

Device Modeling Report

COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER
PART NUMBER: 30WQ04FN
MANUFACTURER: INTERNATIONAL RECTIFIER

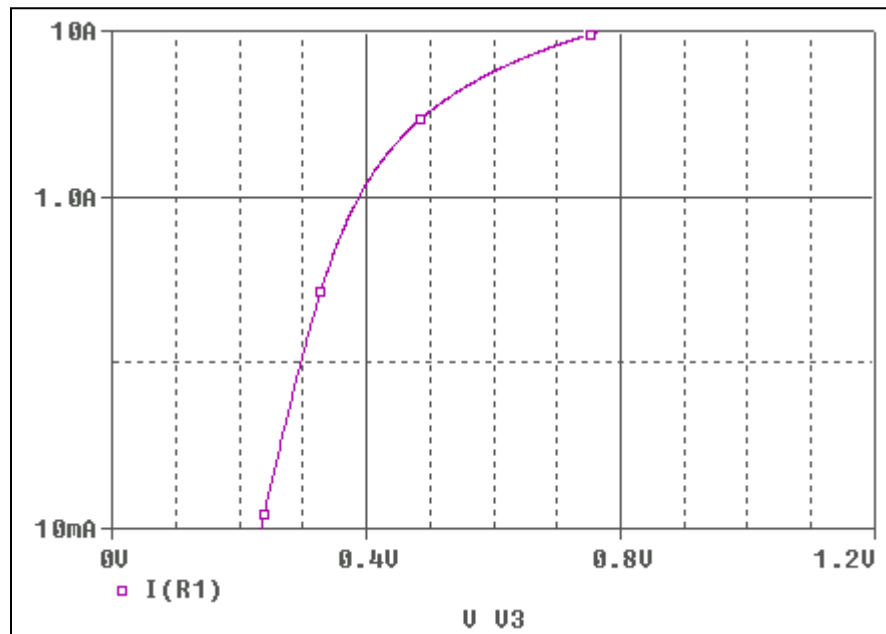


Bee Technologies Inc.

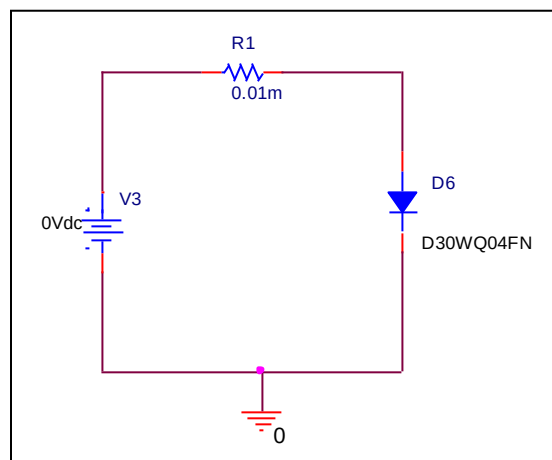
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

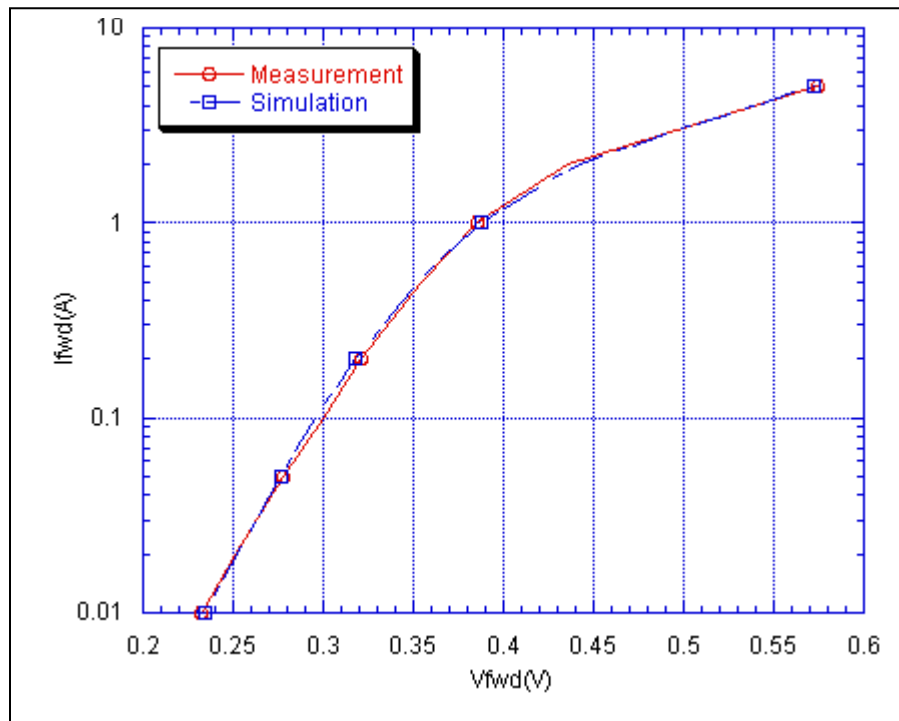


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

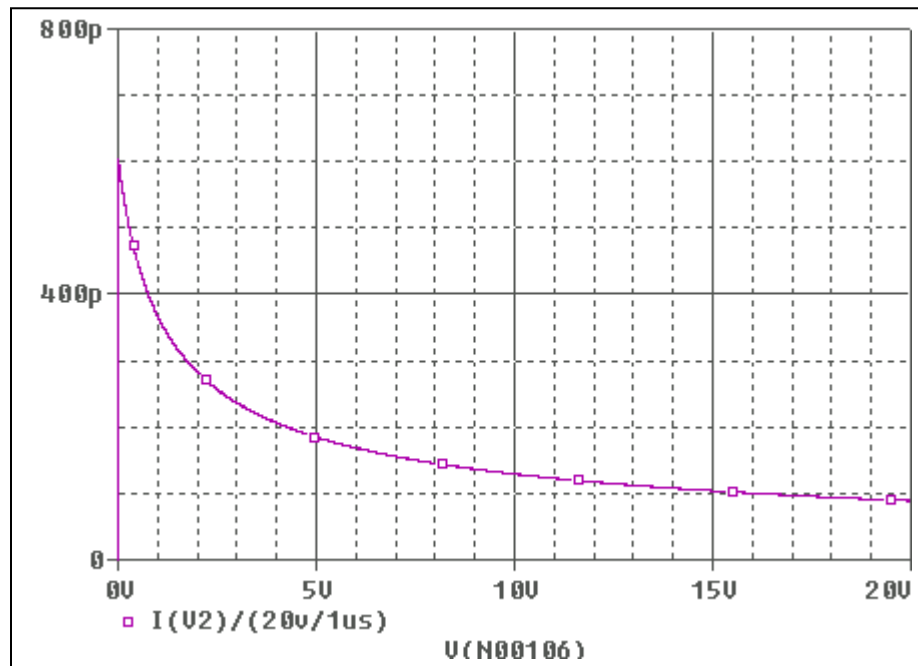


Simulation Result

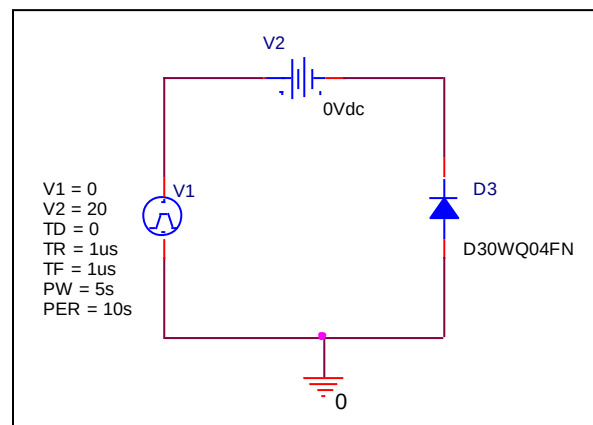
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.232	0.234	0.85
0.02	0.251	0.252	0.40
0.05	0.278	0.277	-0.36
0.1	0.300	0.296	-1.35
0.2	0.321	0.318	-0.94
0.5	0.355	0.352	-0.85
1	0.386	0.388	0.52
2	0.436	0.442	1.36
5	0.575	0.572	-0.52

Junction Capacitance Characteristic

Circuit Simulation Result

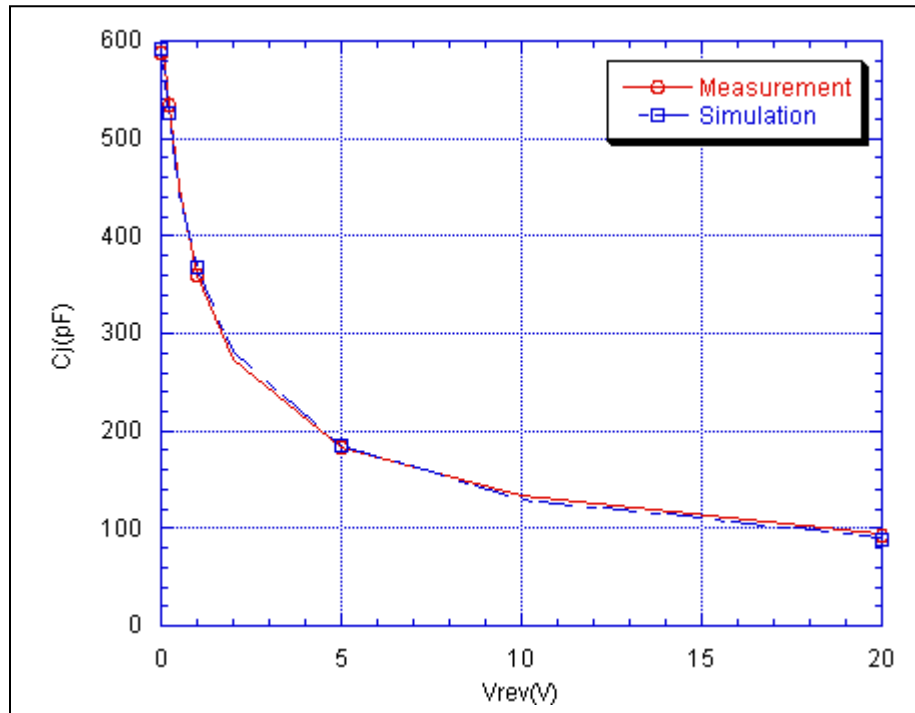


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_{rev} (V)	C_j (pF) Measurement	C_j (pF) Simulation	%Error
0	588.141	592.184	0.68
0.1	576.447	562.574	-2.47
0.2	534.961	525.717	-1.76
0.5	449.972	446.863	-0.70
1	359.147	367.816	2.36
2	274.144	282.459	2.94
5	182.971	184.818	1.00
10	132.818	129.163	-2.83
20	91.663	88.809	-3.21