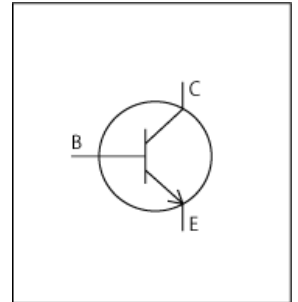


LTspice Model

NPN

Toshiba Corporation

2SC4116



Model Information

Model Gummel-Poon model
Call Name MDC_2SC4116_LT
Pin Assign 1:B 2:E 3:C
File List Model Library MDC_2SC4116_LT01.lib
 Model Report MDC_2SC4116_LT.pdf (this file)

Verified Simulator Version LTspice version XVII
Note

References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version 2015-01-09
- Product name 2SC4116
- Company name Toshiba Corporation
- Characteristics $I_c V_{ce}[I_b], I_b V_{be}[Temp], hFE I_c[Temp], V_{ce(sat)} I_c[Temp], V_{be(sat)} I_c[Temp], f_T I_c[V_{ce}]$

Simulation Range

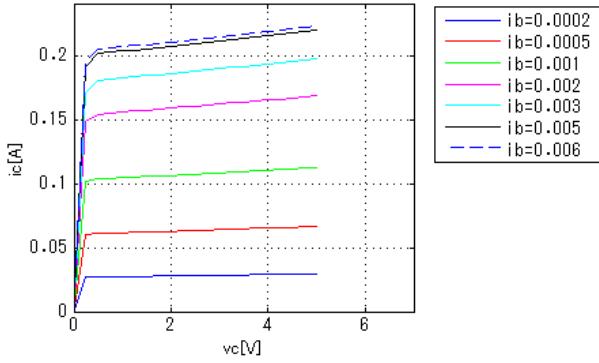
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	50	V
Base current (DC)	0	to	30m	A
Temperature	-55	to	125	deg C

Simulation results are following.
 Explanatory notes — : simulated

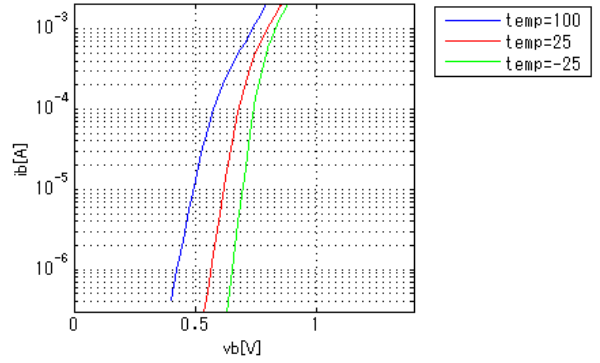
IcVce[ib]

Temp. = 25deg C



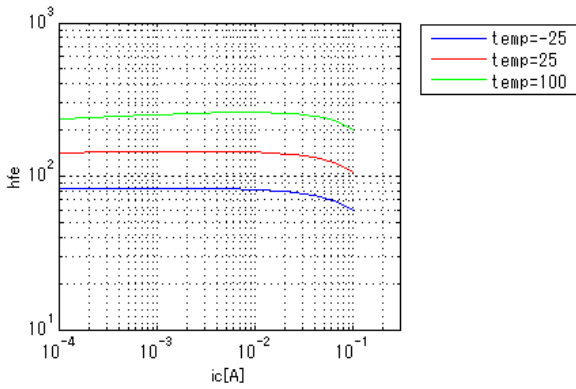
IbVbe[Temp]

Vce = 6V



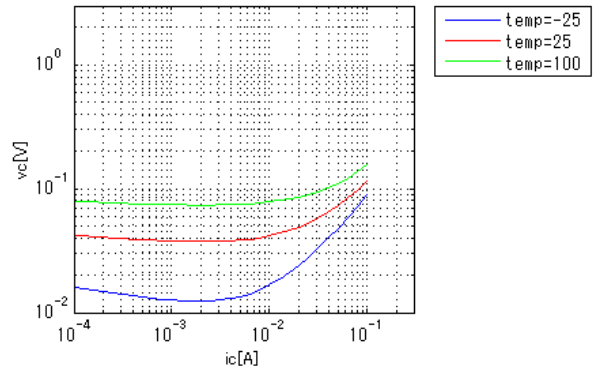
hFEIc[Temp]

Vce = 1V



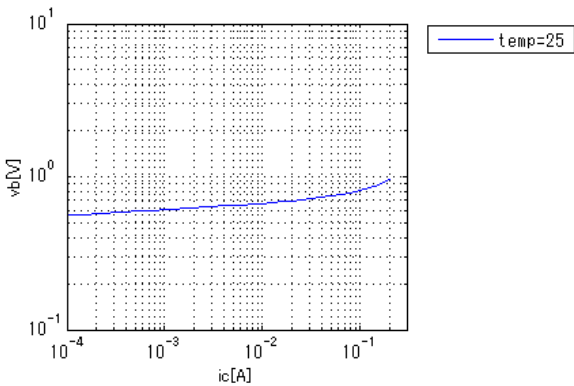
Vce(sat)Ic[Temp]

IC/IB = 10

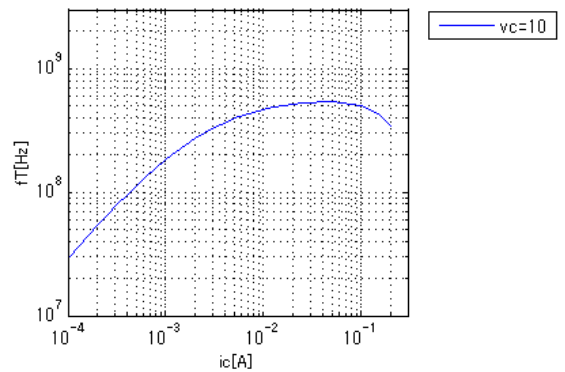


Vbe(sat)Ic[Temp]

IC/IB = 10



fT Ic[Vce]



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