

Device Modeling Report

COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER/ PROFESSIONAL
PART NUMBER: 30WQ06FN
MANUFACTURER: INTERNATIONAL RECTIFIER

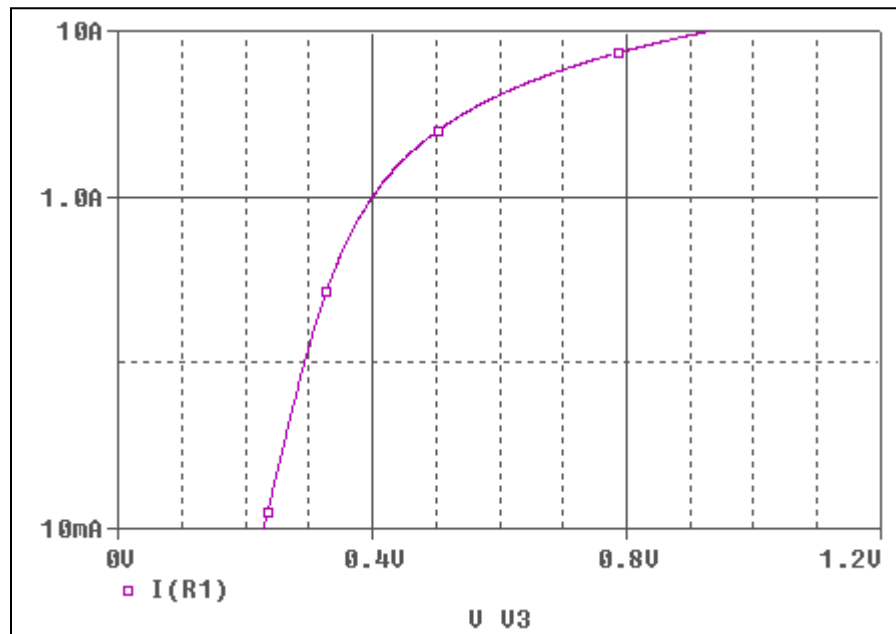


Bee Technologies Inc.

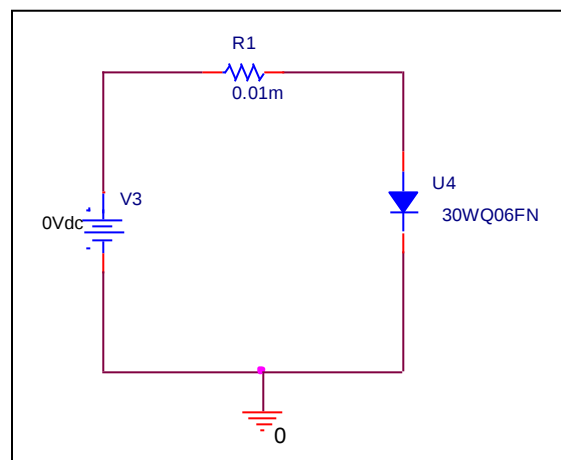
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

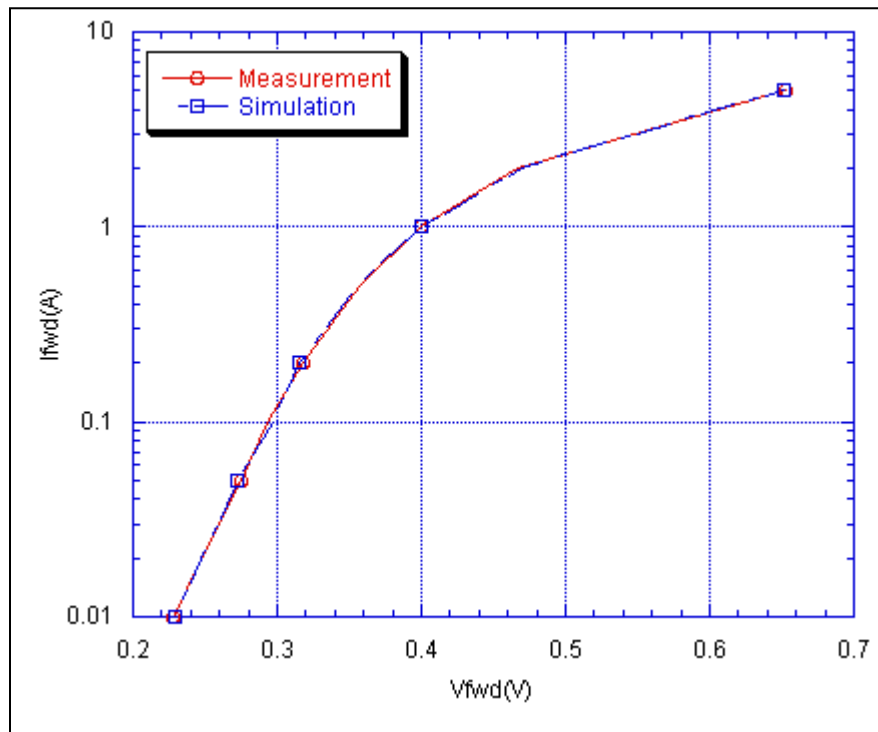


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

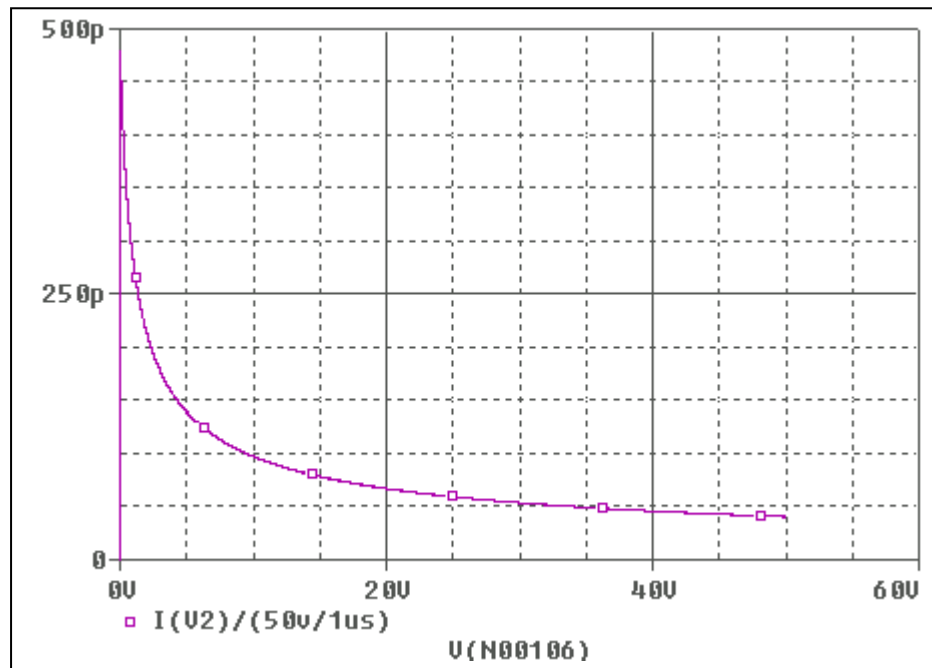


Simulation Result

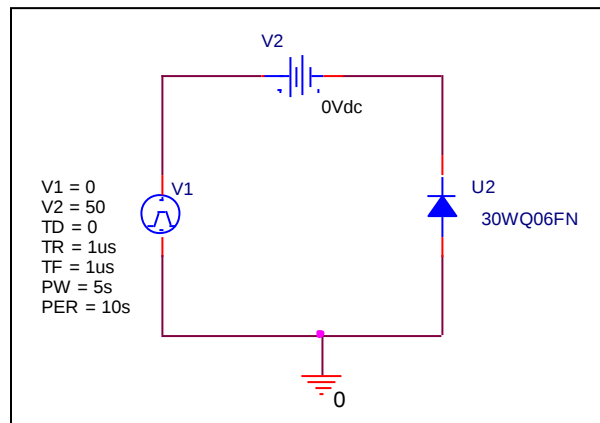
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.228	0.229	0.44
0.02	0.247	0.246	-0.41
0.05	0.275	0.272	-1.10
0.1	0.293	0.297	1.35
0.2	0.318	0.316	-0.63
0.5	0.357	0.355	-0.56
1	0.400	0.398	-0.50
2	0.467	0.470	0.64
5	0.653	0.652	-0.15

Junction Capacitance Characteristic

Circuit Simulation Result

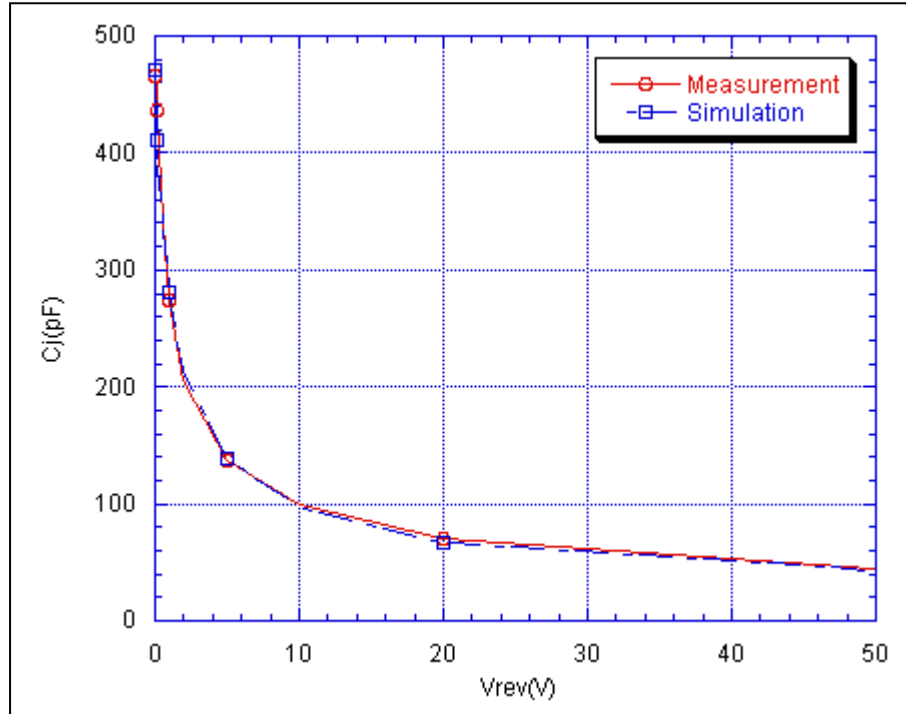


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

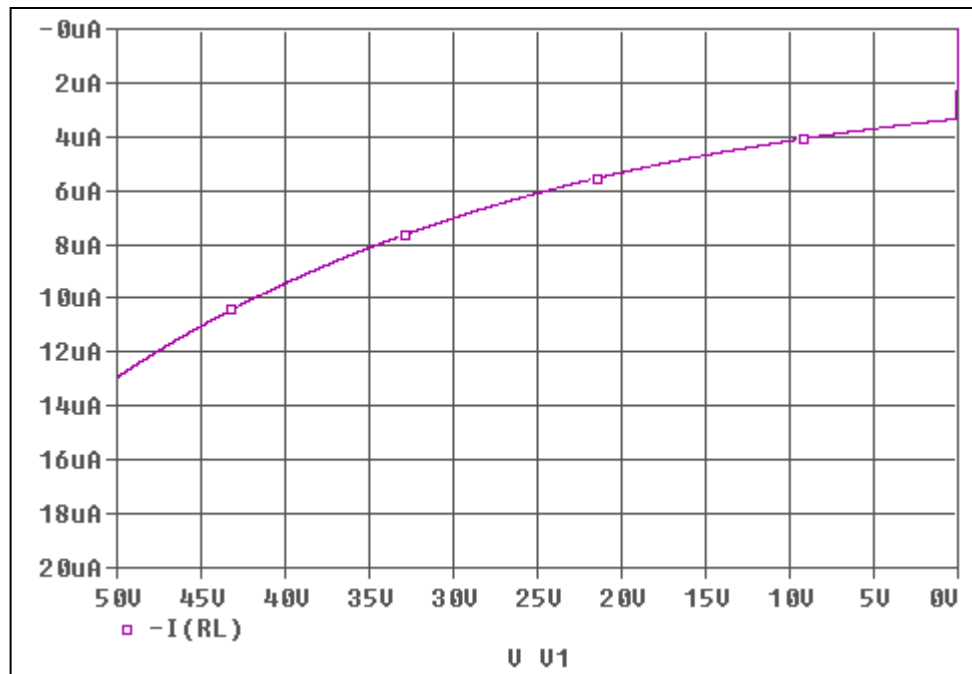


Simulation Result

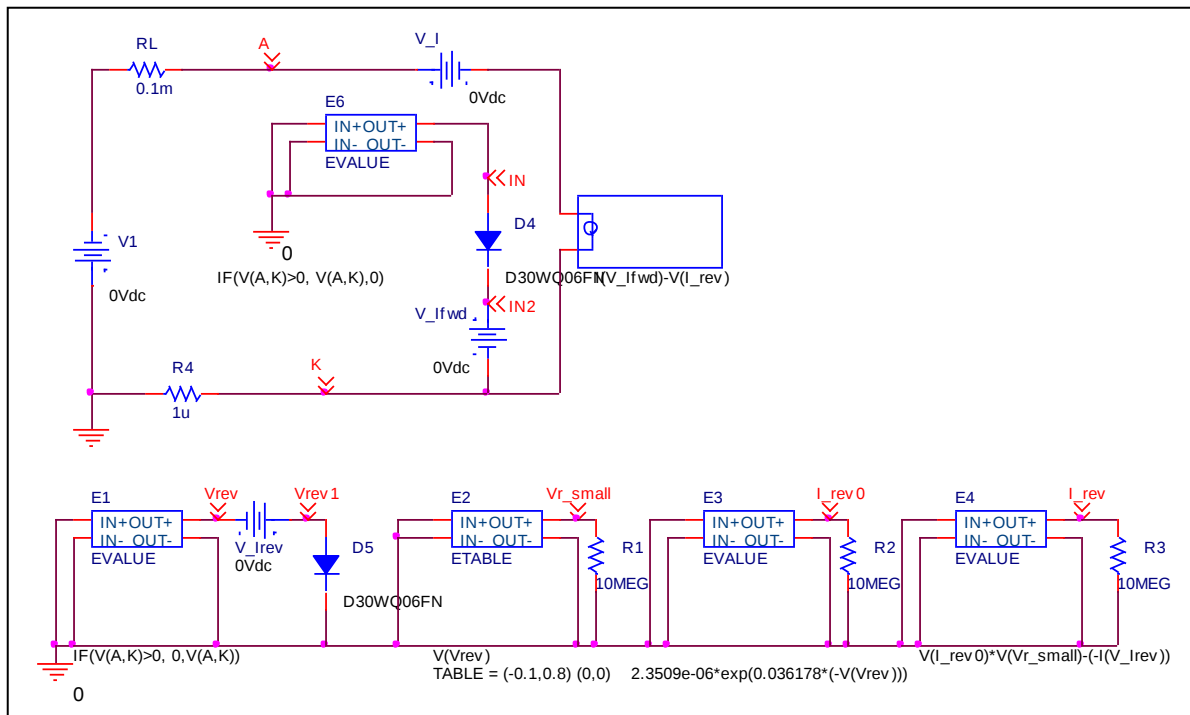
V_{rev} (V)	C_j (pF) Measurement	C_j (pF) Simulation	%Error
0	465.441	469.441	0.85
0.1	455.373	442.402	-2.93
0.2	437.028	417.867	-4.59
0.5	340.839	345.066	1.22
1	273.707	279.356	2.02
2	205.246	211.793	3.09
5	136.810	139.375	1.84
10	99.272	97.400	-1.92
20	69.431	67.105	-3.47
50	42.397	40.682	-4.22

Reverse Characteristic

Circuit Simulation Result

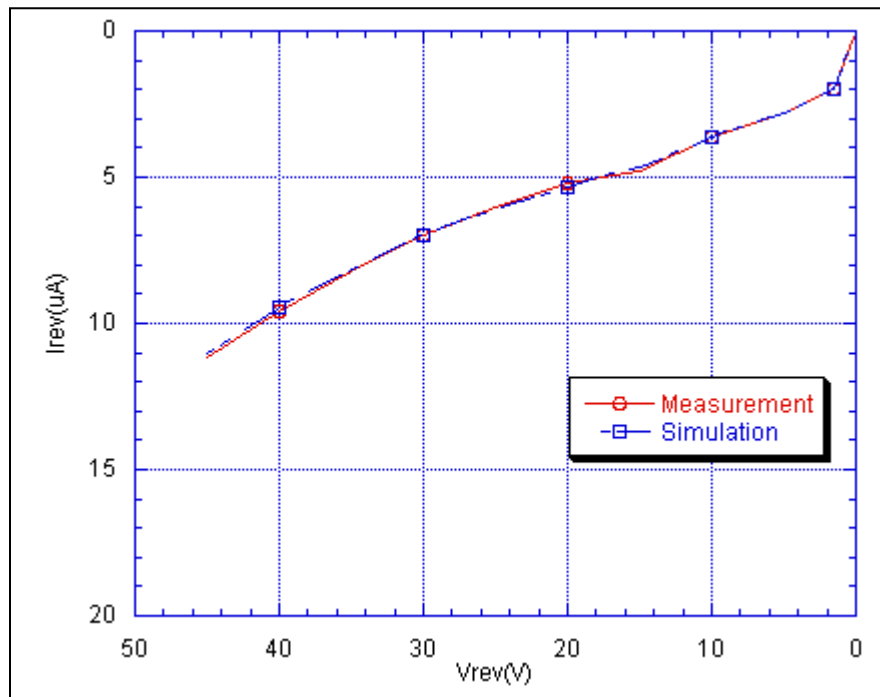


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

$V_{rev}(V)$	$I_{rev}(\mu A)$ Measurement	$I_{rev}(\mu A)$ Simulation	%Error
15	4.800	4.680	-2.56
20	5.200	5.320	2.26
25	6.000	6.090	1.48
30	7.000	7.010	0.14
35	8.200	8.120	-0.99
40	9.600	9.440	-1.69
45	11.200	11.030	-1.54

Reverse Characteristic

Reference

