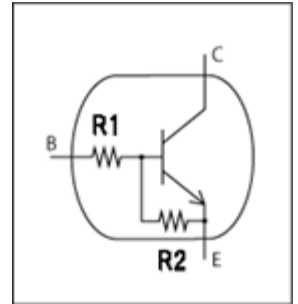


# PSpice Model

## BRT (Bias Resistor Transistor)

### Isahaya

### RT1N14HC



### Model Information

**Model** A macro model based on Gummel-Poon model  
**Call Name** MDC\_RT1N14HC\_PS  
**Pin Assign** 1:B 2:E 3:C  
**File List** Model Library MDC\_RT1N14HC\_PS01.lib  
 Model Report MDC\_RT1N14HC\_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 RT1N14HC
- Company name Isahaya Electronics Corporation
- Characteristics HFEICTEMP,VIONICTEMP,ICVIOFFTEMP,VCESATICTEM P,FTIEVCE

### 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	5	to	5	kOhm
Temperature	-55	to	150	deg C

**BRT**

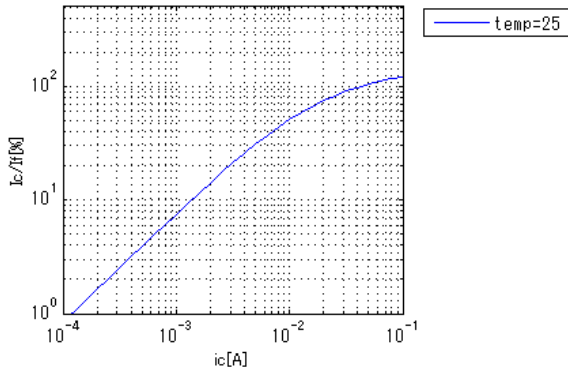
○ : Implemented  
 × : Not Implemented  
 — : Not applicable

**Model Functions Table**
**RANK=1**

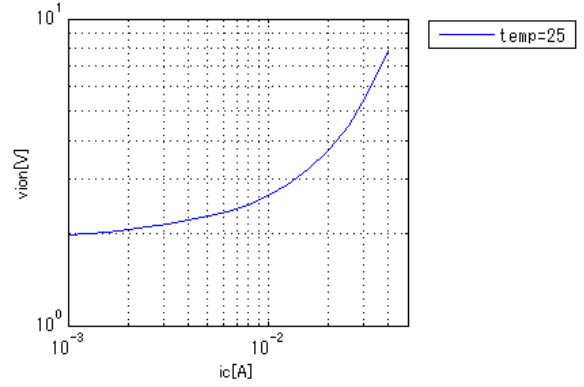
Functions	RANK	Implemented
VIN(on)-Iout(Temp)	1	○
Iout-VIN(off)(Temp)	1	○
Iout-Vo-Iin	1	—
DC_Current_Gain-Iout	1	○
VOUT(on)-Iout(Temp)	1	—
VOUT(sat)-Iin(Temp)	1	○
Capacitance	1	—
Transition Frequency	1	○
Switching(Typ.)	1	—

Simulation results are following.  
 Explanatory notes — : simulated

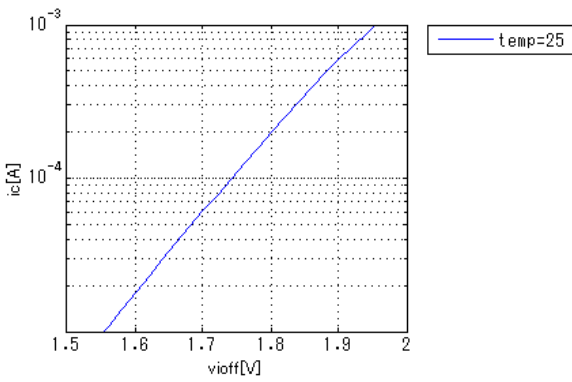
**HFEICTEMP**



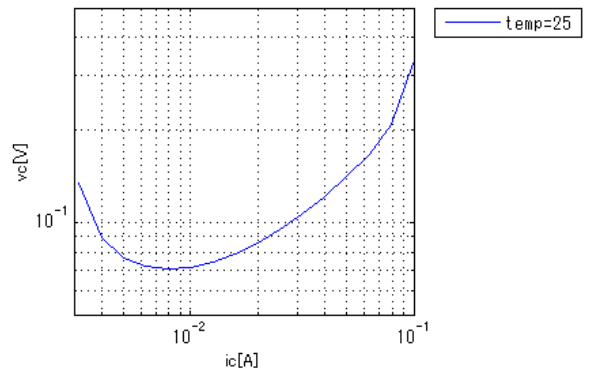
**VIONICTEMP**



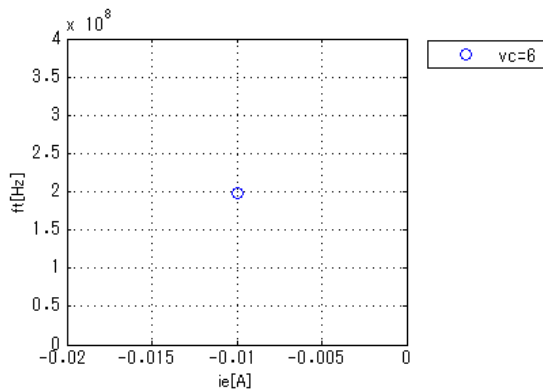
**ICVIOFFTEMP**



**VCESATICTEMP**



**FTIEVCE**



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