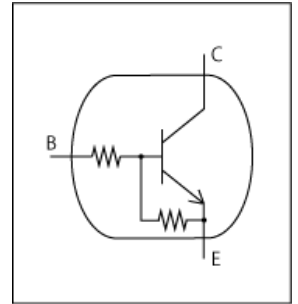


# PSpice Model

## BRT (Bias Resistor Transistor)

### TOSHIBA

### RN1903



### Model Information

**Model** A macro model based on Mextram model  
**Call Name** MDC\_RN1903\_PS  
**Pin Assign** 1:C 2:B 3:E  
**File List** Model Library MDC\_RN1903\_PS02.lib  
 Model Report MDC\_RN1903\_PS.pdf (this file)

**Verified Simulator Version** PSpice version 16.6  
**Note**

### References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version 2016-10-24
- Product name RN1903
- Company name Toshiba Corporation
- Characteristics IcVi[OFF],IcVi[ON],hFEIc[Temp]

### Simulation Range

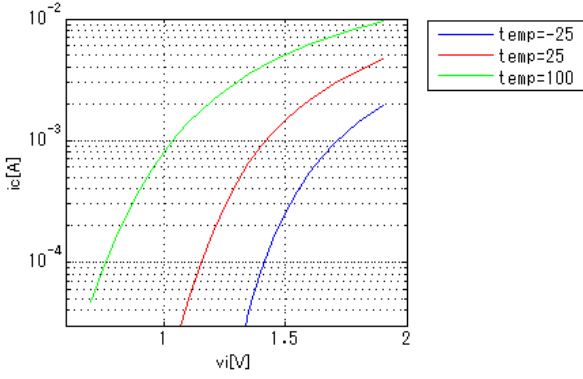
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

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

Simulation results are following.  
 Explanatory notes — : simulated

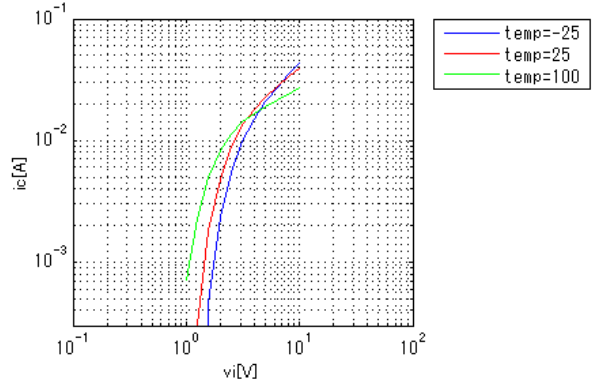
**IcVi[OFF]**

Vce = 5V



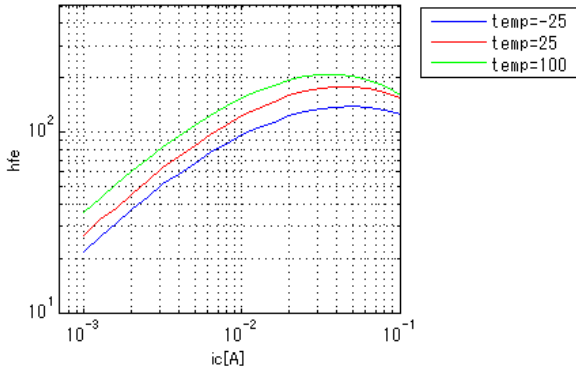
**IcVi[ON]**

Vce = 0.2V



**hFEIc[Temp]**

Vce = 5V



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