

Device Modeling Report

COMPONENTS:

DIODE/ SCHOTTKY RECTIFIER/ STANDARD

PART NUMBER: 50WQ04FN

MANUFACTURER: INTERNATIONAL RECTIFIER

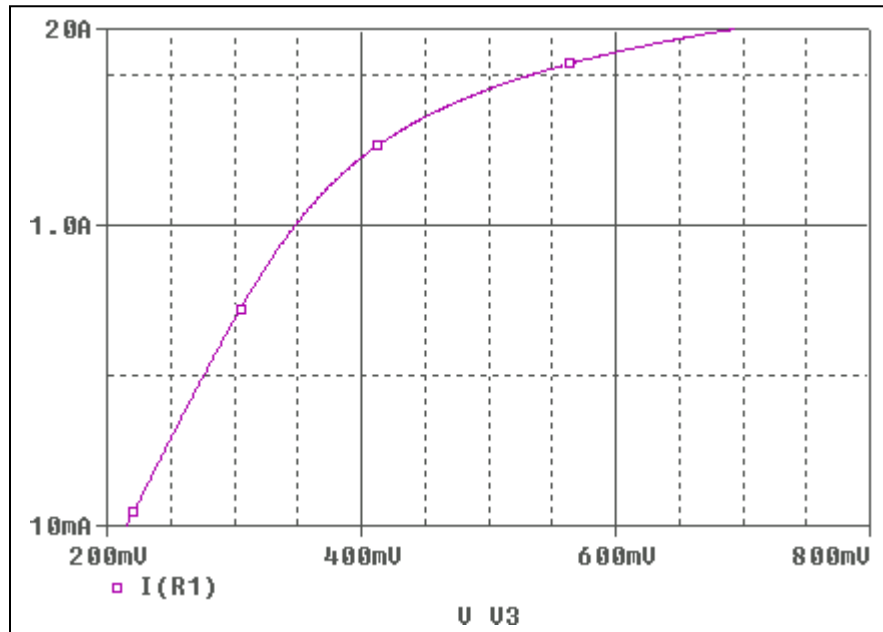


Bee Technologies Inc.

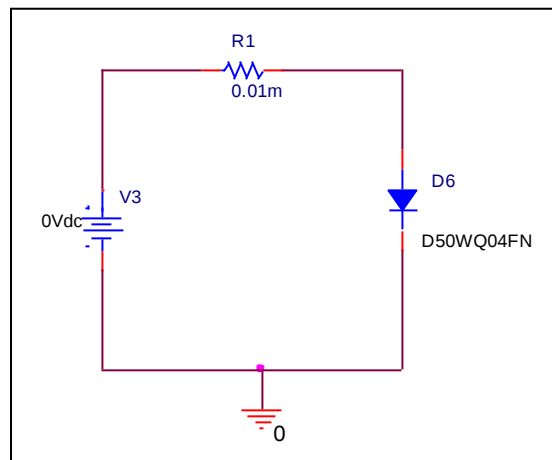
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

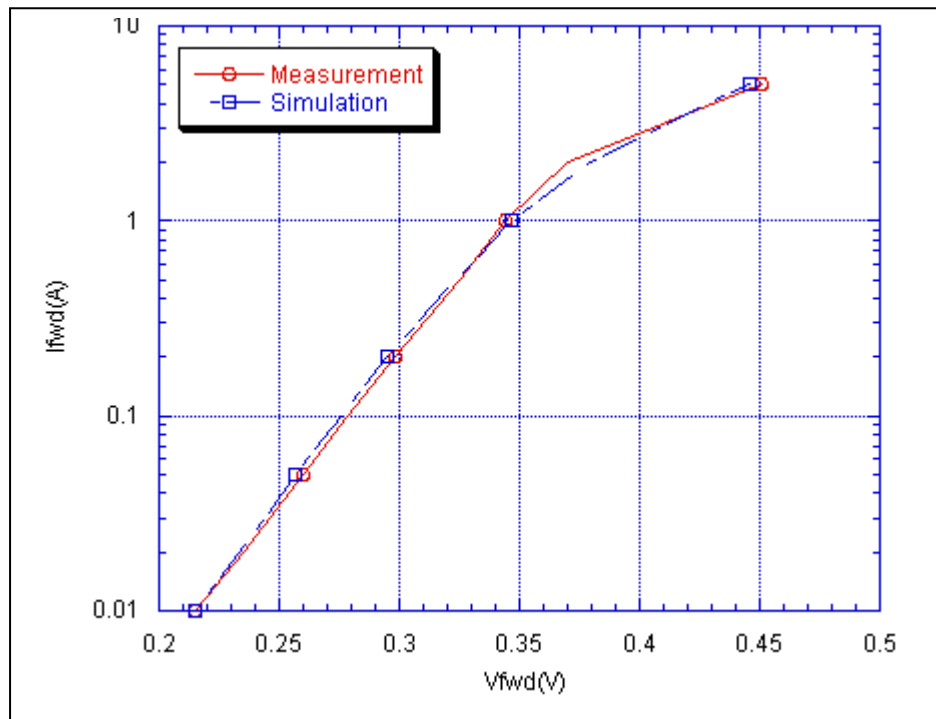


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

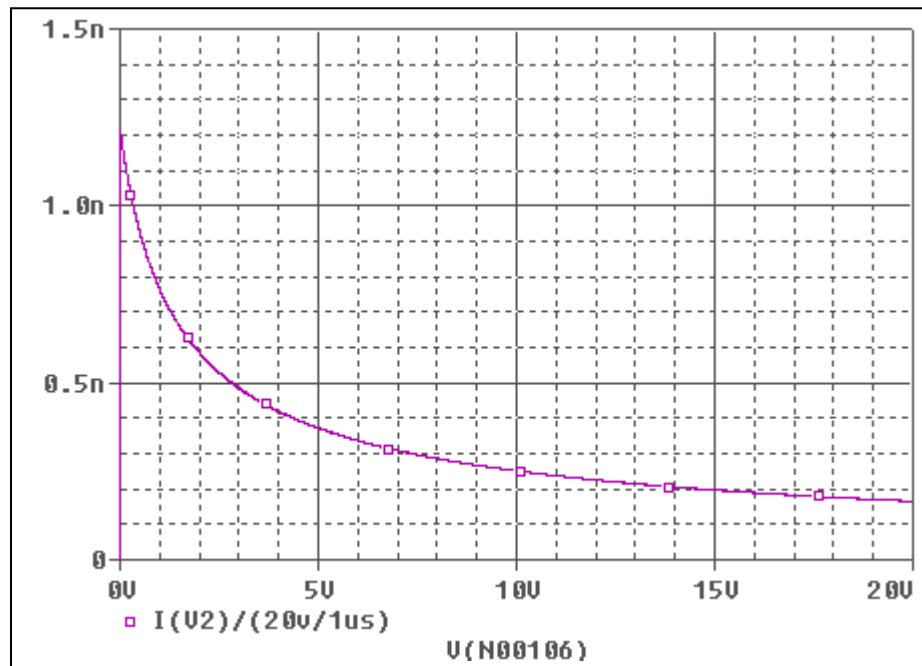


Simulation Result

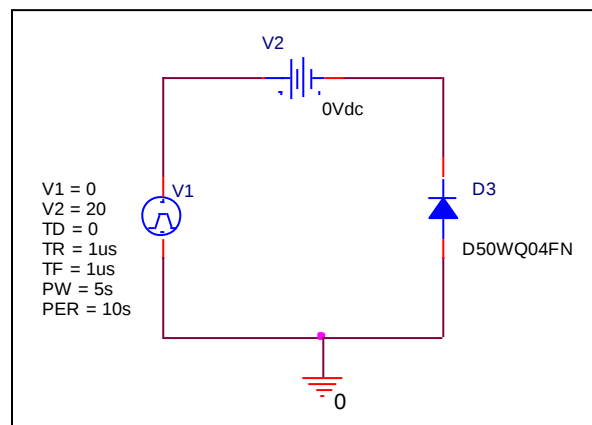
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.215	0.214	-0.47
0.02	0.235	0.233	-0.86
0.05	0.260	0.257	-1.17
0.1	0.278	0.276	-0.72
0.2	0.298	0.295	-1.02
0.5	0.325	0.323	-0.62
1	0.344	0.347	0.86
2	0.370	0.379	2.37

Junction Capacitance Characteristic

Circuit Simulation Result

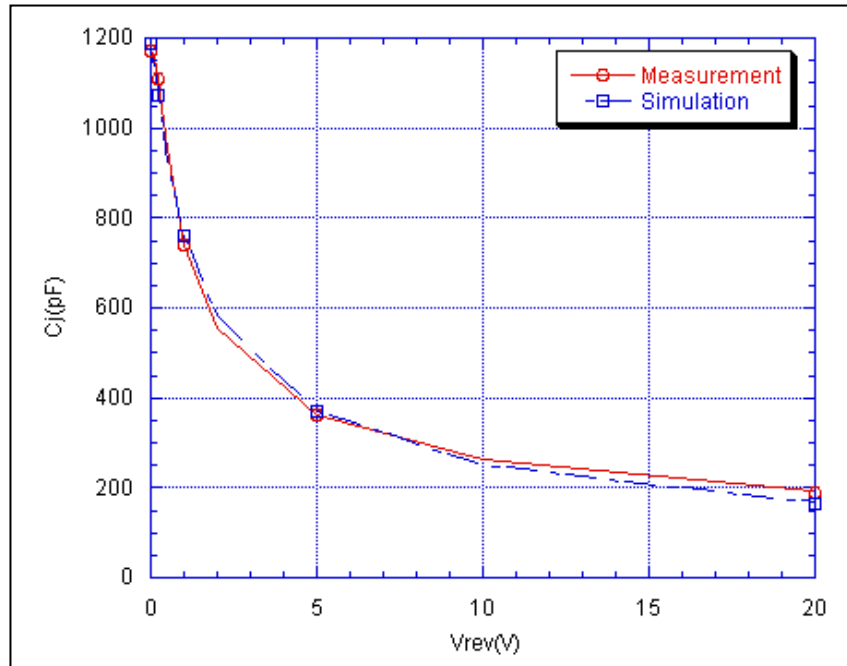


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_{rev} (V)	C_j (pF) Measurement	C_j (pF) Simulation	%Error
0	1172.00	1189.00	1.43
0.1	1158.00	1140.00	-1.58
0.2	1108.00	1073.00	-3.26
0.5	953.73	926.55	-2.93
1	741.76	762.12	2.67
2	565.02	584.99	3.41
5	363.52	371.56	2.16
10	261.47	250.94	-4.20
20	172.38	165.15	-4.38