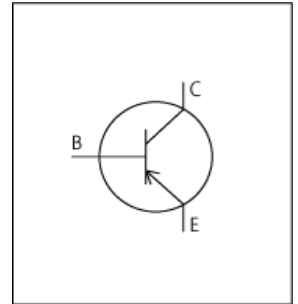


# LTspice Model

## PNP

## ROHM

## 2SB1198K



### Model Information

**Model** Gummel-Poon model  
**Call Name** MDC\_2SB1198K\_LT  
**Pin Assign** 1:E 2:B 3:C  
**File List** Model Library MDC\_2SB1198K\_LT01.lib  
 Model Report MDC\_2SB1198K\_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 2SB1198K
- Company name ROHM Co., Ltd.
- Characteristics  $I_c V_{be}[Temp], I_c V_{ce}[ib], hFE I_c[Temp], V_{ce}(sat) I_c[hFE], V_{ce}(sat) I_c[Temp], V_{ce}(sat) I_c[Temp]_2, V_{ce}(sat) I_c[Temp]_3, f_T I_e[V_{ce}], C_o, b V_{cb}, C_{ib} V_{eb}$

### 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	-80	V
Temperature	-55	to	150	deg C

**BJT**

○ : Implemented  
 × : Not Implemented  
 — : Not applicable

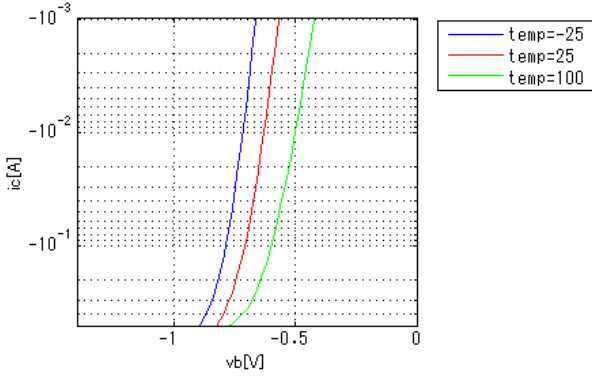
**Model Functions Table**
**RANK=1**

Functions	RANK	Implemented
IC-VBE(Temp)	1	○
IC-VCE-IB(Temp)	1	○
IC-hFE(Temp)	1	○
VCE(sat)-IC	1	○
VBE(sat)-IC	1	—
Capacitance	1	○
Transition	1	○
Switching	1	—

Simulation results are following.  
 Explanatory notes — : simulated

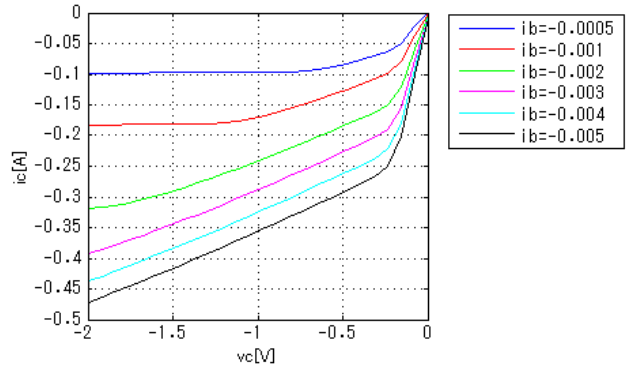
**IcVbe[Temp]**

Vce = -3V



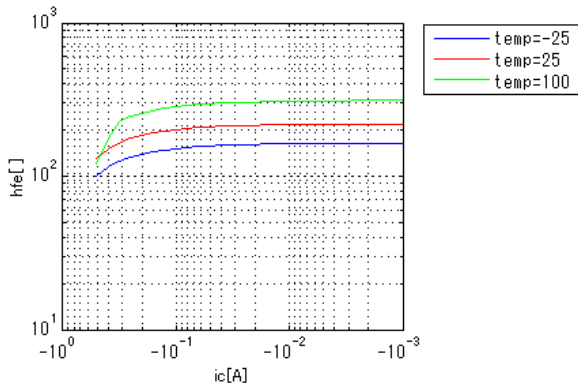
**IcVce[ib]**

Temp = 25degC

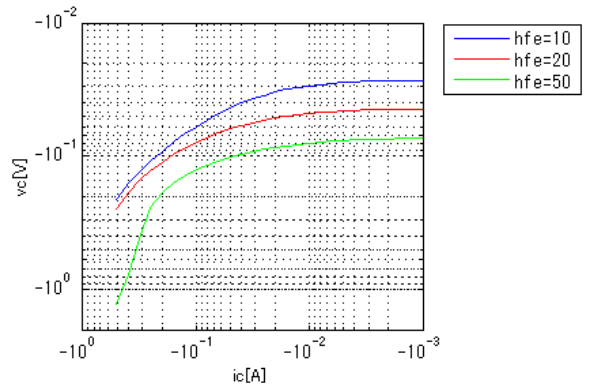


**hFEIc[Temp]**

Vce = -3V

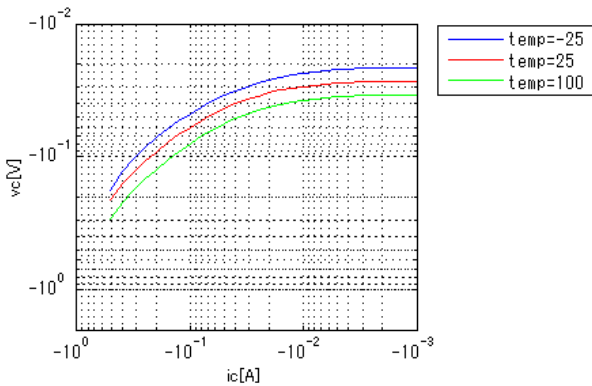


**Vce(sat)Ic[hFE]**



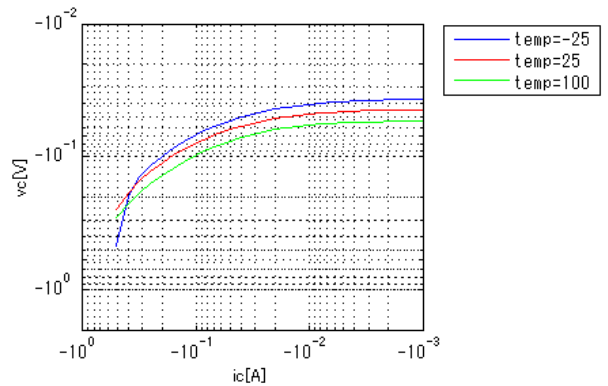
**Vce(sat)Ic[Temp]**

IC/IB = 10



**Vce(sat)Ic[Temp]2**

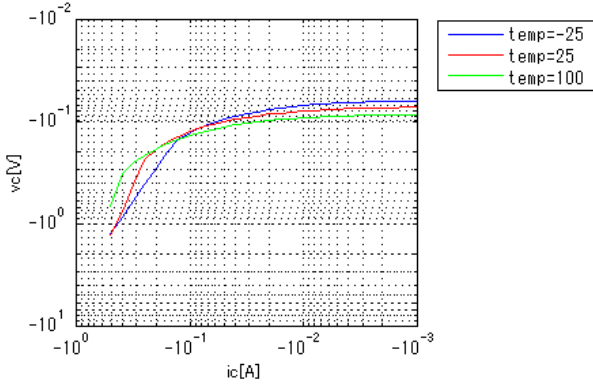
IC/IB = 20



Simulation results are following.  
 Explanatory notes — : simulated

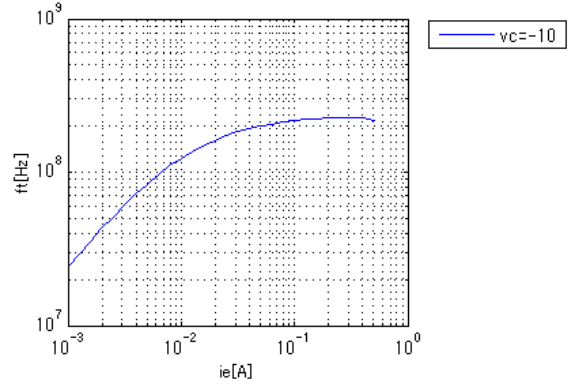
**Vce(sat)Ic[Temp]3**

IC/IB = 50



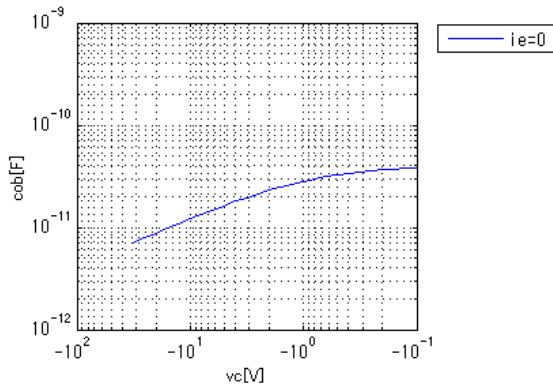
**fTle[Vce]**

Freq = 50000000Hz



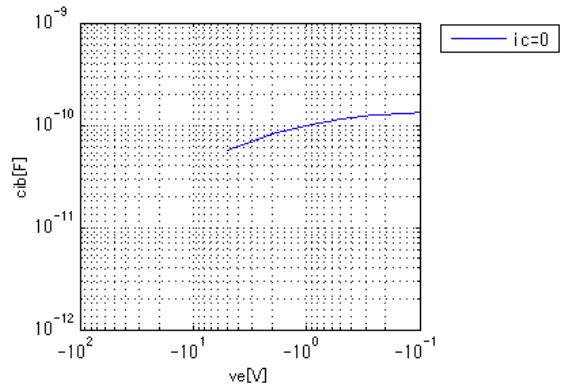
**CobVcb**

Freq = 1000000Hz



**CibVeb**

Freq = 1000000Hz



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