

# PSpice Model

## Digital Transistors (BRT)

### onsemi

### SMUN5211T1G

#### Model Information

**Model** A macro model  
**Call Name** MDC\_SMUN5211T1G\_PS  
**Pin Assign** 1:BASE(INPUT) 2:EMITTER(GROUND) 3:COLLECTOR(OUTPUT)  
**File List** Model Library MDC\_SMUN5211T1G\_PS.lib  
 Model Report MDC\_SMUN5211T1G\_PS.pdf(this file)  
**Verified Simulator Version** PSpice v17.2

#### Note

#### References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version August, 2022 / Rev. 9
- Product name DTC114E/D
- Company name Semiconductor Components Industries

[Characteristics listed]

- Characteristics VCEsat-IC  
hFE-IC  
Cob-VR  
IC-VIN  
Vin-IC

#### Simulation Condition

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

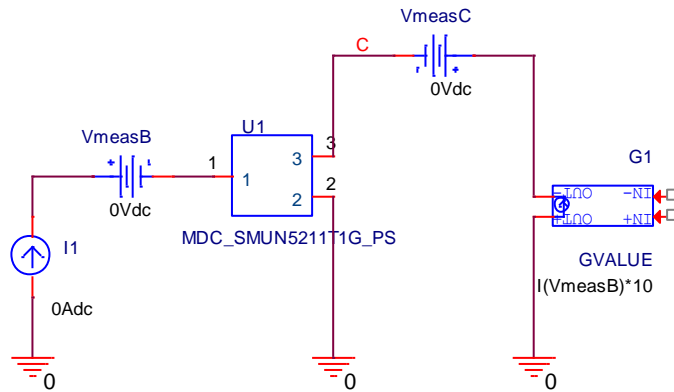
Item	Condition	Unit
Temperature	-25,25,75	deg C

○ : Implemented  
 × : Not Implemented  
 — : Not applicable

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

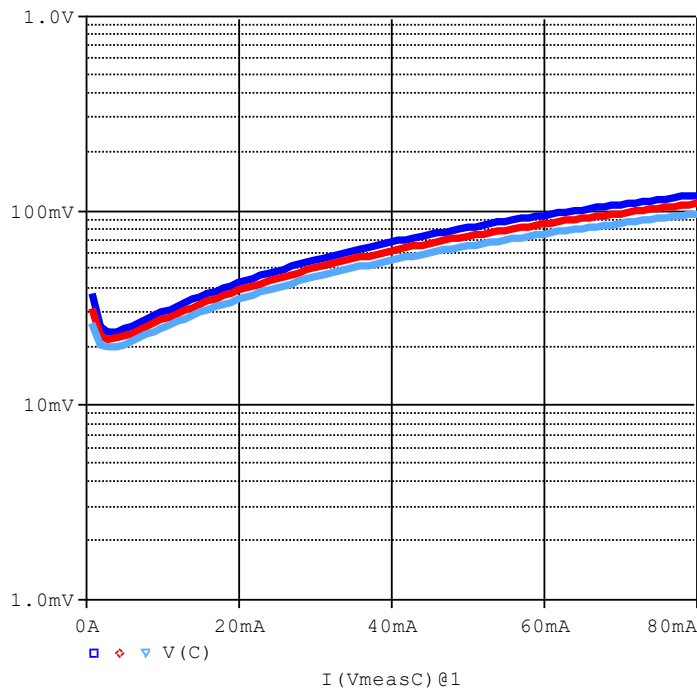
Functions	RANK	Implemented
VIN(on)-Iout(Temp)	1	○
Iout-VIN(off)(Temp)	1	○
Iout-Vo-Iin	1	—
DC_Current_Gain-Iout	1	○
VOOUT(on)-Iout(Temp)	1	—
VOOUT(sat)-Iin(Temp)	1	○
Capacitance	1	○
Transition Frequency	1	—
Switching(Typ.)	1	—

VCEsat-IC Testbench  
 Referred to Data Sheet



Simulation results are following.  
 Explanatory notes — : simulated

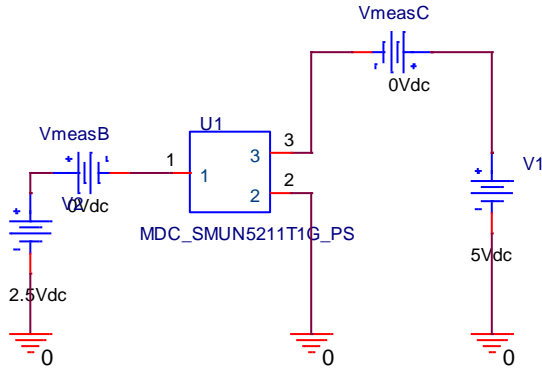
VCEsat-IC



— : 75°C  
 — : 25°C  
 — : -25°C

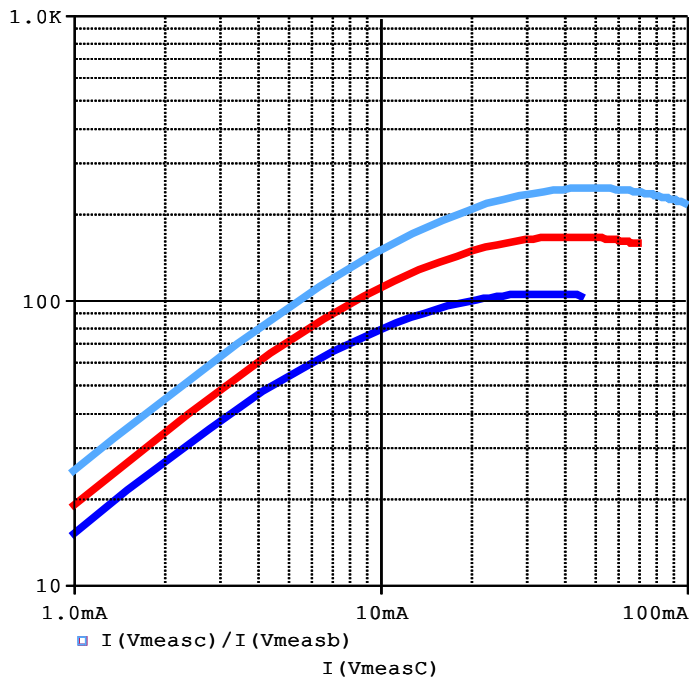
hFE-IC Testbench

Referred to Data Sheet



Simulation results are following.  
 Explanatory notes — : simulated

hFE-IC



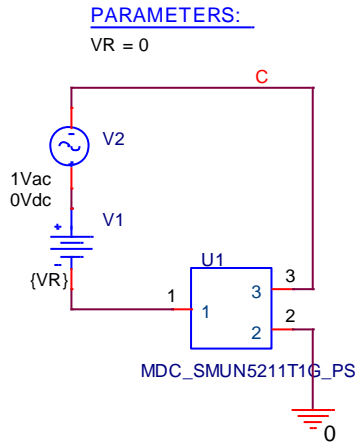
— : 75°C

— : 25°C

— : -25°C

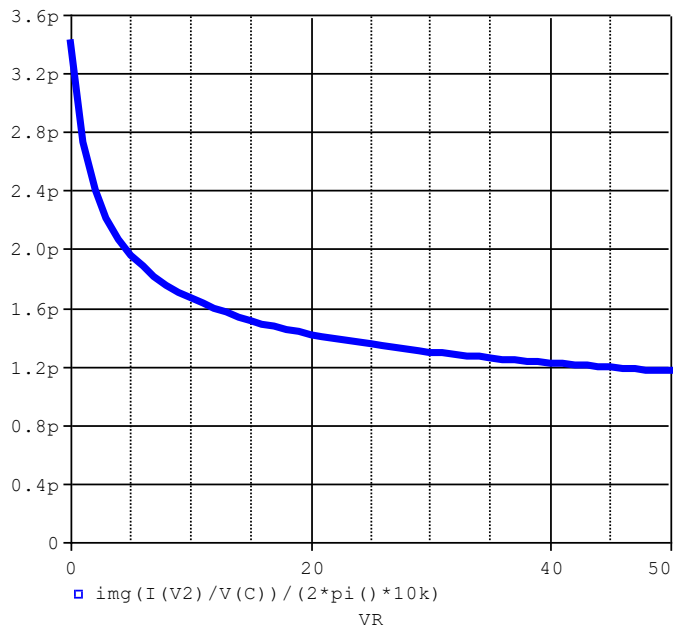
**Cob-VR Testbench**

**Referred to Data Sheet**



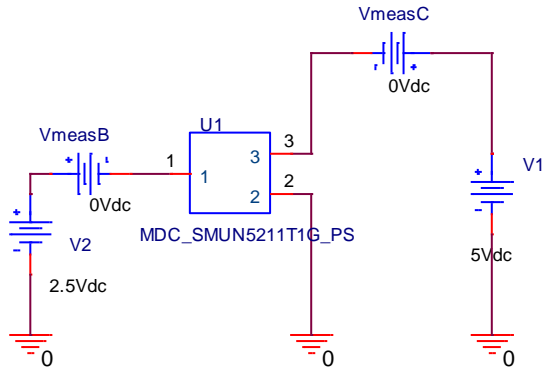
Simulation results are following.  
Explanatory notes — : simulated

**Cob-VR**



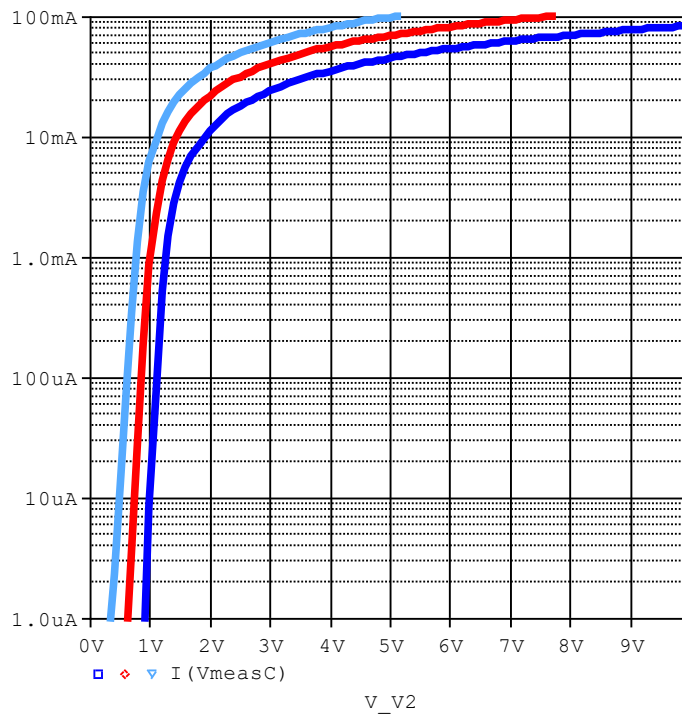
IC-VIN Testbench

Referred to Data Sheet



Simulation results are following.  
 Explanatory notes — : simulated

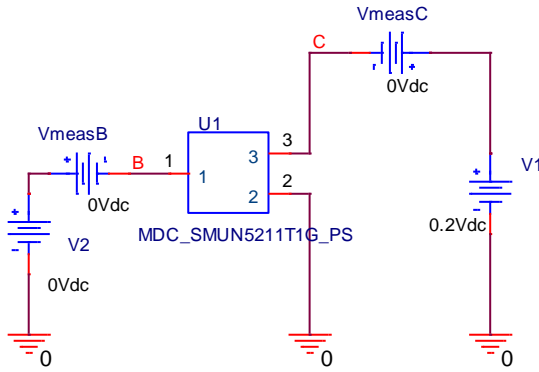
IC-VIN



— : 75°C  
 — : 25°C  
 — : -25°C

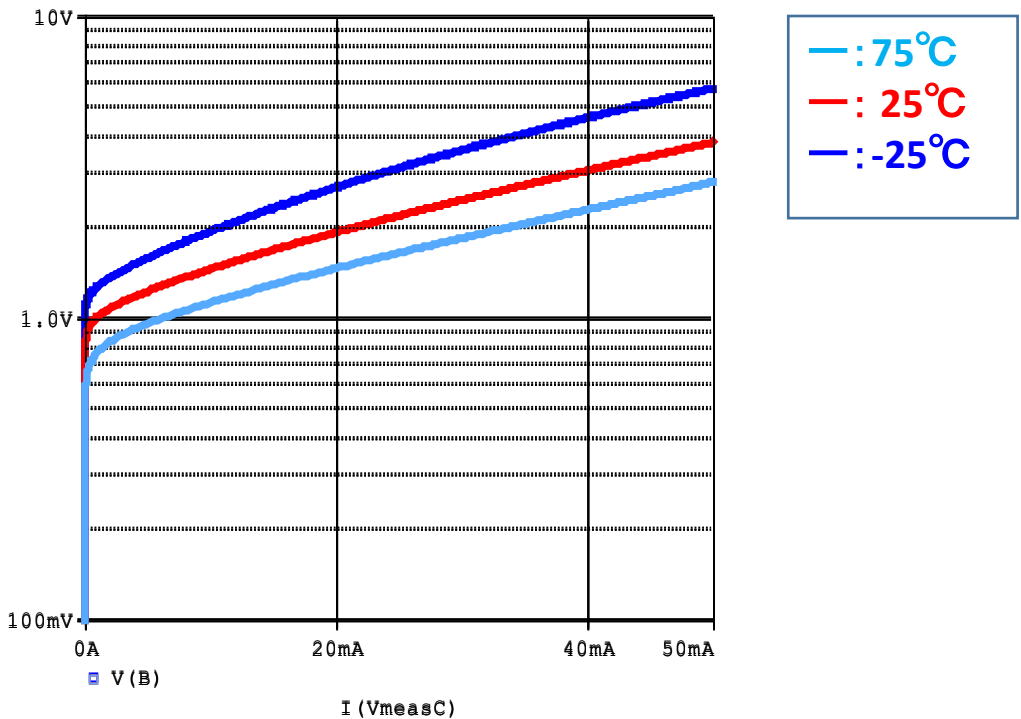
IC-VIN Testbench

Referred to Data Sheet



Simulation results are following.  
 Explanatory notes — : simulated

IC-VIN



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