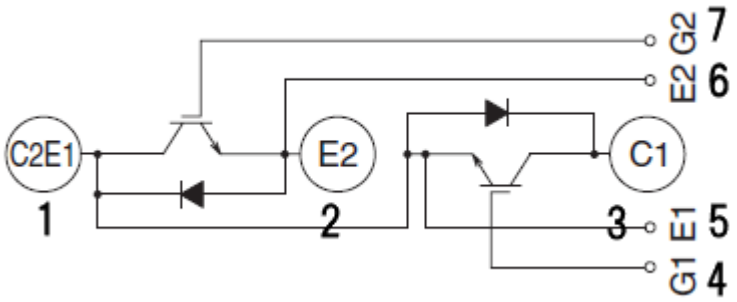
LTspice Model
Nch IGBT
Mitsubishi
CM100DY-24NF



Model Information

Model	An original macro model based on BSIM3 and Gummel-Poon model	
Call Name	MDC_CM100DY-24NF_LT	
Pin Assign	1:C2E1 2:E2 3:C1 4:G1 5:E1 6:E2 7:G2	
File List	Model Library	MDC_CM100DY-24NF_LT01.lib
	Model Report	MDC_CM100DY-24NF_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 CM100DY-24NF
- ●Company name Mitsubishi Electric Corporation
- ●Characteristics IcVce[Vge],Vce(sat)Ic[TEMP],Vce(sat)Vge[Ic],IfVf[Temp],CapacitanceVce[Cname],SwitchingIcc[Tname],TrrIf,VgeQg[Vcc],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.	
Collector-emitter voltage (DC)	0	to	1,200	V
Gate-emitter voltage (DC)	-20	to	20	V
Temperature	-40	to	125	deg C

IGBT

○ : Implemented
× : Not Implemented
— : Not applicable

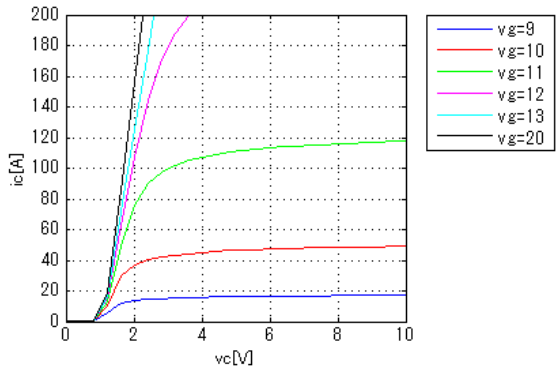
Model Functions Table

	RANK=1	
Functions	RANK	Implemented
DC Characteristics(with Temperature)	1	○
Capacitance	1	○
Gate Charge	1	○
Reverse recovery characteristics	1	○
Switching(Typ.) Inductor Load	1	○
trr	1	○

Simulation results are following.
Explanatory notes — : simulated

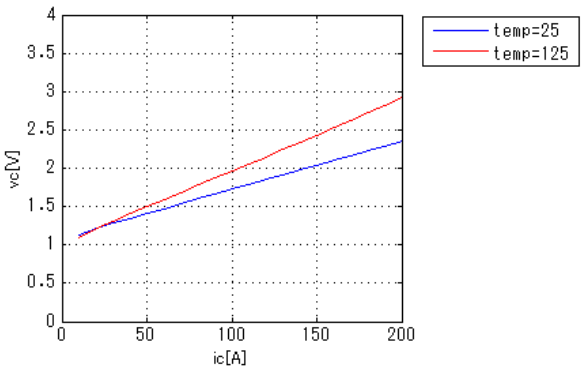
IcVce[Vge]

Temp. = 25deg C



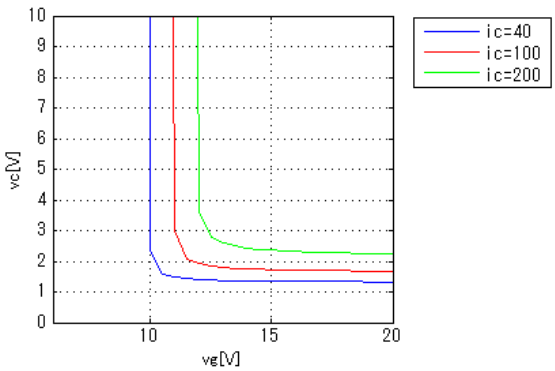
Vce(sat)Ic[TEMP]

Vge = 15V

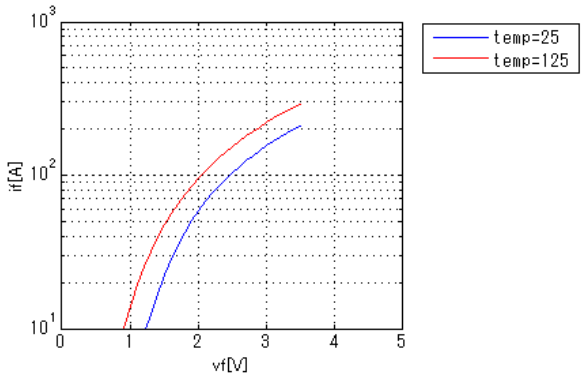


Vce(sat)Vge[Ic]

Temp. = 25deg C

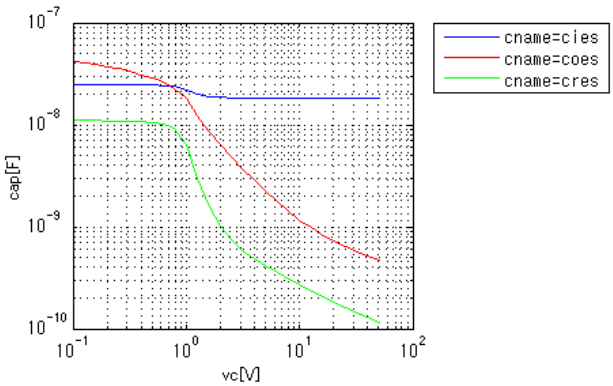


IfVf[Temp]



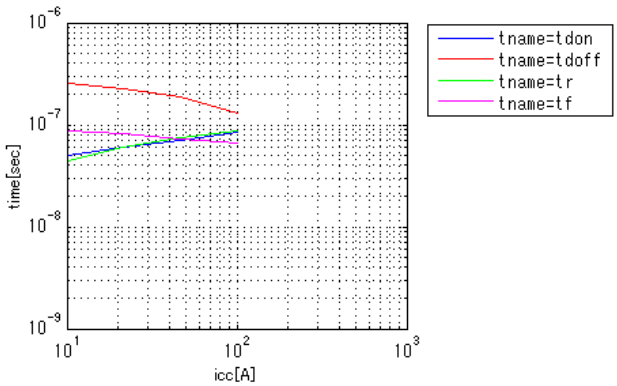
CapacitanceVce[Cname]

freq = 1000000Hz



SwitchingIcc[Tname]

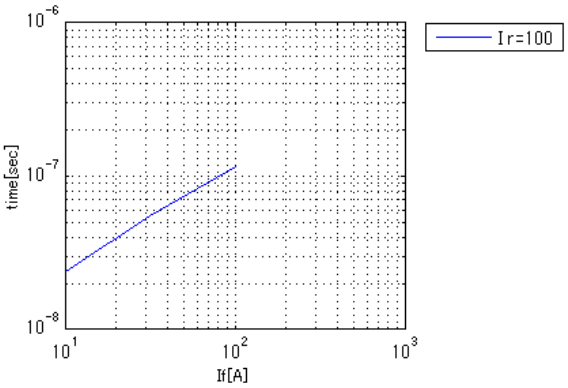
vgg = 15V, vcc = 600V, RGG = 3.1ohm, Temp = 125degC



Simulation results are following.
Explanatory notes — : simulated

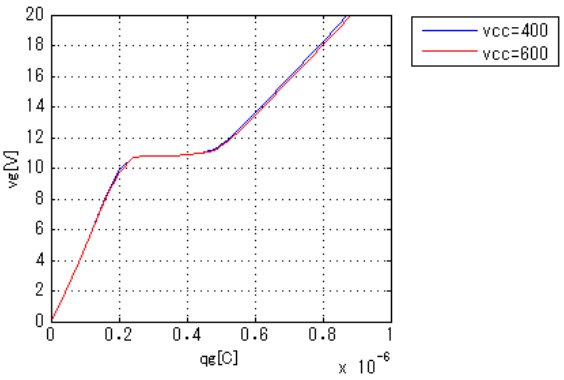
TrrIf

didt = 5000A/us, vcc = 600V



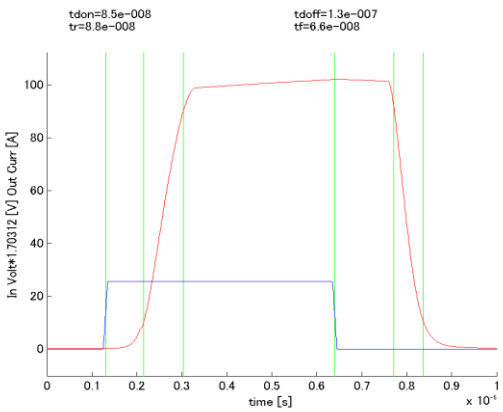
VgeQg[Vcc]

Ic = 100A



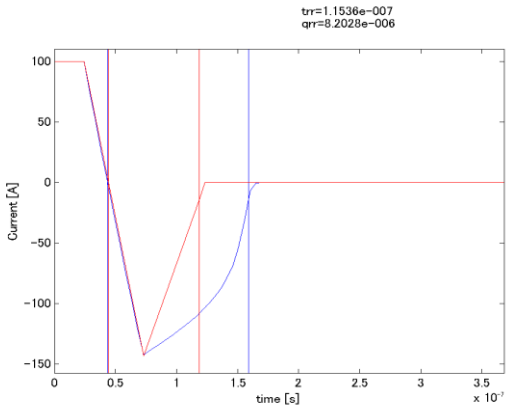
Switching Waveform (Blue : INPUT Red : OUTPUT)

vgg = 15V, vcc = 600V, RGG = 1ohm, Temp = 125degC, Ic = 100A



Trr Waveform (Red : Datasheet Blue : Simulation)

didt = 5000A/us, vcc = 600V, if = 100A, ir = 150A



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