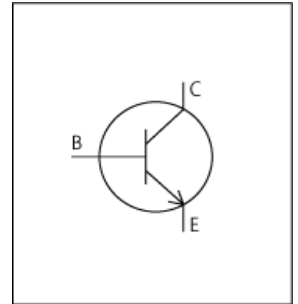


LTspice Model

NPN

ON Semiconductor

2SC4027S



Model Information

Model Mextram 504
Call Name MDC_2SC4027S_LT
Pin Assign 1:B 2:C 3:E 4:C(Tab)
File List Model Library MDC_2SC4027S_LT01.lib
 Model Report MDC_2SC4027S_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 December, 2013
- Product name 2SC4027S
- Company name ON Semiconductor.
- Characteristics $I_{cV_{ce}[ib]}$, $I_{cV_{be}[Temp]}$, $h_{FE}I_{c}[Temp]$, $f_{T}I_{c}[V_{ce}]$, C_{ob} , $V_{ce}(sat)I_{c}[Temp]$, $V_{be}(sat)I_{c}[Temp]$, $I_{cV_{ce}[ib]}^2$, switching

Simulation Range

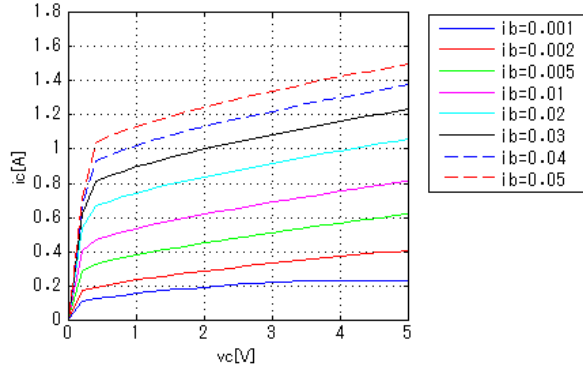
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	160	V
Base current (DC)	0	to	0.15	A
Temperature	-55	to	150	deg C

Simulation results are following.
 Explanatory notes — : simulated

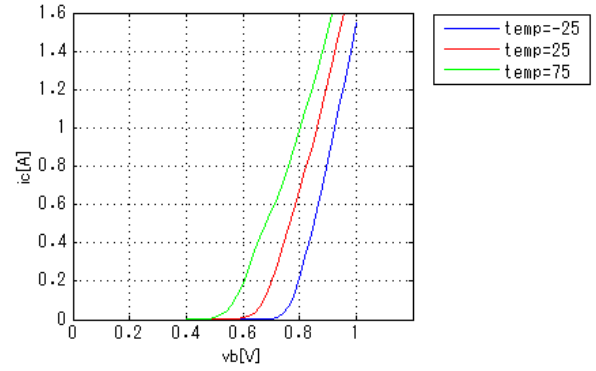
IcVce[ib]

Temp. = 25deg C



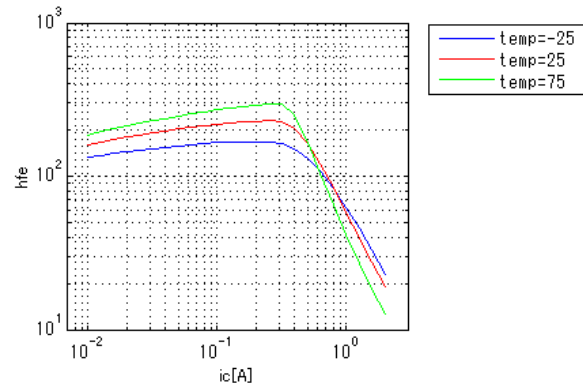
IcVbe[Temp]

Vce = 5V

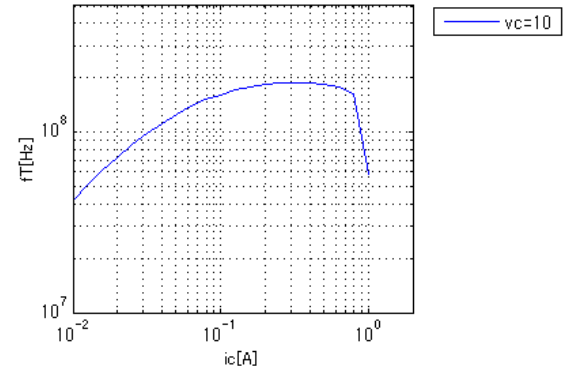


hFEIc[Temp]

Vce = 5V

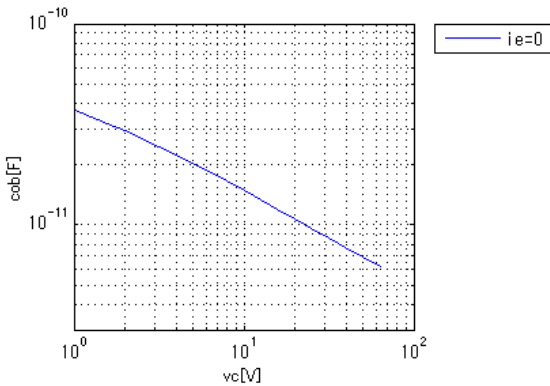


fT Ic[Vce]



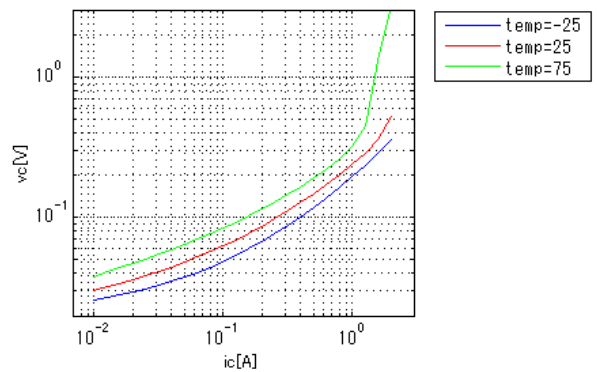
Cob

Freq. = 1MHz



Vce(sat)Ic[Temp]

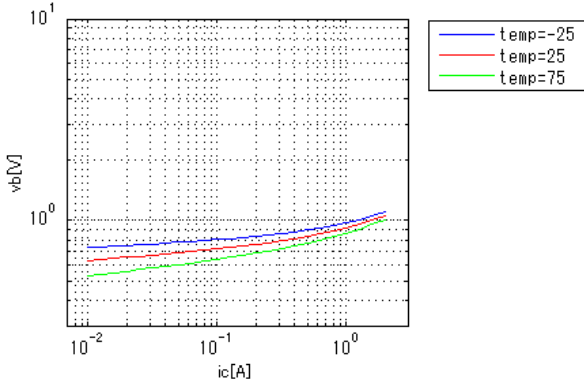
IC/IB = 10



Simulation results are following.
 Explanatory notes — : simulated

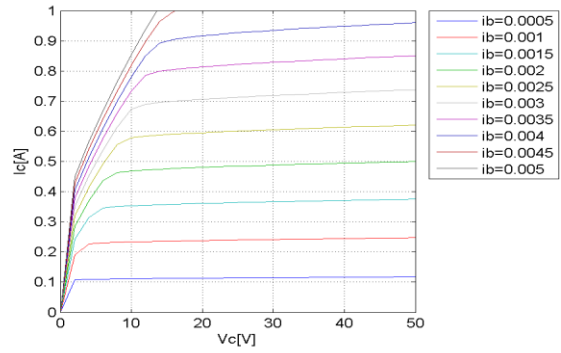
Vbe(sat)Ic[Temp]

IC/IB = 10

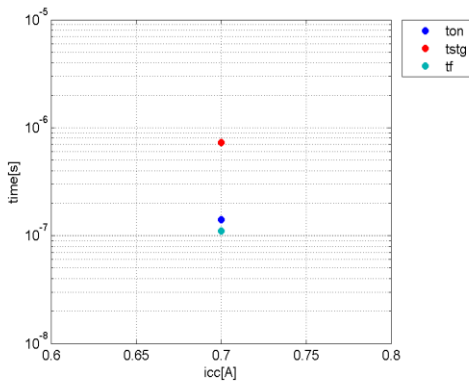


IcVce[ib]2

Temp. = 25deg C



Switching



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