

Device Modeling Report

COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER/ PROFESSIONAL
PART NUMBER: 6CWQ04FN
MANUFACTURER: INTERNATIONAL RECTIFIER

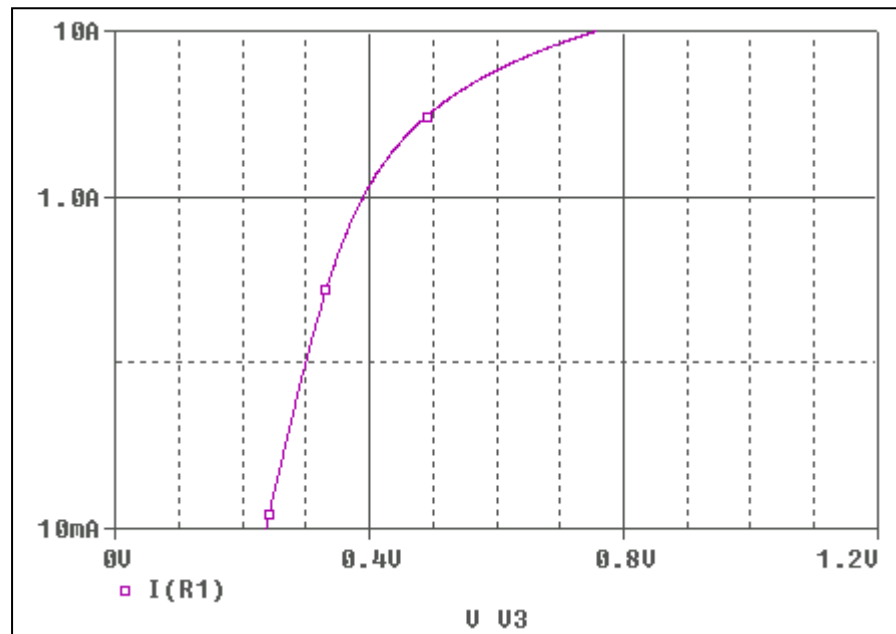


Bee Technologies Inc.

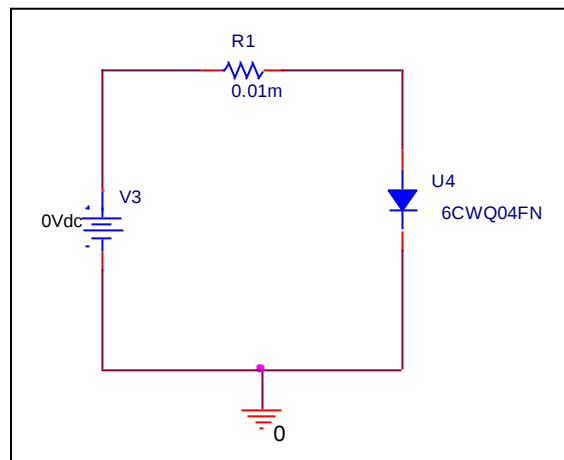
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

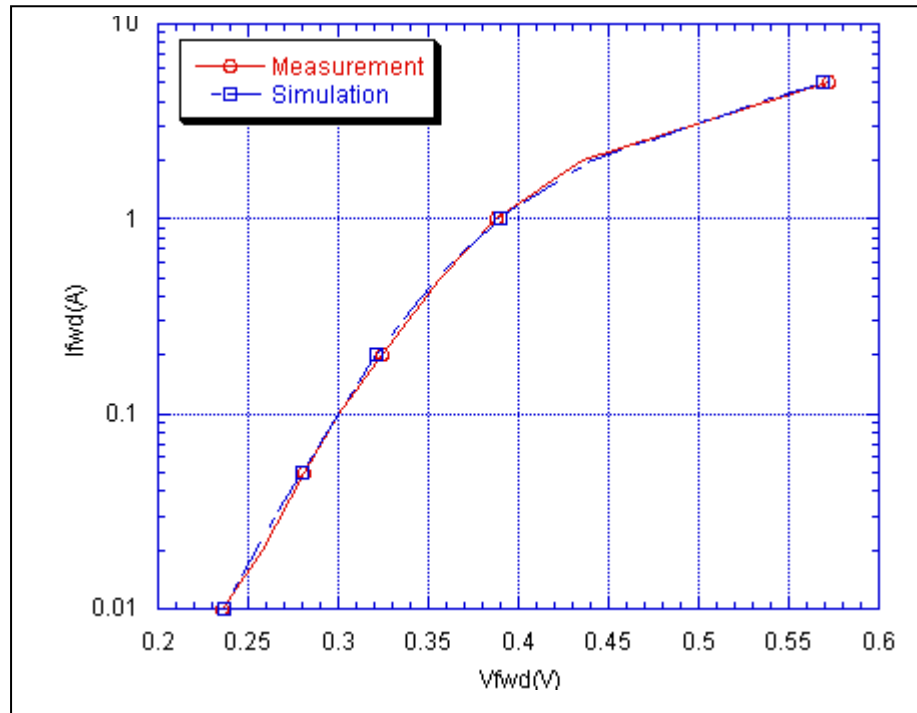


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

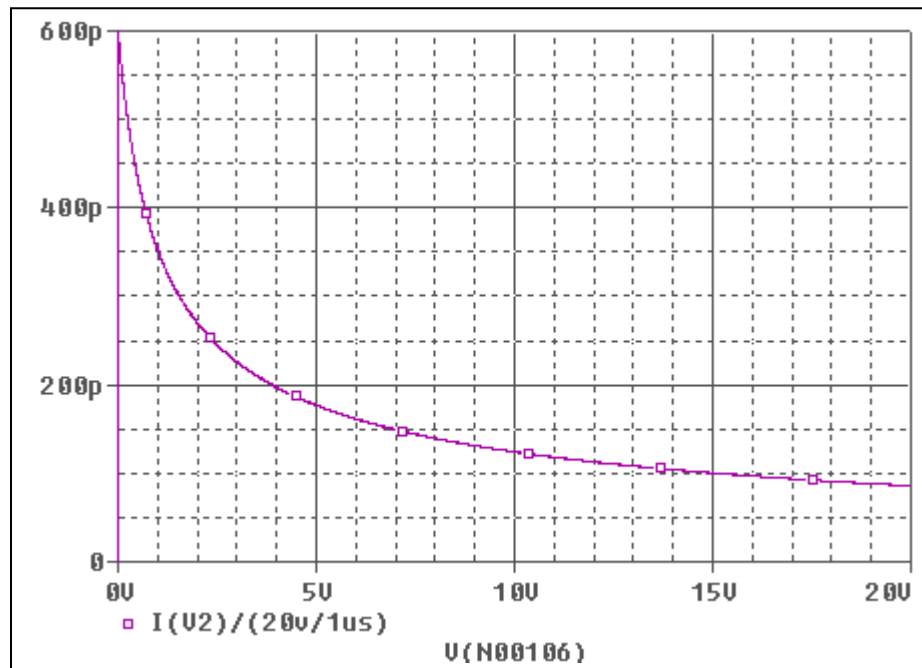


Simulation Result

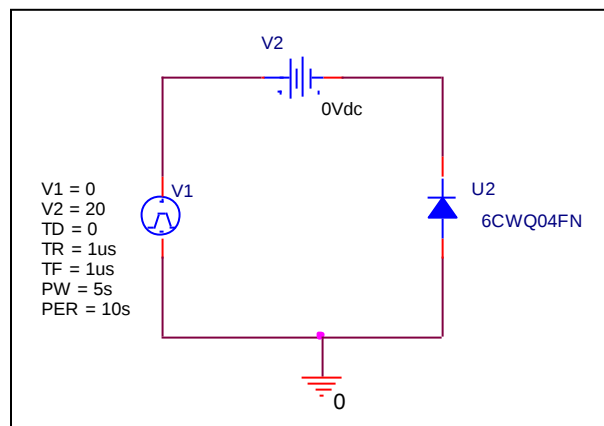
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.236	0.237	0.42
0.02	0.258	0.255	-1.18
0.05	0.281	0.280	-0.36
0.1	0.300	0.300	0.00
0.2	0.324	0.321	-0.93
0.5	0.357	0.355	-0.56
1	0.388	0.390	0.51
2	0.436	0.441	1.13
5	0.572	0.569	-0.53

Junction Capacitance Characteristic

Circuit Simulation Result

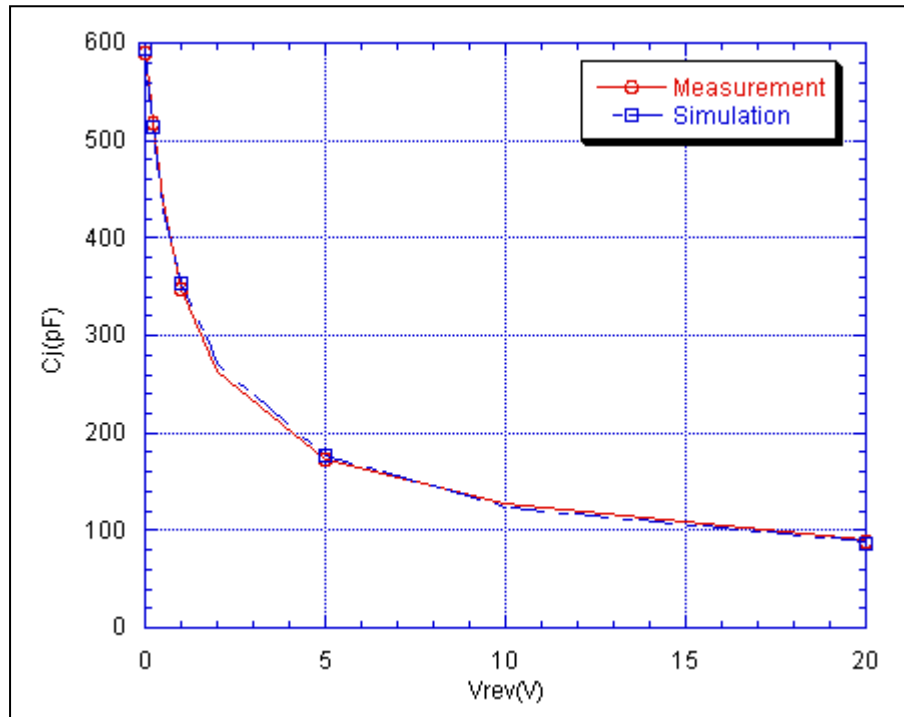


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

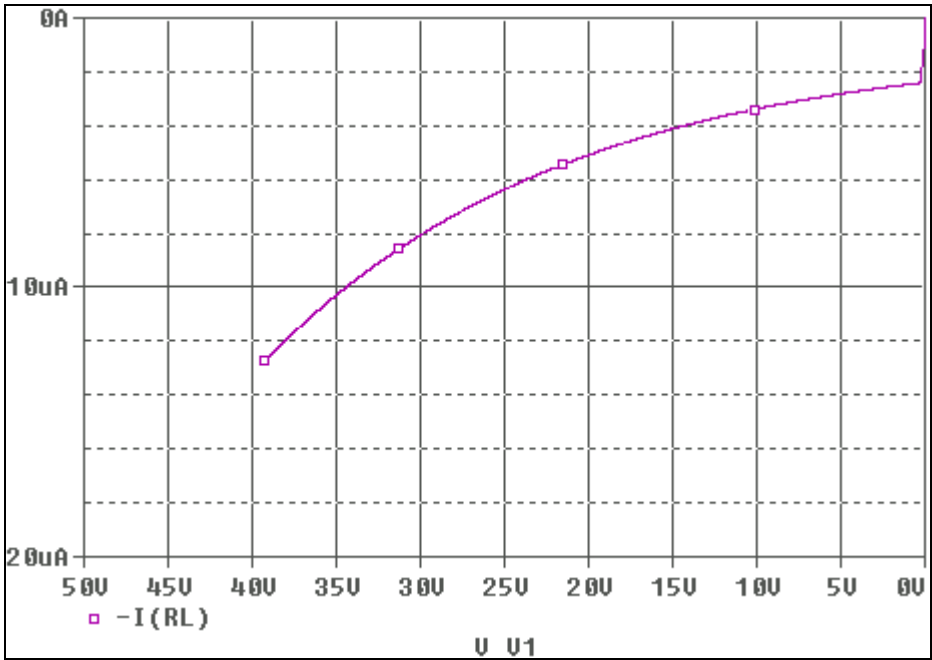


Simulation Result

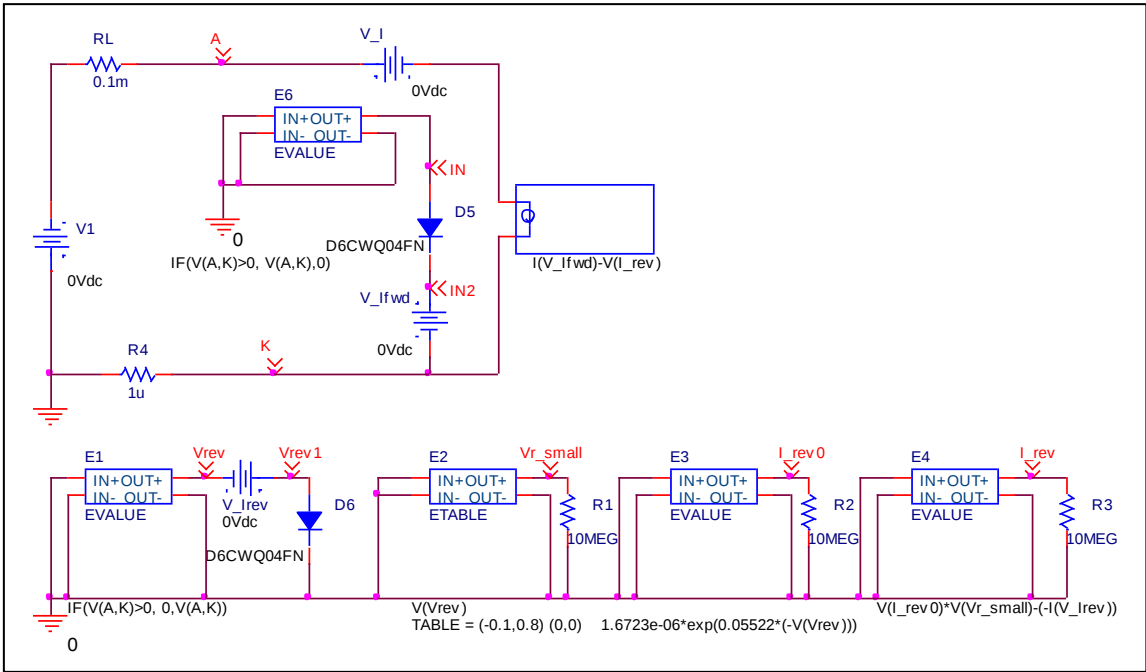
V_{rev} (V)	C_j (pF) Measurement	C_j (pF) Simulation	%Error
0	590.504	559.000	-5.64
0.1	558.622	551.580	-1.28
0.2	517.184	513.787	-0.66
0.5	437.415	432.658	-1.10
1	347.439	351.551	1.17
2	263.895	270.459	2.43
5	173.372	176.944	2.02
10	127.502	124.396	-2.50
20	88.897	85.874	-3.52

Reverse Characteristic

Circuit Simulation Result

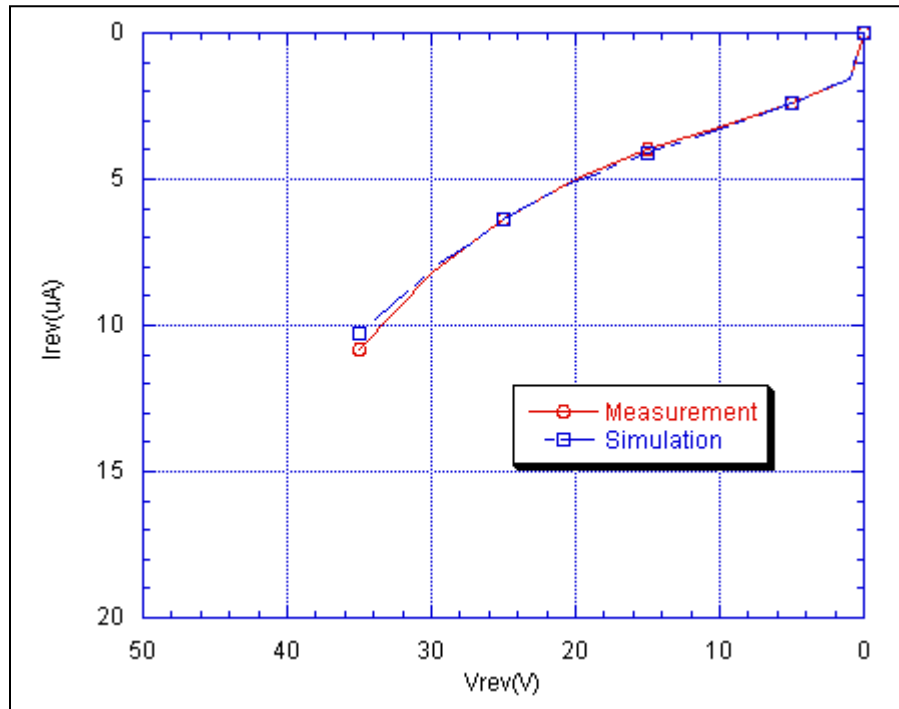


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

$V_{rev}(V)$	$I_{rev}(\mu A)$ Measurement	$I_{rev}(\mu A)$ Simulation	%Error
10	3.200	3.300	3.03
15	4.000	4.110	2.68
20	5.000	5.080	1.57
25	6.400	6.360	-0.63
30	8.200	8.060	-1.74
35	10.800	10.300	-4.85

Reverse Characteristic

Reference

