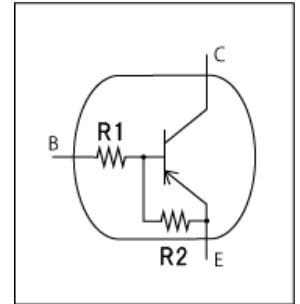


PSpice Model

BRT (Bias Resistor Transistor)

Isahaya

RT1P141C



Model Information

Model A macro model based on Gummel-Poon model
Call Name MDC_RT1P141C_PS
Pin Assign 1:B 2:E 3:C
File List Model Library MDC_RT1P141C_PS01.lib
 Model Report MDC_RT1P141C_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 2016.11
- Product name RT1P141C
- Company name Isahaya Electronics Corporation
- Characteristics $h_{FE}I_c[Temp]$, $V_{ion}I_c[Temp]$, $I_cV_{ioff}[Temp]$, $V_{ce(sat)}I_c[Temp]$, $f_{Tle}[V_{ce}]$

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	-50	V
R1	10	to	10	kOhm
R2	10	to	10	kOhm
Temperature	-55	to	150	deg C

BRT

○ : Implemented
 × : Not Implemented
 — : Not applicable

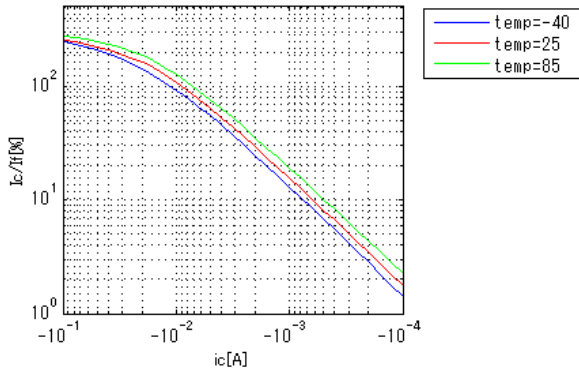
Model Functions Table
RANK=1

Functions	RANK	Implemented
VIN(on)-Iout(Temp)	1	○
Iout-VIN(off)(Temp)	1	○
Iout-Vo-Iin	1	—
DC_Current_Gain-Iout	1	○
VOOUT(on)-Iout(Temp)	1	—
VOOUT(sat)-Iin(Temp)	1	○
Capacitance	1	—
Transition Frequency	1	○
Switching(Typ.)	1	—

Simulation results are following.
 Explanatory notes — : simulated

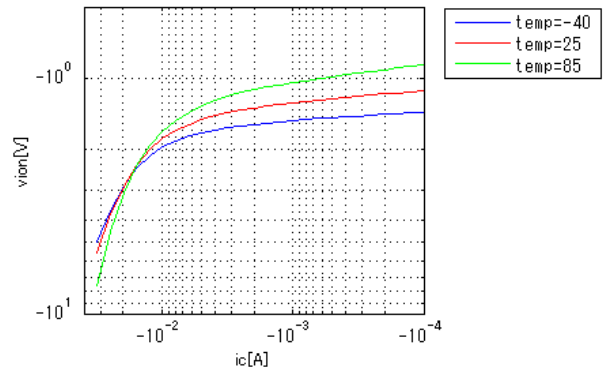
hFEIc[Temp]

Vce = -5V



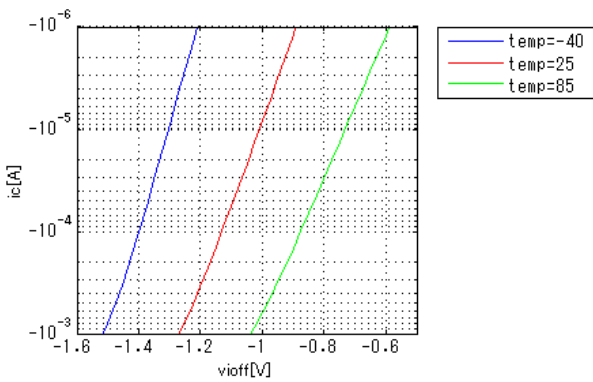
VionIc[Temp]

Vce = -0.2V



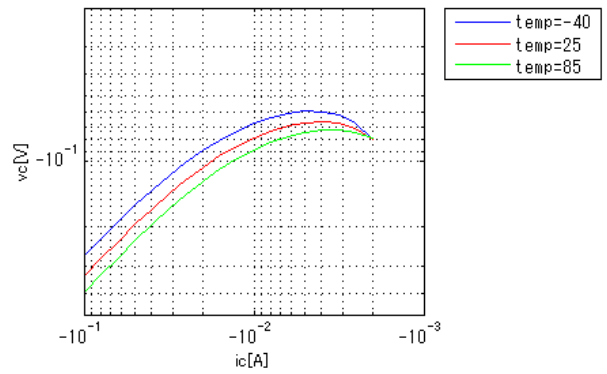
IcVioff[Temp]

Vce = -5V



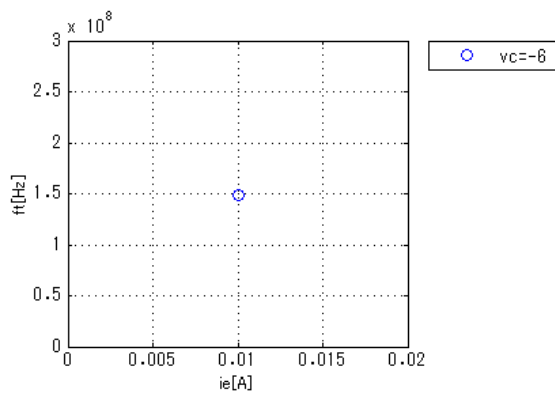
Vce(sat)Ic[Temp]

IC/IB = 20



fTle[Vce]

Freq = 50000000Hz



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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/>