

Device Modeling Report

COMPONENTS:

DIODE/ SCHOTTKY RECTIFIER / STANDARD

PART NUMBER: 1SS374

MANUFACTURER: TOSHIBA

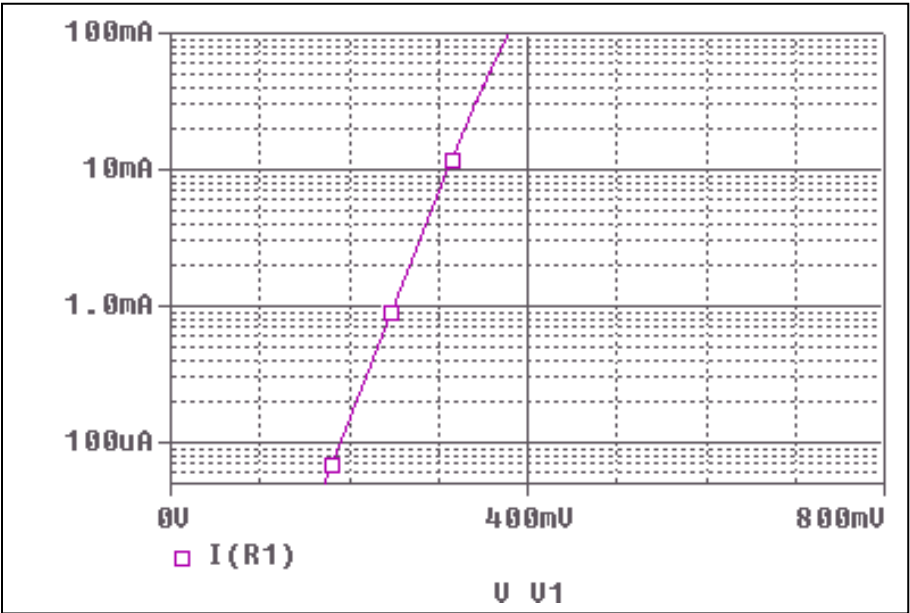


Bee Technologies Inc.

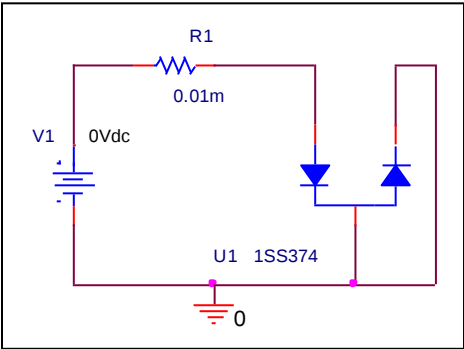
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

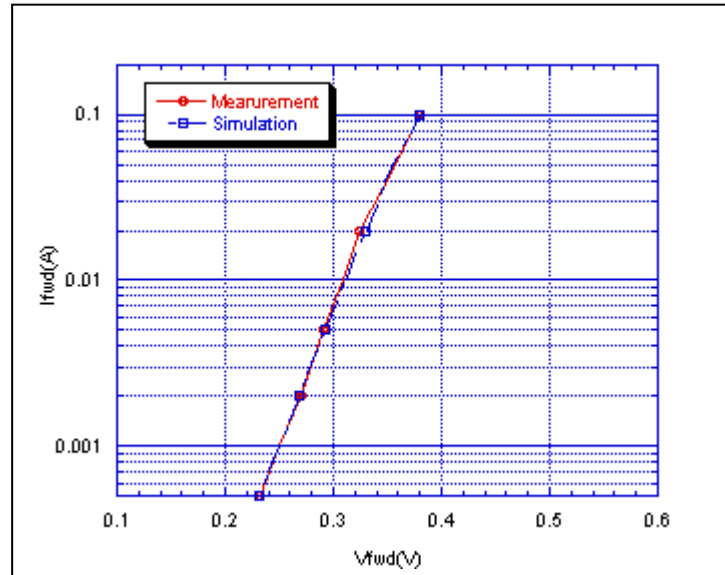


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

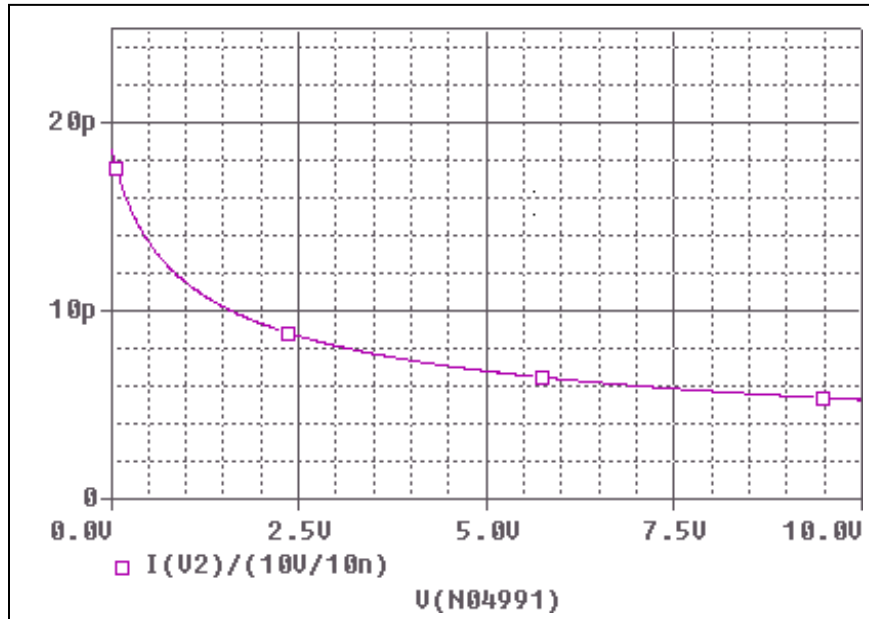


Simulation Result

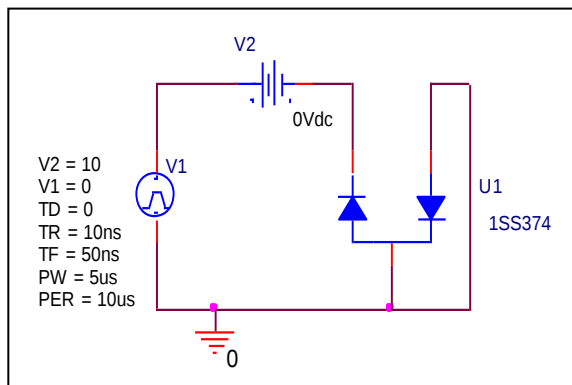
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.00005	0.172	0.172	0.23
0.0001	0.190	0.190	0.21
0.0002	0.210	0.208	-0.95
0.0005	0.232	0.232	-0.13
0.001	0.249	0.250	0.40
0.002	0.270	0.268	-0.74
0.005	0.290	0.292	0.69
0.01	0.310	0.311	0.16
0.02	0.325	0.329	1.35
0.05	0.357	0.356	-0.22
0.1	0.380	0.379	-0.18

Junction Capacitance Characteristic

Circuit Simulation Result

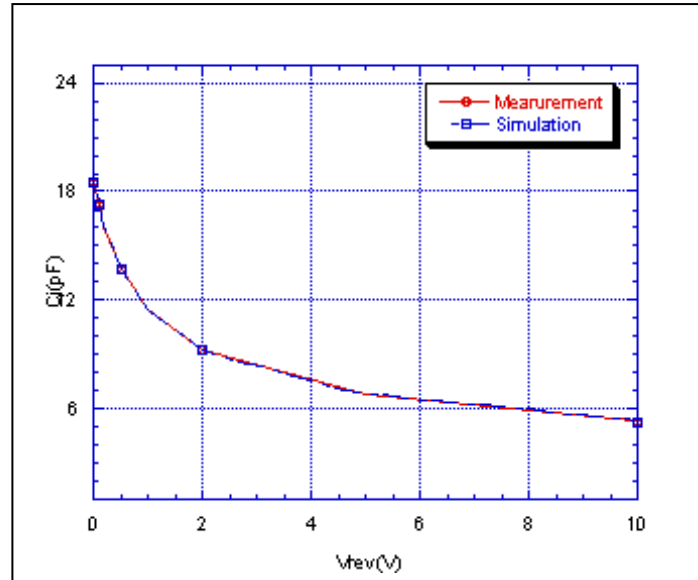


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_{rev} (V)	C_j (pF) Measurement	C_j (pF) Simulation	%Error
0.02	18.500	18.560	0.32
0.05	18.100	18.000	-0.55
0.1	17.310	17.300	-0.06
0.2	16.000	16.100	0.63
0.5	13.720	13.700	-0.15
1	11.510	11.500	-0.09
2	9.310	9.300	-0.11
5	6.820	6.800	-0.29
10	5.300	5.200	-1.89