

Device Modeling Report

COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER/ STANDARD
PART NUMBER: 30WQ10FN
MANUFACTURER: INTERNATIONAL RECTIFIER

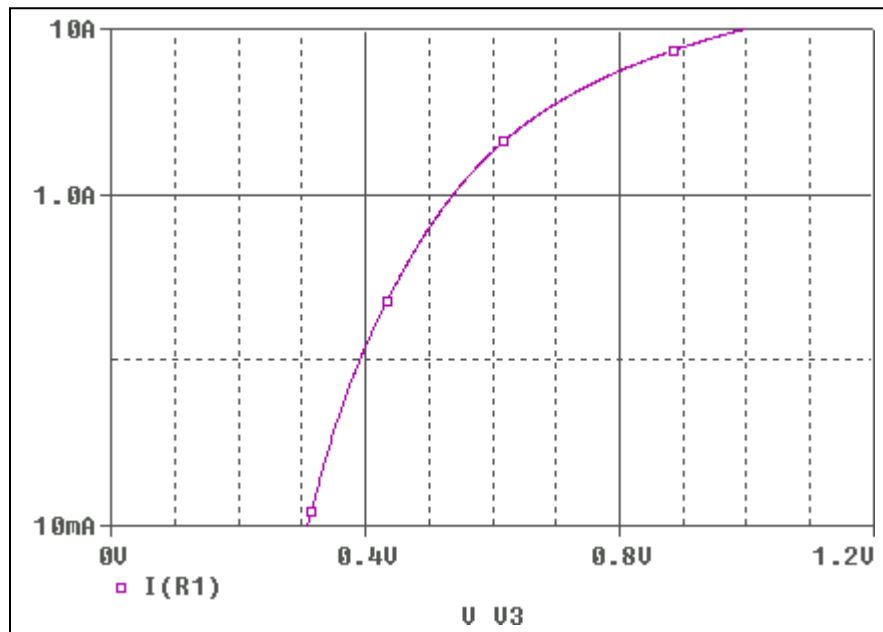


Bee Technologies Inc.

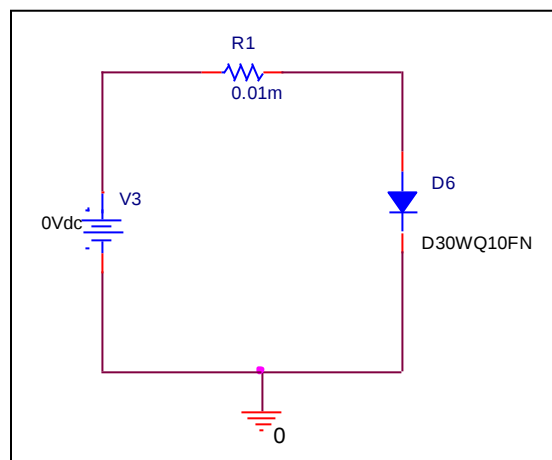
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

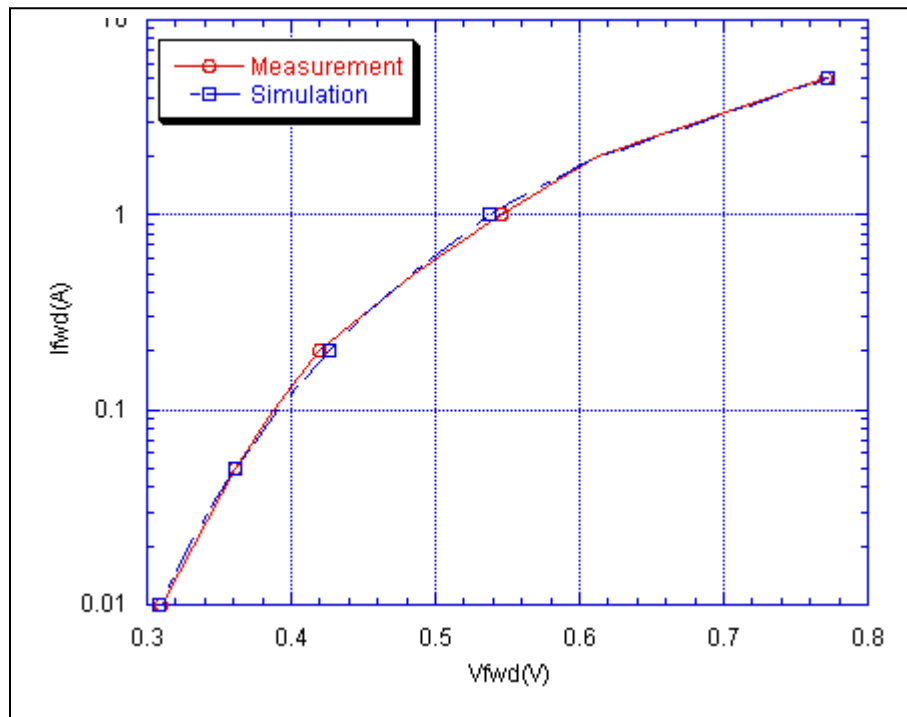


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

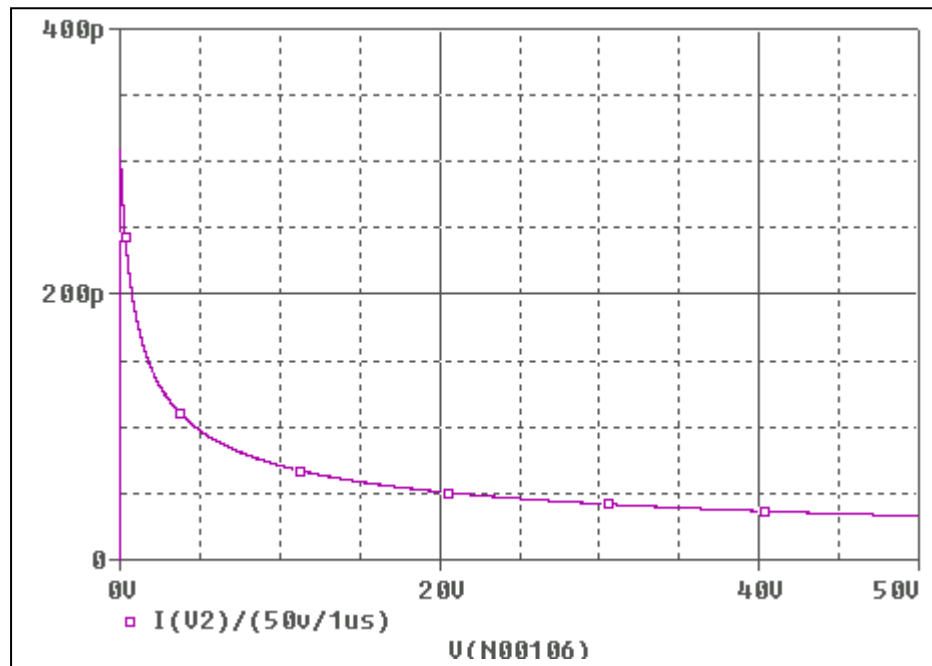


Simulation Result

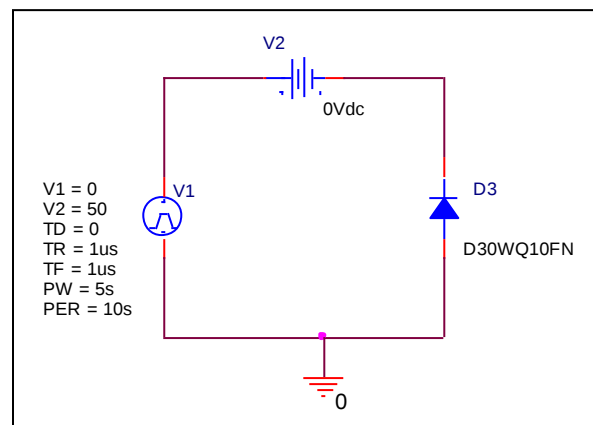
I_{fwd} (A)	V_{fwd} (V) Measurement	V_{fwd} (V) Simulation	%Error
0.01	0.310	0.309	-0.32
0.02	0.332	0.329	-0.91
0.05	0.361	0.360	-0.28
0.1	0.388	0.390	0.51
0.2	0.420	0.426	1.41
0.5	0.485	0.484	-0.21
1	0.546	0.538	-1.49
2	0.612	0.611	-0.16
5	0.771	0.772	0.13

Junction Capacitance Characteristic

Circuit Simulation Result

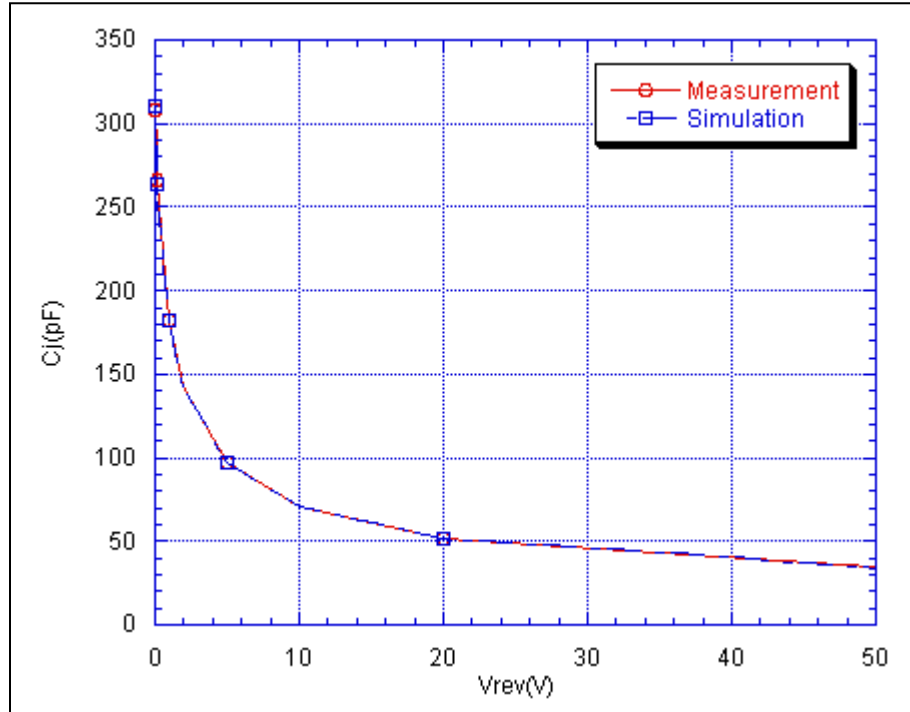


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	308.588	310.805	0.71
0.1	285.982	284.719	-0.44
0.2	266.161	264.276	-0.71
0.5	221.666	222.774	0.50
1	182.319	182.215	-0.06
2	142.822	142.229	-0.42
5	97.381	97.487	0.11
10	70.955	71.022	0.09
20	51.343	51.233	-0.21
50	33.773	32.979	-2.41