

# LTspice Model

## BRT (Bias Resistor Transistor)

### Isahaya Electronics Corporation

#### RT1P431M-T111-1

### Model Information

**Model** A macro model based on Gummel-Poon model  
**Call Name** MDC\_RT1P431M-T111-1\_LT  
**Pin Assign** 1:B 2:E 3:C  
**File List** Model Library MDC\_RT1P431M-T111-1\_LT01.lib  
 Model Report MDC\_RT1P431M-T111-1\_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 Unknown
- Product name RT1P431M-T111-1
- Company name Isahaya Electronics Corporation
- Characteristics IcVi[OFF],IcVi[ON],hFEIc[Temp],Vce(sat)Ic[Temp]

### Simulation Range

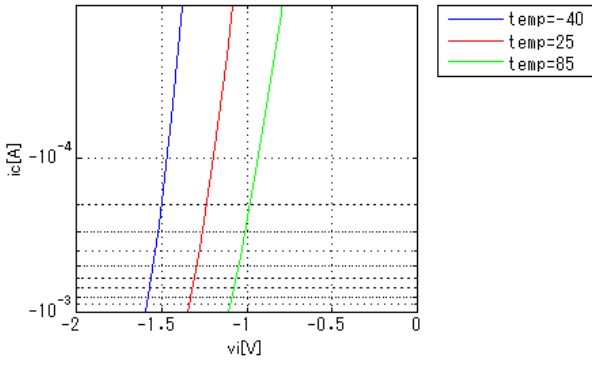
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	-50	V
Base current (DC)	0	to	-5	A
Temperature	-55	to	150	deg C

Simulation results are following.  
 Explanatory notes — : simulated

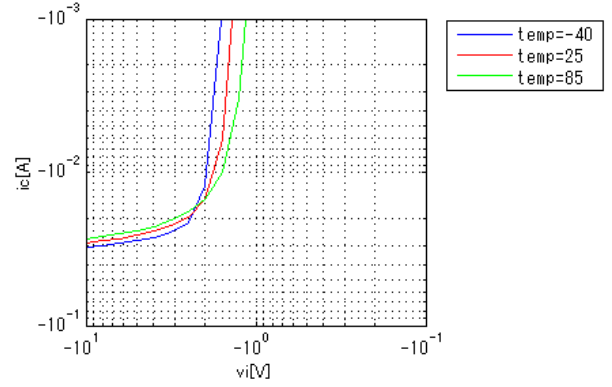
**IcVi[OFF]**

Vce = -5V



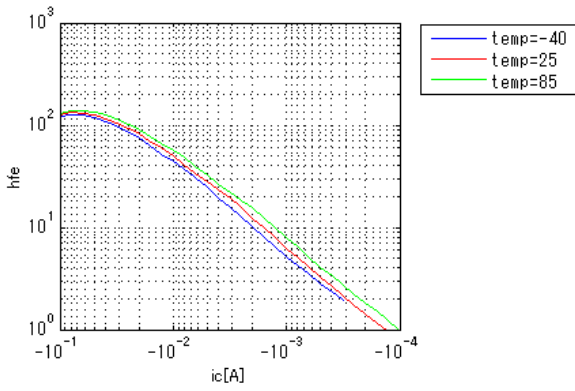
**IcVi[ON]**

Vce = -0.2V



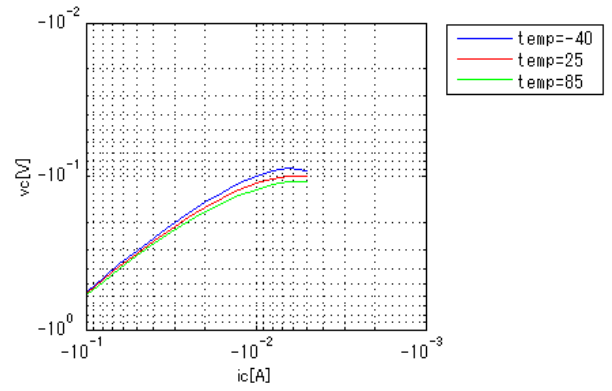
**hFEIc[Temp]**

Vce = -5V



**Vce(sat)Ic[Temp]**

IC/IB = 20



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