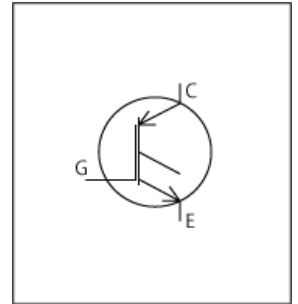


LTspice Model

Nch IGBT

Sanken Electric Co., Ltd.

FGM623S



Model Information

Model An original macro model based on BSIM3 and Gummel-Poon model
Call Name MDC_FGM623S_LT
Pin Assign 1:G 2:C 3:E
File List Model Library MDC_FGM623S_LT01.lib
 Model Report MDC_FGM623S_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.1.2
- Product name FGM623S
- Company name Sanken Electric Co., Ltd.
- Characteristics $I_c V_{ge}[Temp]$, $I_c V_{ce}[V_{ge}]$, $V_{ce}(sat)Temp[I_c]$, $V_{th}Temp[I_c]$, C_{res} , C_{ies} , C_{oes} , $V_{ge}Qg[V_{cc}]$, Transient

Simulation Range

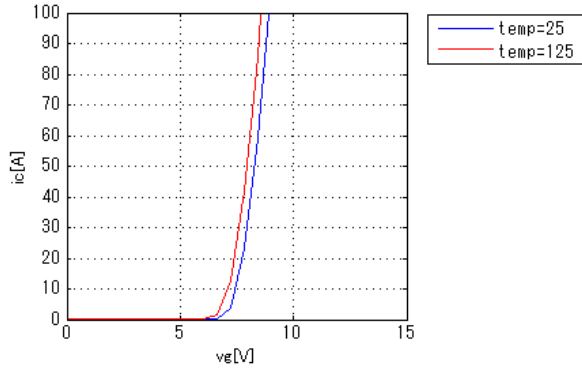
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	600	V
Gate-emitter voltage (DC)	0	to	30	V
Temperature	-55	to	150	deg C

Simulation results are following.
 Explanatory notes — : simulated

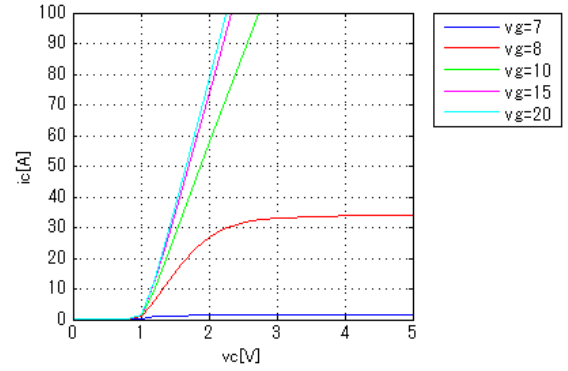
IcVge[Temp]

Vce = 5V



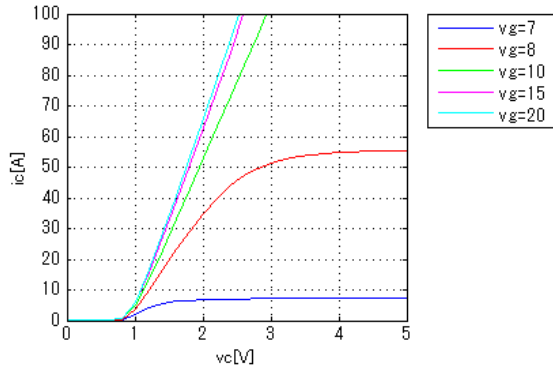
IcVce[Vge]

Temp. = 25deg C



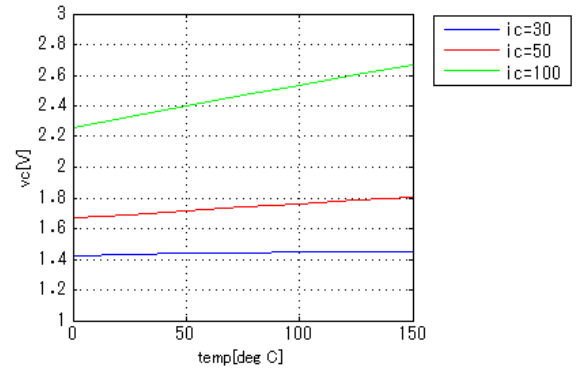
IcVce[Vge]

Temp. = 125deg C

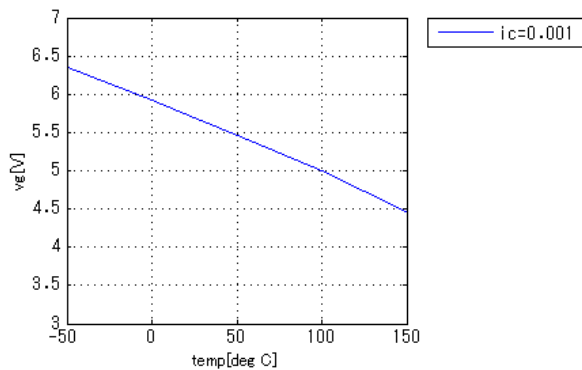


Vce(sat)Temp[Ic]

Vge = 15V

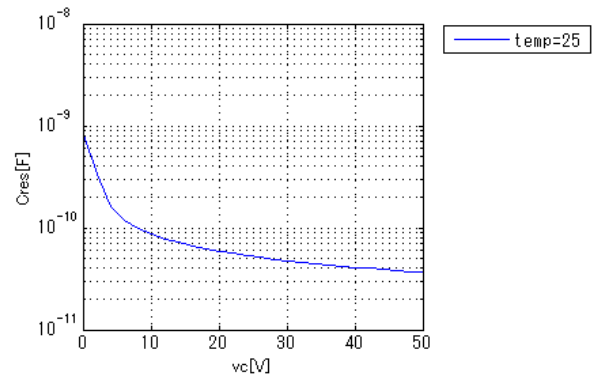


VthTemp[Ic]



Cres

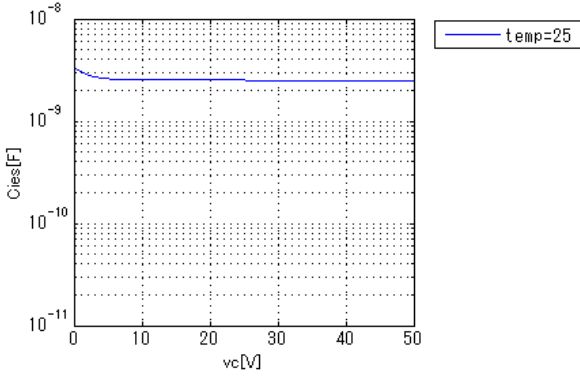
Freq. = 1MHz



Simulation results are following.
 Explanatory notes — : simulated

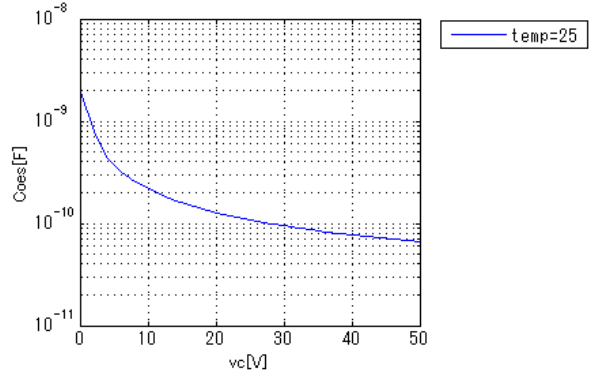
Cies

Freq. = 1MHz



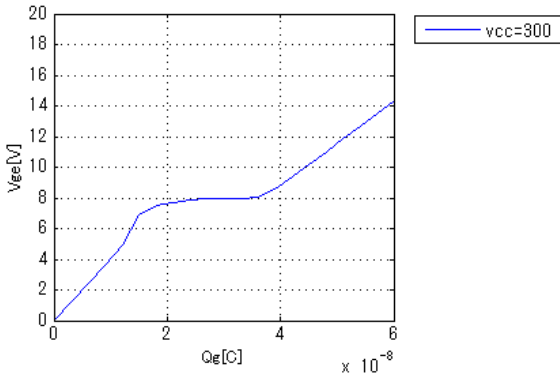
Coes

Freq. = 1MHz



VgeQg[Vcc]

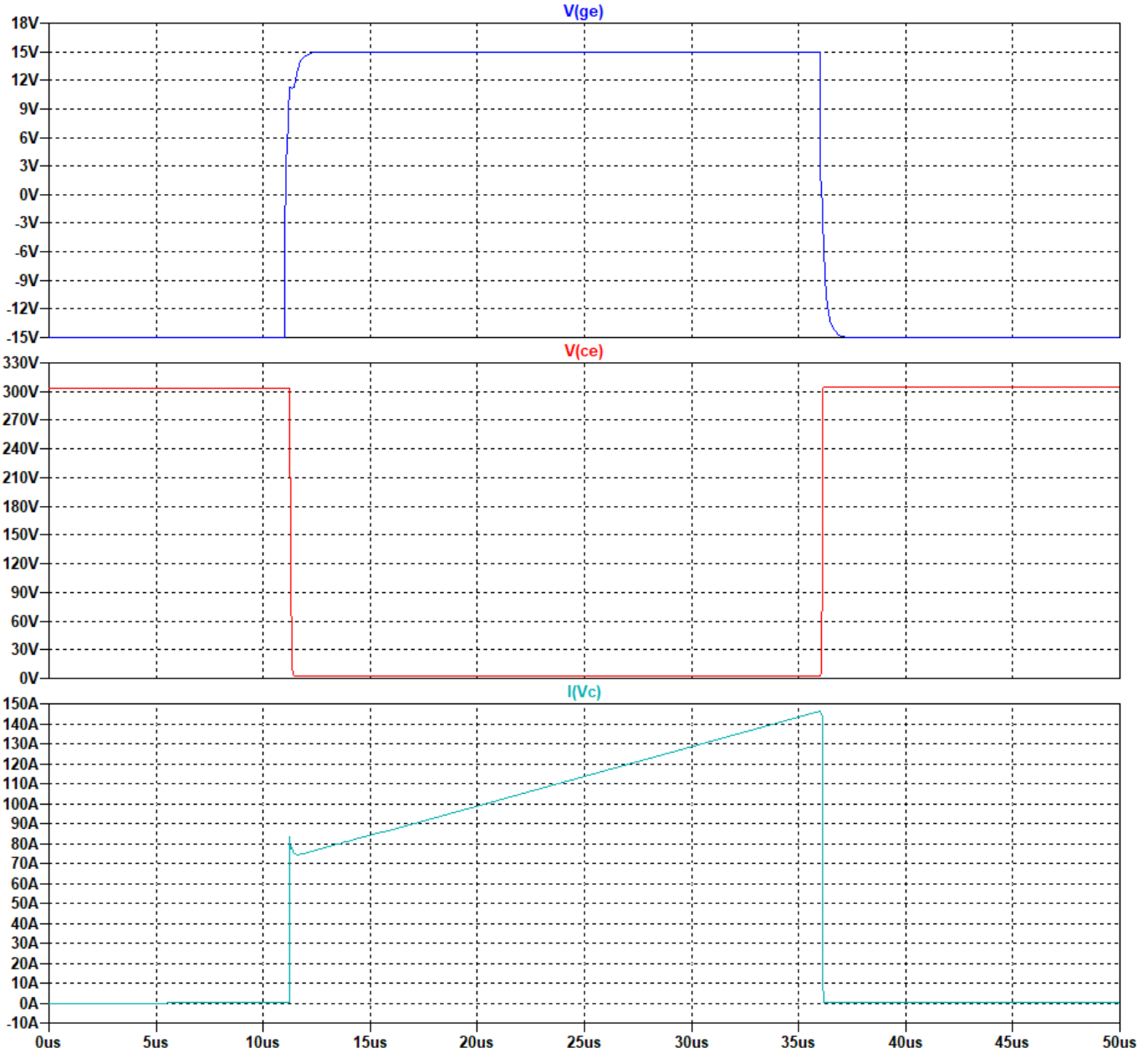
Ic = 30A



Simulation results are following.
Explanatory notes — : simulated

Transient

V_{cc} = 300V, I_c = 30A, +V_g = 15V, -V_g = 0V, R_G = 39Ω, L = 200u, Temp. = 25deg C



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