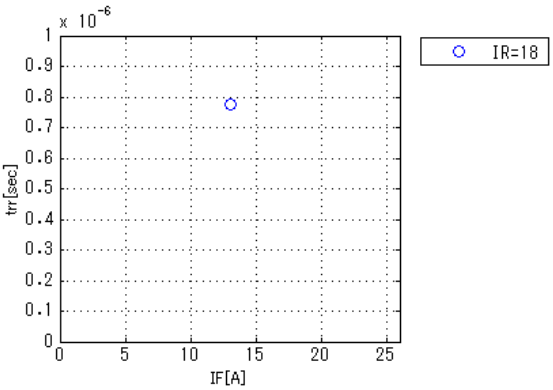
CapacitanceVds[Cname]
freq = 250000Hz



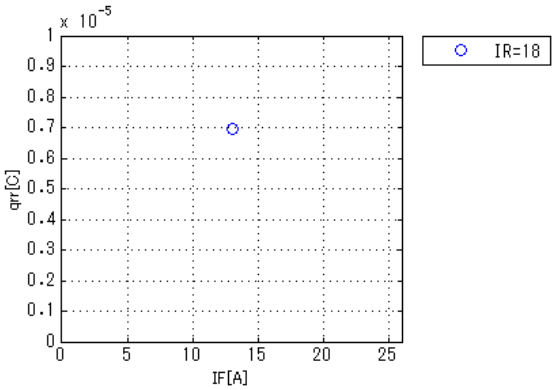
SwitchingIdd[Tname]
vgg = 13V, vdd = 400V, RGG = 10ohm



TrrIf[Ir]
vdd = 400V, didt = 55A/us, Temp = 25degC



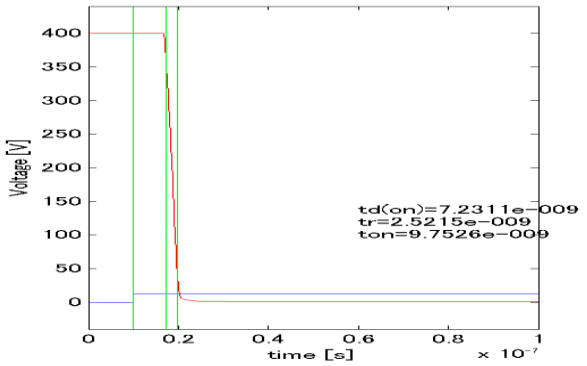
QrrIf[Ir]
vdd = 400V, didt = 55A/us, Temp = 25degC

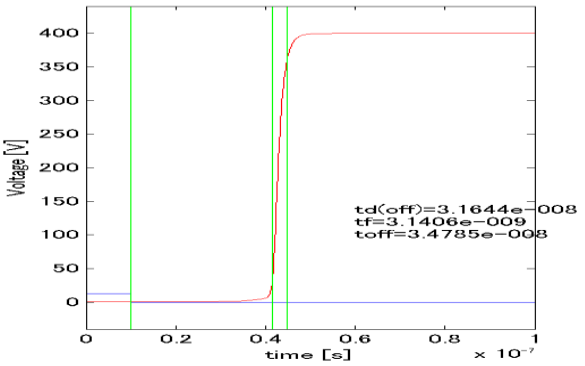


Simulation results are following.
Explanatory notes — : simulated

Switching Waveform (Blue : INPUT Red : OUTPUT)

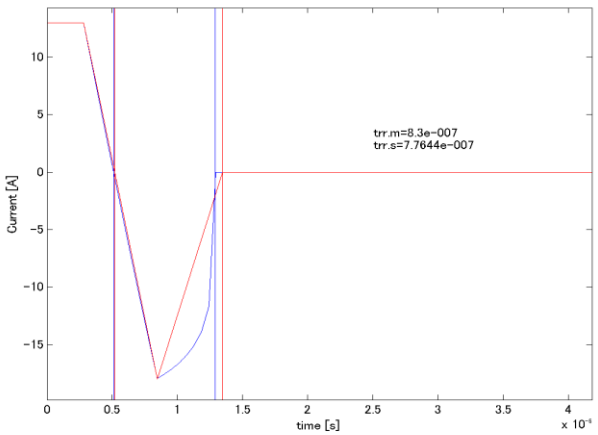
vgg = 13V, vdd = 400V, RGG = 10ohm, idd = 5.7A





Trr Waveform (Red : Datasheet Blue : Simulation)

vdd = 400V, didt = 55A/us, Temp = 25degC, If = 13A, Ir = 18A



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