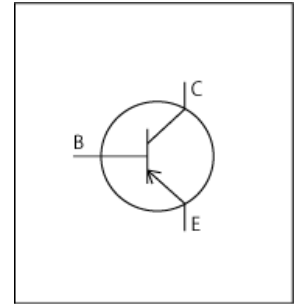


# PSpice Model

## PNP

## ON

## NSS40300MZ4T1G



### Model Information

**Model** Gummel-Poon model  
**Call Name** MDC\_NSS40300MZ4T1G\_PS  
**Pin Assign** 1:C 2:B 3:E  
**File List** Model Library MDC\_NSS40300MZ4T1G\_PS02.lib  
 Model Report MDC\_NSS40300MZ4T1G\_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 Rev.3
- Product name NSS40300MZ4T1G
- Company name ON Semiconductor.
- Characteristics  $hFE(I_C, T_{amb}), V_{ce(sat)}(I_C, T_{amb}), V_{ce}(I_C, T_{amb}), I_{c(sat)}(V_{ce}, T_{amb}), I_{c(max)}(V_{ce}, T_{amb}), I_{c(max)}(V_{ce}, T_{amb}), I_{c(max)}(V_{ce}, T_{amb}), V_{be(sat)}(I_C, T_{amb}), C_{ib}, C_{ob}, f_T(I_C, V_{ce})$

### Simulation Range

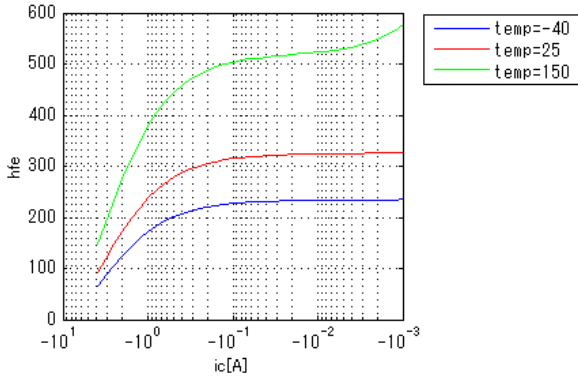
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	-40	V
Base current (DC)	0	to	-1	A
Temperature	-55	to	150	deg C

Simulation results are following.  
 Explanatory notes — : simulated

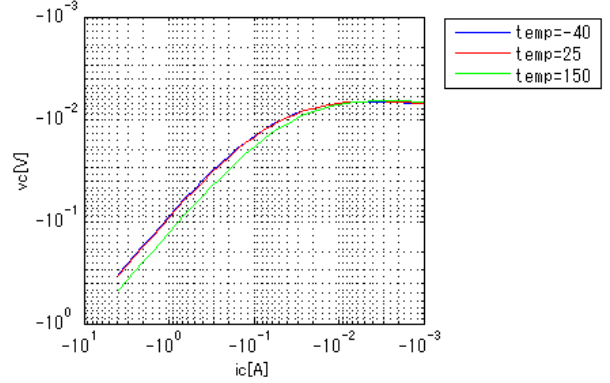
**hFEIc[Temp]**

Vce = -1V

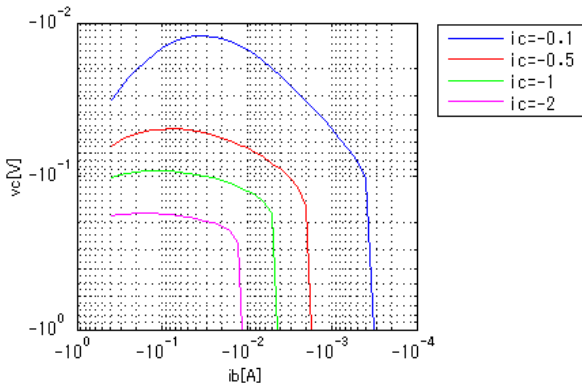


**Vce(sat)Ic[Temp]**

IC/IB = 10

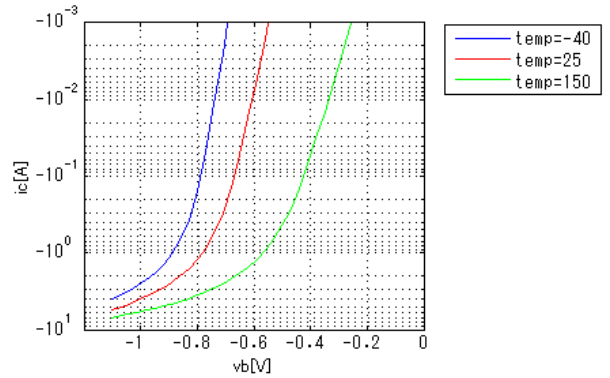


**VceIb[Ic]**



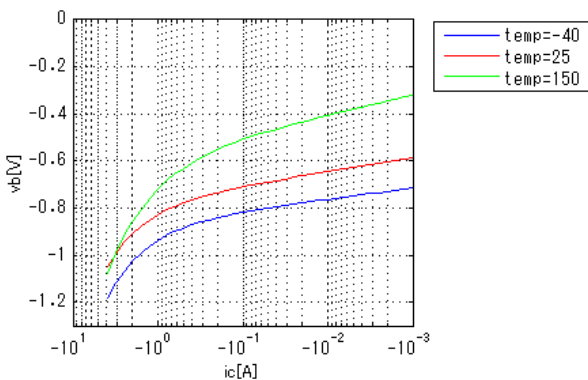
**IcVbe[Temp]**

Vce = -2V



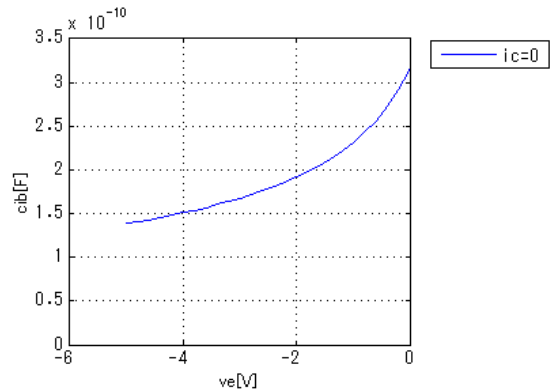
**Vbe(sat)Ic[Temp]**

IC/IB = 10



**Cib**

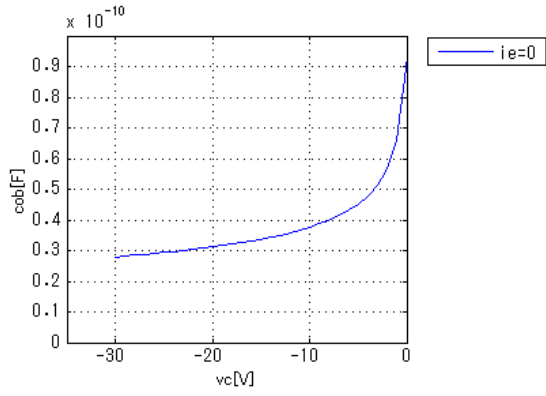
Freq. = 1MHz



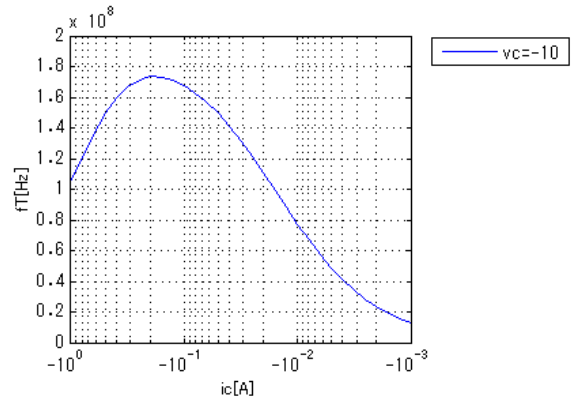
Simulation results are following.  
 Explanatory notes — : simulated

**Cob**

Freq. = 1MHz



**fTic[Vce]**



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