

PSpice Model

NPN

TOSHIBA

TTC016



Model Information

Model Gummel-Poon model
Call Name MDC_TTC016_PS
Pin Assign 1:C 2:B 3:E
File List Model Library MDC_TTC016_PS02.lib
 Model Report MDC_TTC016_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.1.0
- Product name TTC016
- Company name Toshiba Corporation
- Characteristics $I_c V_{ce}[ib], h_{FE} I_c[Temp], V_{ce}(sat) I_c[Temp], V_{be}(sat) I_c[Temp], I_c V_{be}[Temp]$

Simulation Range

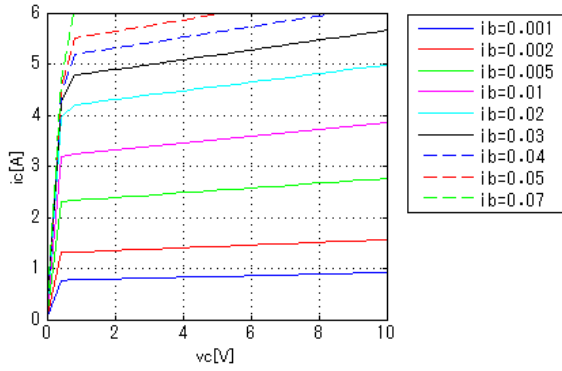
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

| Item | Range | | | Unit |
|--------------------------------|-------|----|------|-------|
| | Min. | | Max. | |
| Collector-emitter voltage (DC) | 0 | to | 50 | V |
| Base current (DC) | 0 | to | 0.5 | A |
| Temperature | -55 | to | 150 | deg C |

Simulation results are following.
 Explanatory notes — : simulated

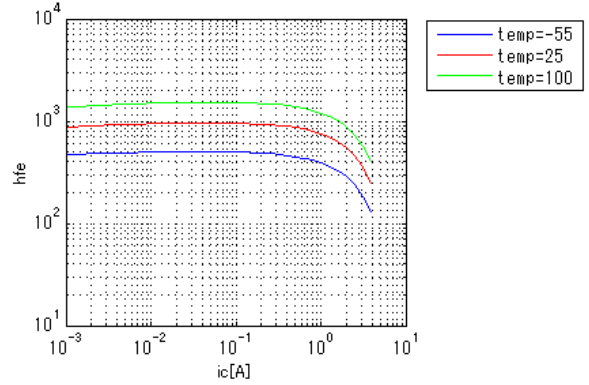
IcVce[ib]

Temp. = 25deg C



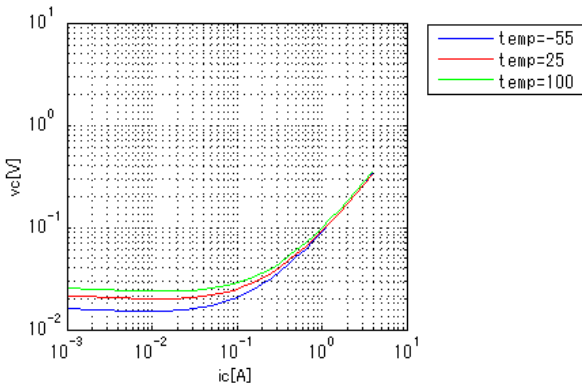
hFEIc[Temp]

Vce = 2V



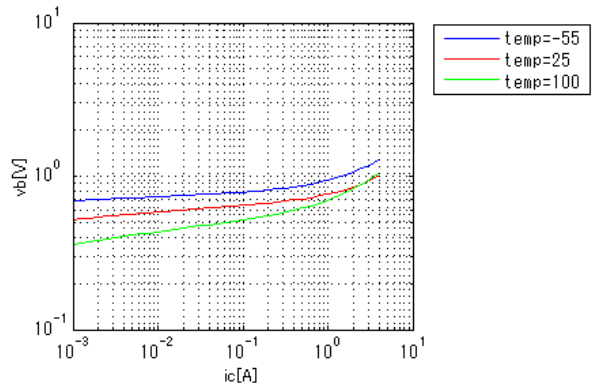
Vce(sat)Ic[Temp]

IC/IB = 50



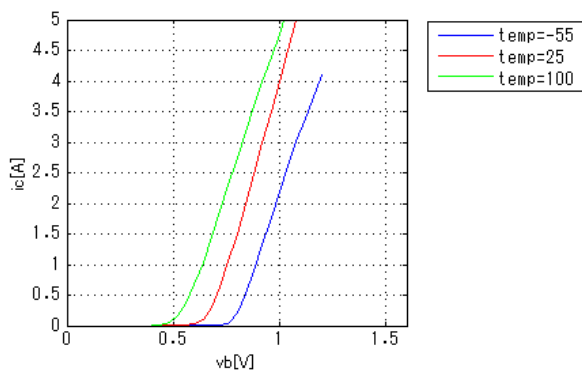
Vbe(sat)Ic[Temp]

IC/IB = 50



IcVbe[Temp]

Vce = 2V



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