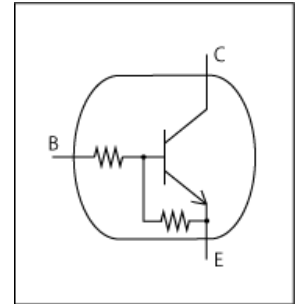


LTspice Model

BRT (Bias Resistor Transistor)

ROHM

DTC123EKAT146



Model Information

Model A macro model based on Gummel-Poon model
Call Name MDC_DTC123EKAT146_LT
Pin Assign 1:E 2:B 3:C
File List Model Library MDC_DTC123EKAT146_LT01.lib
 Model Report MDC_DTC123EKAT146_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 20151209 - Rev.003
- Product name DTC123EKAT146
- Company name ROHM Co., Ltd.
- Characteristics $V_{ionIc}[Temp], I_{cVioff}[Temp], I_{cVce}[ib], h_{FEIc}[Temp], V_{ce}(sat)I_c[Temp], f_{Tle}[Vce]$

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
Collector currebt (DC)	0	to	100m	A
Temperature	-55	to	150	deg C
R1	2,200	to	2,200	ohm
R2	2,200	to	2,200	ohm

BRT

○ : Implemented
 × : Not Implemented
 — : Not applicable

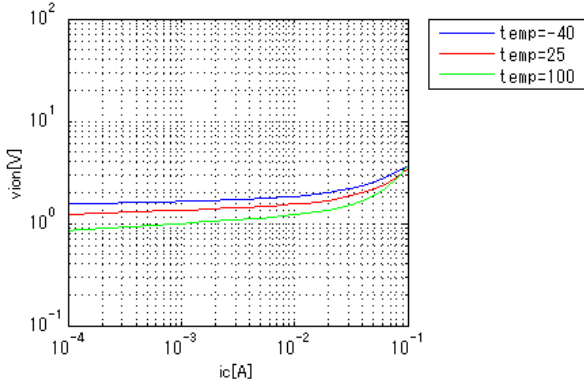
Model Functions Table
RANK=1

Functions	RANK	Implemented
VIN(on)-Iout(Temp)	1	○
Iout-VIN(off)(Temp)	1	○
Iout-Vo-Iin	1	○
DC_Current_Gain-Iout	1	○
VOUT(on)-Iout(Temp)	1	—
VOUT(sat)-Iout(Temp)	1	○
Capacitance	1	—
Transition Frequency	1	○
Switching(Typ.)	1	—

Simulation results are following.
 Explanatory notes — : simulated

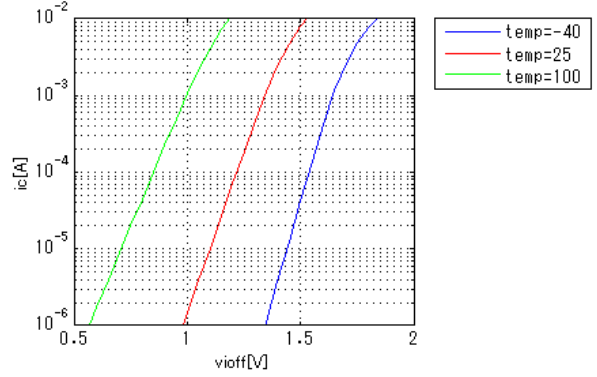
VionIc[Temp]

Vce = 0.3V



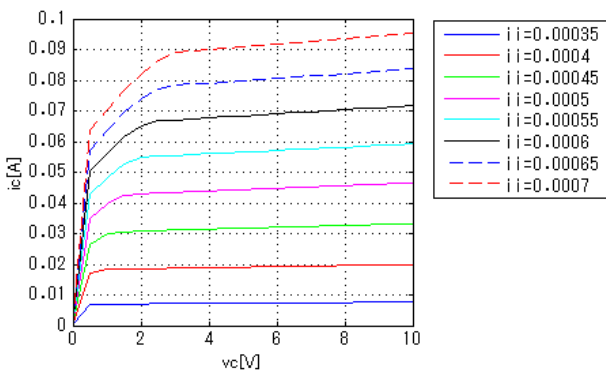
IcVioff[Temp]

Vce = 5V



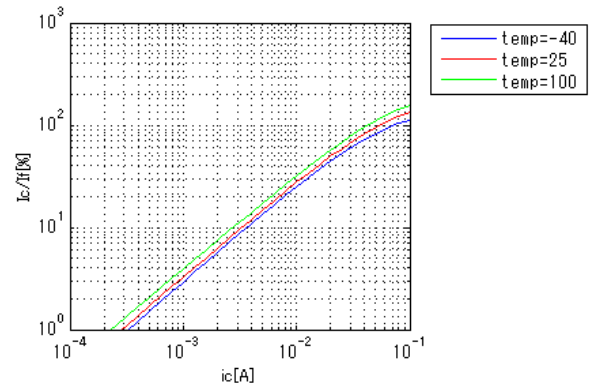
IcVce[ib]

Temp. = 25degC



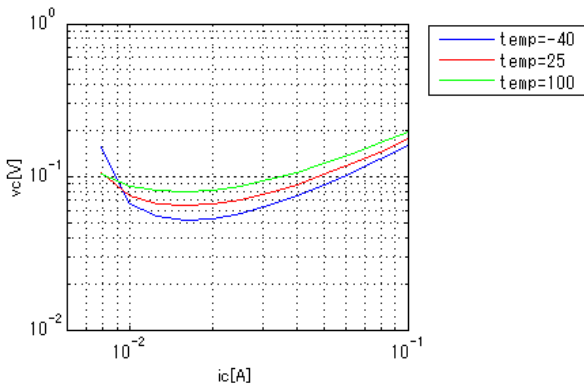
hFEIc[Temp]

Vce = 5V

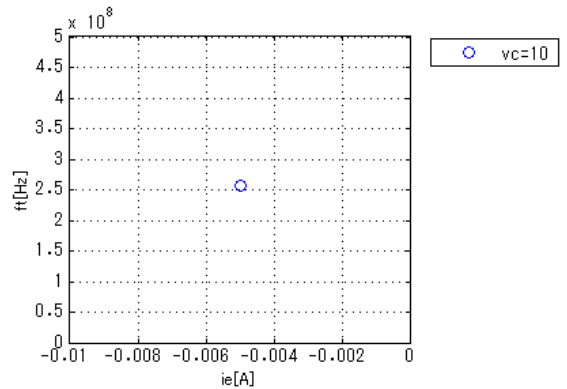


Vce(sat)Ic[Temp]

IC/IB = 20



fTle[Vce]



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