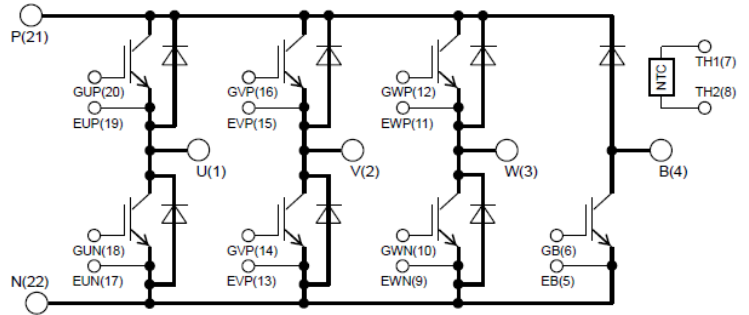


LTspice Model

Nch IGBT

Mitsubishi

CM150RXL-34SA



Model Information

- Model** An original macro model based on BSIM3 and Gummel-Poon model
Call Name MDC_CM150RXL-34SA_LT
Pin Assign 1:U 2:V 3:W 4:B 5:EB 6:GB 7:TH1 8:TH2 9:EWN 10:GWN 11:EWP 12:GWP 13:EVP 14:GVP 15:EVP 16:GVP 17:EUN 18:GUN 19:EUP 20:GUP 21:P 22:N
File List Model Library MDC_CM150RXL-34SA_LT01.lib
 Model Report MDC_CM150RXL-34SA_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 2014.06
- Product name CM150RXL-34SA
- Company name Mitsubishi Electric Corporation
- Characteristics IcVce[Vge], Vce(sat)Ic[TEMP], IfVf[Temp], SwitchingIcc[Tname], SwitchingIcc[Tname]2, CapacitanceVce[Cname], TrrIf[Temp], VgeQg[Vcc], SwitchingWaveform, TrrWaveform

Simulation Range

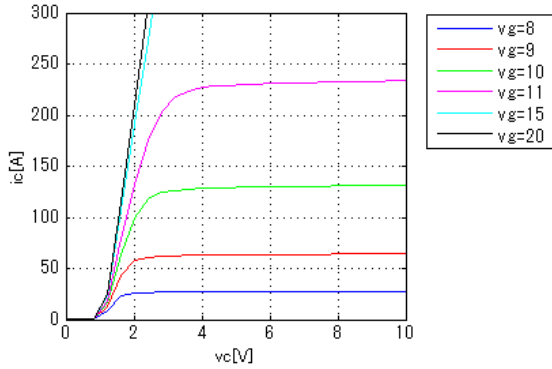
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	1,700	V
Gate-emitter voltage (DC)	-20	to	20	V
Temperature	-40	to	125	deg C

Simulation results are following.
 Explanatory notes — : simulated

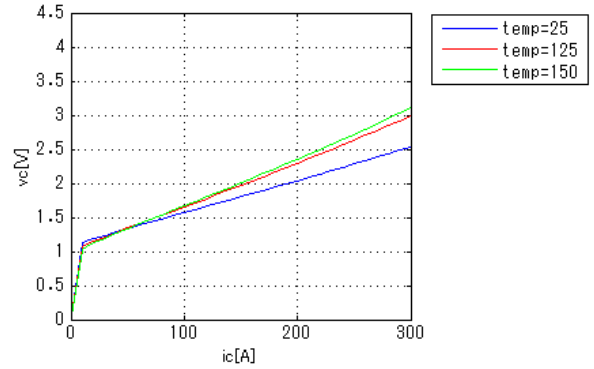
IcVce[Vge]

Temp. = 25deg C

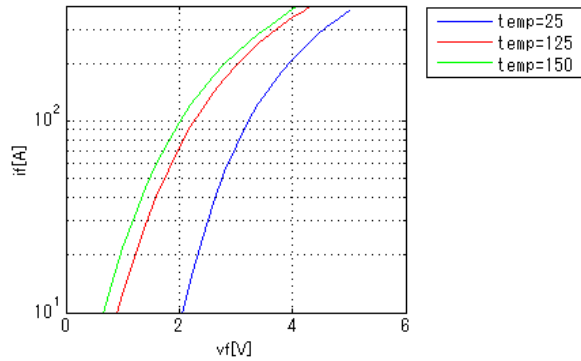


Vce(sat)Ic[TEMP]

Vge = 15V

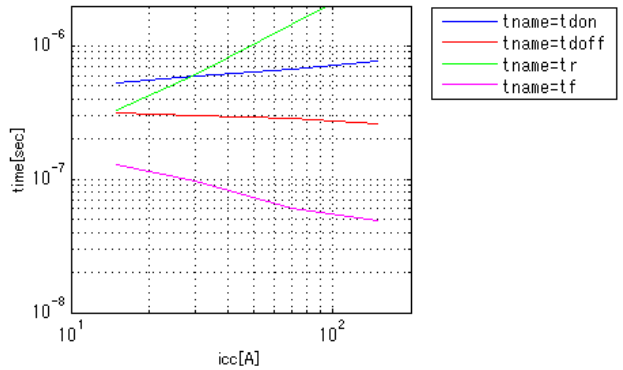


IfVf[Temp]



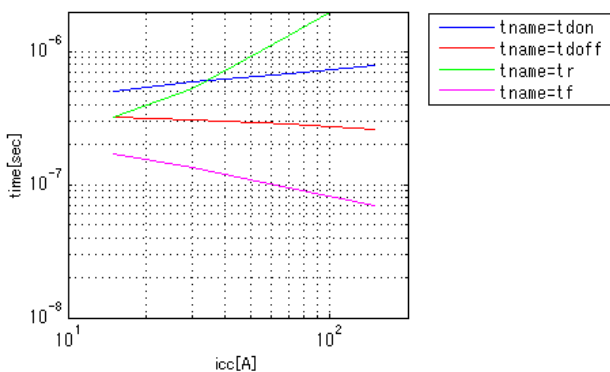
SwitchingIcc[Tname]

vge = 15V, vcc = 1000V, RGG = 10ohm, Temp = 125degC



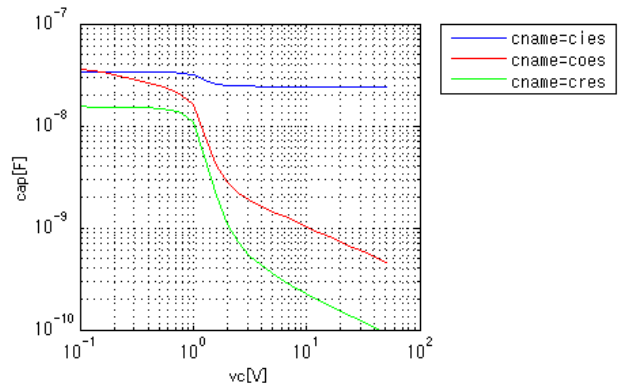
SwitchingIcc[Tname]2

vge = 15V, vcc = 1000V, RGG = 10ohm, Temp = 150degC



CapacitanceVce[Cname]

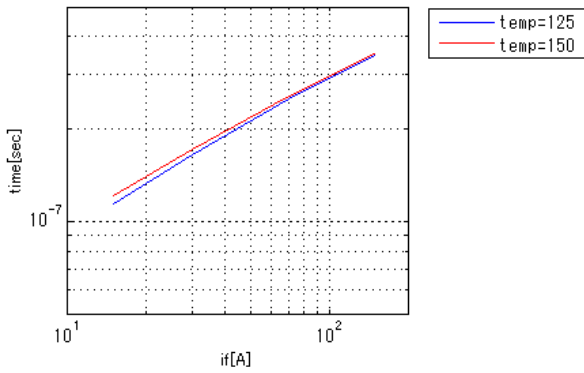
freq = 1000000Hz



Simulation results are following.
 Explanatory notes — : simulated

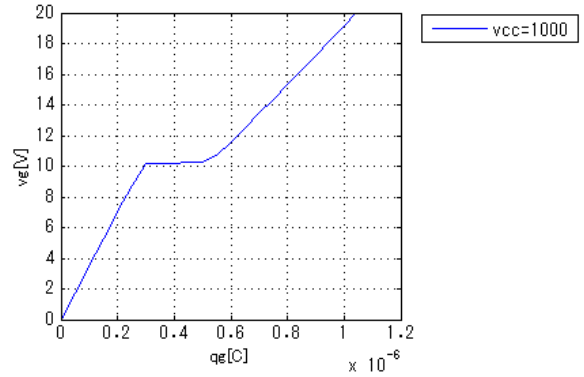
Trrlf[Temp]

Vcc = 1000V, didt = 1000V



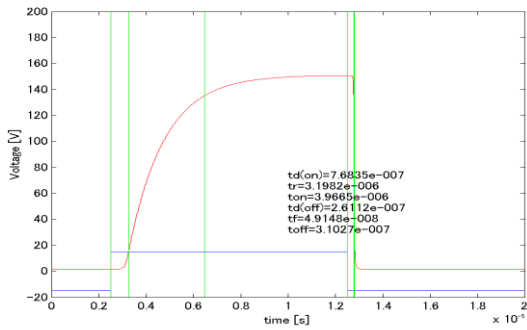
VgeQg[Vcc]

Ic = 150A



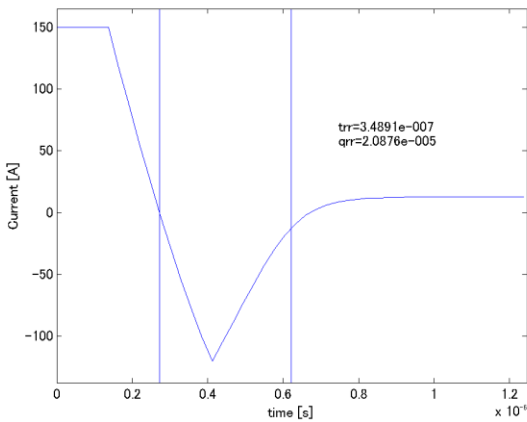
Switching Waveform

Blue : INPUT Red : OUTPUT



Trr Waveform

Vcc = 1000V, didt = 1000V



DISCLAIMER

1. This SPICE (Simulation Program with Integrated Circuit Emphasis) model and its content (the "Contents") are copyright of MoDeCH Inc. All rights reserved. Any redistribution or reproduction of any or all part of the Contents in any form is prohibited without express written permission made by MoDeCH Inc.
2. MoDeCH Inc. as licensor (the "Licensor") hereby grants to you, as licensee (the "Licensee"), a non-exclusive, non-transferable license to use the Contents as long as you abide by the terms and conditions of this DISCLAIMER.
3. The Licensee is not authorized to sell, loan, rent and redistribute or license the Contents in whole or in part, or in modified form, to anyone.
4. The Licensor shall in no way be liable to the Licensee or any third party for any loss or damage (including, but not limited to, lost profits, or other incidental, consequential, or punitive damages), however caused (including through negligence) which may be directly or indirectly suffered from, arising out of, or in connection with, any use of the Contents .
5. Notwithstanding anything contained in this DISCLAIMER, in no event shall Licensor be liable for any claims, damages or loss which may arise from the modification, combination, operation or use of the Contents with the Licensee's computer programs.
6. The Licensor does not warrant that the Contents will function in any environment.
7. The Contents may be changed or updated without notice. MoDeCH Inc. may also make improvements and/or changes in the products, pricing and/or the programs related to the Contents at any time without notice.



MoDeCH Inc.

Head Office

Location: Taiju-Seimei-Hachioji Bldg., 5-15 Yokoyama-cho, Hachioji-Shi, Tokyo 192-0081, Japan

Tel:+81-42-656-3360

E-Mail:model-on-support@modech.co.jp

URL:<http://www.modech.com/en/>