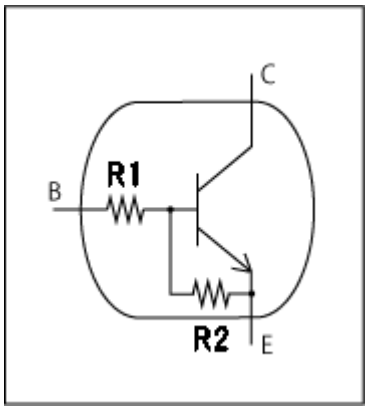
PSpice Model
BRT (Bias Resistor Transistor)
ROHM
DTC143ZKA



Model Information

Model	A macro model based on Gummel-Poon model	
Call Name	MDC_DTC143ZKA_PS	
Pin Assign	1:E 2:B 3:C	
File List	Model Library	MDC_DTC143ZKA_PS01.lib
	Model Report	MDC_DTC143ZKA_PS.pdf (this file)
Verified Simulator Version		PSpice version 17.2
Note		

References

The information which was used for modeling is as follow:

[Data Sheet]

●Date/Version	Unknown
●Product name	DTC143ZKA
●Company name	ROHM Co., Ltd.
●Characteristics	VionIc[Temp],IcVioff[Temp],IcVce[ib],hFEIc[Temp],Vce(sat)Ic[Temp],fTIe[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	0	to	50	V
In - Emitter Voltage	-5	to	30	V
R1	4.7K	to	4.7K	ohm
R2	47K	to	47K	ohm
Temperature	-55	to	150	deg C

BRT

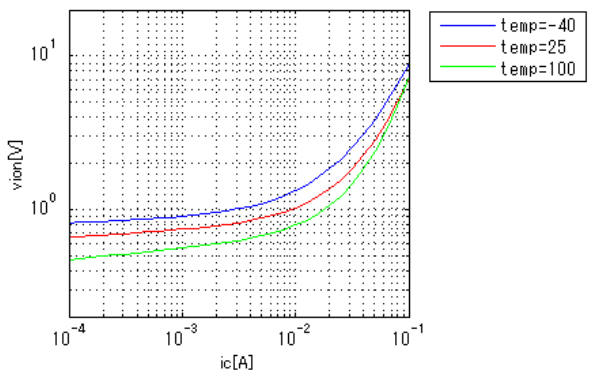
○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

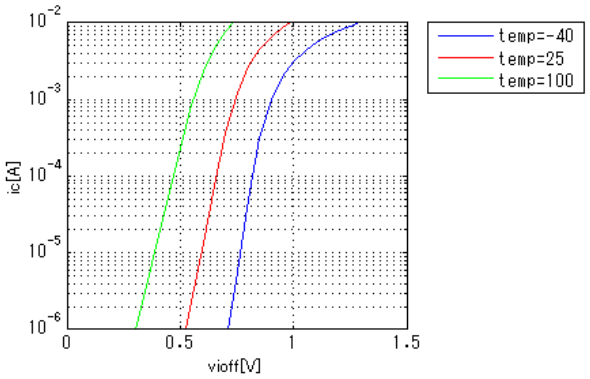
	RANK=1	
Functions	RANK	Implemented
VIN(on)-Iout(Temp)	1	○
Iout-VIN(off)(Temp)	1	○
Iout-Vo-Iin	1	○
DC_Current_Gain-Iout	1	○
VOUT(on)-Iout(Temp)	1	—
VOUT(sat)-Iin(Temp)	1	○
Capacitance	1	—
Transition Frequency	1	○
Switching(Typ.)	1	—

Simulation results are following.
Explanatory notes — : simulated

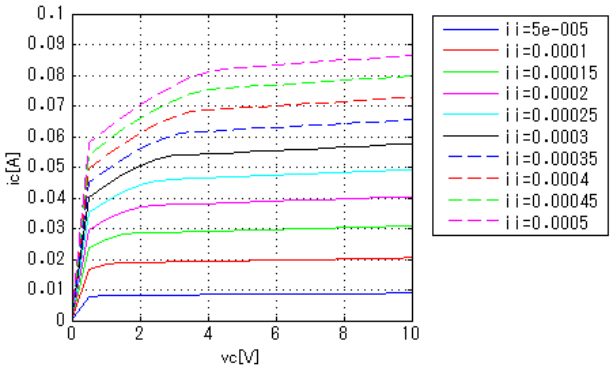
VionIc[Temp]
Vce = 0.3V



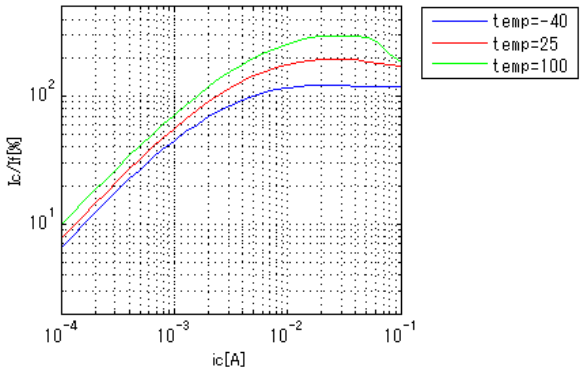
IcVioff[Temp]
Vce = 5V



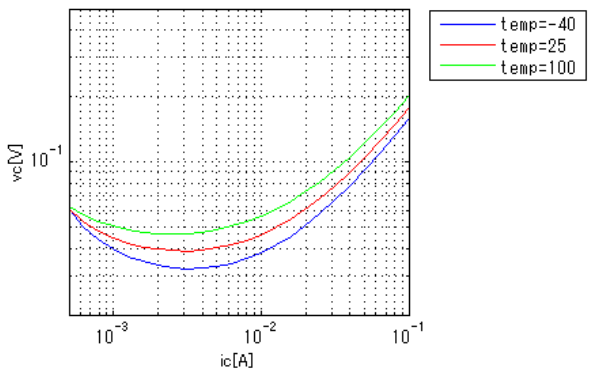
IcVce[ib]
Temp. = 25degC



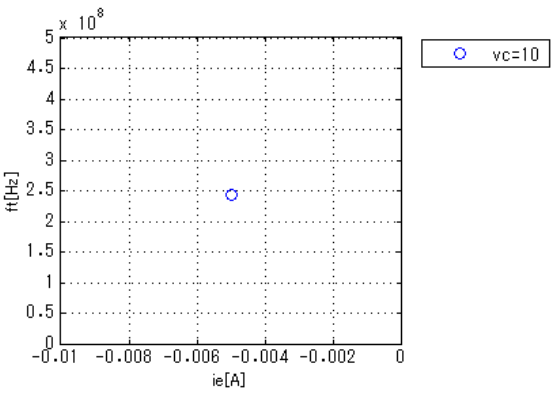
hFEIc[Temp]
Vce = 5V



Vce(sat)Ic[Temp]
IC/IB = 20



fTIe[Vce]



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