Device Modeling Report

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Bee Technologies Inc.

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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

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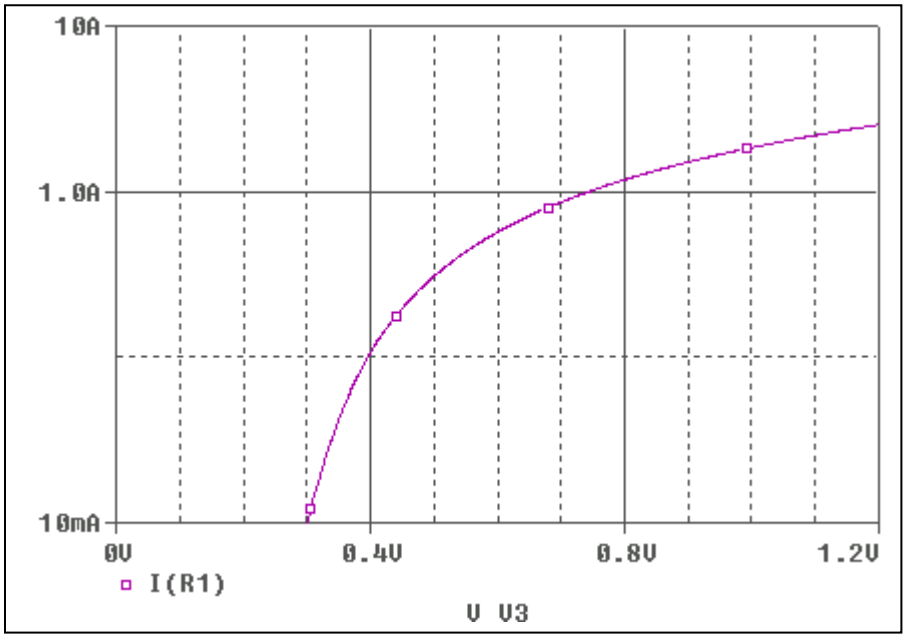
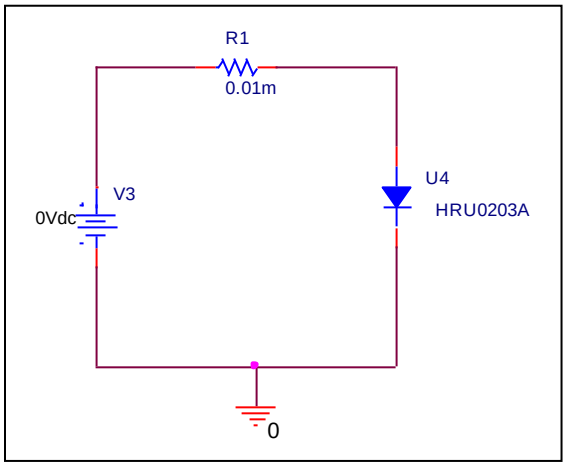
Forward Current Characteristic

Circuit Simulation Result



Evaluation Circuit



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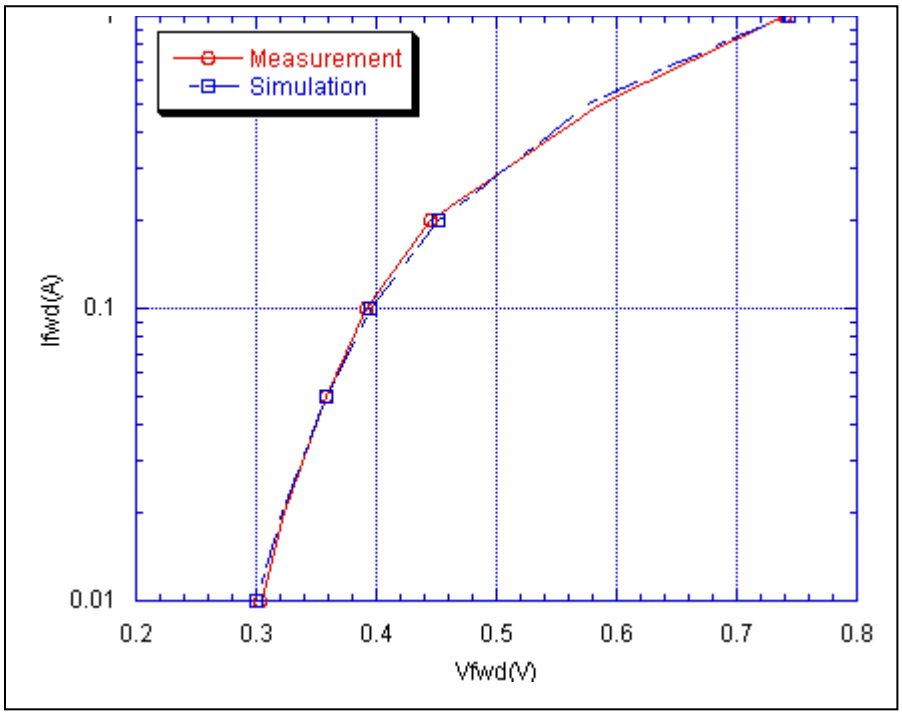
Comparison Graph

Circuit Simulation Result



Simulation Result

Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.303	0.300	-1.000
0.02	0.323	0.322	-0.311
0.05	0.358	0.357	-0.280
0.1	0.392	0.395	0.759
0.2	0.445	0.452	1.549
0.5	0.586	0.576	-1.736
1	0.740	0.744	0.538

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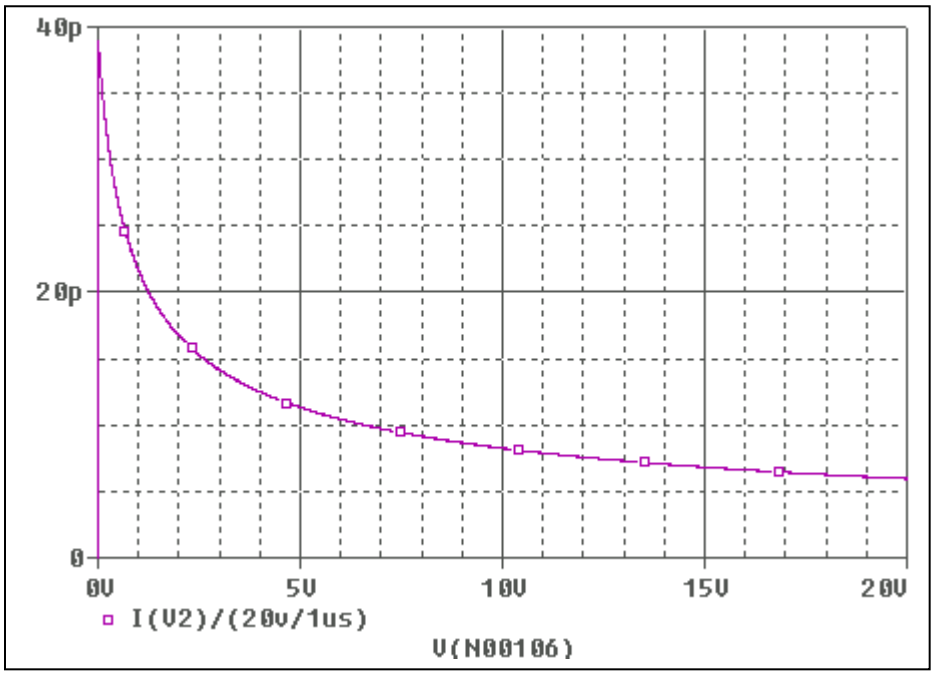
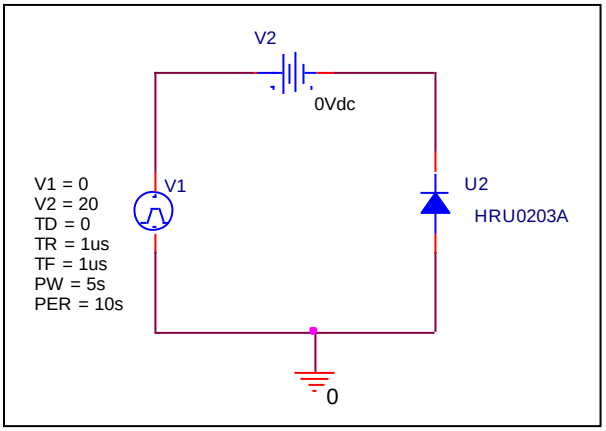
Junction Capacitance Characteristic

Circuit Simulation Result



Evaluation Circuit



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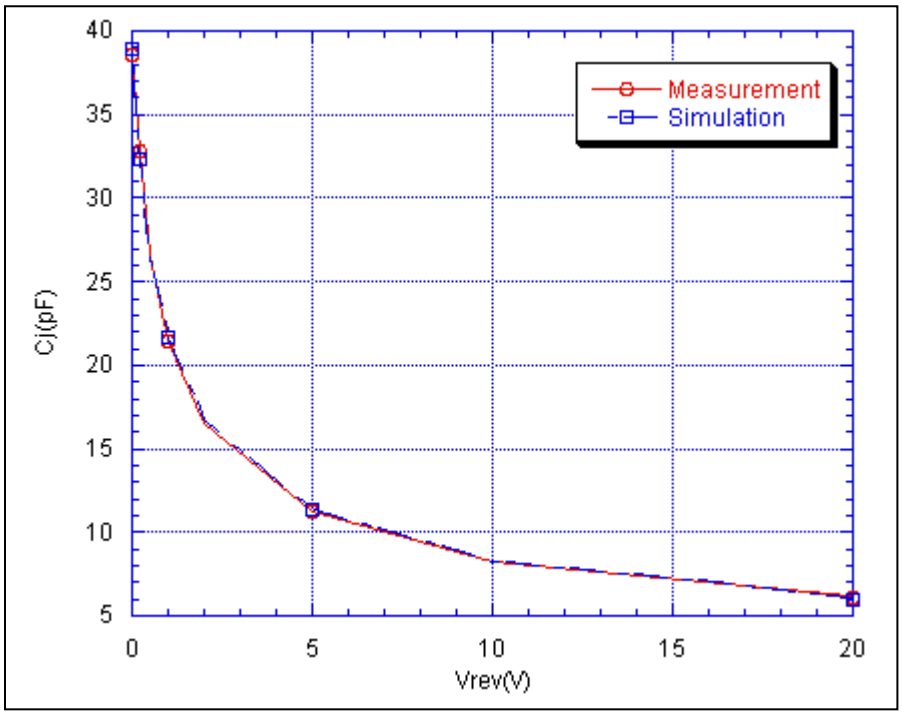
Comparison Graph

Circuit Simulation Result



Simulation Result

Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	38.626	38.713	0.225
0.1	35.557	35.197	-1.023
0.2	32.757	32.319	-1.355
0.5	26.624	26.726	0.382
1	21.443	21.703	1.198
2	16.499	16.754	1.522
5	11.188	11.333	1.279
10	8.296	8.263	-0.399
20	6.075	5.984	-1.521

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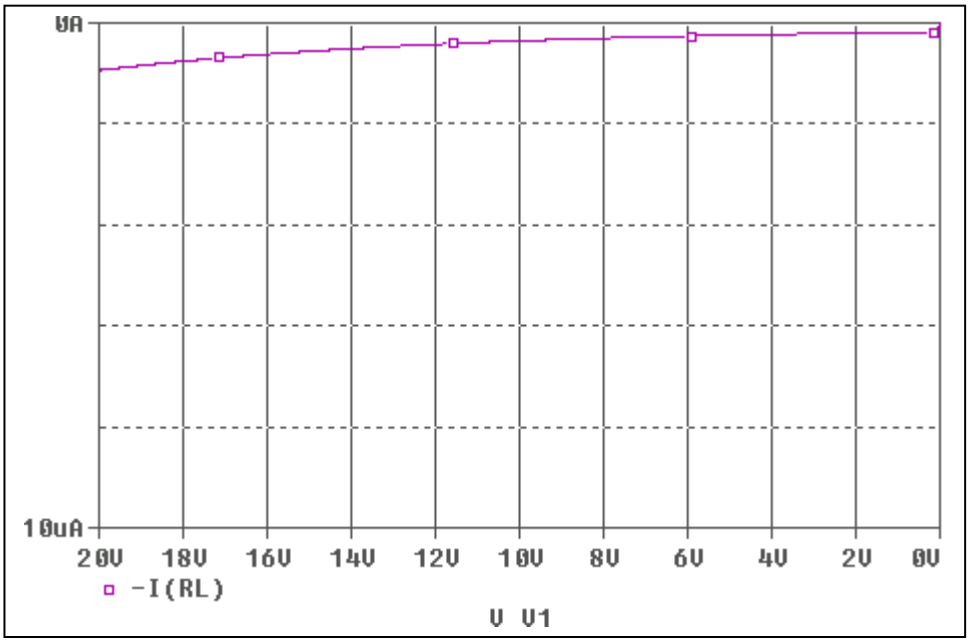
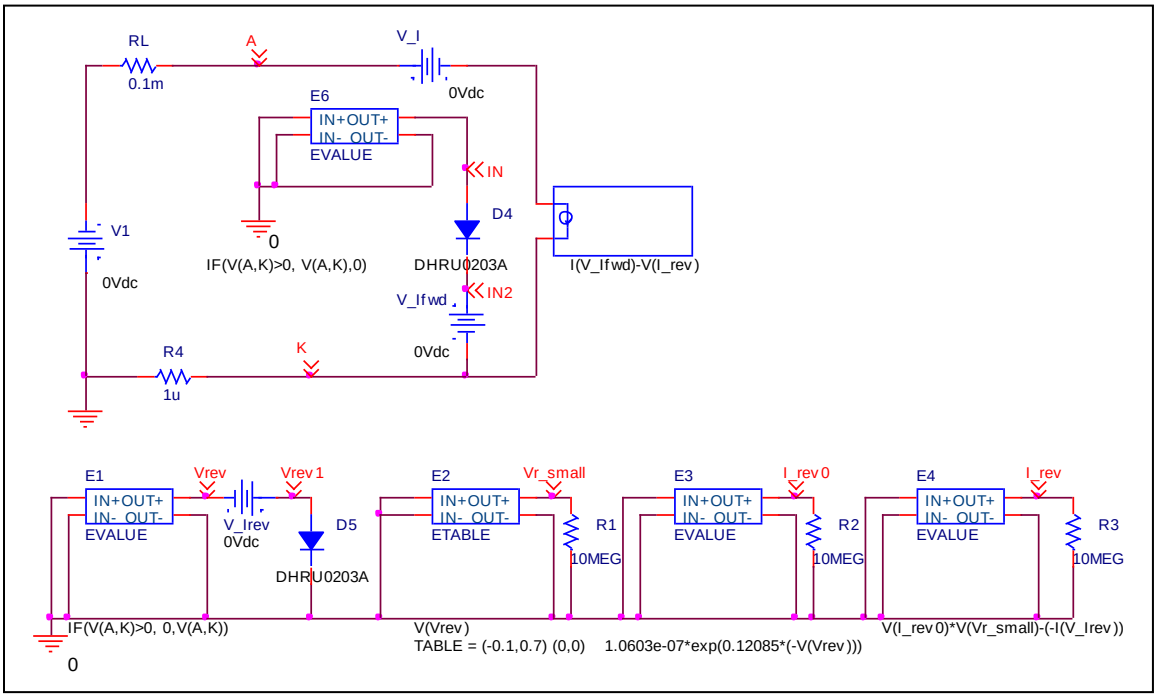
Reverse Characteristic

Circuit Simulation Result



Evaluation Circuit



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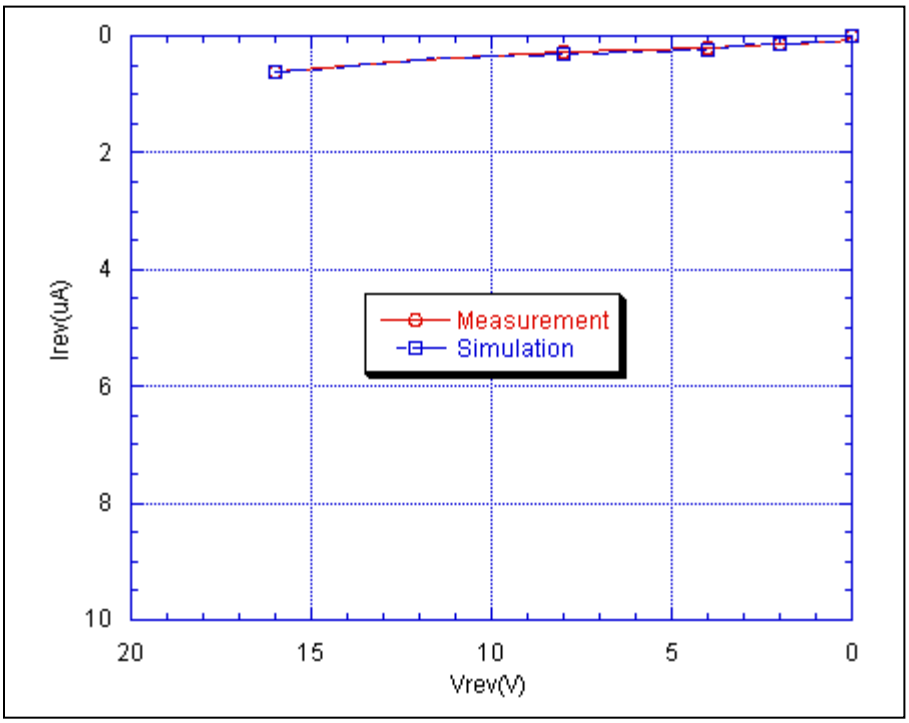
Comparison Graph

Circuit Simulation Result



Simulation Result

Vrev(V)	Irev(uA) Measurement	Irev(uA) Simulation	%Error
4	0.220	0.226	2.655
8	0.290	0.300	3.333
12	0.420	0.422	0.474
16	0.620	0.619	-0.162

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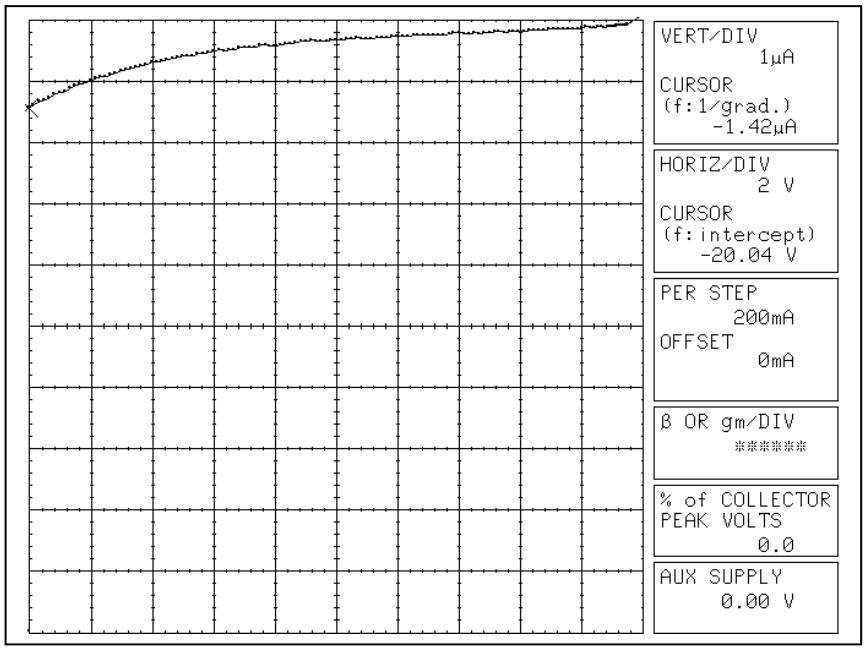
Reverse Characteristic Reference



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