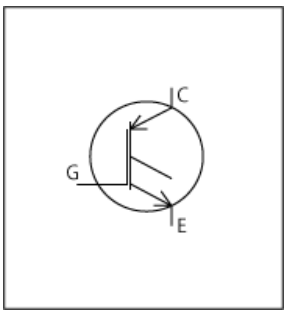
LTspice Model
Nch IGBT
SanKen
FGF65A3L6L



Model Information

Model	An original macro model based on BSIM3 and Gummel-Poon model	
Call Name	MDC_FGF65A3L6L_LT	
Pin Assign	1:G 2:C 3:E	
File List	Model Library	MDC_FGF65A3L6L_LT01.lib
	Model Report	MDC_FGF65A3L6L_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.1.1 Feb. 19, 2018
- ●Product name: FGF65A3L6L
- ●Company name: Sanken Electric Co., Ltd.
- ●Characteristics: IcVce[Vge],IcVce[Vge]2,IcVge[Temp],Vce(sat)Temp[Ic],Vce(sat)Ic[TEMP],VthTemp[Ic],CapacitanceVds[Cname],VgeQg[Vcc],SwitchingTemp[Tname],SwitchingIcc[Tname],SwitchingRg[Tname],IfVf[Temp],VfTemp[If],TrrDidt[Temp],QrrDidt[Temp],SwitchingWaveform,TrrQrrWaveform

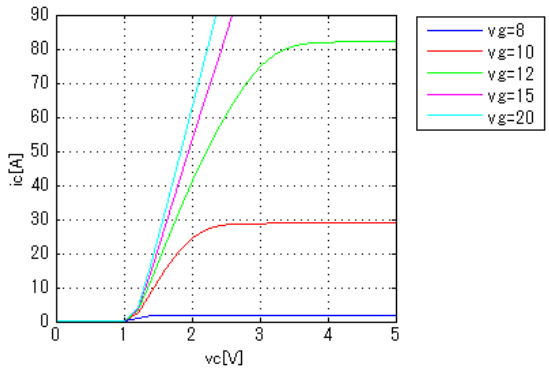
Simulation Range

This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

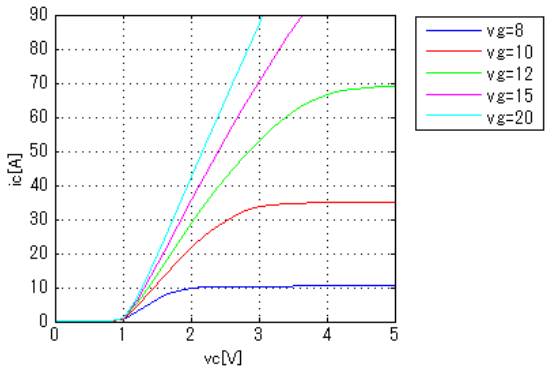
Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	650	V
Gate-emitter voltage (DC)	-30	to	30	V
Temperature	-55	to	150	deg C

Simulation results are following.
Explanatory notes — : simulated

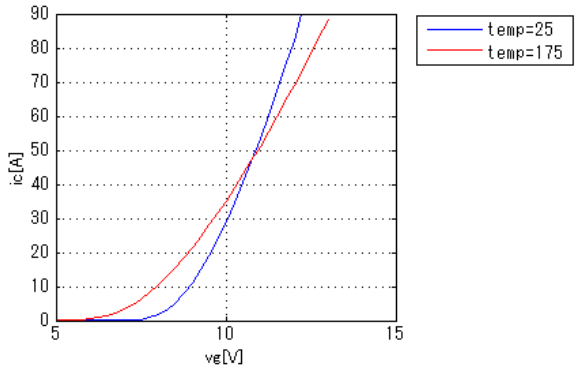
IcVce[Vge]
Temp. = 25deg C



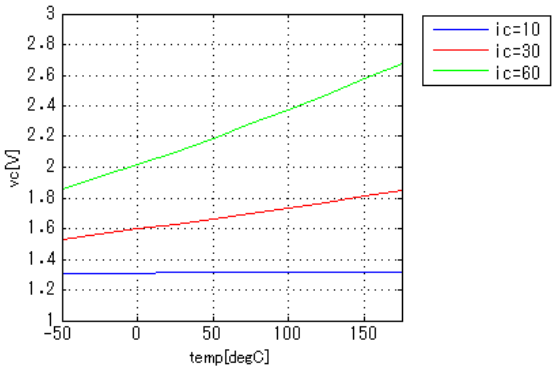
IcVce[Vge]2
Temp. = 175deg C



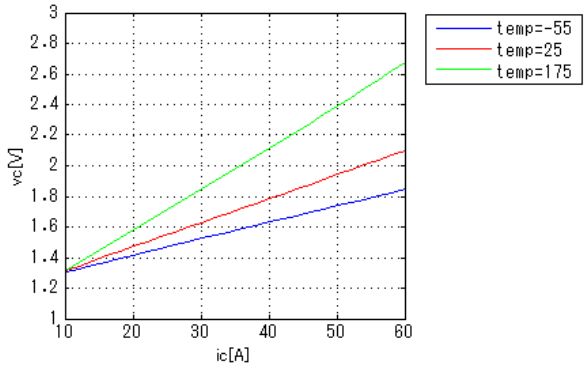
IcVge[Temp]
Vce = 5V



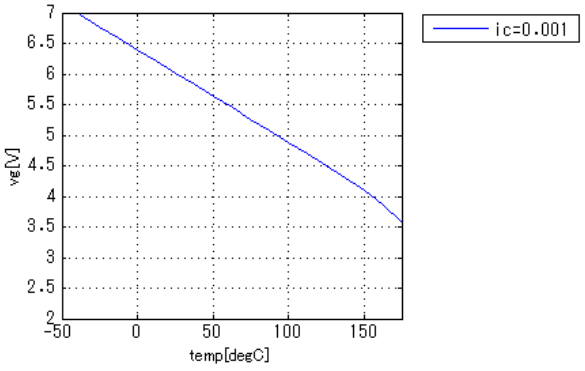
Vce(sat)Temp[Ic]
Vge = 15V



Vce(sat)Ic[TEMP]
Vge = 15V



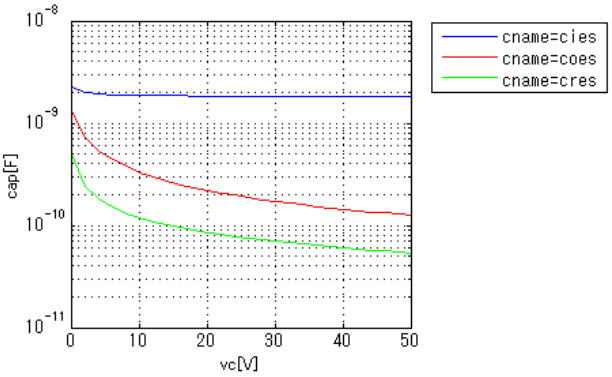
VthTemp[Ic]



Simulation results are following.
Explanatory notes — : simulated

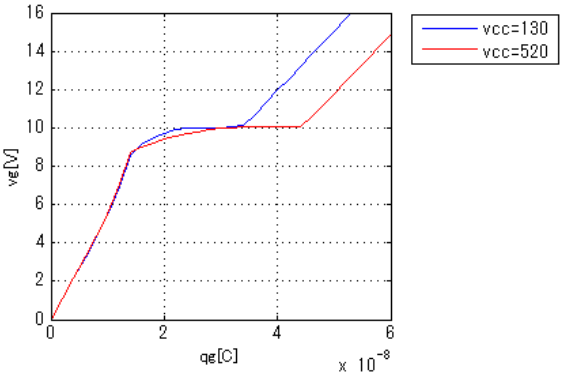
CapacitanceVds[Cname]

freq = 1000000Hz



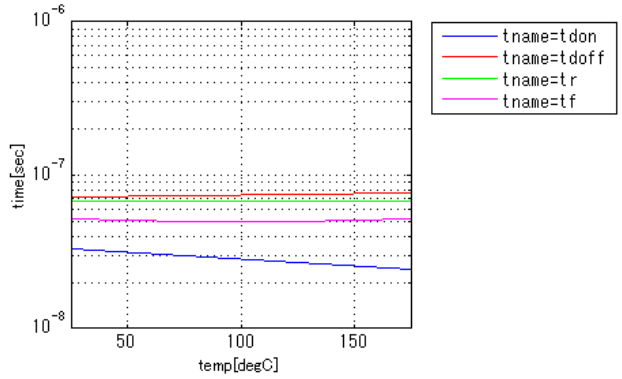
VgeQg[Vcc]

Ic = 30A



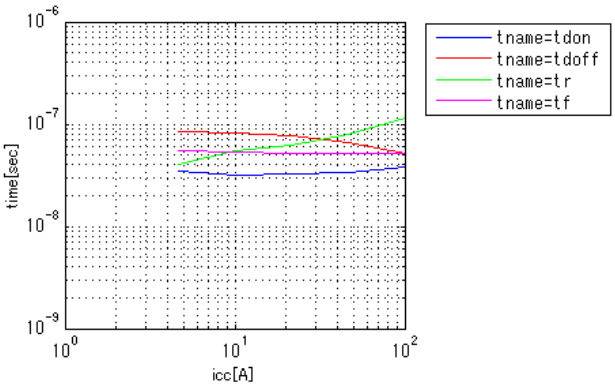
SwitchingTemp[Tname]

vgg = 15V, vcc = 400V, RGG = 10ohm, icc = 30ohm



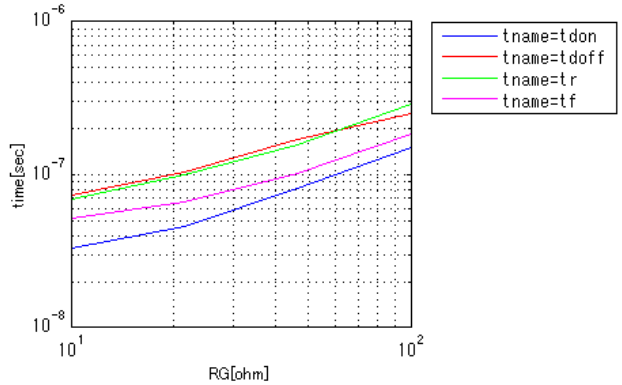
SwitchingIcc[Tname]

vgg = 15V, vcc = 400V, RGG = 10ohm, Temp = 25degC

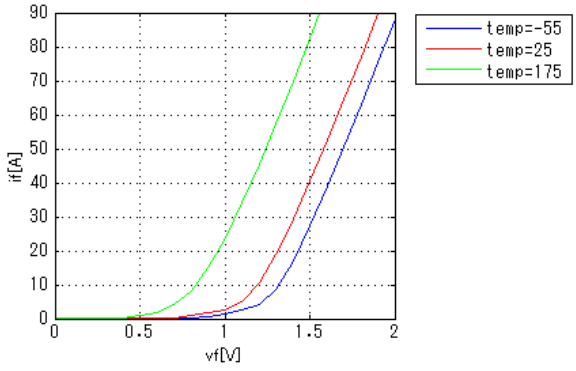


SwitchingRg[Tname]

vgg = 15V, vcc = 400V, icc = 30A, Temp = 25degC

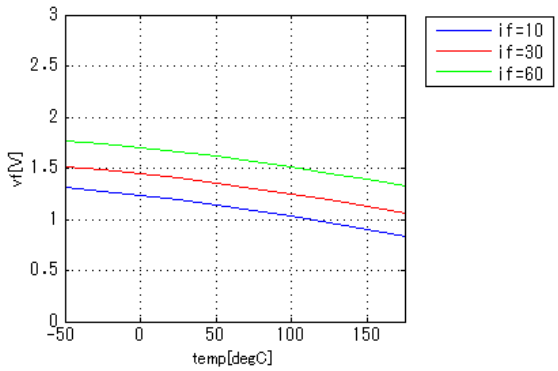


IfVf[Temp]



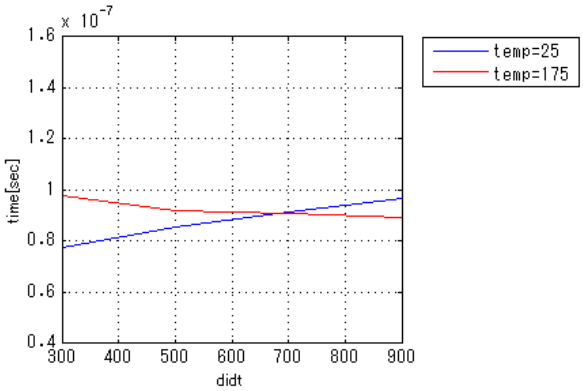
Simulation results are following.
Explanatory notes — : simulated

VfTemp[If]



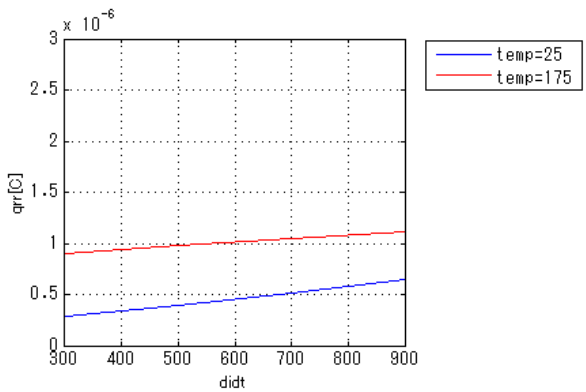
TrrDidt[Temp]

vcc = 400V



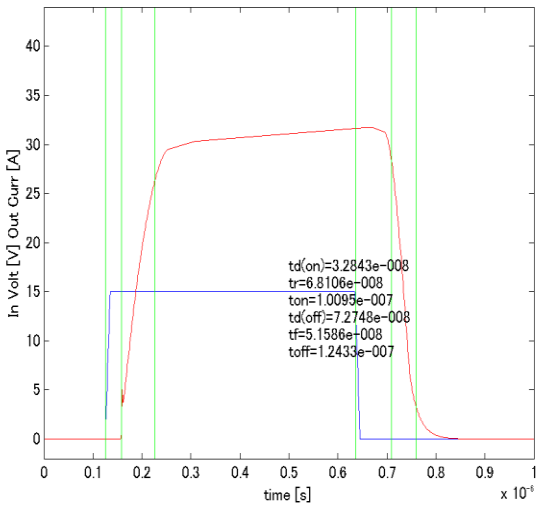
QrrDidt[Temp]

vcc = 400V



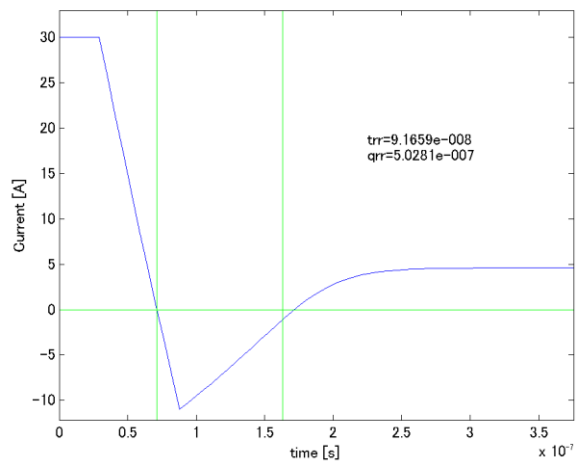
SwitchingWaveform

Blue : INPUT Red : OUTPUT



TrrQrrWaveform

vcc = 400V didt=700A/us



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