Device Modeling Report

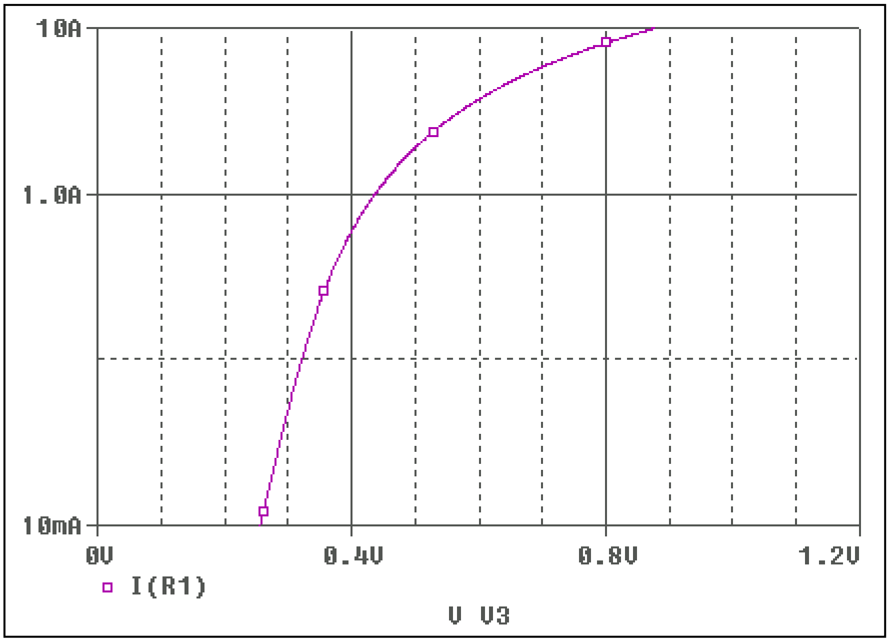
COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER/ PROFESSIONAL
PART NUMBER: SB350
MANUFACTURER: General Semiconductor

Bee Technologies Inc.

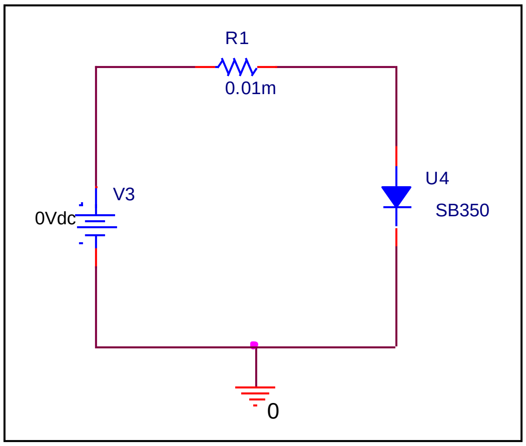
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a positive value)
IBV	Reverse Breakdown Current(a positive value)
TT	Transit Time
EG	Energy-band Gap

Forward Current Characteristic

Circuit Simulation Result

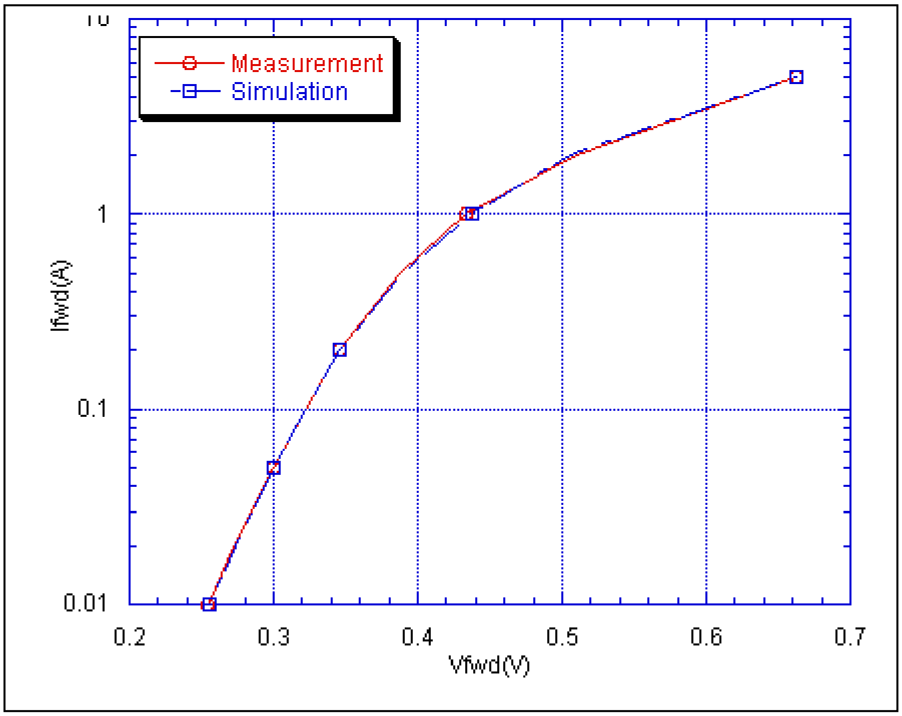


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

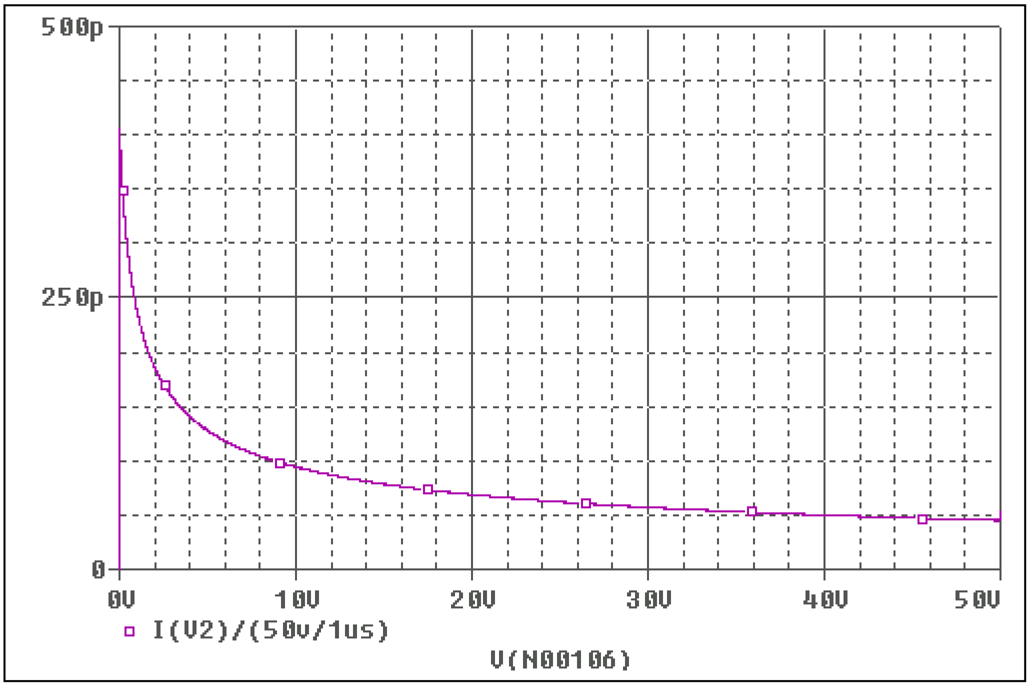


Simulation Result

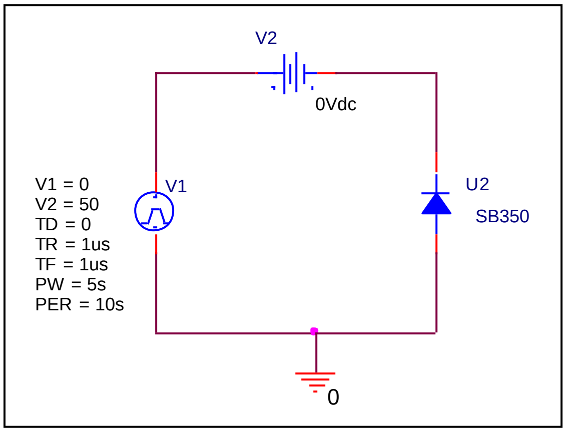
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.254	0.255	0.392
0.02	0.272	0.274	0.730
0.05	0.300	0.298	-0.671
0.1	0.322	0.321	-0.312
0.2	0.346	0.345	-0.290
0.5	0.388	0.389	0.257
1	0.433	0.437	0.915
2	0.510	0.506	-0.791
5	0.662	0.661	-0.151

Junction Capacitance Characteristic

Circuit Simulation Result

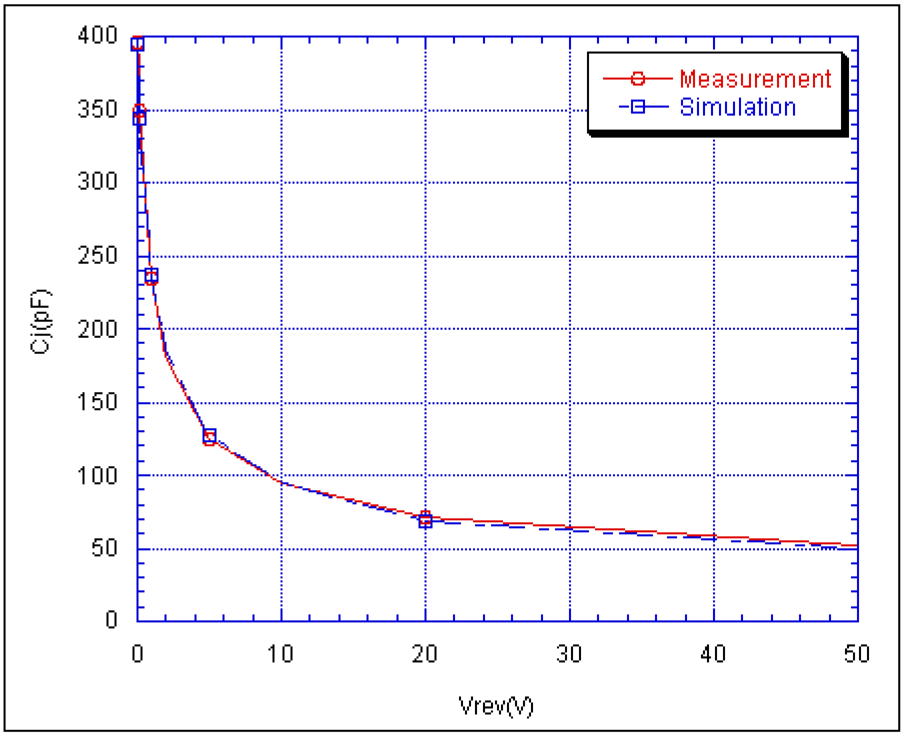


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

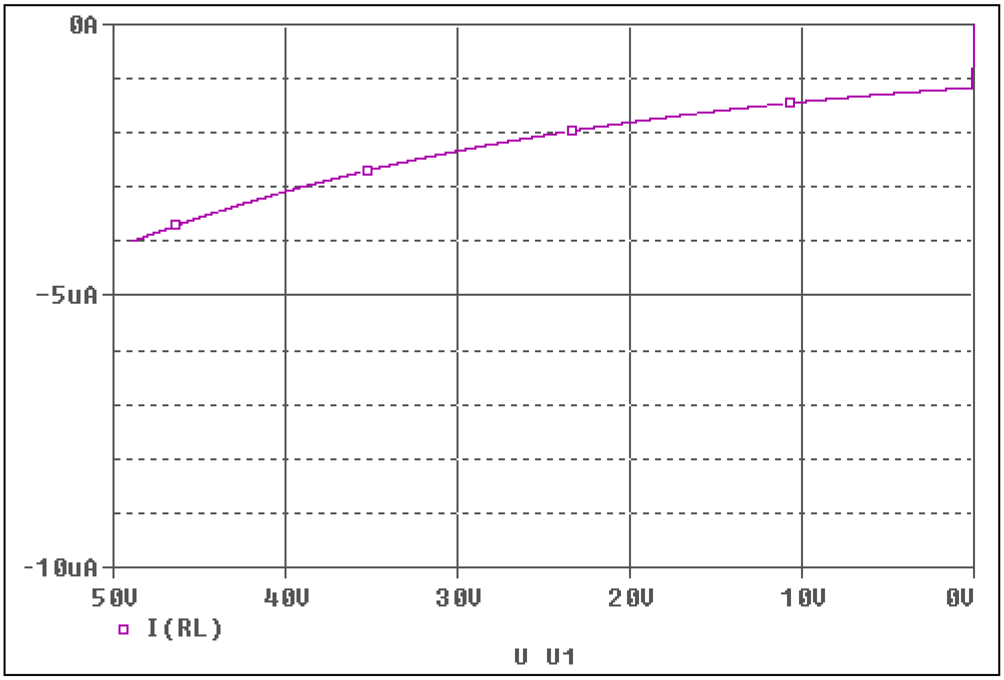


Simulation Result

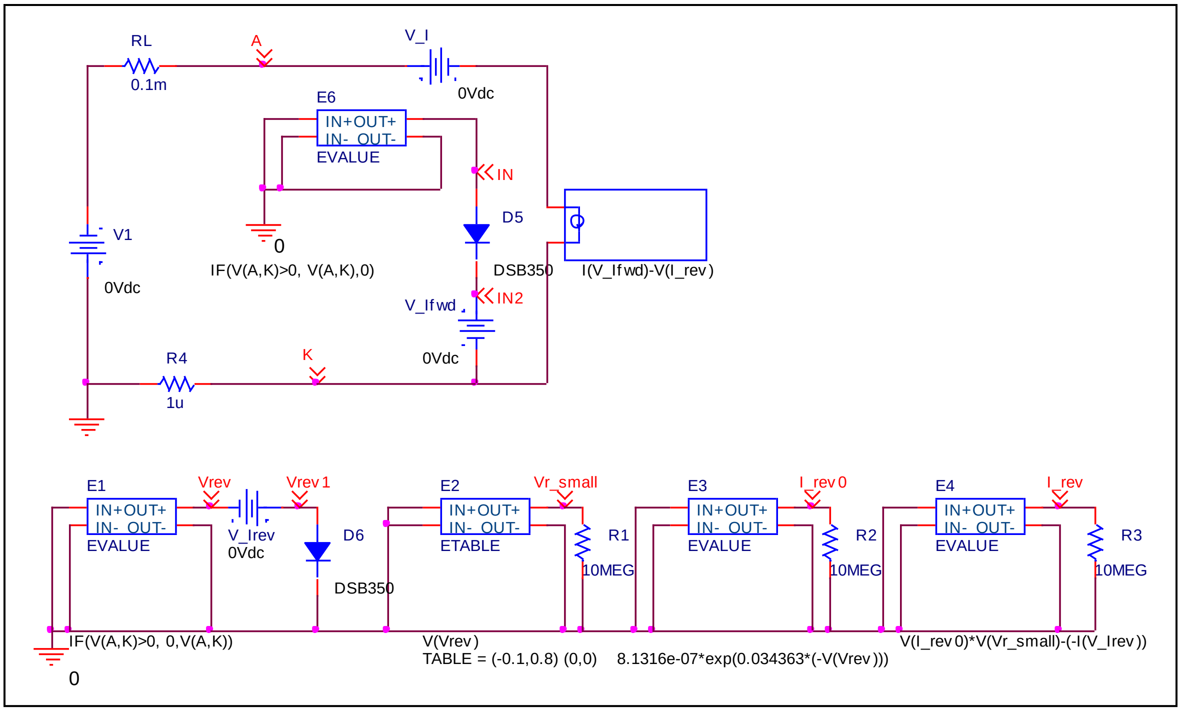
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	395.418	394.015	-0.356
0.1	382.813	370.732	-3.259
0.2	348.742	343.741	-1.455
0.5	290.631	289.146	-0.514
1	233.741	235.768	0.860
2	180.825	185.290	2.410
5	124.351	127.294	2.312
10	93.917	93.561	-0.381
20	71.406	68.840	-3.727

Reverse Characteristic

Circuit Simulation Result

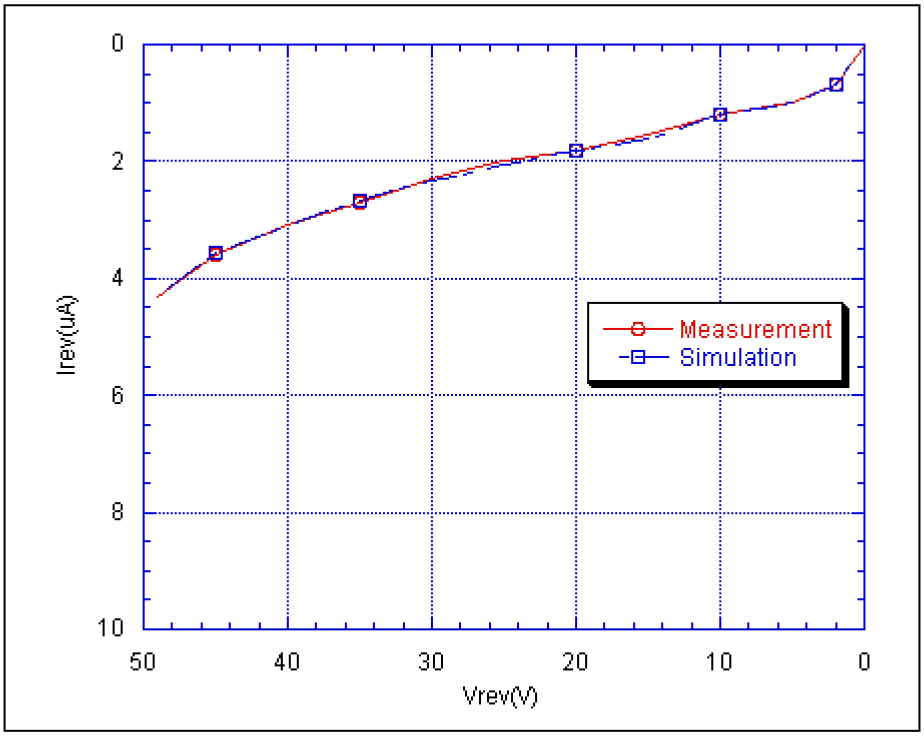


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

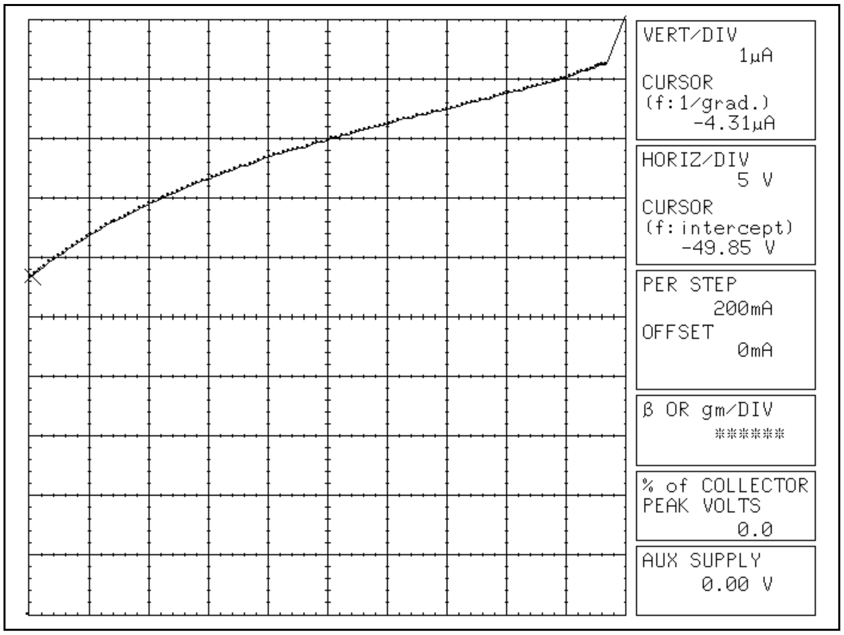


Simulation Result

Vrev(V)	Irev(uA) Measurement	Irev(uA) Simulation	%Error
15	1.550	1.600	3.125
20	1.800	1.798	-0.111
25	2.000	2.040	1.961
30	2.300	2.330	1.288
35	2.700	2.670	-1.124
40	3.100	3.080	-0.649
45	3.600	3.560	-1.124

Reverse Characteristic

Reference



VERT/DIV
1µA
CURSOR
(f:1/grad.)
-4.31µA

HORIZ/DIV
5 V
CURSOR
(f:intercept)
-49.85 V

PER STEP
200mA
OFFSET
0mA

β OR gm/DIV
******

% of COLLECTOR
PEAK VOLTS
0.0

AUX SUPPLY
0.00 V