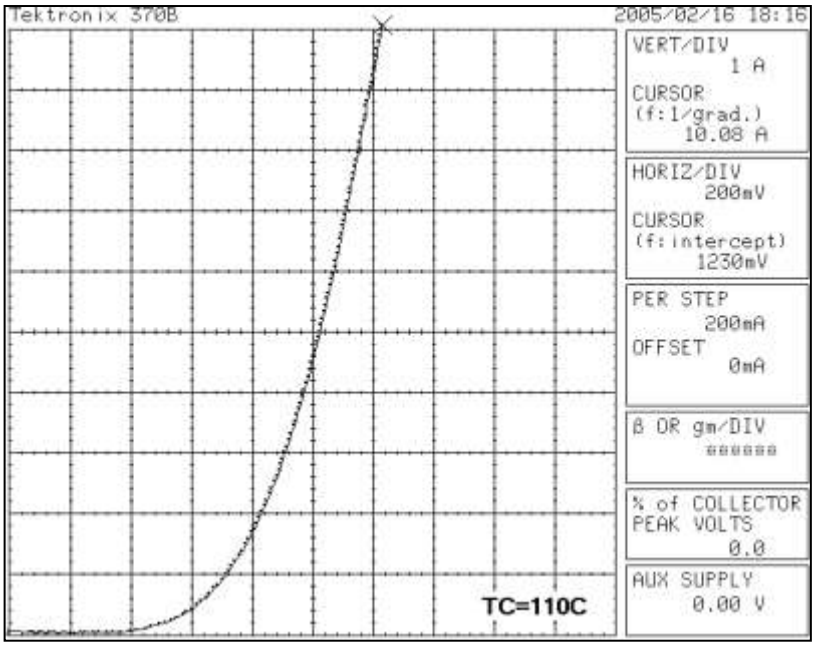
Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER / STANDARD
PART NUMBER: RHRG50120
MANUFACTURER: INTERSIL
REMARK:TC=110 C

Bee Technologies Inc.

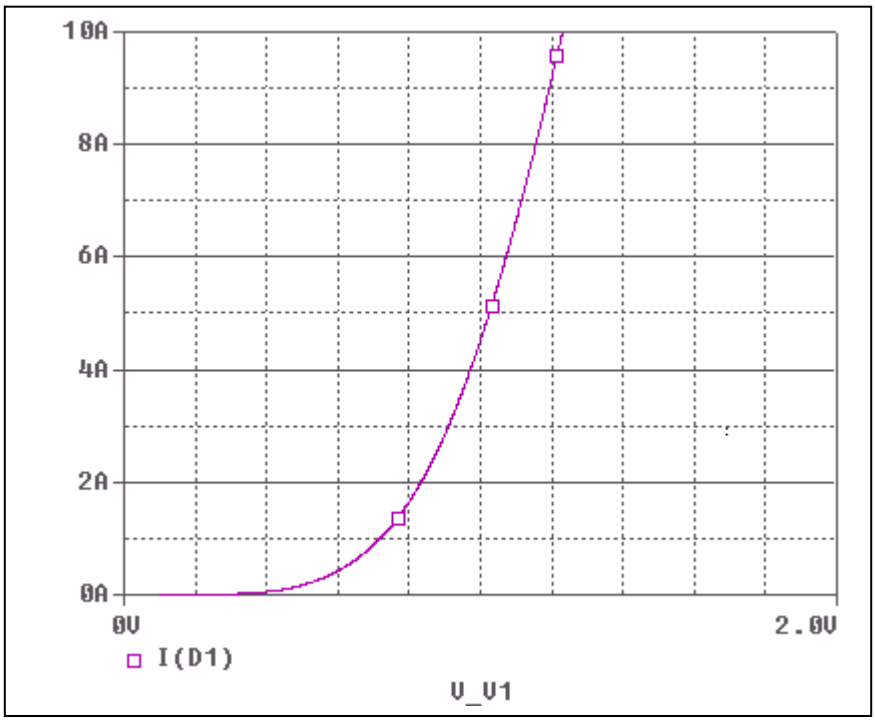
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic Reference

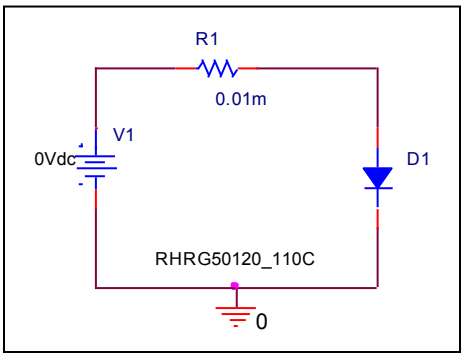


Forward Current Characteristic

Circuit Simulation Result

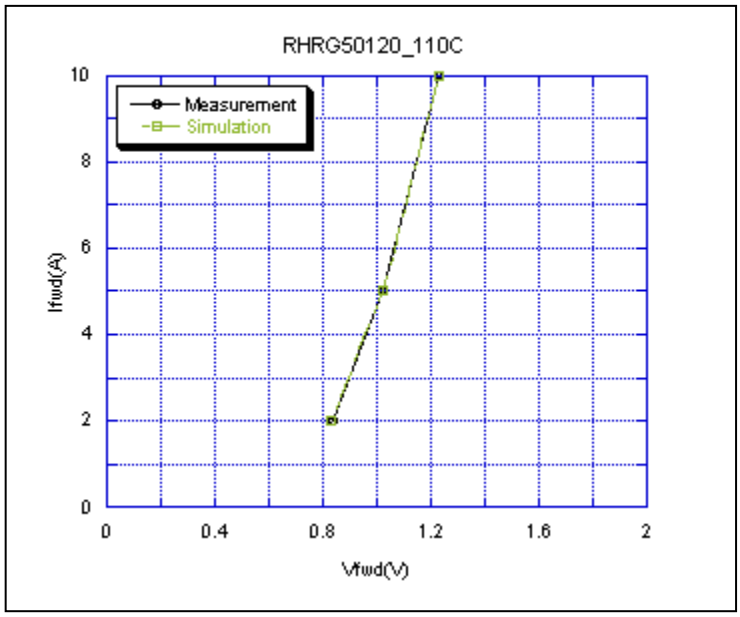


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

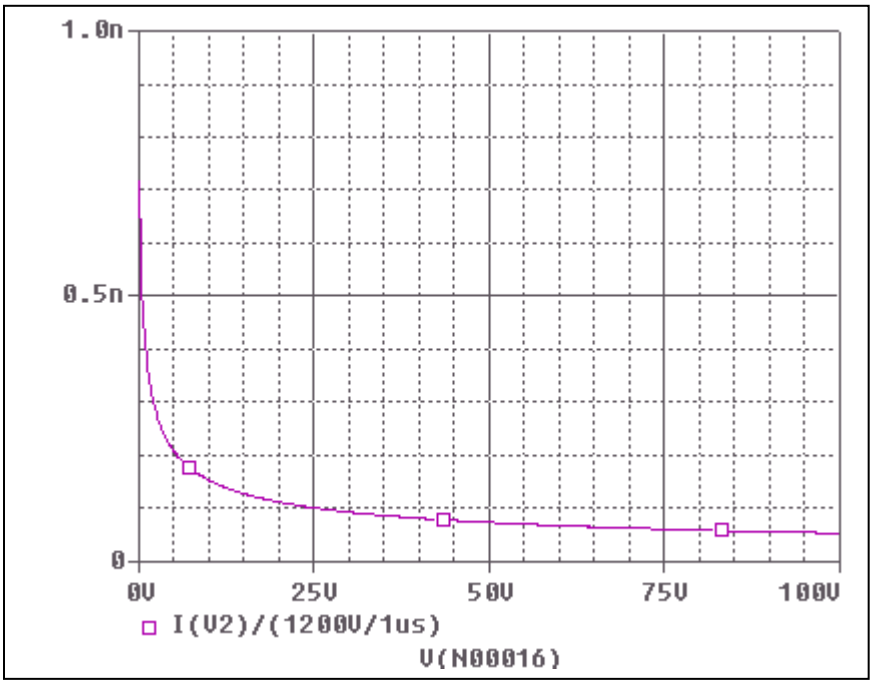


Simulation Result

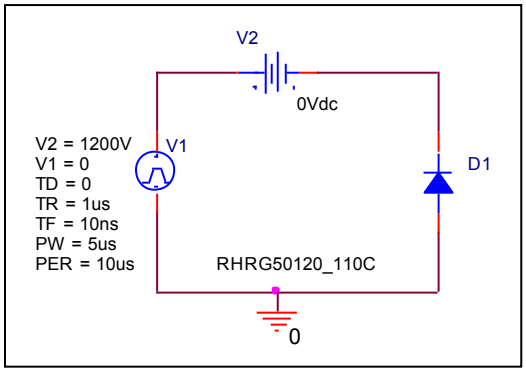
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
1	0.718	0.718	0.00
2	0.834	0.832	0.24
5	1.024	1.024	0.00
10	1.230	1.229	0.08

Capacitance Characteristic

Circuit Simulation Result

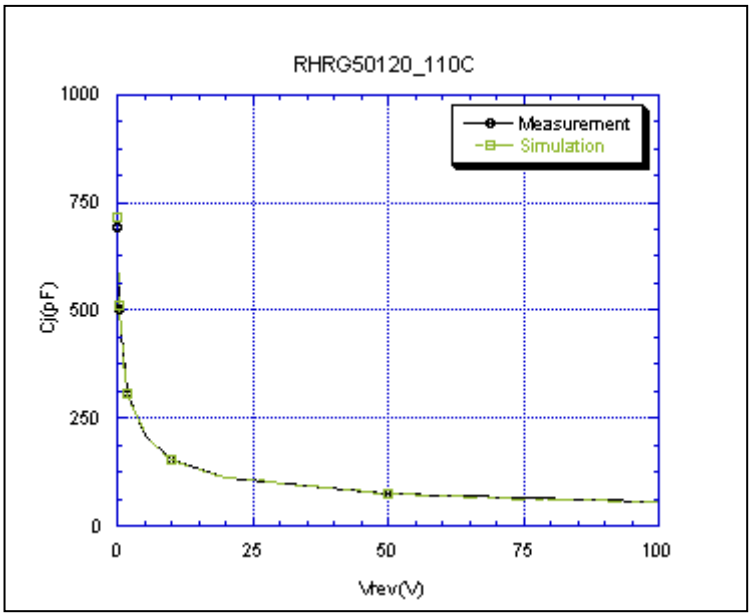


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

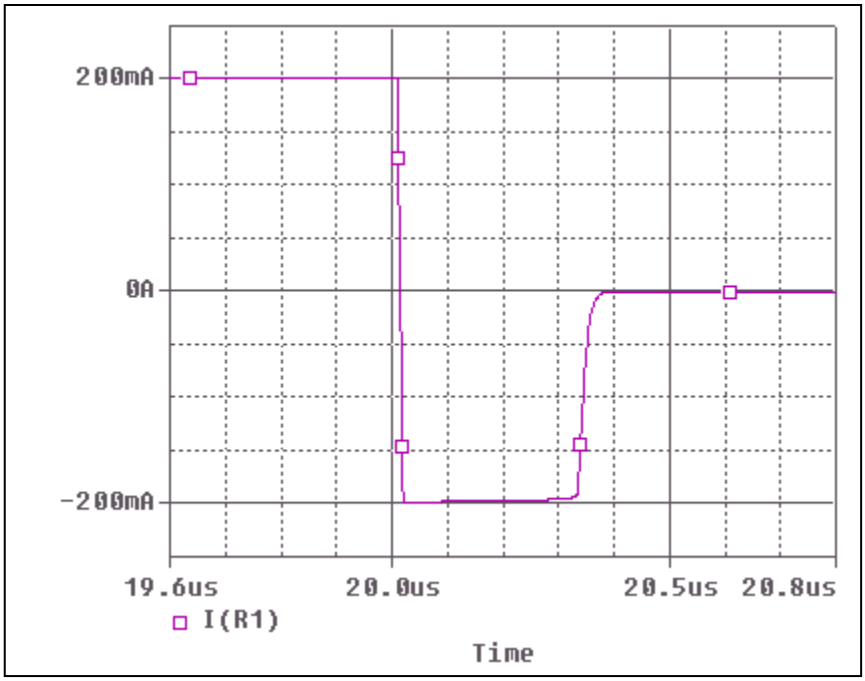


Simulation Result

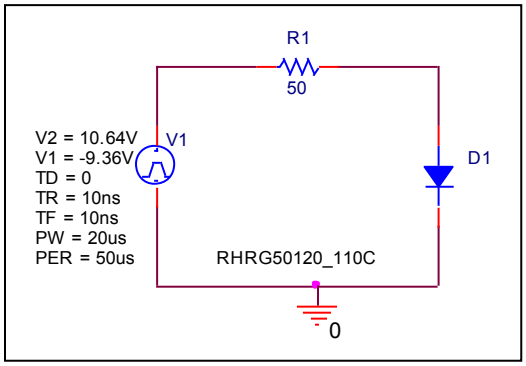
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	781.778	781.778	0.00
0.1	690.695	715.812	-3.64
0.2	613.016	634.910	-3.57
0.5	499.991	510.211	-2.04
1	399.767	403.830	-1.02
2	309.406	308.602	0.26
5	209.334	209.200	0.06
10	153.530	153.801	-0.18
20	111.860	112.603	-0.66
50	73.206	74.081	-1.19
100	53.061	53.820	-1.43

Reverse Recovery Characteristic

Circuit Simulation Result



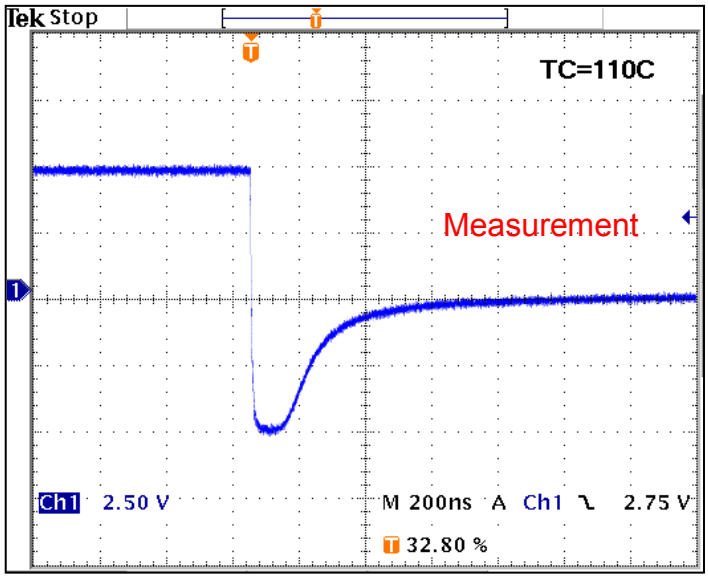
Evaluation Circuit



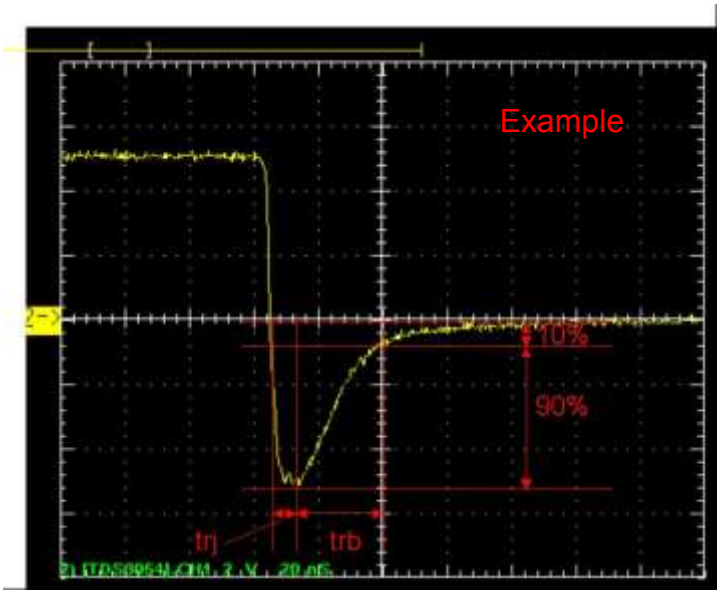
Compare Measurement vs. Simulation

trr	Measurement		Simulation		%Error
	344.00	ns	343.92	ns	0.022

Reverse Recovery Characteristic Reference



Trj =88(ns)
Trb=256(ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb