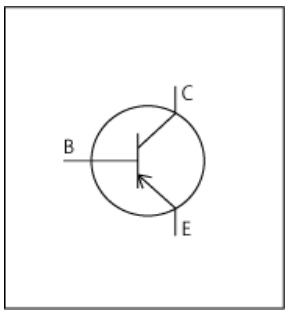
LTspice Model
PNP
SanKen
2SA1668



Model Information

Model	Gummel-Poon model	
Call Name	MDC_2SA1668_LT	
Pin Assign	1:B 2:C 3:E	
File List	Model Library	MDC_2SA1668_LT01.lib
	Model Report	MDC_2SA1668_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	None
●Product name	2SA1668
●Company name	Sanken Electric Co., Ltd.
●Characteristics	IcVce[ib],VceIb[Ic],IcVbe[Temp],hFEIc[Temp],fTIe[Vce],Cob, SwitchingIcc[Tname],SwitchingWaveform

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	-200	V
Collector current (DC)	0	to	-2	A
Temperature	-55	to	150	deg C

BJT

○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

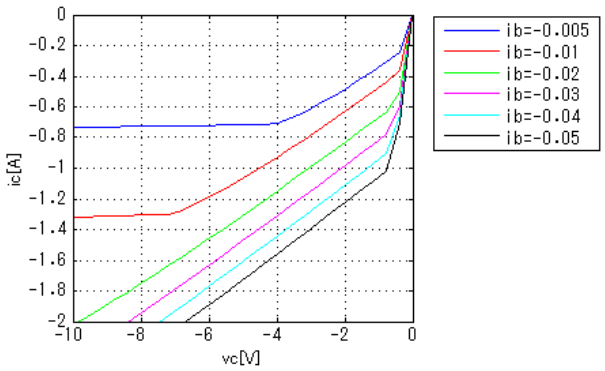
RANK=1

Functions	RANK	Implemented
IC-VBE(Temp)	1	○
IC-VCE-IB(Temp)	1	○
IC-hFE(Temp)	1	○
VCE(sat)-IC	1	○
VBE(sat)-IC	1	—
Capacitance	1	○
Transition	1	○
Switching	1	○

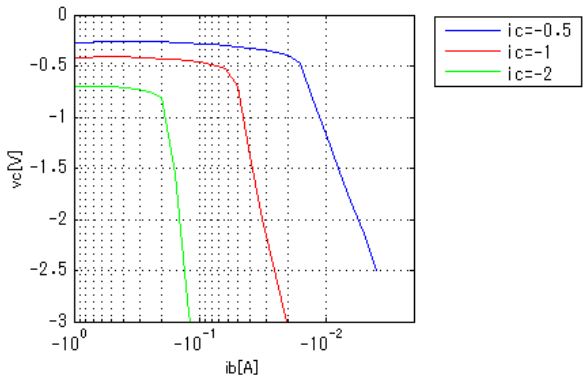
Simulation results are following.
Explanatory notes — : simulated

IcVce[ib]

Temp = 25degC

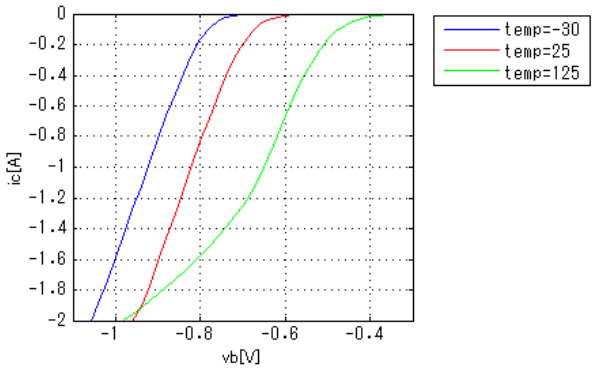


VceIb[Ic]



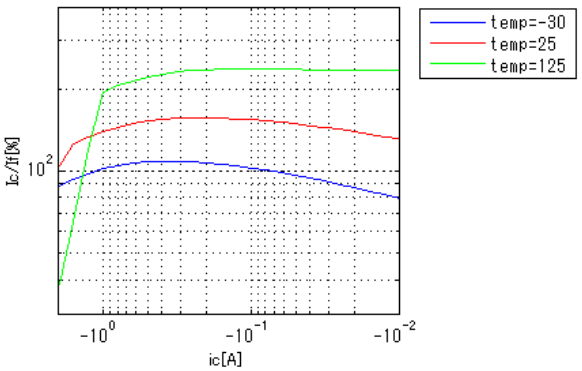
IcVbe[Temp]

Vce = -10V



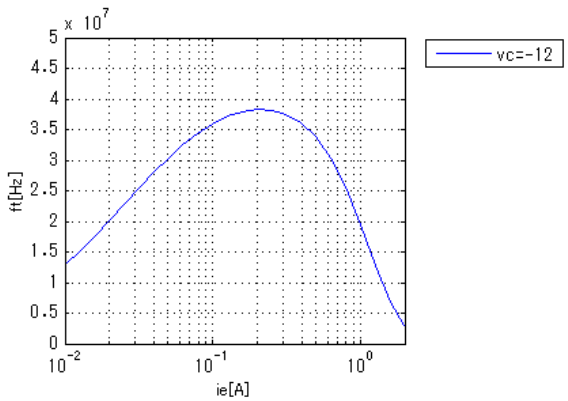
hFEIc[Temp]

Vce = -10V



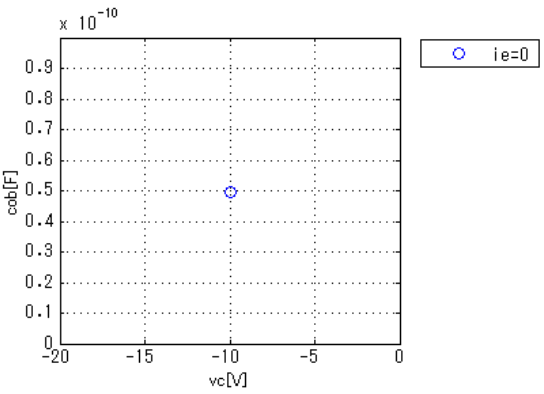
fTIe[Vce]

Freq = 10000000Hz



Cob

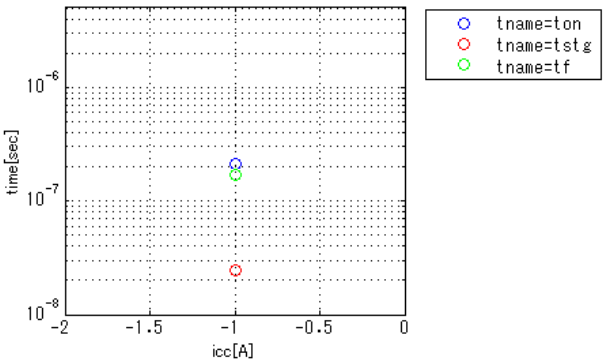
Freq = 1000000Hz



Simulation results are following.
Explanatory notes — : simulated

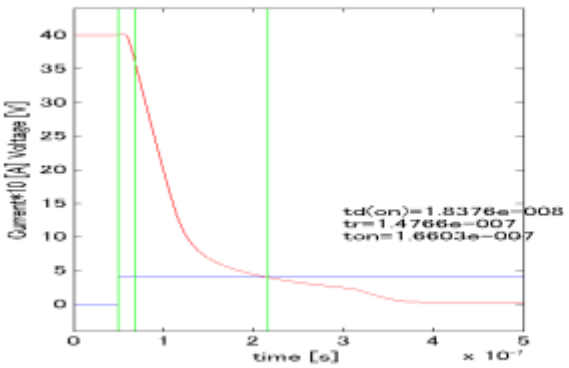
SwitchingIcc[Tname]

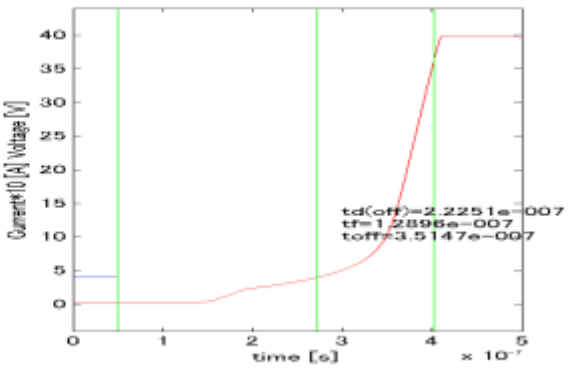
ic/ib = 10, vcc = -20V, Temp = 25degC



Switching Waveform (Blue : INPUT Red : OUTPUT)

Icc = -1A, ic/ib = 10, vcc = -20V, Temp = 25degC





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