

Device Modeling Report

COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER
PART NUMBER: 1SS404
MANUFACTURER: TOSHIBA

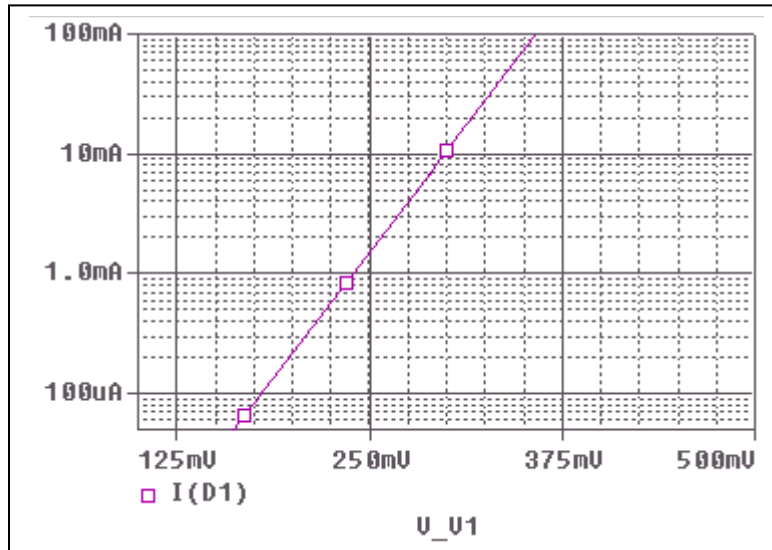


Bee Technologies Inc.

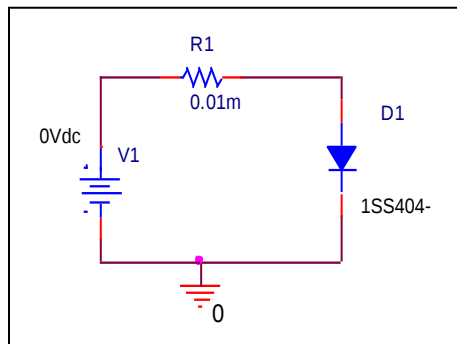
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

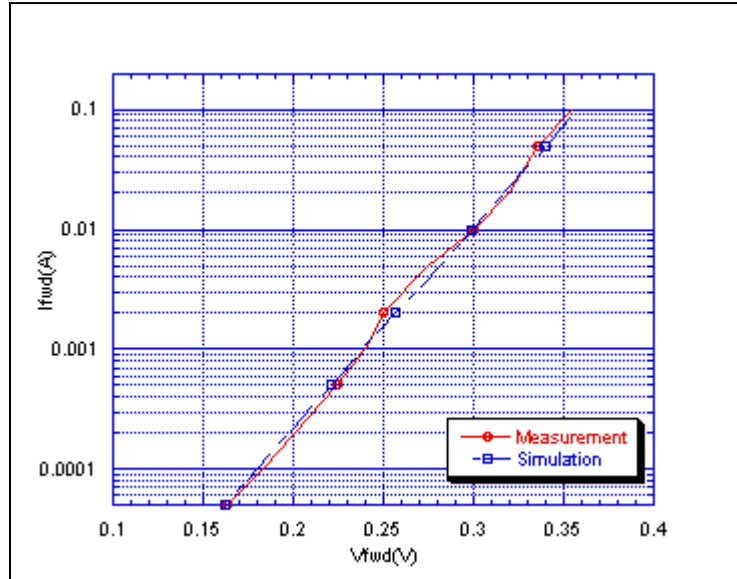


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

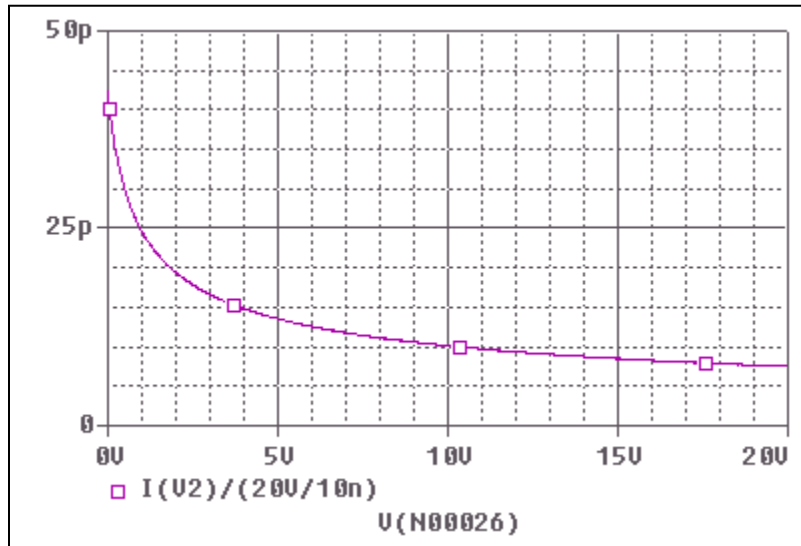


Simulation Result

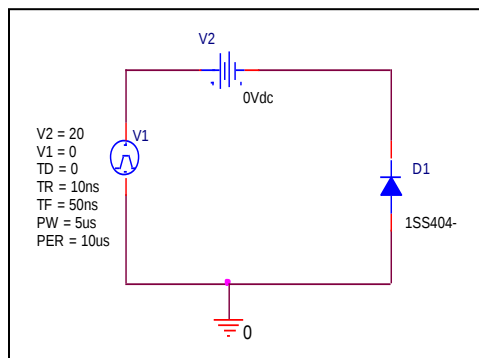
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
5.00E-05	0.163	0.1618	0.7361
0.0001	0.183	0.1797	1.8032
0.0005	0.225	0.2213	1.6444
0.001	0.24	0.2394	0.25
0.002	0.25	0.2571	2.84
0.005	0.274	0.2808	2.4817
0.01	0.3	0.2988	0.4
0.02	0.32	0.317	0.9375
0.05	0.335	0.3404	1.6119
0.1	0.355	0.3583	0.9295

Junction Capacitance Characteristic

Circuit Simulation Result

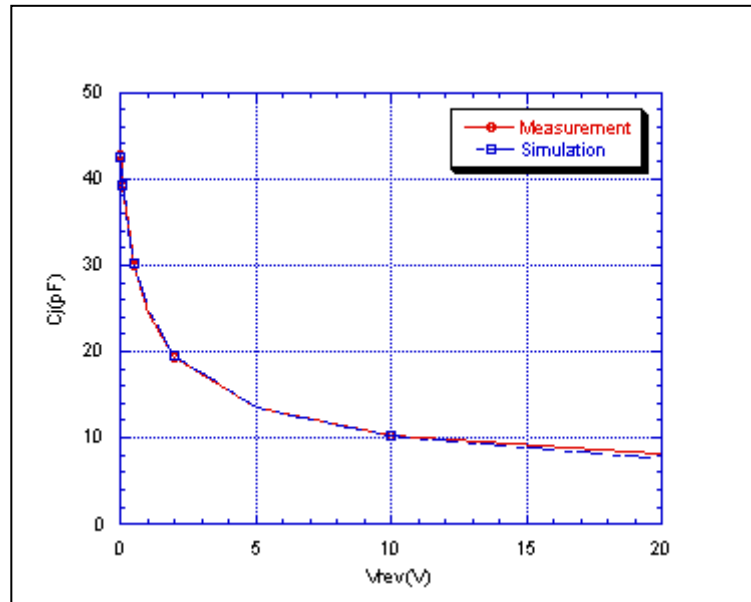


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

$V_{rev}(V)$	$C_j(pF)$ Measurement	$C_j(pF)$ Simulation	%Error
0.02	42.7	42.51	0.44496
0.05	41.2	41.18	0.04854
0.1	39.2	39.33	0.33163
0.2	36.4	36.17	0.63186
0.5	30	30.17	0.56666
1	24.5	24.72	0.89795
2	19.3	19.46	0.82901
5	13.5	13.51	0.07407
10	10.15	10.14	0.09852
20	8.0	7.5	6.25