

# PSpice Model

## NPN

## RENESAS

## 2SD1000



### Model Information

**Model** Mextram model  
**Call Name** MDC\_2SD1000\_PS  
**Pin Assign** 1:C 2:B 3:E  
**File List** Model Library MDC\_2SD1000\_PS01.lib  
 Model Report MDC\_2SD1000\_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 November 1994
- Product name 2SD1000
- Company name Renesas Electronics Corporation
- Characteristics  $I_c V_{ce}[I_b], I_c V_{be}[Temp], h_{FE} I_c[Temp], V_{be}(sat) I_c[Temp], V_{ce}(sat) I_c[Temp], f_T I_c[V_{ce}], C_{ob}$

### Simulation Range

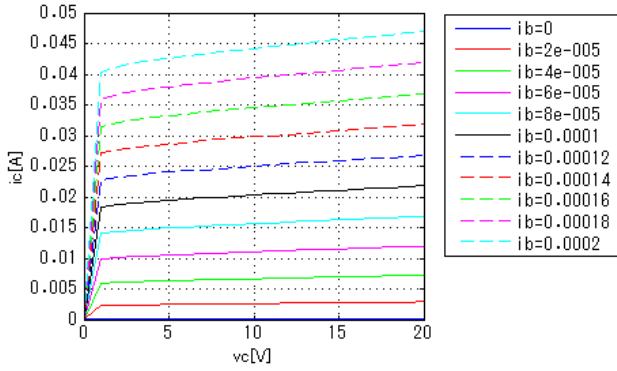
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	50	V
Base current (DC)	0	to	0.07	A
Temperature	-55	to	150	deg C

Simulation results are following.  
 Explanatory notes — : simulated

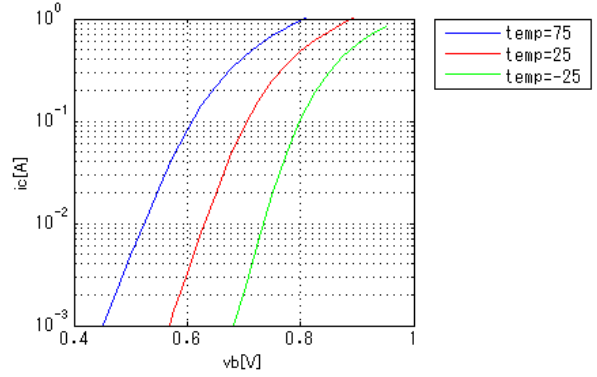
**IcVce[ib]**

Temp. = 25deg C



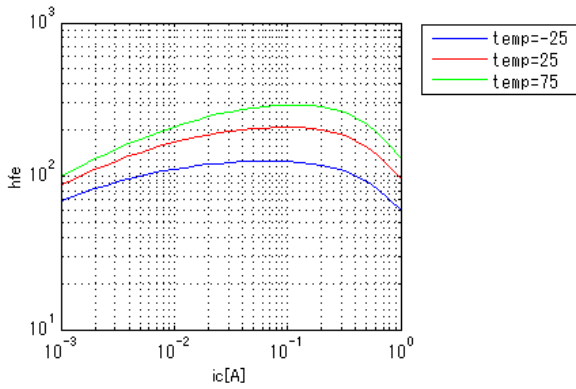
**IcVbe[Temp]**

Vce = 6V



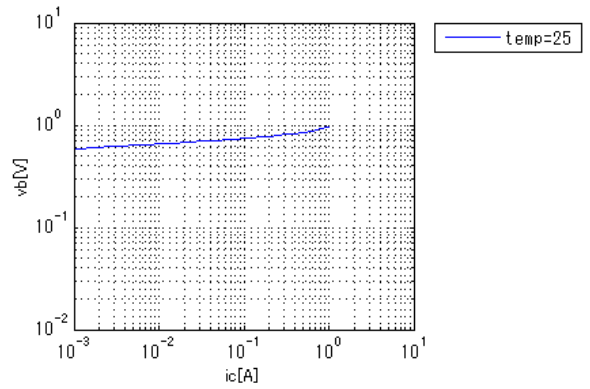
**hFEIc[Temp]**

Vce = 1V



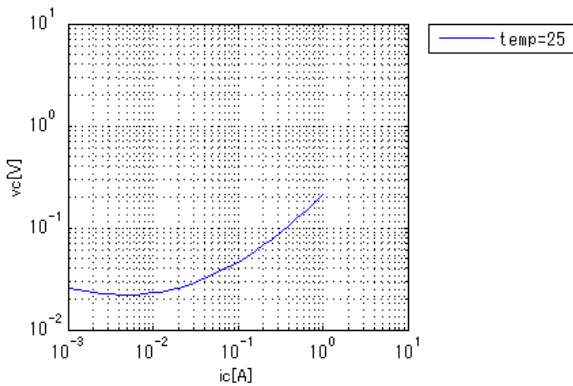
**Vbe(sat)Ic[Temp]**

IC/IB = 10

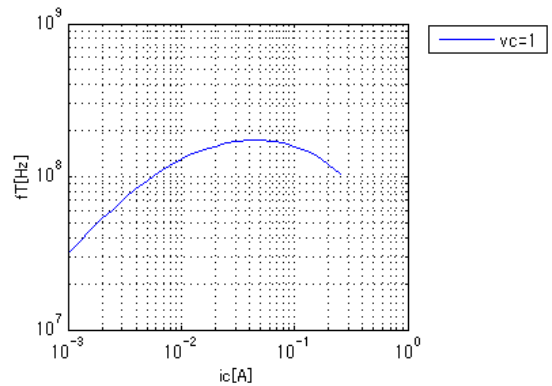


**Vce(sat)Ic[Temp]**

IC/IB = 10



**fT Ic [Vce]**

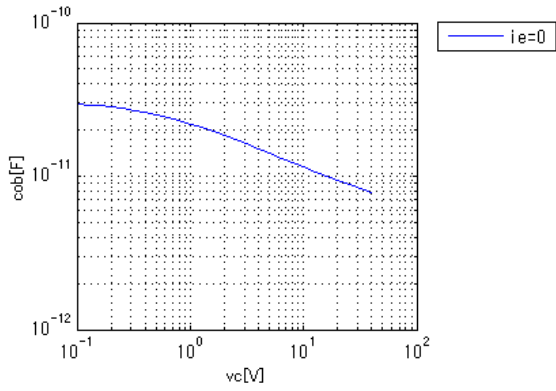


Simulation results are following.

Explanatory notes — : simulated

**Cob**

Freq. = 1MHz



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