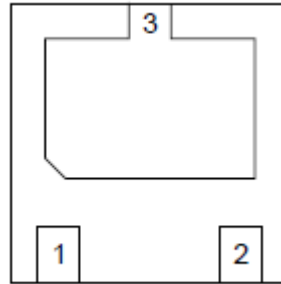


PSpice Model

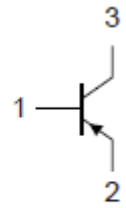
PNP

Nexperia

BC51PA



Transparent top view



sym013

Model Information

Model Gummel-Poon model
Call Name MDC_BC51PA_PS
Pin Assign 1:B 2:E 3:C
File List Model Library MDC_BC51PA_PS01.lib
 Model Report MDC_BC51PA_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 Rev. 9 - 13 October 2011
- Product name BC51PA
- Company name Nexperia B.V.
- Characteristics $hFEI_c[Temp]$, $I_cV_{ce}[ib]$, $V_{belc}[Temp]$, $V_{ce(sat)}I_c[Temp]$, $C_{ob}V_{cb}$, $fT I_c[V_{ce}]$

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	-45	V
Collector current (DC)	0	to	-1	A
Temperature	-65	to	150	deg C

BJT

○ : Implemented
 × : Not Implemented
 — : Not applicable

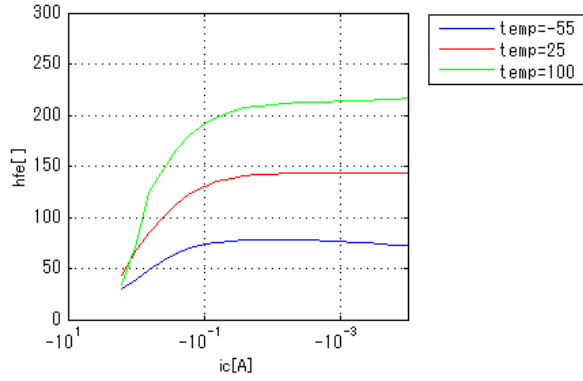
Model Functions Table
RANK=1

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

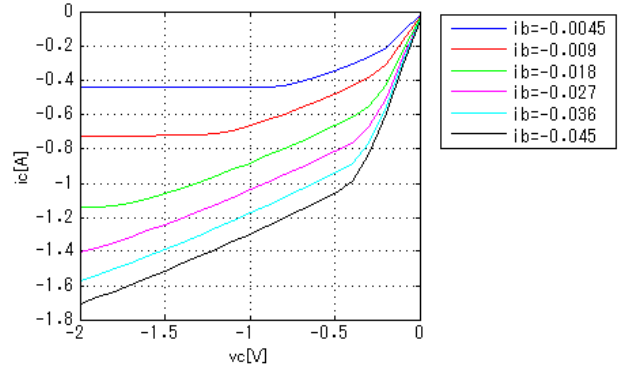
hFEIc[Temp]

Vce = -2V



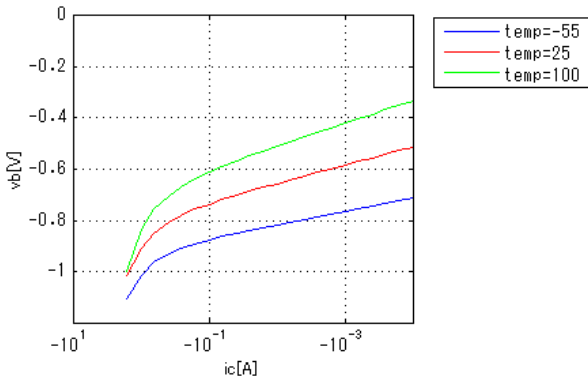
IcVce[ib]

Temp = 25degC



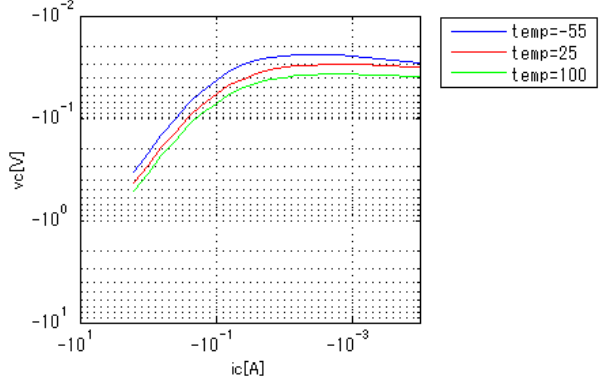
VbeIc[Temp]

Vce = -2V



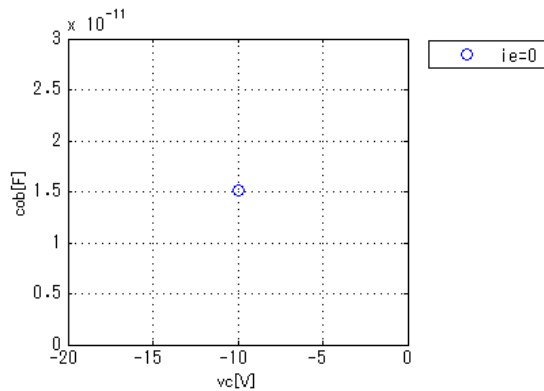
Vce(sat)Ic[Temp]

IC/IB = 10



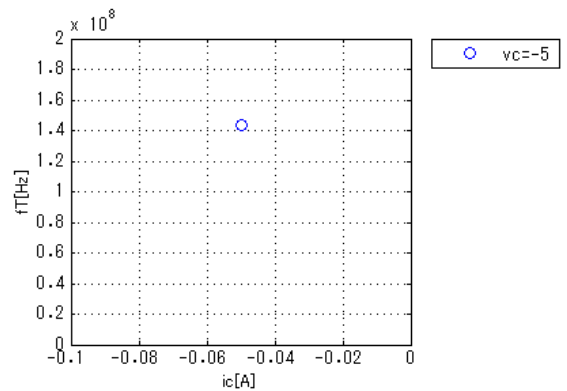
CobVcb

Freq = 1000000Hz



fT(Ic[Vce])

Freq = 100000000Hz



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MoDeCH Inc.

Head Office

Location: 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/>