

# PSpice Model

## PNP

## ROHM

## 2SB1694FRA



### Model Information

**Model** Gummel-Poon  
**Call Name** MDC\_2SB1694FRA\_PS  
**Pin Assign** 1:C 2:B 3:E  
**File List** Model Library MDC\_2SB1694FRA\_PS01.lib  
 Model Report MDC\_2SB1694FRA\_PS.pdf (this file)

**Verified Simulator Version** PSpice version 16.6  
**Note**

### References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version 20160915 - Rev.001
- Product name 2SB1694FRA
- Company name ROHM Co., Ltd.
- Characteristics  $I_C V_{BE}[Temp]$ ,  $I_C V_{CE}[I_B]$ ,  $h_{FE} I_C[Temp]$ ,  $h_{FE} I_C[V_{CE}]$ ,  $V_{CE}(sat) I_C[Temp]$ ,  $V_{CE}(sat) I_C[h_{FE}]$ ,  $V_{BE}(sat) I_C[Temp]$ ,  $f_T I_C[V_{CE}]$ ,  $C_{ib}$ ,  $C_{ob}$

### Simulation Range

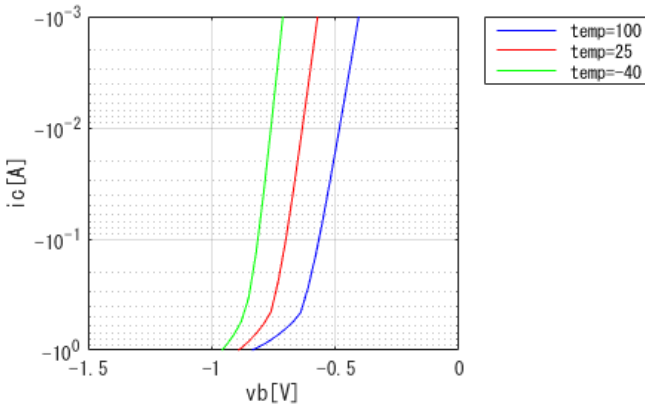
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	-30	V
Temperature	-55	to	150	deg C

Simulation results are following.  
 Explanatory notes — : simulated

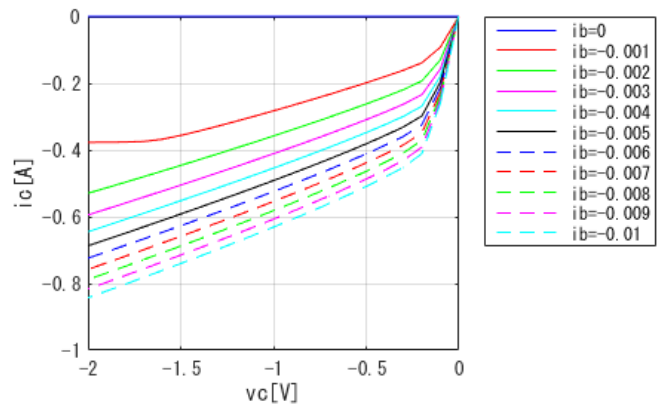
**IcVbe[Temp]**

Vce = -2V



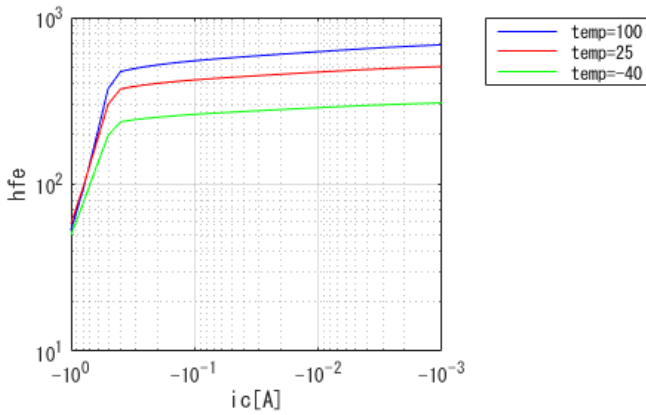
**IcVce[ib]**

Temp. = 25deg C

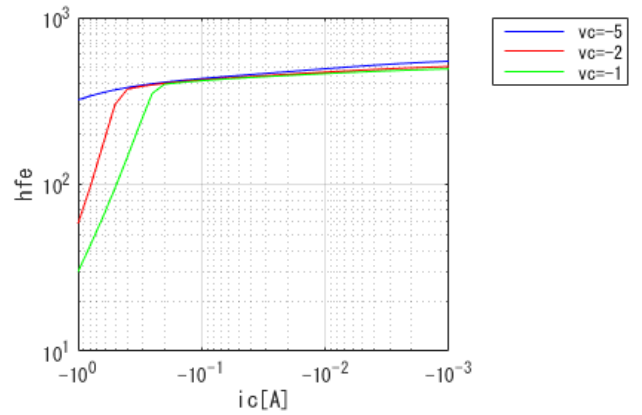


**hFEIc[Temp]**

Vce = -2V

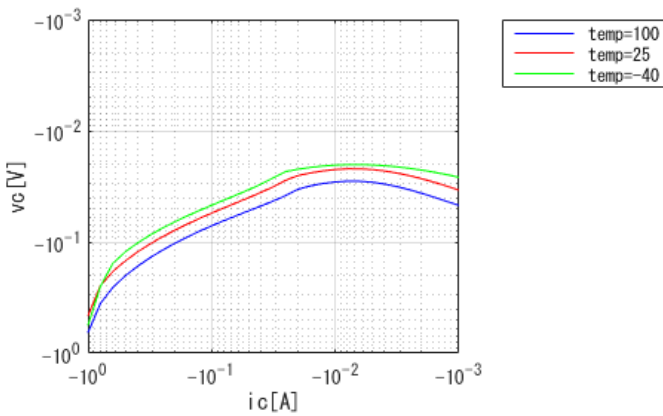


**hFEIc[Vce]**

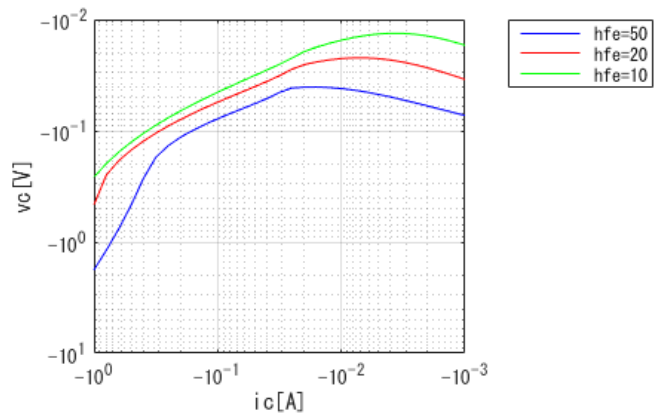


**Vce(sat)Ic[Temp]**

IC/IB = 20



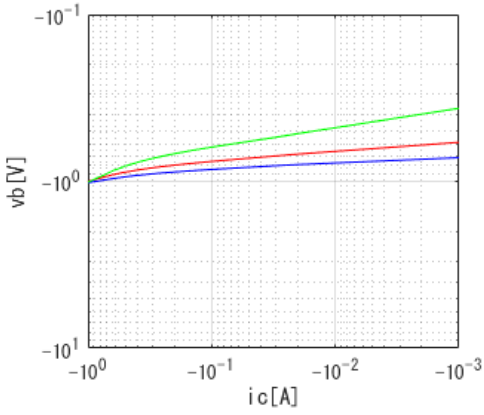
**Vce(sat)Ic[hFE]**



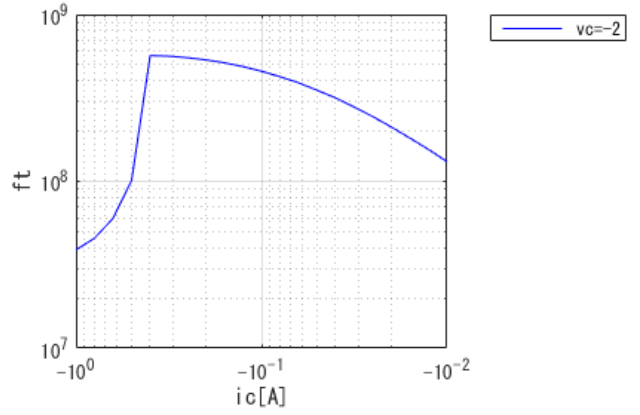
Simulation results are following.  
 Explanatory notes — : simulated

**Vbe(sat)Ic[Temp]**

IC/IB = 20

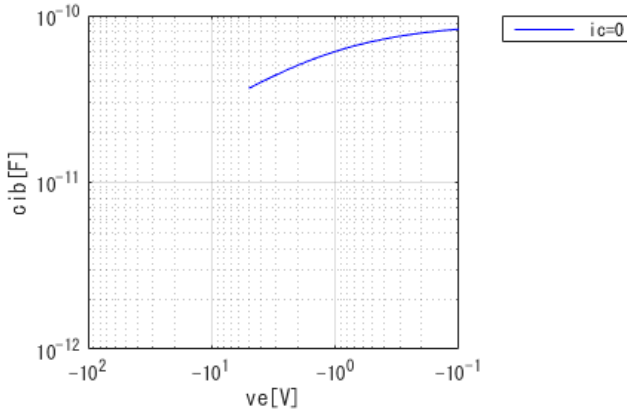


**fT Ic[Vce]**



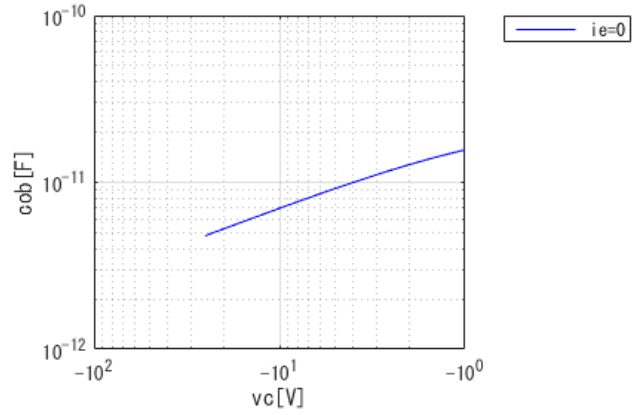
**Cib**

Freq. = 1MHz



**Cob**

Freq. = 1MHz



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