

PSpice Model

BJT(NPN+PNP)

Nexperia

BC847BPN

Model Information

Model A macro model
Call Name MDC_BC847BPN_PS
Pin Assign 1:emitter TR1 2:base TR1 3:collector TR2 4:emitter TR2 5:base TR2 6:collector TR1
File List Model Library MDC_BC847BPN_PS.lib
 Model Report MDC_BC847BPN_PS.pdf(this file)
Verified Simulator Version PSpice 17.2

Note

References

The information which was used for modeling is as follow:

[Data Sheet]
 ●Date/Version 2009/02/18
 ●Product name BC847BPN
 ●Company name Nexperia

[Characteristics listed]
 ●Characteristics IcVbeTemp,IcVceIb,hFEIcTemp
 Vce(sat)IcTemp,Vbe(sat)IcTemp
 Cc,Ce,fTlc

Simulation Condition

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

Item	Condition	Unit
Temperature	25	deg C

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○ : Implemented
 × : Not Implemented
 — : Not applicable

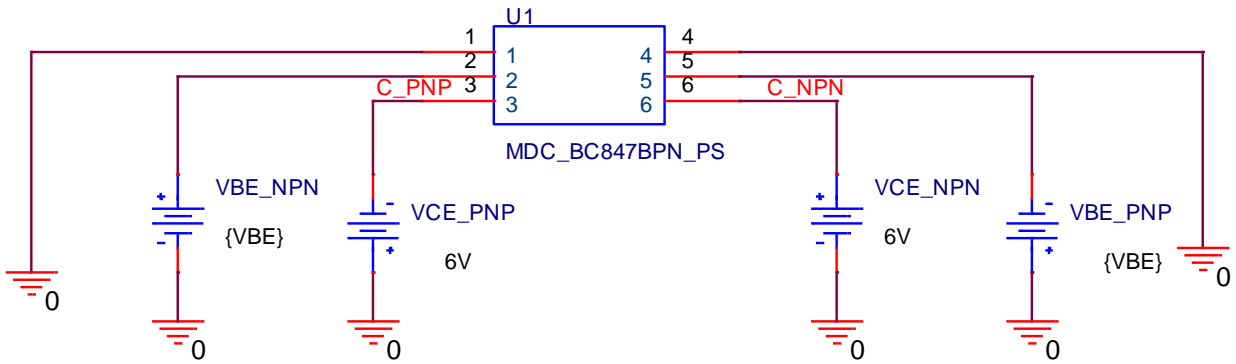
Model Functions Table

Functions	RANK	Implemented
IcVbeTemp	1	○
IcVceIb	1	○
hFEIcTemp	1	○
Vbe(sat)IcTemp	1	○
Vce(sat)IcTemp	1	○
Cc	1	○
Ce	1	○
fTIc	1	○

IcVbeTemp Testbench

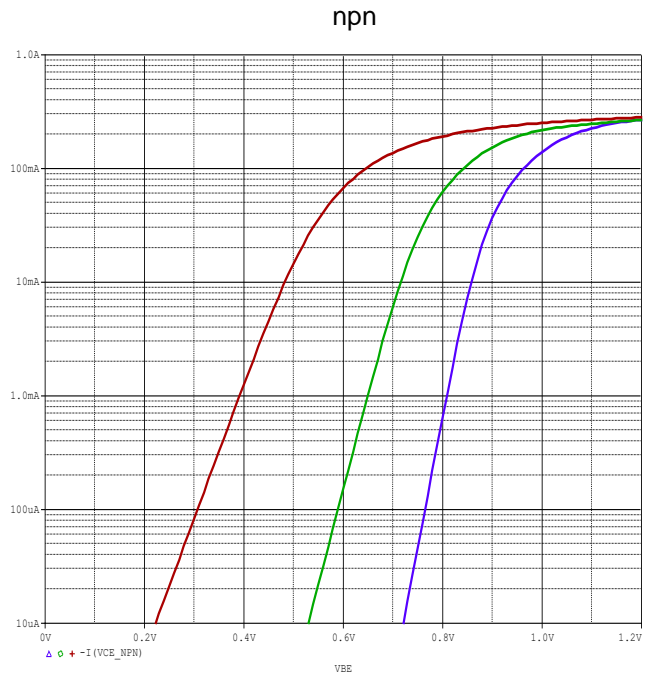
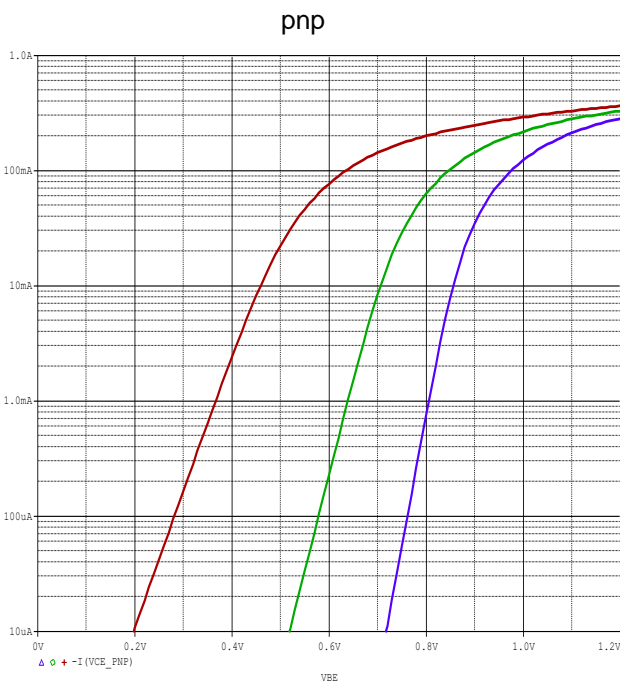
PARAMETERS:

VBE = 0V



Simulation results are following.
 Explanatory notes — : simulated

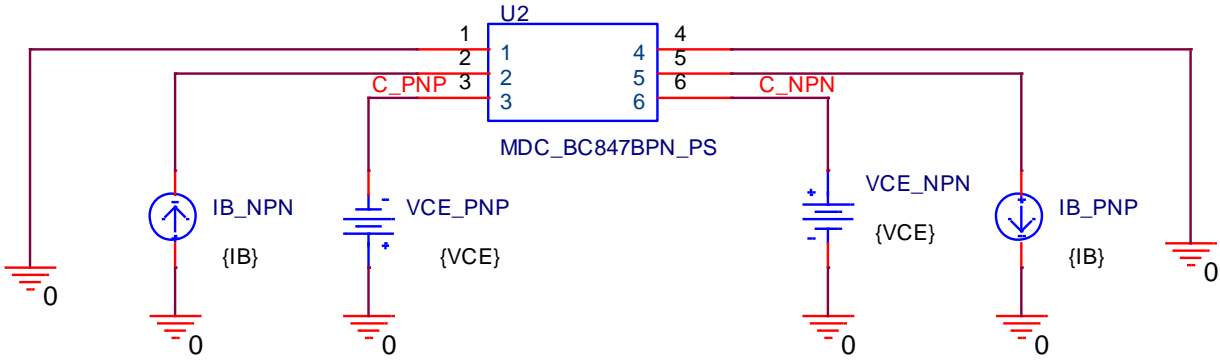
IcVbeTemp



IcVcelb Testbench

PARAMETERS:

IB = 1n
VCE = 0

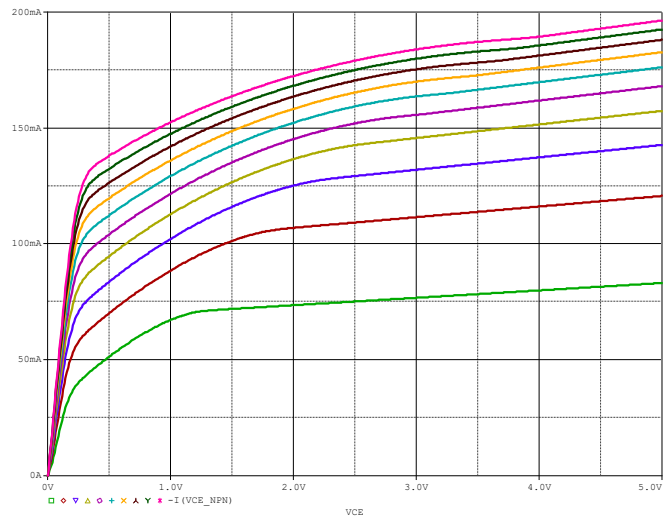
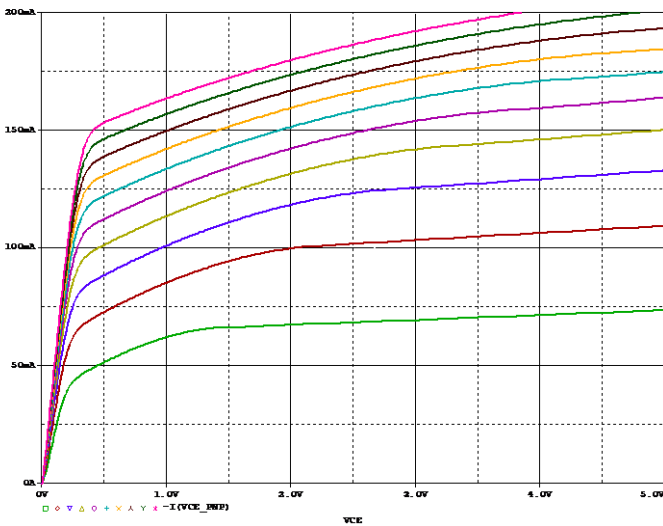


Simulation results are following.
Explanatory notes — : simulated

IcVcelb

pnp

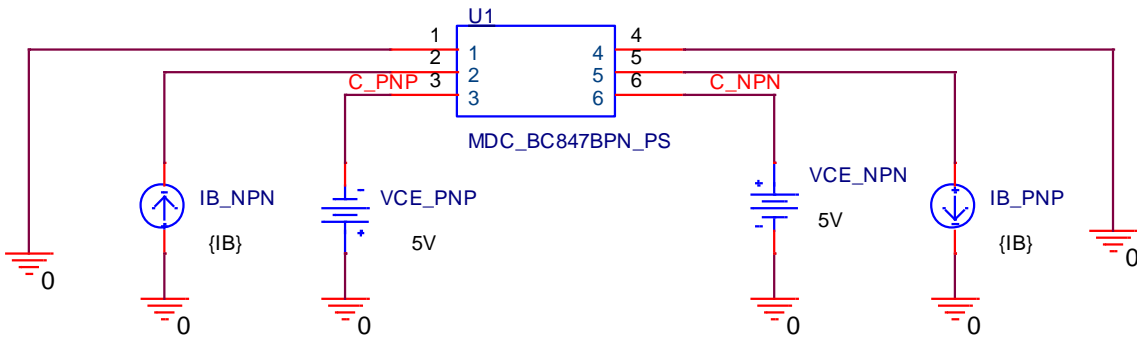
nnp



hFEIcTemp Testbench

PARAMETERS:

IB = 1n

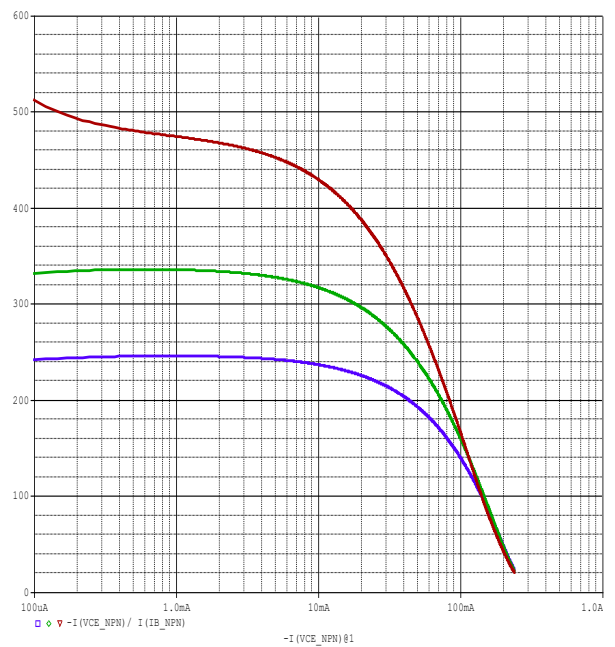
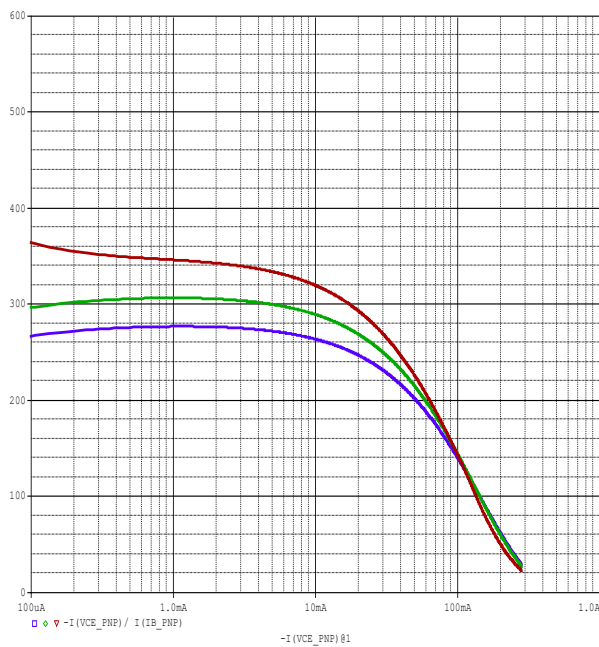


Simulation results are following.
 Explanatory notes — : simulated

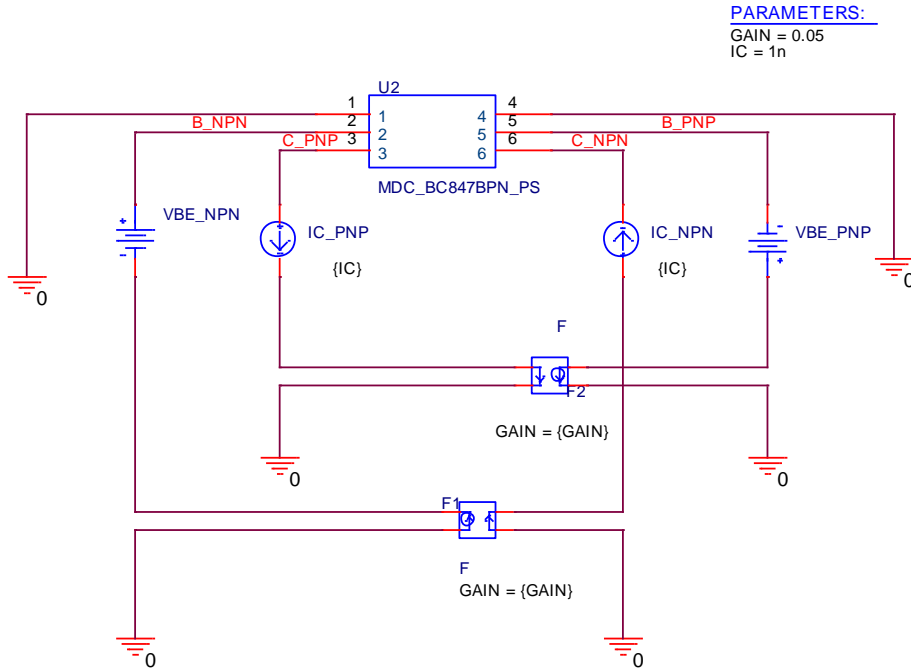
hFEIcTemp

pnp

npn



Vbe(sat)IcTemp Testbench

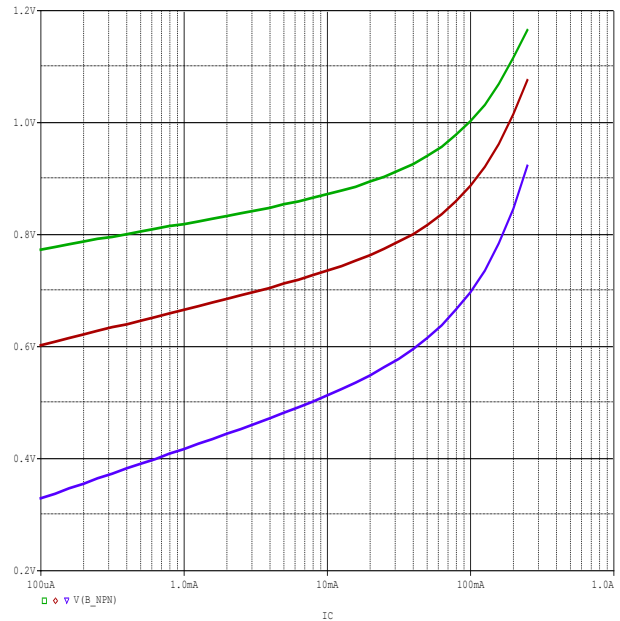
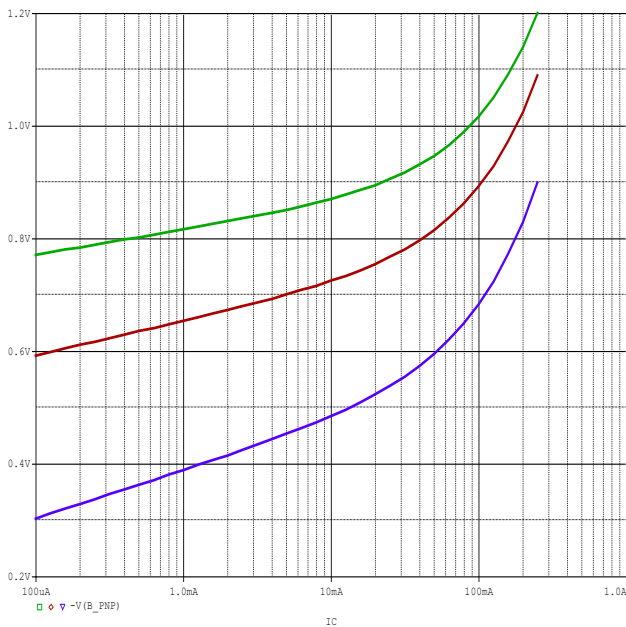


Simulation results are following.
 Explanatory notes — : simulated

Vbe(sat)IcTemp

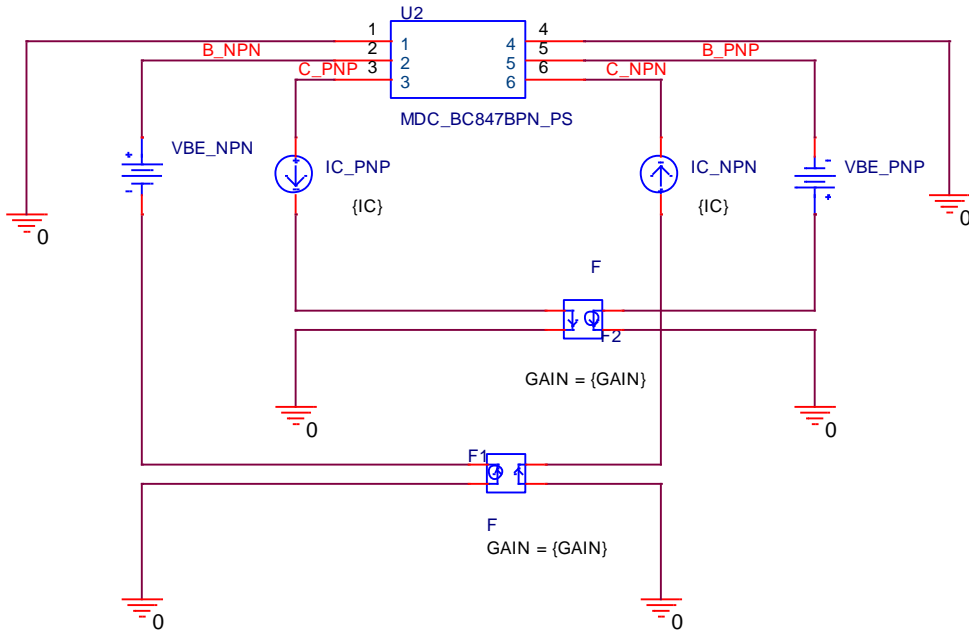
pnp

nnp



Vce(sat)IcTemp Testbench

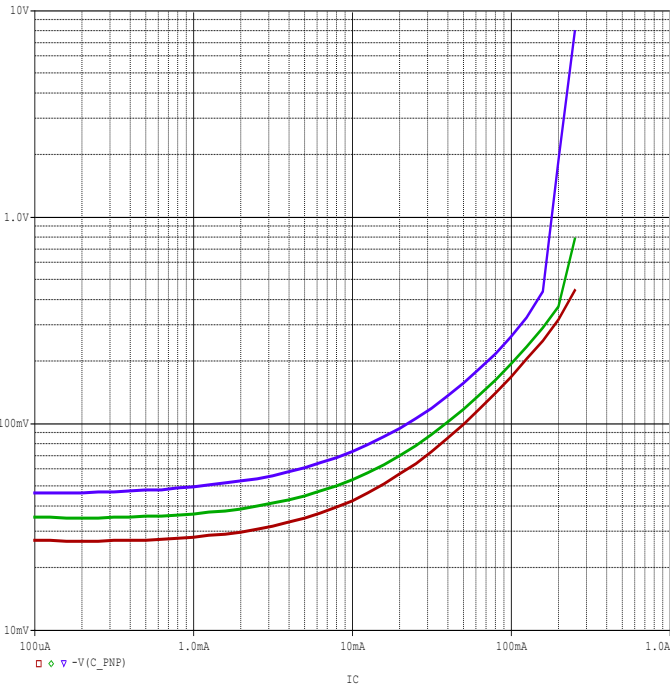
PARAMETERS:
GAIN = 0.05
IC = 1n



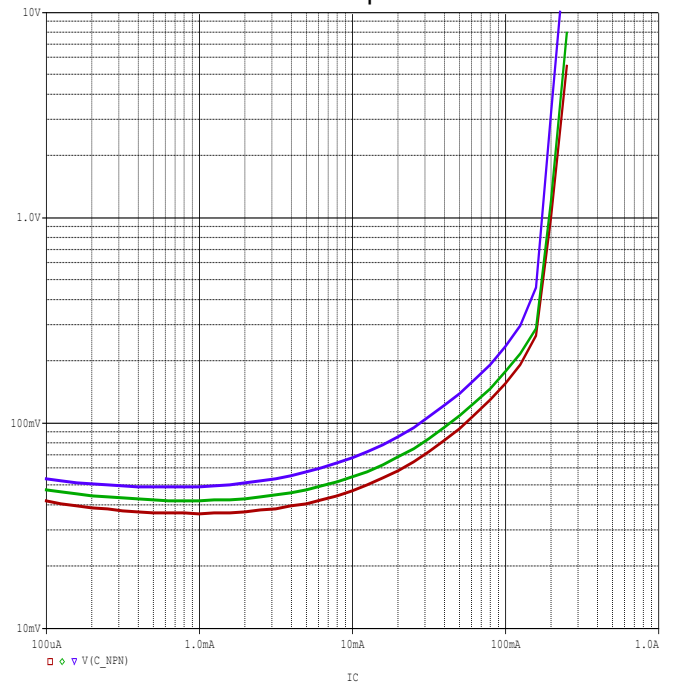
Simulation results are following.
Explanatory notes — : simulated

Vce(sat)IcTemp

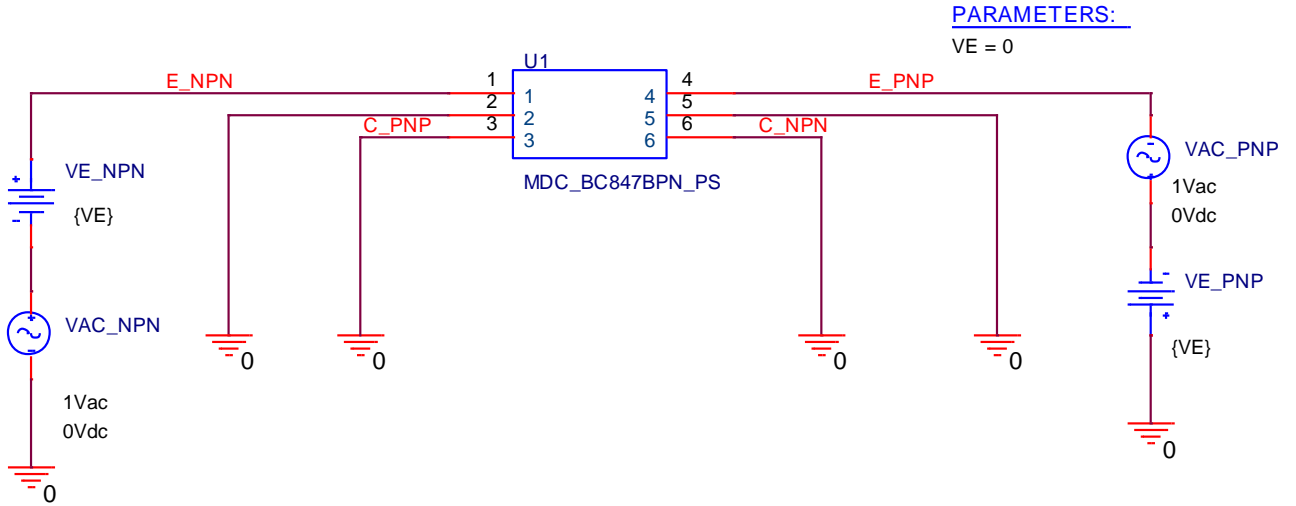
pnp



npn



Cc Testbench

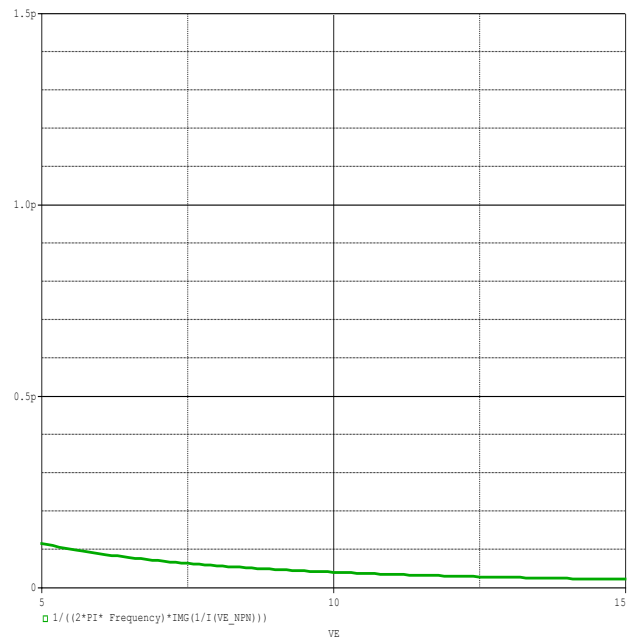
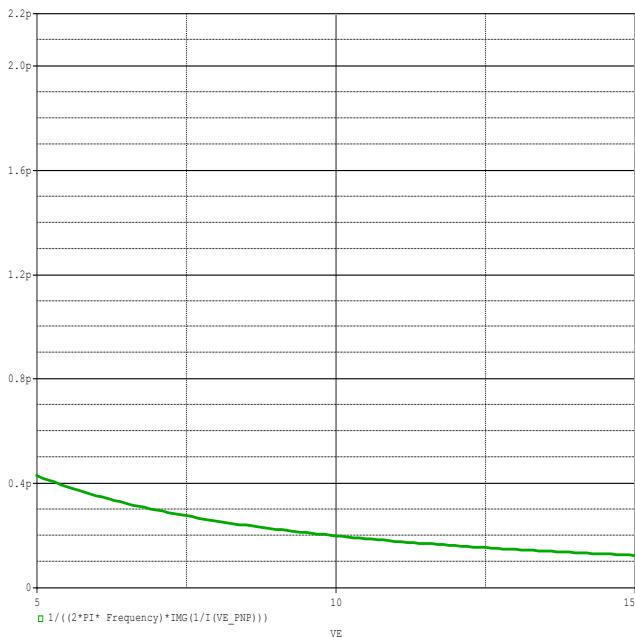


Simulation results are following.
Explanatory notes — : simulated

Cc

pnp

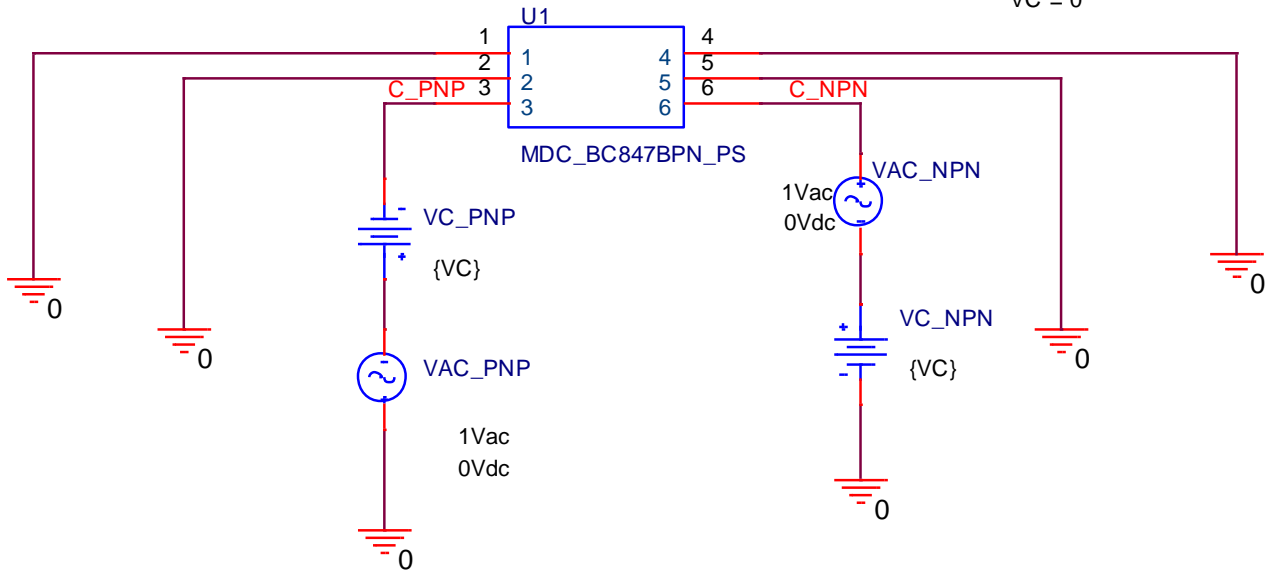
npn



Ce Testbench

PARAMETERS:

VC = 0

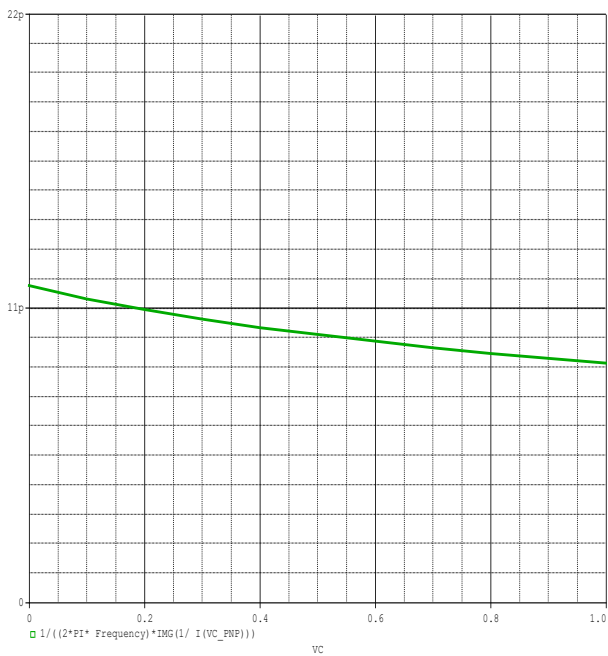


Simulation results are following.
 Explanatory notes — : simulated

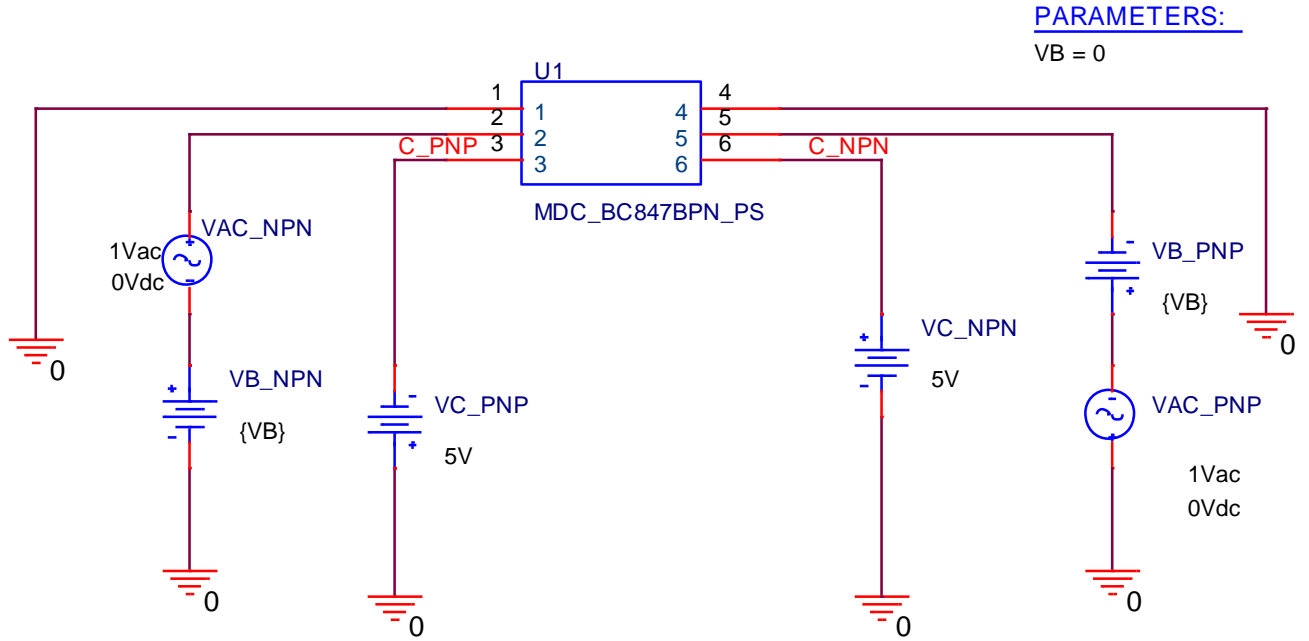
Ce

pnp

npn



fT_{lc} Testbench

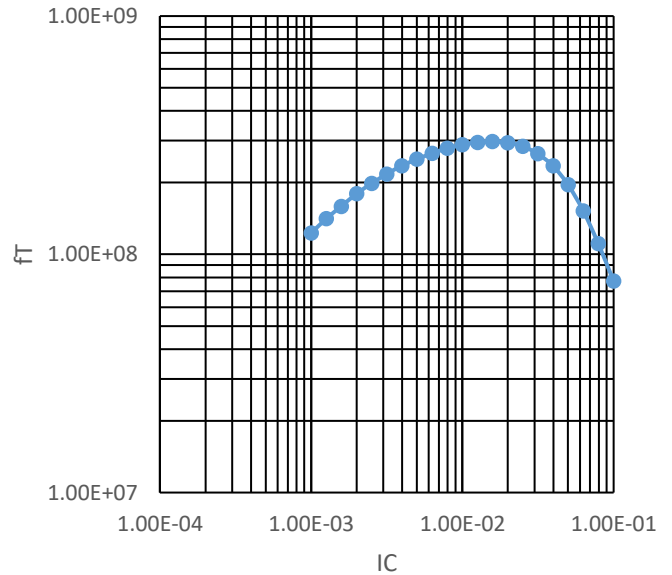
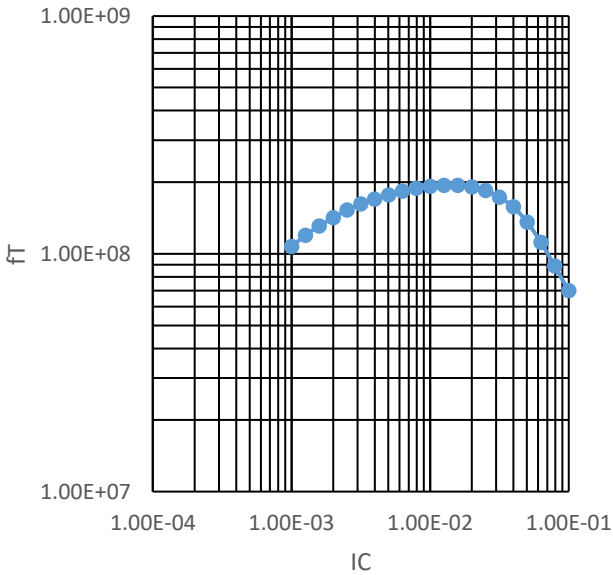


Simulation results are following.
Explanatory notes — : simulated

fT_{lc}

pnp

nnp



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