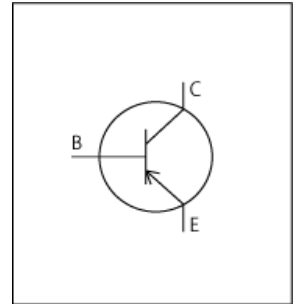


LTspice Model

PNP

RENESAS

2SA1330



Model Information

Model Gummel-Poon model
Call Name MDC_2SA1330_LT
Pin Assign 1:E 2:B 3:C
File List Model Library MDC_2SA1330_LT01.lib
 Model Report MDC_2SA1330_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 April 1st, 2010
- Product name 2SA1330
- Company name Renesas Electronics Corporation
- Characteristics $I_{cV_{ce}}[I_b], I_{cV_{be}}[Temp], hFE I_{c}[V_{ce}], V_{ce(sat)} I_{c}[hFE], V_{be(sat)} I_{c}[hFE], fT I_{e}[V_{ce}], C_{ob}, Switching I_{cc}[Tname], Switching Waveform$

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	-200	V
Collector current (DC)	0	to	-100m	A
Temperature	-55	to	150	deg C

BJT

○ : Implemented
 × : Not Implemented
 — : Not applicable

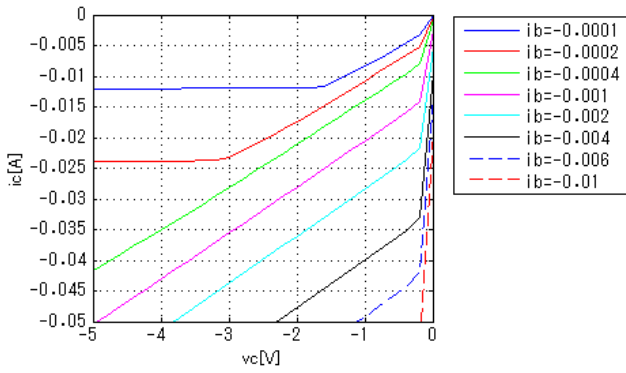
Model Functions Table
RANK=1

Functions	RANK	Implemented
IC-VBE(Temp)	1	○
IC-VCE-IB(Temp)	1	○
IC-hFE(Temp)	1	○
VCE(sat)-IC	1	○
VBE(sat)-IC	1	○
Capacitance	1	○
Transition	1	○
Switching	1	○

Simulation results are following.
 Explanatory notes — : simulated

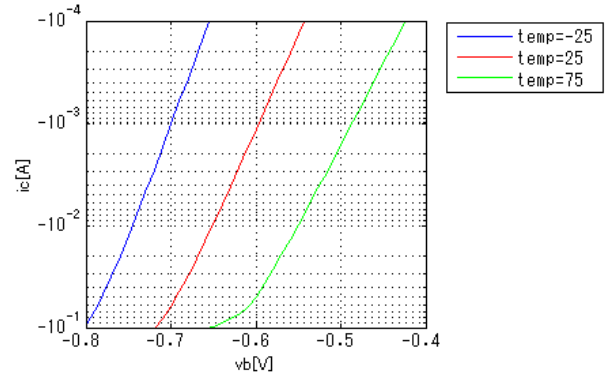
IcVce[ib]

Temp. = 25degC



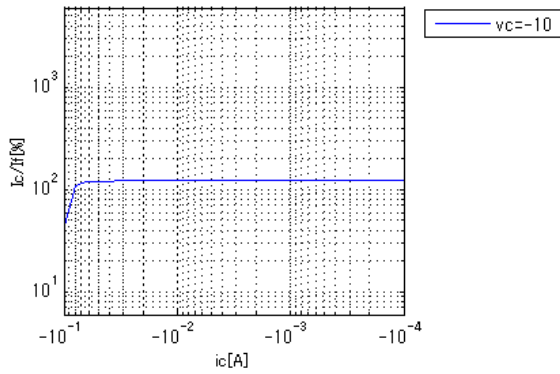
IcVbe[Temp]

Vce = -10V



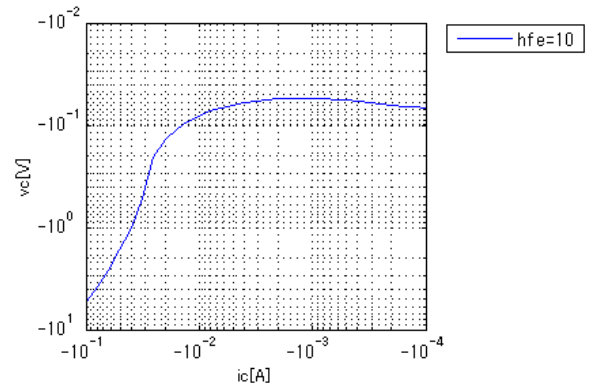
hFEIc[Vce]

Temp = 25degC



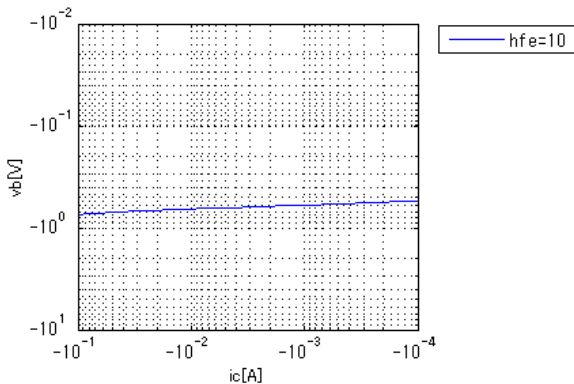
Vce(sat)Ic[hFE]

Temp = 25degC

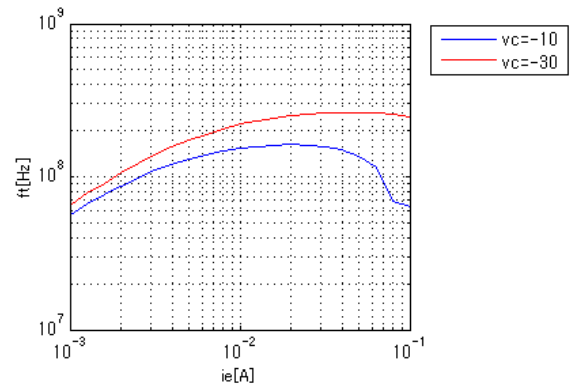


Vbe(sat)Ic[hFE]

Temp = 25degC



fTle[Vce]



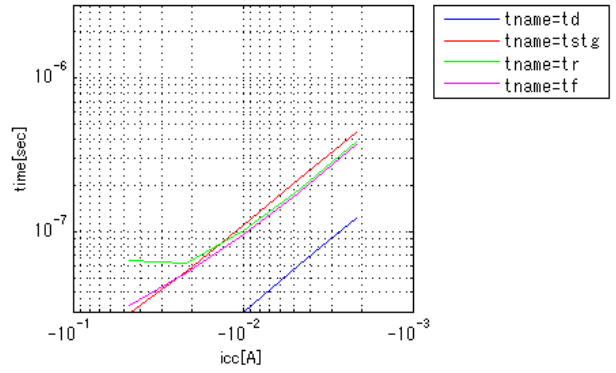
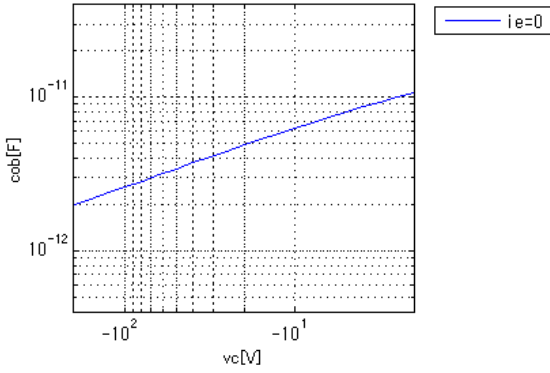
Simulation results are following.
 Explanatory notes — : simulated

Cob

Freq. = 1MHz

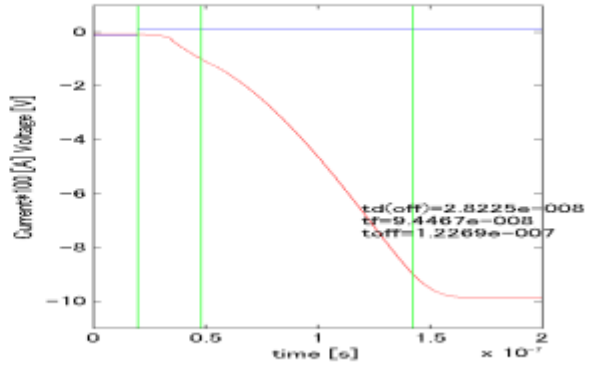
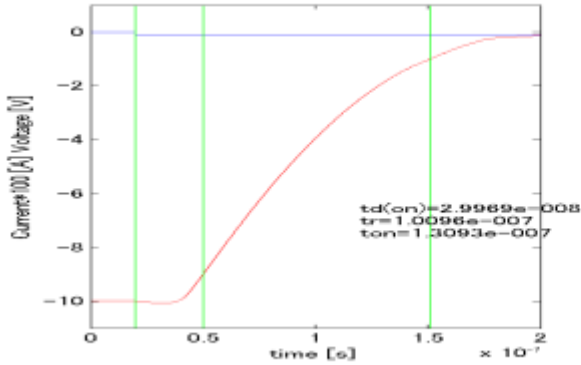
SwitchingIcc[Tname]

ib. = 1/10*ic, vcc. = -10V, Temp. = 25degC



Switching Waveform (Blue : INPUT Red : OUTPUT)

ib. = 1/10*ic, vcc. = -10V, Temp. = 25degC, ic = -0.01A



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