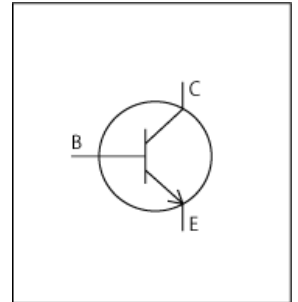


# LTspice Model

## NPN

### Comchip

### MMBT4401-G



### Model Information

**Model** Mextram model  
**Call Name** MDC\_MMBT4401-G\_LT  
**Pin Assign** 1:C 2:B 3:E  
**File List** Model Library MDC\_MMBT4401-G\_LT01.lib  
 Model Report MDC\_MMBT4401-G\_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 REV:B
- Product name MMBT4401-G
- Company name Comchip Technology Co., Ltd.
- Characteristics  $I_c V_{ce}[I_b], h_{FE} I_c[Temp], V_{ce}(sat) I_c[Temp], V_{be}(sat) I_c[Temp], I_c V_{be}[Temp], C_{ob}, C_{ib}, f_T I_c[V_{ce}]$

### Simulation Range

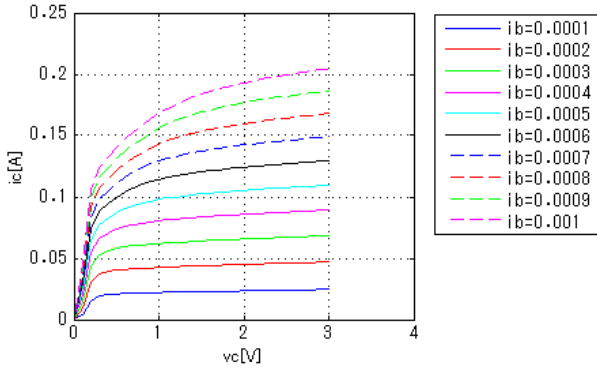
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	40	V
Base current (DC)	0	to	60	A
Temperature	-55	to	150	deg C

Simulation results are following.  
 Explanatory notes — : simulated

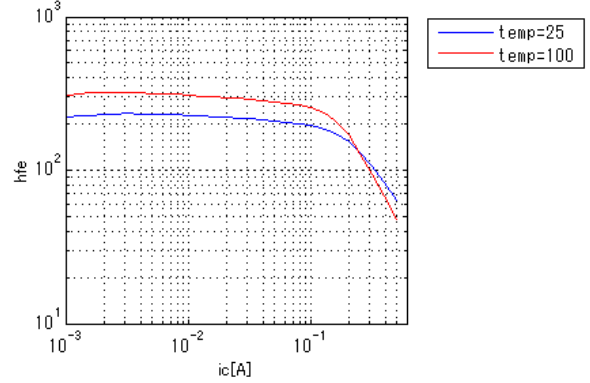
**IcVce[ib]**

Temp. = 25deg C



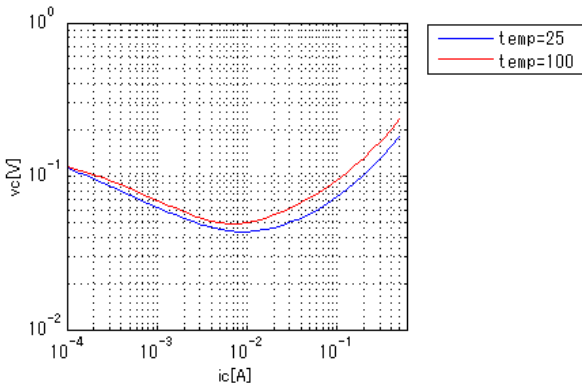
**hFEIc[Temp]**

Vce = 1V



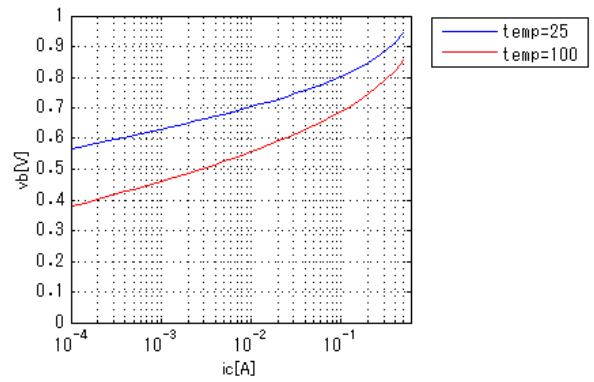
**Vce(sat)Ic[Temp]**

IC/IB = 10



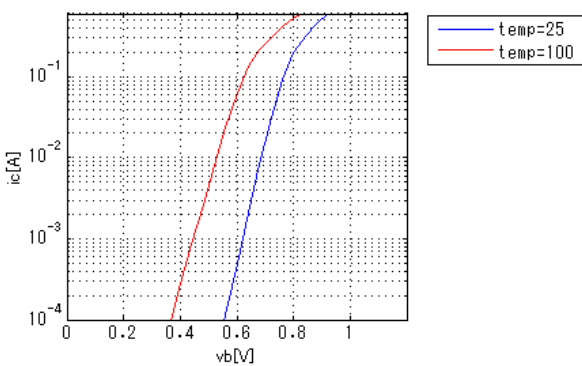
**Vbe(sat)Ic[Temp]**

IC/IB = 10



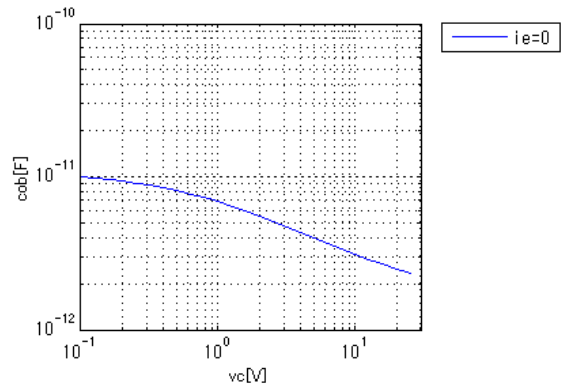
**IcVbe[Temp]**

Vce = 1V



**Cob**

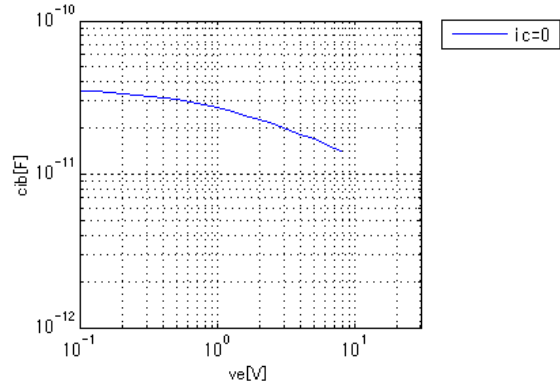
Freq. = 1MHz



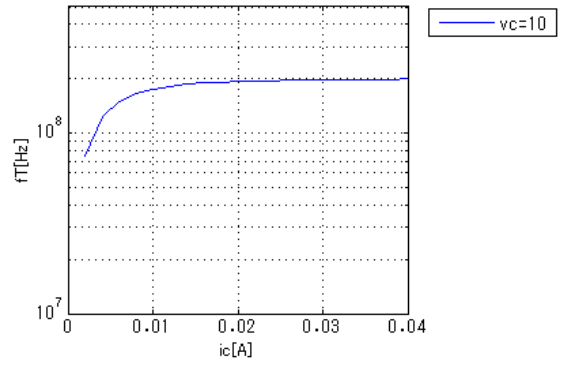
Simulation results are following.  
 Explanatory notes — : simulated

**Cib**

Freq. = 1MHz



**fT<sub>ic</sub>[Vce]**



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