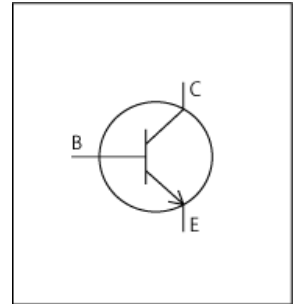


PSpice Model

NPN

Isahaya

2SC5209-T111-1J



Model Information

Model Gummel-Poon model
Call Name MDC_2SC5209-T111-1J_PS
Pin Assign 1:E 2:C 3:B
File List Model Library MDC_2SC5209-T111-1J_PS01.lib
 Model Report MDC_2SC5209-T111-1J_PS.pdf (this file)

Verified Simulator Version PSpice version 17.2
Note

References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version 2011.06
- Product name 2SC5209-T111-1J
- Company name Isahaya Electronics Corporation
- Characteristics $I_{cV_{ce}[ib]}$, $I_{cV_{be}[Temp]}$, $h_{FEIc}[Temp]$, $V_{ceIb}[Ic]$, $f_{Tle}[V_{ce}]$, C_{ob} , $V_{ce(sat)Ic}[Temp]$

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	50	V
Collector current (DC)	0	to	1	A
Temperature	-55	to	150	deg C

BJT

○ : Implemented
 × : Not Implemented
 — : Not applicable

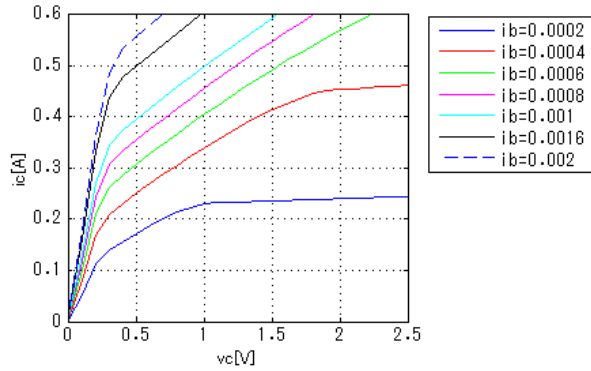
Model Functions Table
RANK=1

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	—
VCE-IB	1	○

Simulation results are following.
 Explanatory notes — : simulated

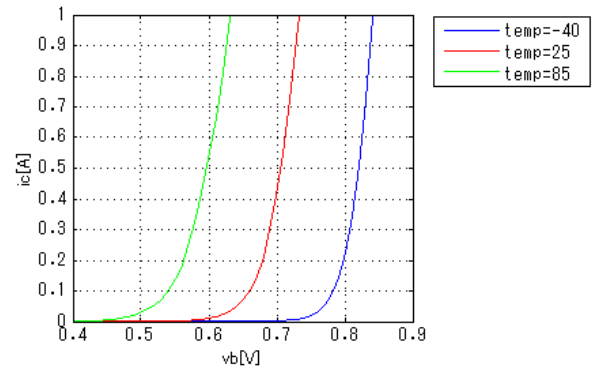
IcVce[ib]

Temp = 25degC



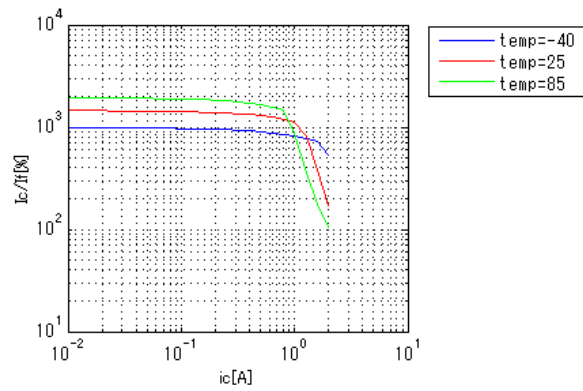
IcVbe[Temp]

Vce = 6V

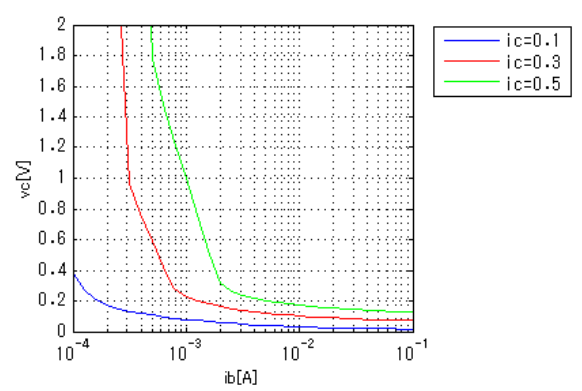


hFEIc[Temp]

Vce = 6V

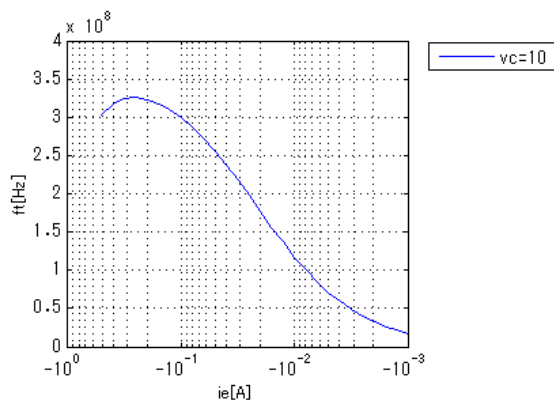


Vcelb[Ic]



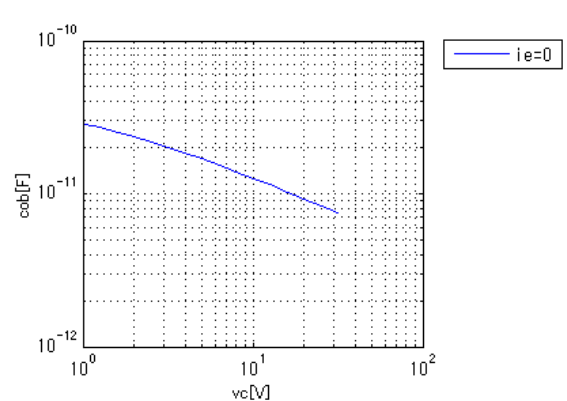
fTle[Vce]

Freq = 50000000Hz



Cob

Freq = 1000000Hz

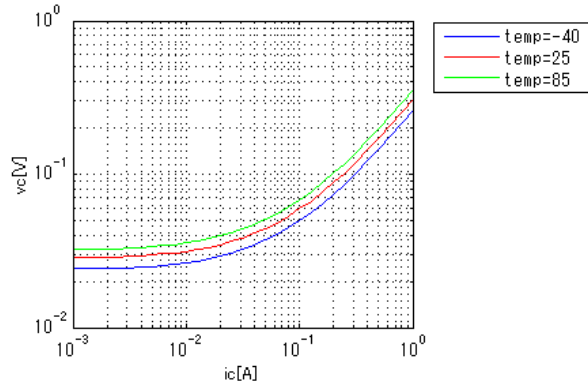


Simulation results are following.

Explanatory notes — : simulated

Vce(sat)Ic[Temp]

IC/IB = 50



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