

Device Modeling Report

COMPONENTS:

DIODE/ SCHOTTKY RECTIFIER/PROFESSIONAL

PART NUMBER: RB160L-40

MANUFACTURER: ROHM

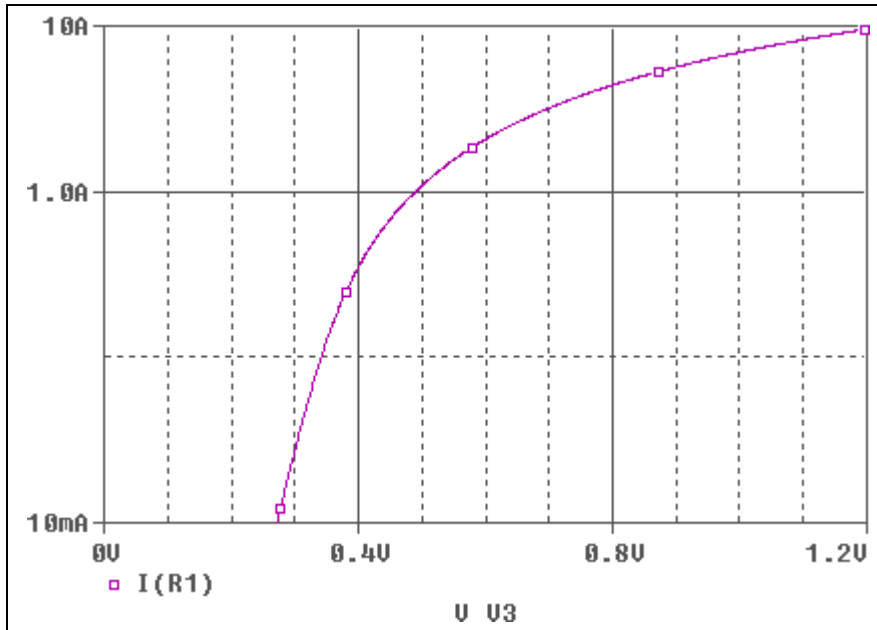


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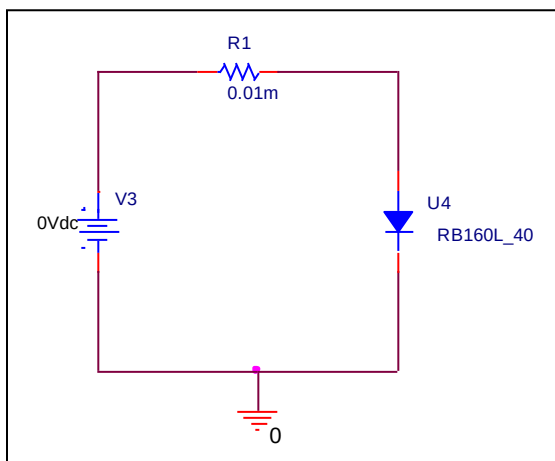
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

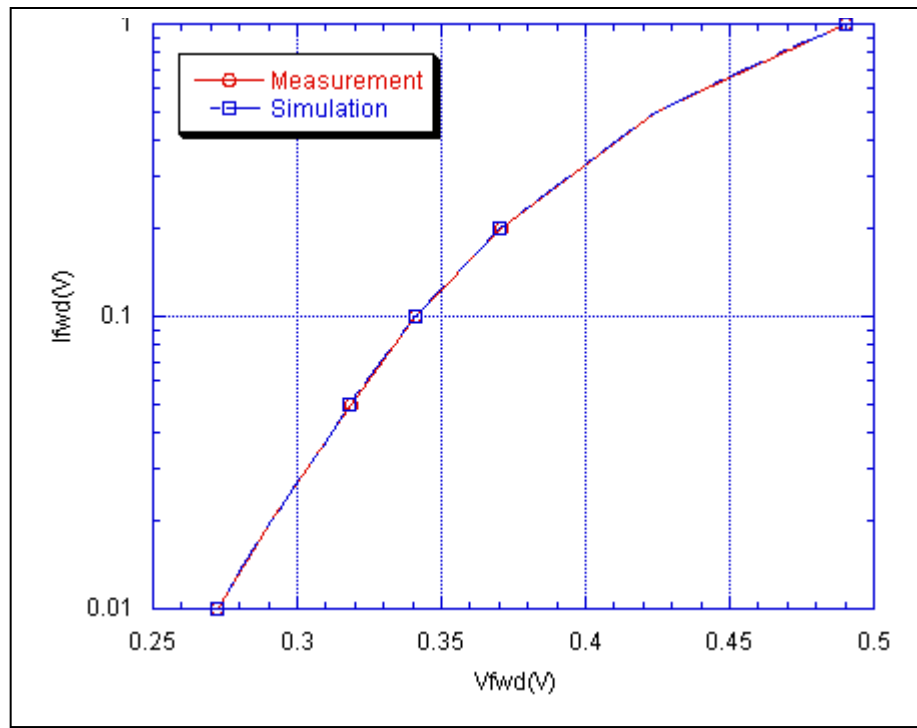


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

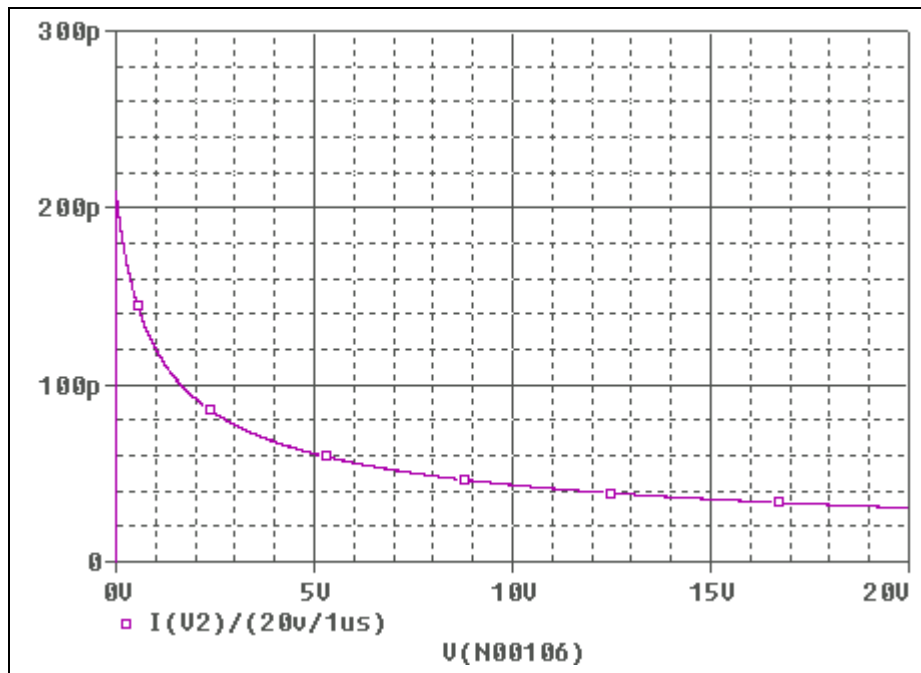


Simulation Result

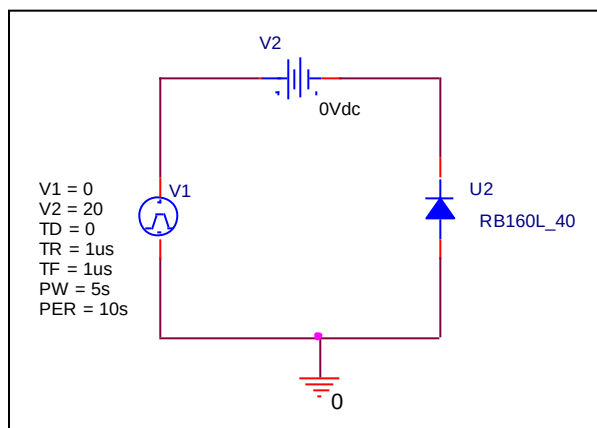
$I_{fwd}(A)$	$V_{fwd}(V)$ Measurement	$V_{fwd}(V)$ Simulation	%Error
0.01	0.272	0.271	-0.37
0.02	0.291	0.290	-0.34
0.05	0.319	0.318	-0.31
0.1	0.341	0.341	0.00
0.2	0.371	0.370	-0.27
0.5	0.424	0.423	-0.24
1	0.490	0.488	-0.41

Junction Capacitance Characteristic

Circuit Simulation Result

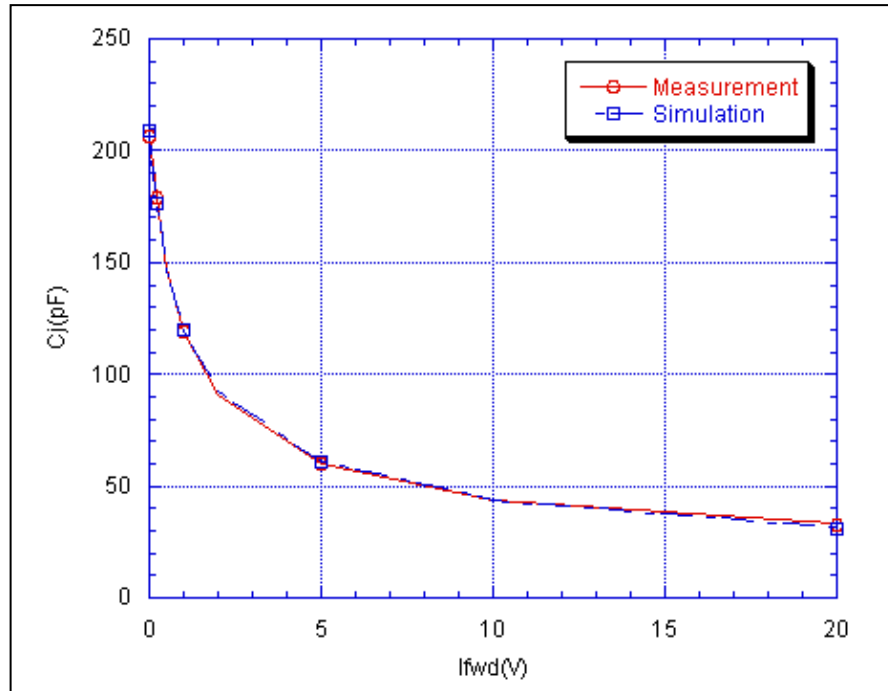


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

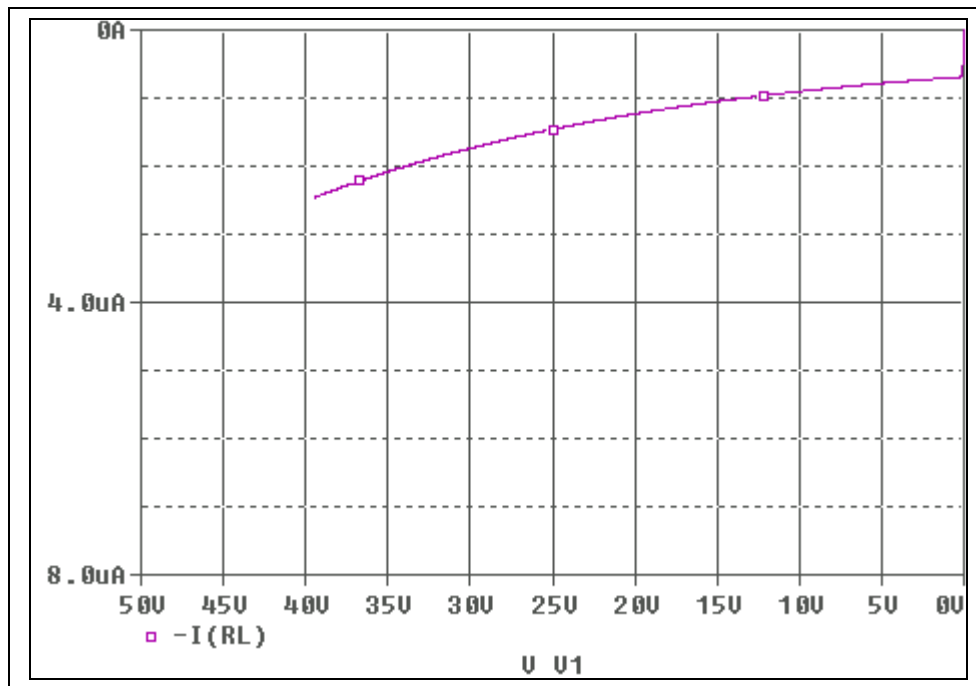


Simulation Result

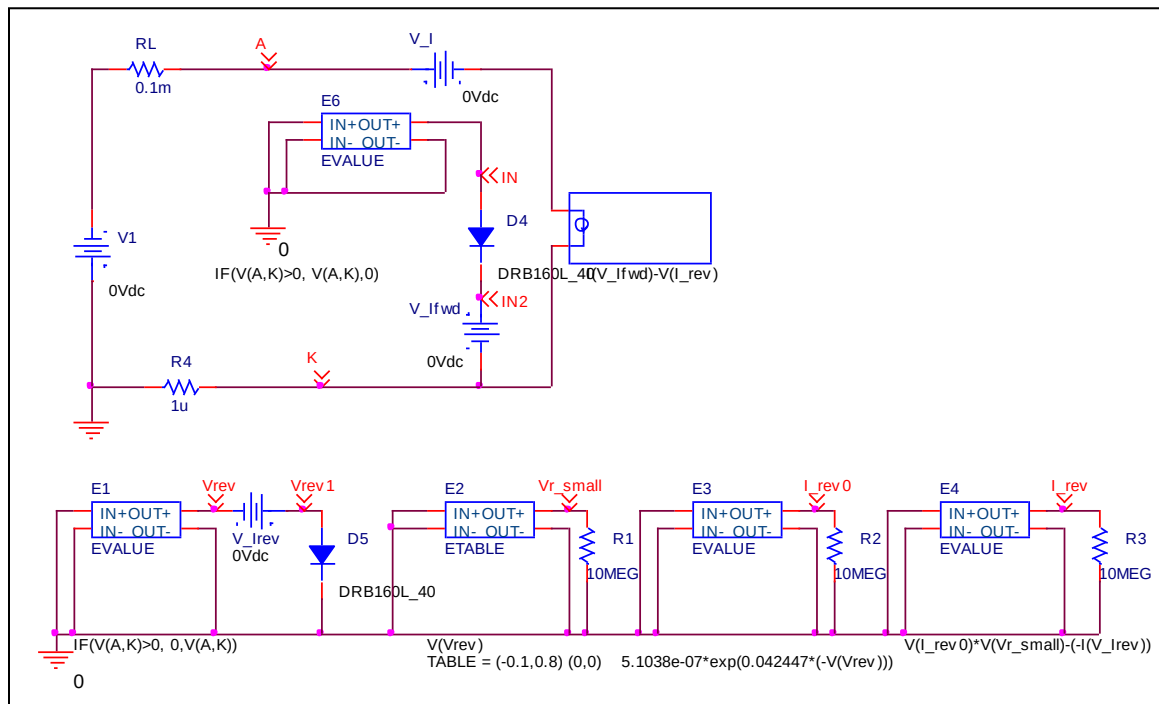
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	206.217	208.965	1.32
0.1	193.335	191.146	-1.15
0.2	179.354	176.891	-1.39
0.5	147.404	147.833	0.29
1	118.827	119.645	0.68
2	90.955	92.306	1.46
5	60.264	60.949	1.12
10	43.844	43.496	-0.80
20	31.48	30.68	-2.61

Reverse Characteristic

Circuit Simulation Result

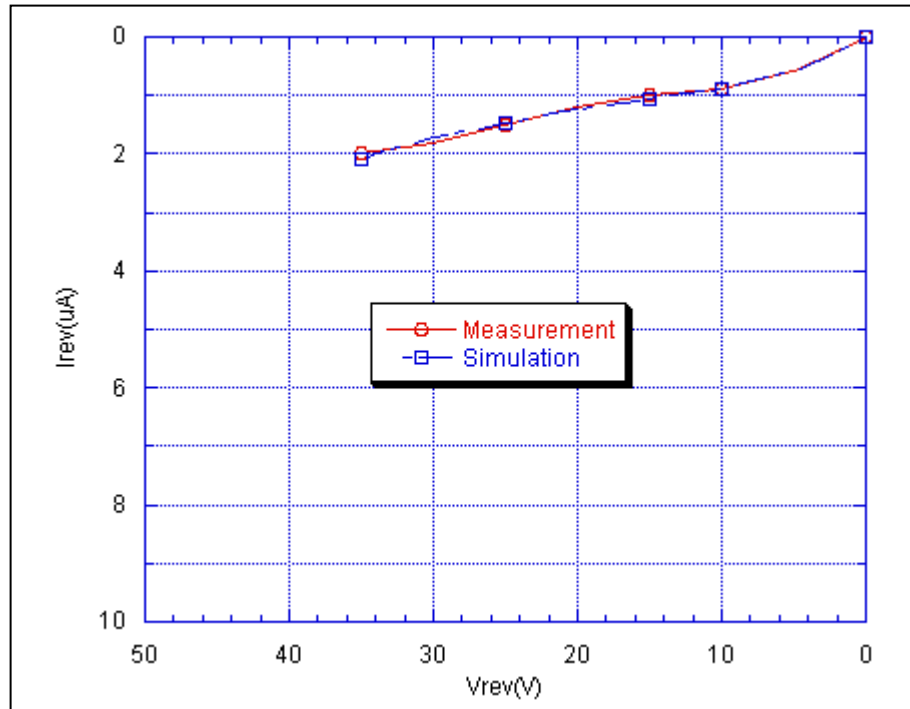


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

$V_{rev}(V)$	$I_{rev}(\mu A)$ Measurement	$I_{rev}(\mu A)$ Simulation	%Error
10	0.900	0.899	-0.11
15	1.000	1.050	4.76
20	1.200	1.230	2.44
25	1.500	1.460	-2.74
30	1.800	1.730	-4.05
35	2.000	2.080	3.85

Reverse Characteristic

Reference

