

Device Modeling Report

COMPONENTS:

DIODE/ SCHOTTKY RECTIFIER / STANDARD

PART NUMBER: CRS09

MANUFACTURER: TOSHIBA

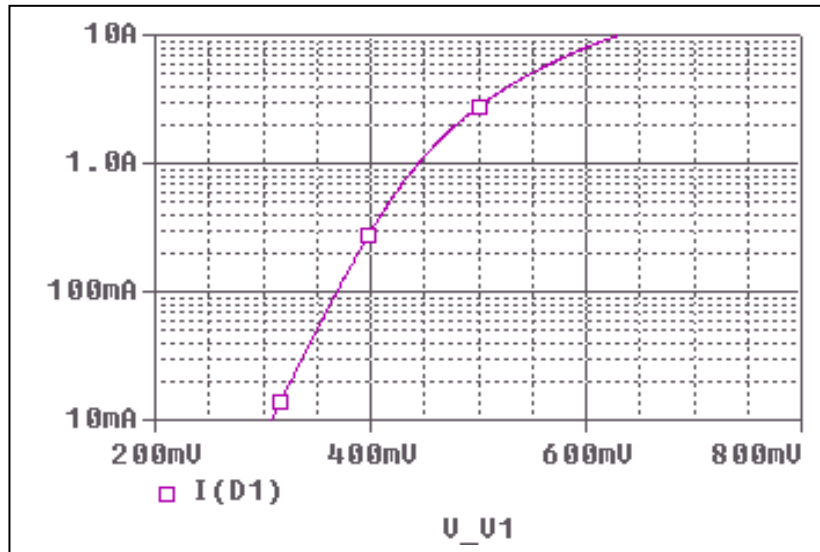


Bee Technologies Inc.

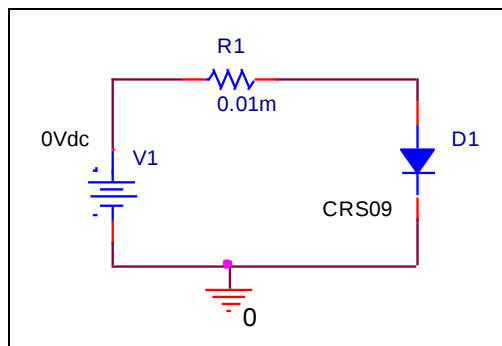
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

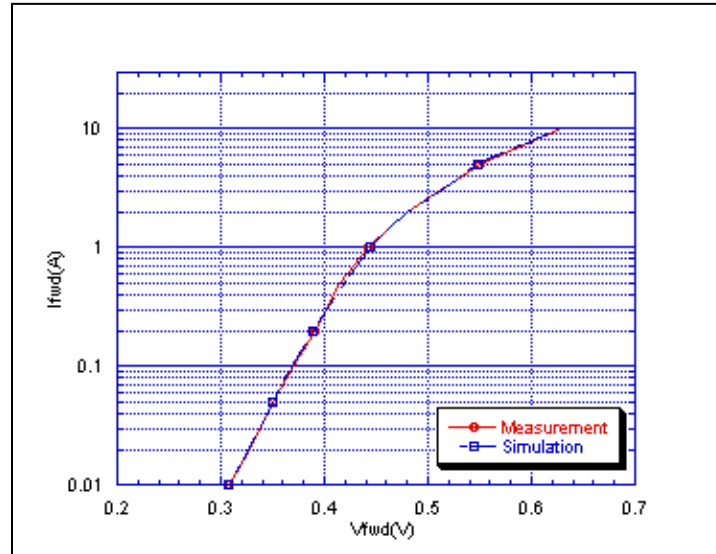


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

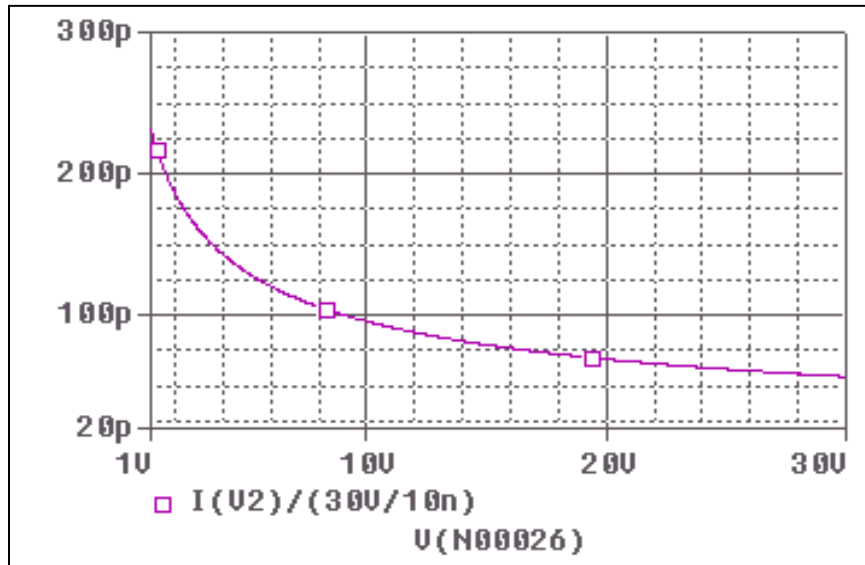


Simulation Result

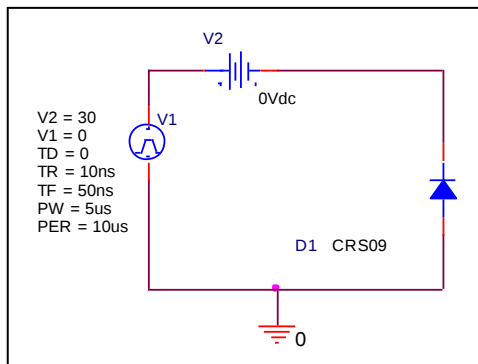
I_{fwd} (A)	V_{fwd} (V) Measurement	V_{fwd} (V) Simulation	%Error
0.01	0.307	0.308	0.16
0.02	0.327	0.326	-0.31
0.05	0.350	0.350	-0.03
0.1	0.370	0.369	-0.35
0.2	0.390	0.388	-0.41
0.5	0.415	0.418	0.70
1	0.442	0.444	0.52
2	0.480	0.479	-0.12
5	0.550	0.549	-0.24
10	0.630	0.631	0.08

Junction Capacitance Characteristic

Circuit Simulation Result

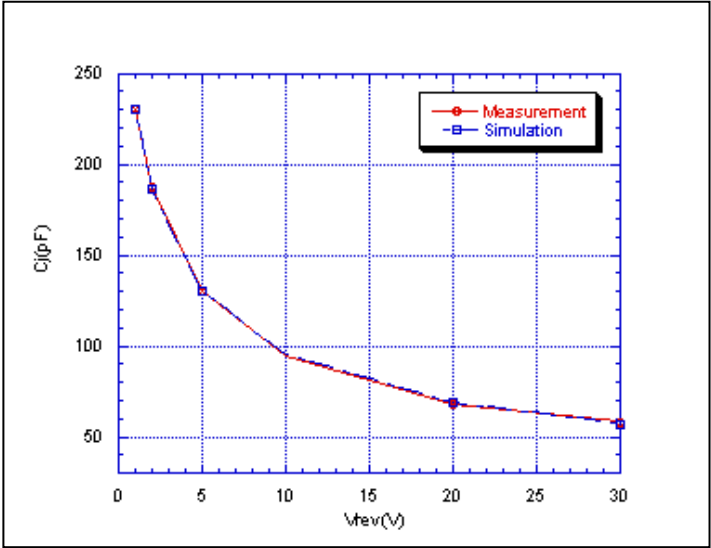


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
1	230.00	230.30	0.13
2	187.00	186.60	-0.21
5	130.00	130.20	0.15
10	95.00	95.60	0.63
20	68.00	68.90	1.32
30	58.00	56.60	-2.41