

PSpice Model

PNP

infineon

BC857S

Model Information

Model A macro model
Call Name MDC_BC857S_PS
Pin Assign 1:C 2:B 3:E
File List Model Library MDC_BC857S_PS.lib
 Model Report MDC_BC857S_PS.pdf

Verified Simulator Version

Note

References

The information which was used for modeling is as follow:

- [Data Sheet]
- Date/Version 25 July 2011
 - Product name BC857S
 - Company name infineon

[Characteristics listed]

- Characteristics $I_{cV_{be}[Temp](on), h_{FE}I_{c}[Temp], V_{be(sat)}I_{c}[temp], V_{ce(sat)}I_{c}[temp], C_{EB}, C_{CB}, f_{T}I_{c}[V_{ce}]$

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

BJT

○ : Implemented
 × : Not Implemented
 — : Not applicable

Model Functions Table
RANK=1

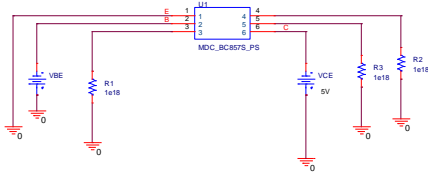
Functions	RANK	Implemented
IC-VBE(Temp)(on)	1	○
IC-hFE(Temp)	1	○
VCE(sat)-IC(Temp)	1	○
VBE(sat)-IC(Temp)	1	○
CCB	1	○
CEB	1	○
fT-IC	1	○

Simulation results are following.

Explanatory notes : 1.Pulse test: $t < 300\mu s$; $D < 2\%$

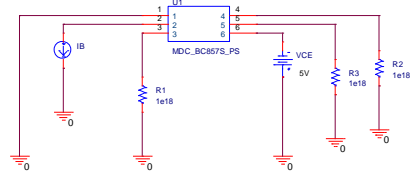
IcVbe[Temp](on) Testbench

CONDITIONS	MIN.	TYP.	MAX.	UNIT
Ic = 2 mA, Vce = 5 V, note1	600	650	750	mV
Ic = 10 mA, Vce = 5 V, note1	-	-	820	mV

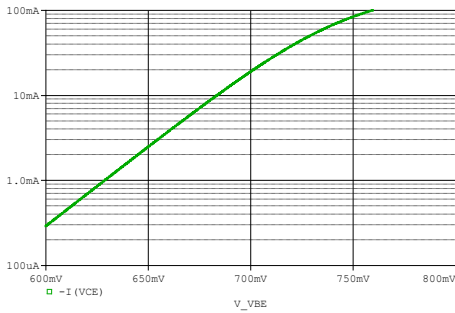


hFEIc[Temp] Testbench

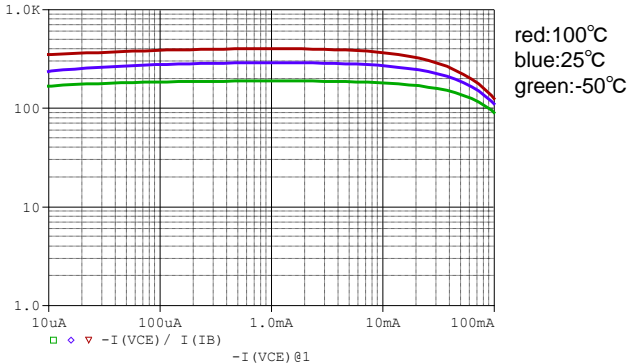
CONDITIONS	MIN.	TYP.	MAX.	UNIT
Ic = 10 μA , Vce = 5V, note1	-	250	-	-
Ic = 2 mA, Vce = 5V, note1	200	290	630	-



IcVbe[Temp](on) Data Sheet

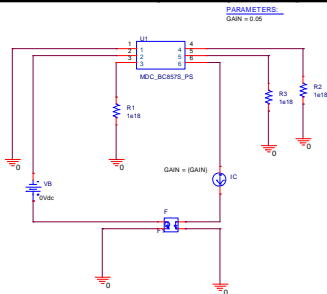


hFEIc[Temp] Data sheet



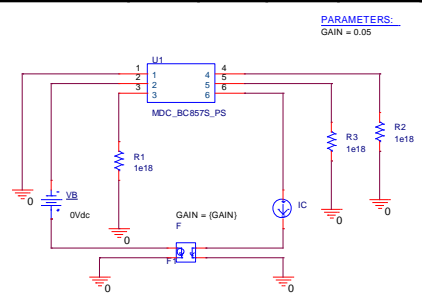
Vbe(sat)Ic[Temp] Testbench

CONDITIONS	MIN.	TYP.	MAX.	UNIT
Ic = 10 mA, Ib = 0.5 mA, note1	-	700	-	-
Ic = 100 mA, Ib = 5 mA, note1	-	850	-	-

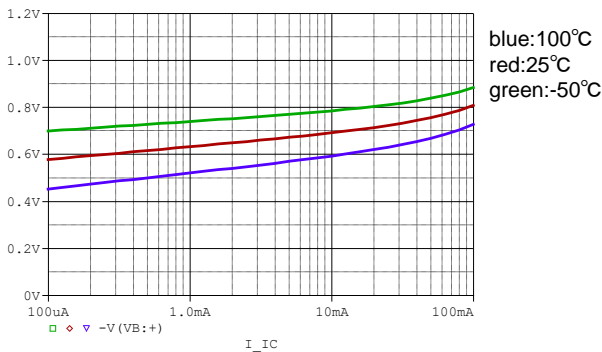


Vce(sat)Ic[Temp] Testbench

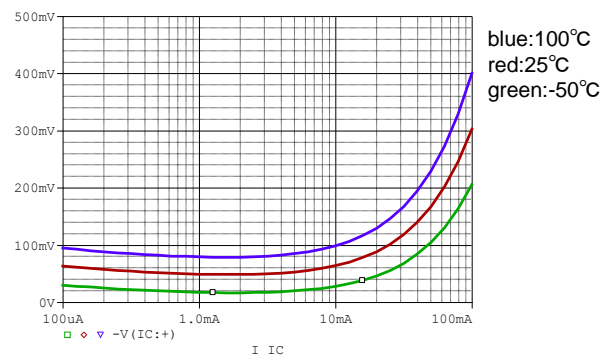
CONDITIONS	MIN.	TYP.	MAX.	UNIT
Ic = 10 mA, Ib = 0.5 mA, note1	-	75	300	mV
Ic = 100 mA, Ib = 5 mA, note1	-	250	650	mV



Vbe(sat)Ic[Temp] Data Sheet



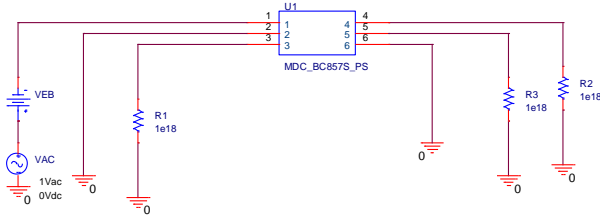
Vce(sat)Ic[Temp] Data Sheet



Simulation results are following.
 Explanatory notes — : simulated

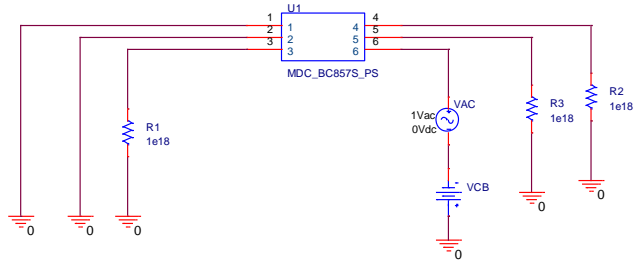
CEB Testbench

CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _{eb} = 500 mV, f = 1 MHz	-	8	-	pF

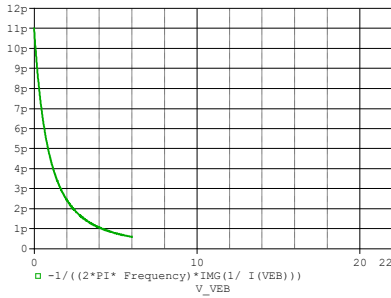


CCB Testbench

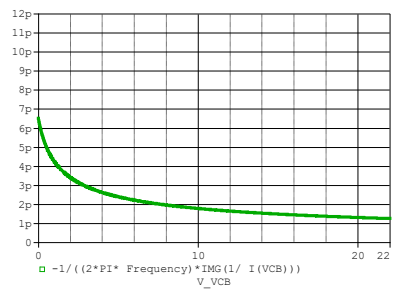
CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _{cb} = 10 V, f = 1 MHz	-	1.5	-	pF



CEB Data Sheet



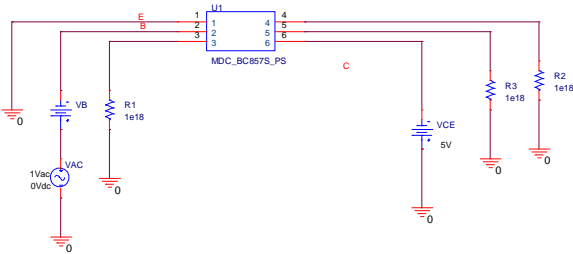
CCB Data sheet



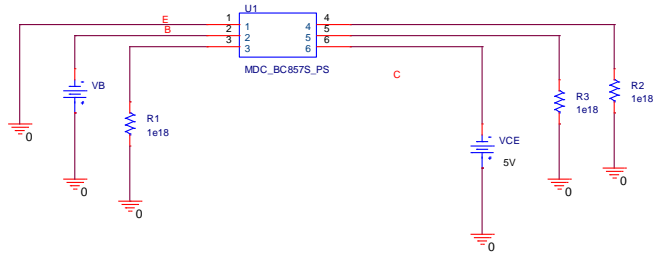
fT_{ic}[V_{ce}] Testbench

CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _c = 20 mA, V _{ce} = 5 V, f = 100 MHz	-	250	-	MHz

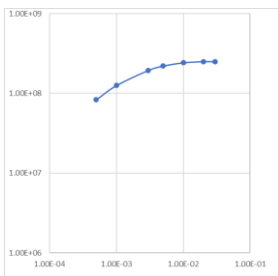
AC



DC



fT_{ic}[V_{ce}] Data Sheet



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