

Device Modeling Report

COMPONENTS:

DIODE/ SCHOTTKY RECTIFIER/PROFESSIONAL

PART NUMBER: PBYR10100

MANUFACTURER: PHILIPS

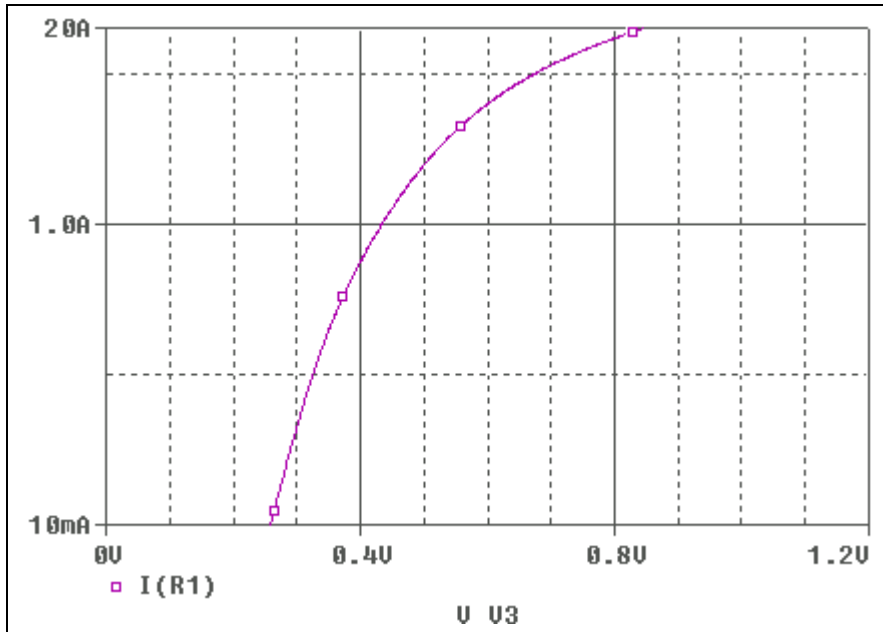


Bee Technologies Inc.

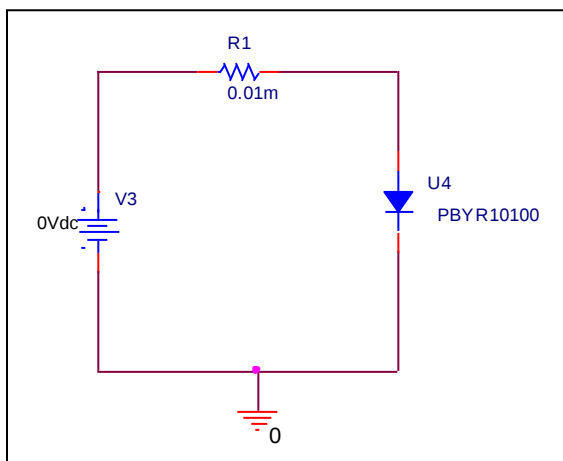
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

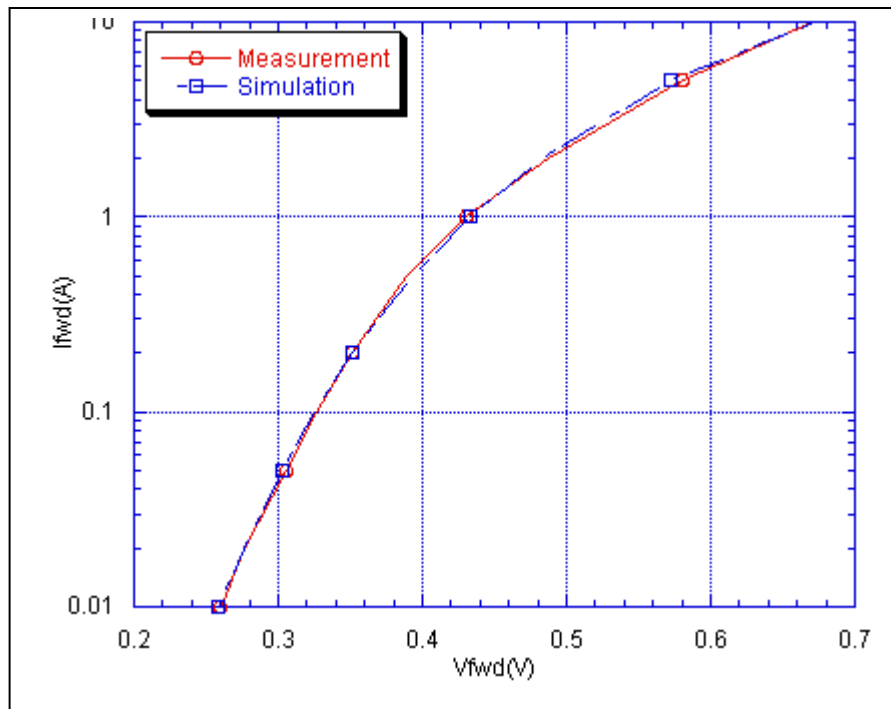


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

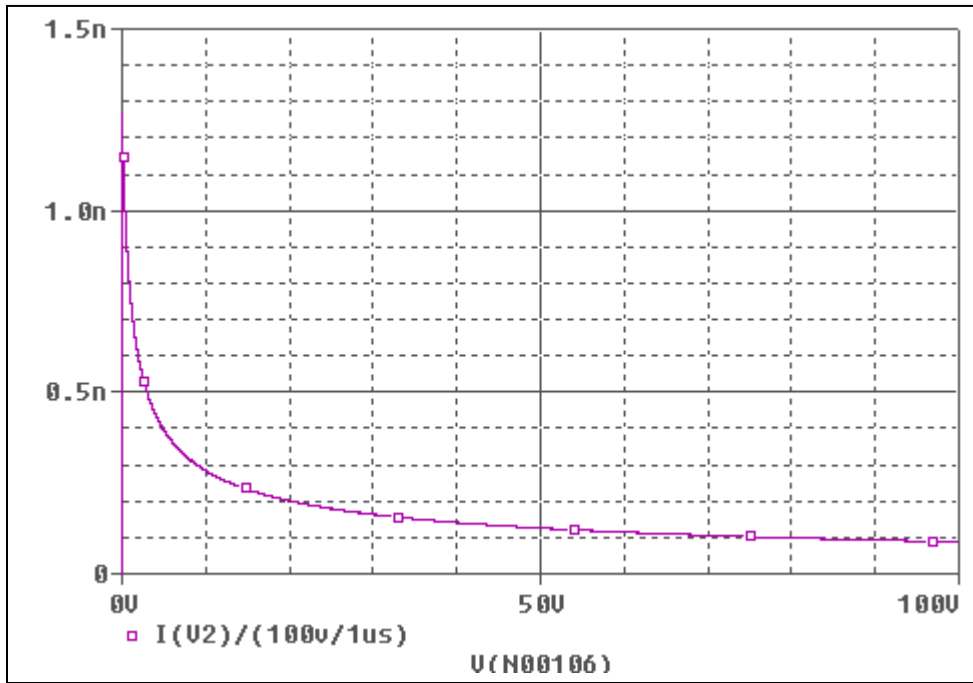


Simulation Result

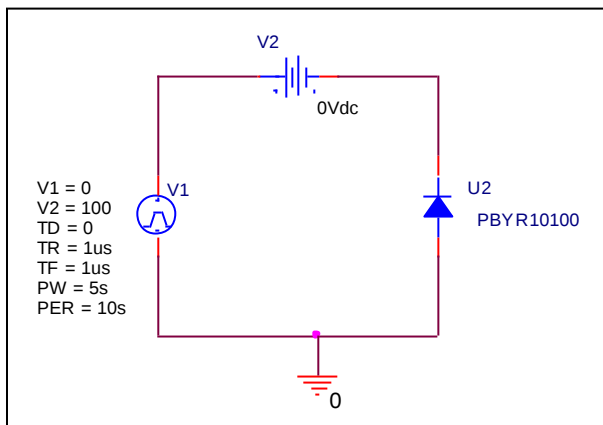
$I_{fwd}(A)$	$V_{fwd}(V)$ Measurement	$V_{fwd}(V)$ Simulation	%Error
0.01	0.260	0.259	-0.39
0.02	0.276	0.277	0.36
0.05	0.305	0.303	-0.66
0.1	0.326	0.325	-0.31
0.2	0.351	0.350	-0.29
0.5	0.389	0.393	1.02
1	0.430	0.434	0.92
2	0.487	0.483	-0.83
5	0.580	0.572	-1.40
10	0.671	0.675	0.59

Junction Capacitance Characteristic

Circuit Simulation Result

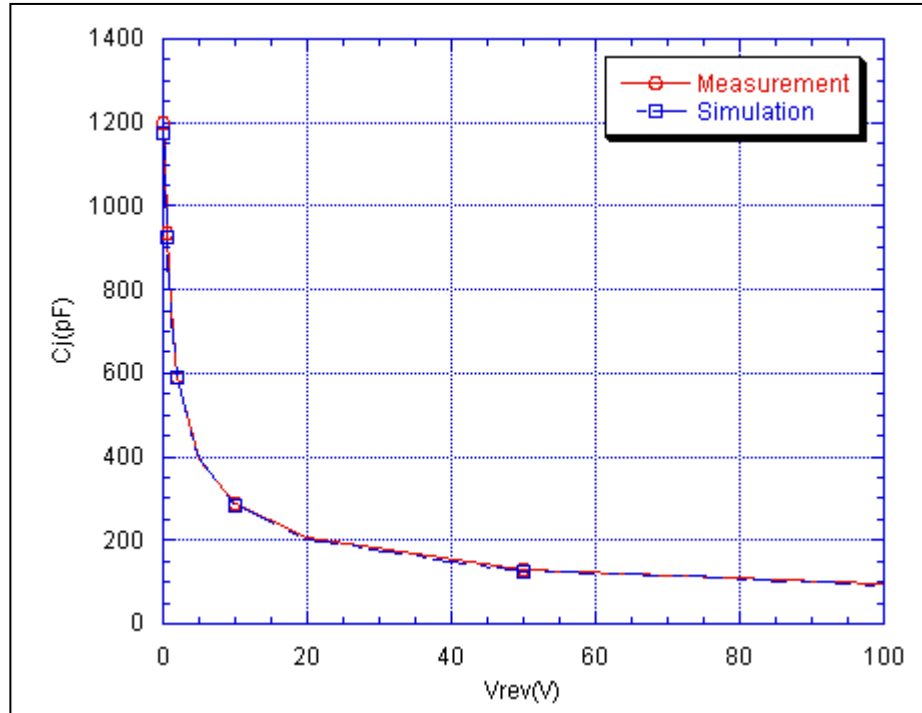


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

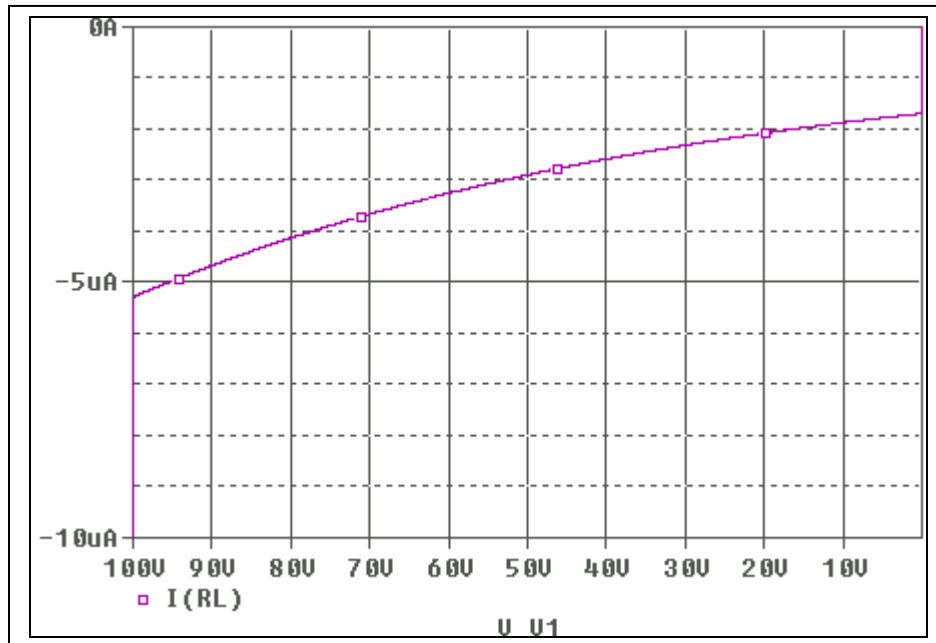


Simulation Result

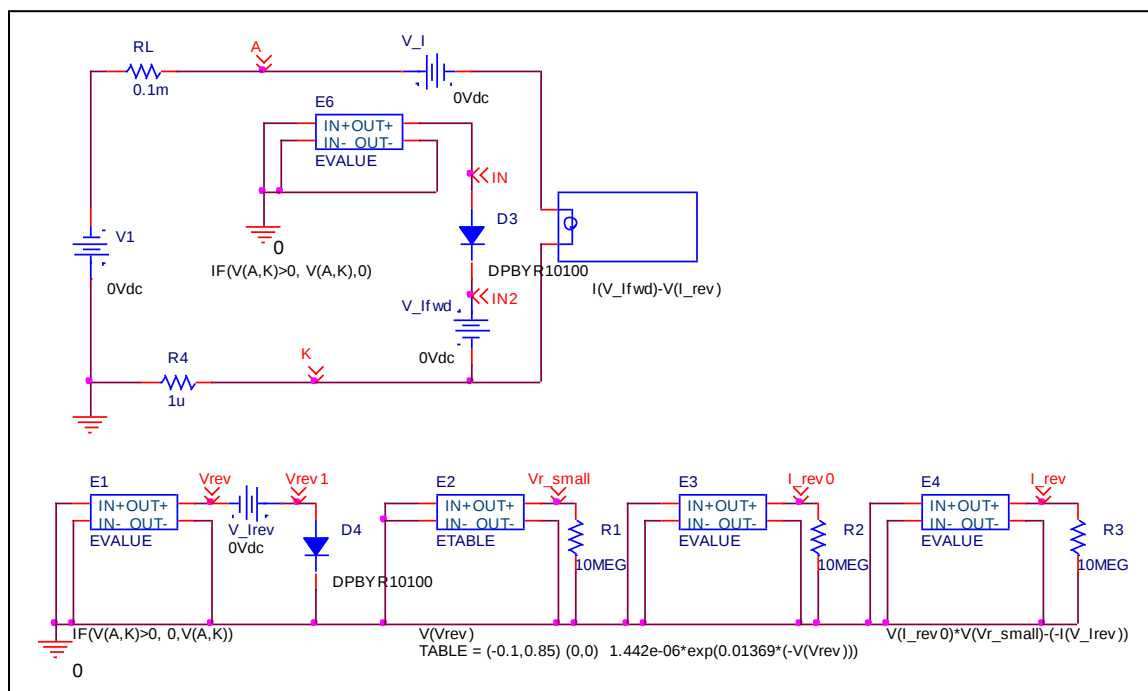
V_{rev} (V)	C_j (pF) Measurement	C_j (pF) Simulation	%Error
0	1270.000	1266.000	-0.32
0.1	1200.000	1178.000	-1.87
0.2	1120.000	1097.000	-2.10
0.5	936.747	927.914	-0.95
1	761.257	761.938	0.09
2	588.068	590.282	0.38
5	394.626	395.519	0.23
10	286.343	283.601	-0.97
20	205.671	200.869	-2.39
50	131.716	125.732	-4.76
100	90.743	88.112	-2.99

Reverse Characteristic

Circuit Simulation Result

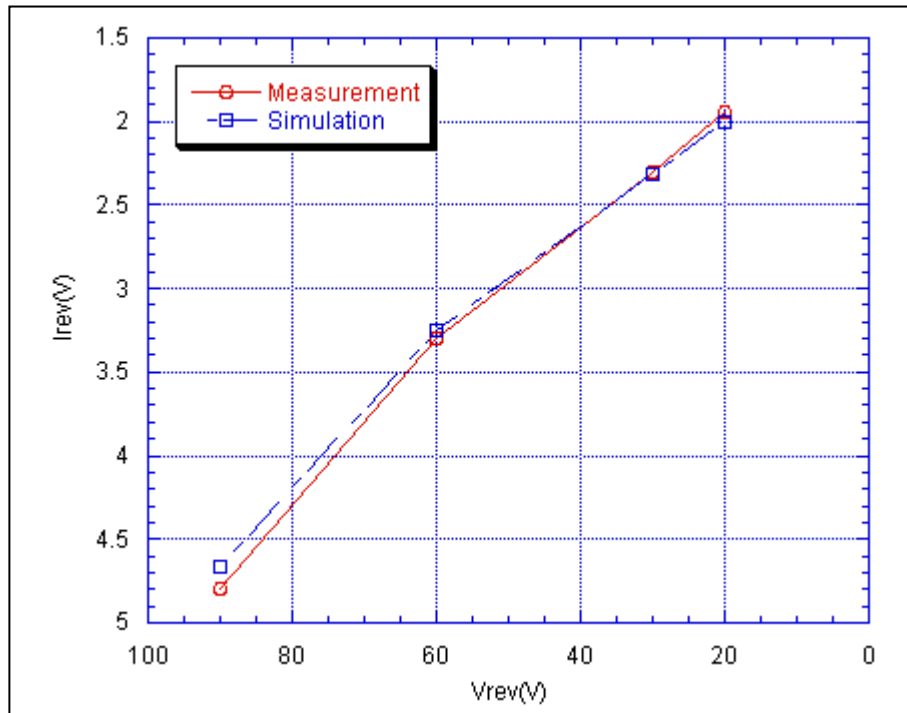


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

$V_{rev}(V)$	$I_{rev}(\mu A)$ Measurement	$I_{rev}(\mu A)$ Simulation	%Error
90	4.800	4.660	-3.00
60	3.300	3.250	-1.54
30	2.300	2.310	0.43
20	1.950	2.000	2.50

Reverse Characteristic

Reference

