

Device Modeling Report

COMPONENTS:

DIODE/ GENERAL PURPOSE RECTIFIER/ STANDARD

PART NUMBER: 1N5822

MANUFACTURER: ON Semiconductor

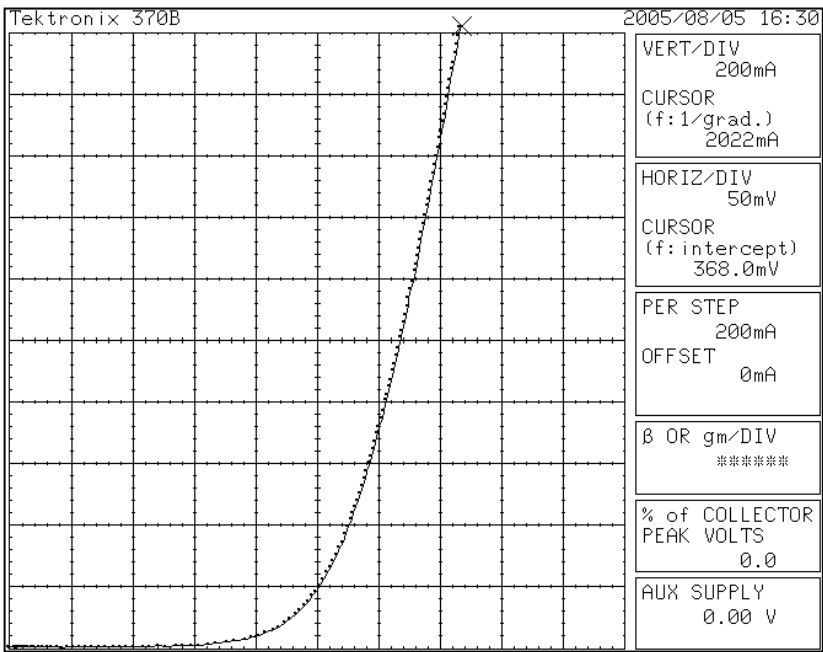


Bee Technologies Inc.

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

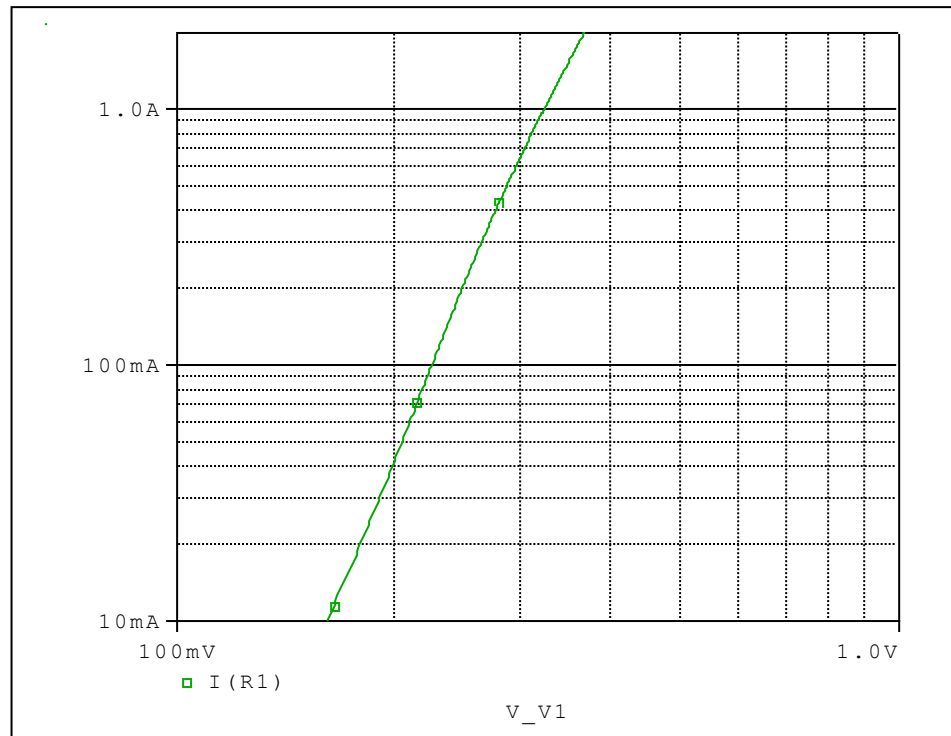
Forward Current Characteristic

Reference

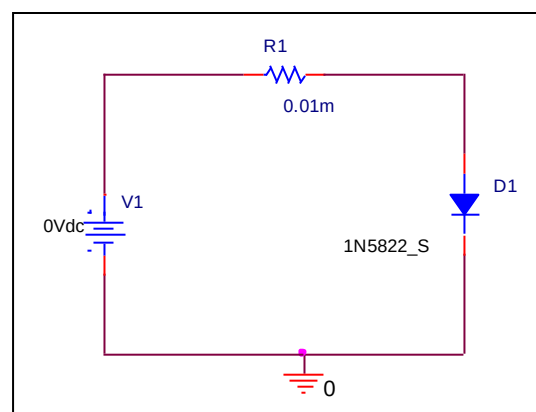


Forward Current Characteristic

Circuit Simulation Result

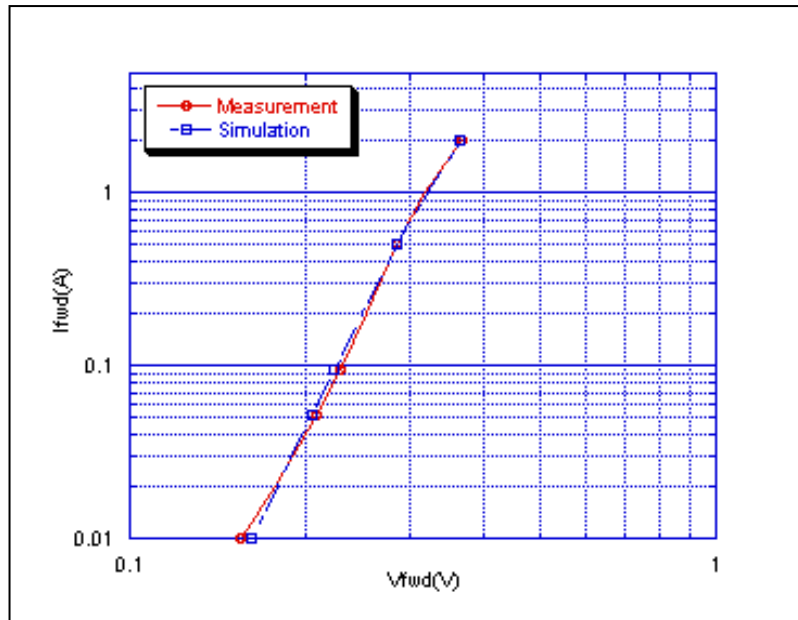


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

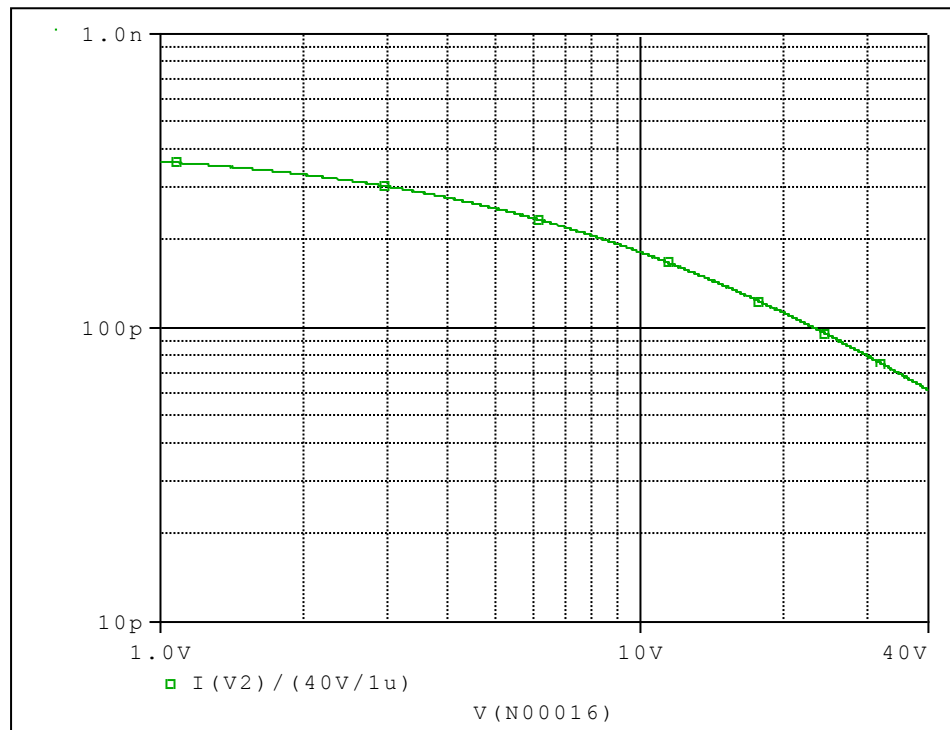


Simulation Result

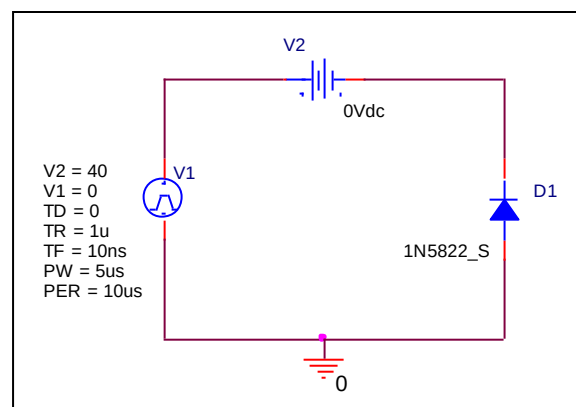
I_{fwd} (A)	V_{fwd} (V) Measurement	V_{fwd} (V) Simulation	%Error
0.01	0.15	0.16	4.21
0.02	0.18	0.18	1.13
0.052	0.21	0.21	-1.68
0.096	0.23	0.22	-2.41
0.2	0.25	0.25	-1.78
0.5	0.29	0.29	-0.18
1	0.32	0.32	1.10
2	0.37	0.37	-0.41

Capacitance Characteristic

Circuit Simulation Result

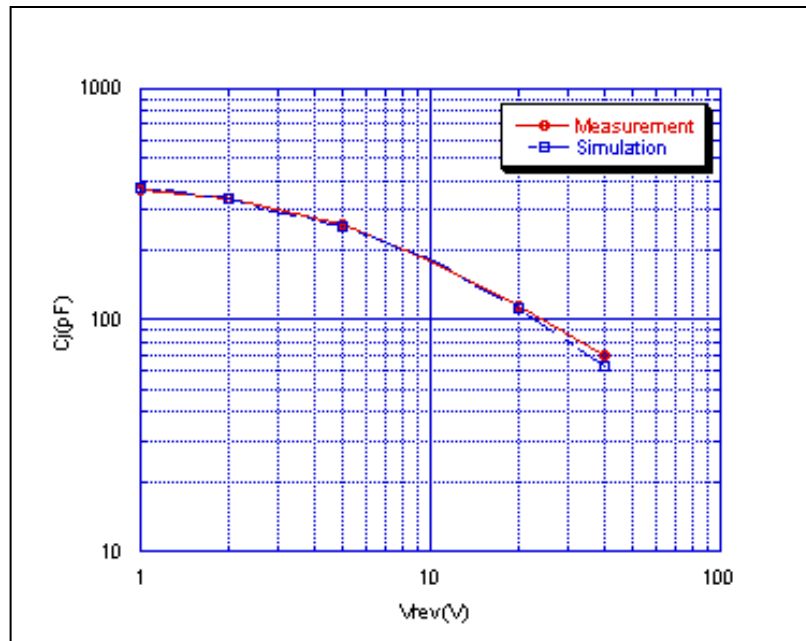


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

$V_{rev}(V)$	$C_j(pF)$ Measurement	$C_j(pF)$ Simulation	%Error
1	365.70	368.70	0.82
2	330.63	332.10	0.44
5	260.92	255.20	-2.19
10	180.84	181.50	0.36
20	115.41	112.20	-2.78