

PSpice Model

NPN

RENESAS

2SC4177



Model Information

Model Mextram model
Call Name MDC_2SC4177_PS
Pin Assign 1:C 2:B 3:E
File List Model Library MDC_2SC4177_PS01.lib
 Model Report MDC_2SC4177_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 Unknown
- Product name 2SC4177
- Company name Renesas Electronics Corporation
- Characteristics $I_c V_{ce}[ib], h_{FE} I_c[V_{ce}], h_{FE} I_c[Temp], I_c V_{be}[Temp], V_{be}(sat) I_c[h_{FE}], V_{ce}(sat) I_c[h_{FE}], f_T I_c[V_{ce}], C_{ib}, C_{ob}$

Simulation Range

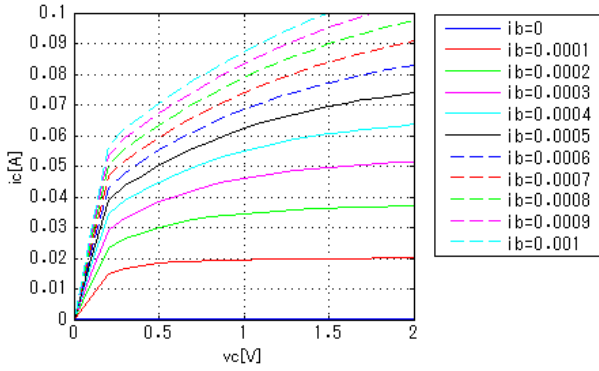
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	50	V
Base current (DC)	0	to	10	A
Temperature	-55	to	150	deg C

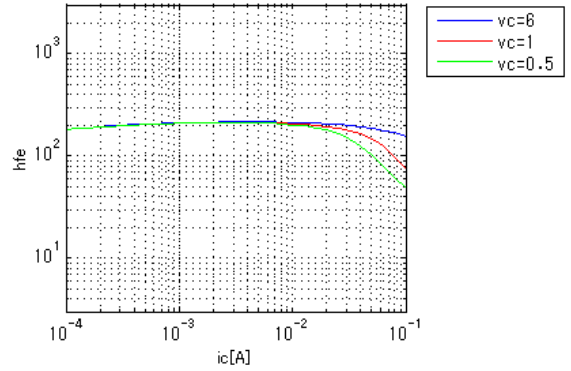
Simulation results are following.
 Explanatory notes — : simulated

IcVce[ib]

Temp. = 25deg C

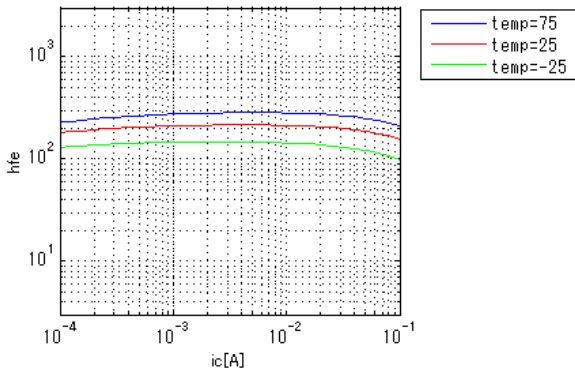


hFEIc[Vce]



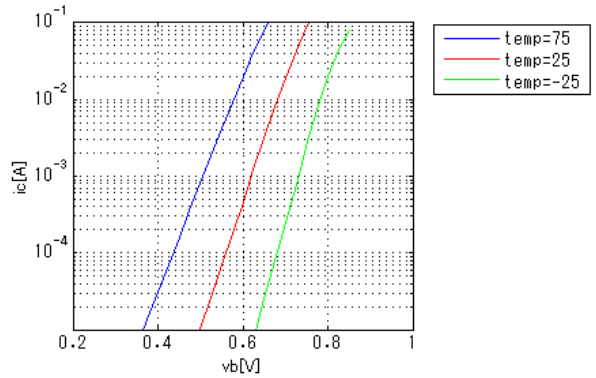
hFEIc[Temp]

Vce = 6V

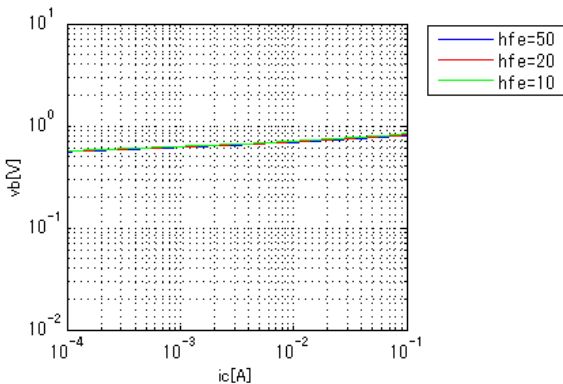


IcVbe[Temp]

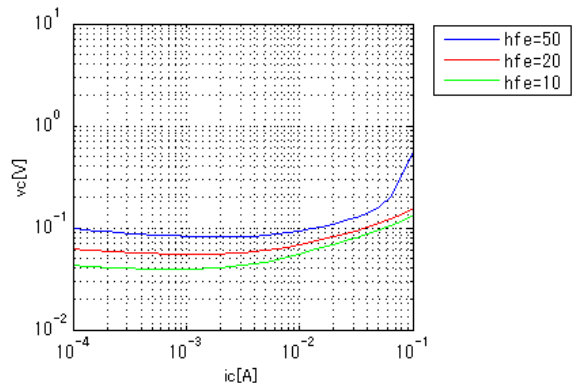
Vce = 6V



Vbe(sat)Ic[hFE]

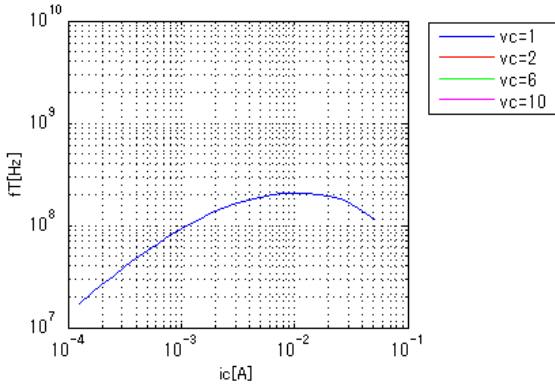


Vce(sat)Ic[hFE]



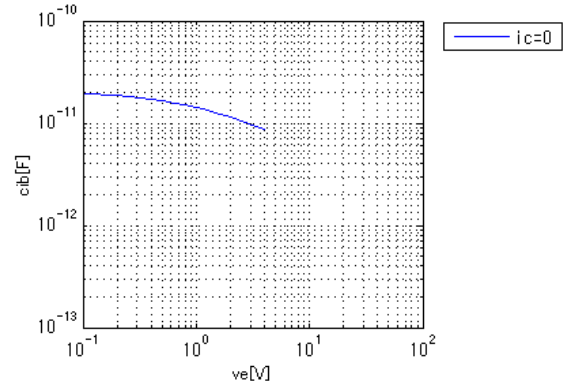
Simulation results are following.
 Explanatory notes — : simulated

fT_{lc}[Vce]



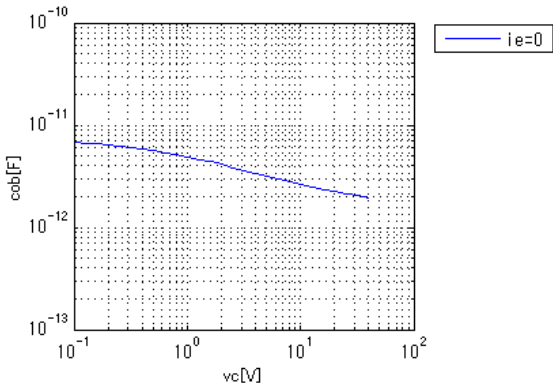
C_{ib}

Freq. = 1MHz



C_{ob}

Freq. = 1MHz



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