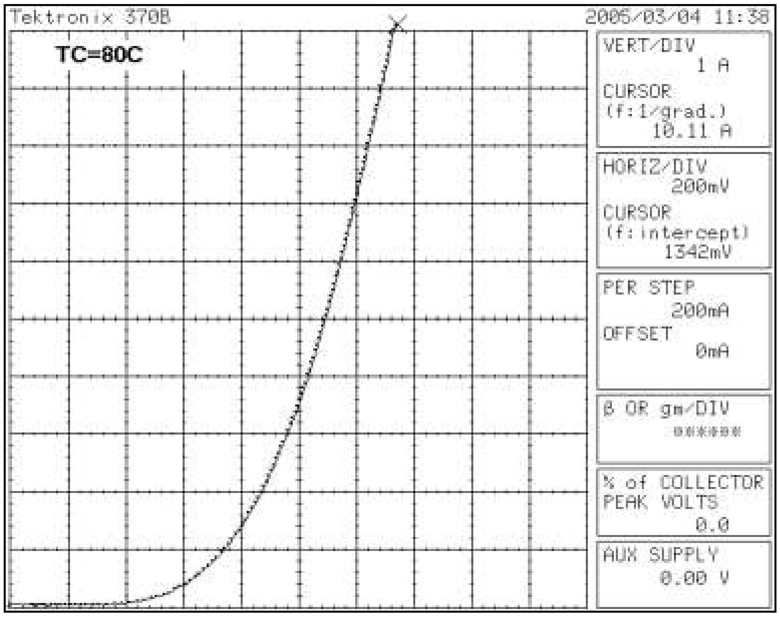
Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER / STANDARD
PART NUMBER: RHRG75120
MANUFACTURER: INTERSIL
REMARK: TC= 80C

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



VERT/DIV
1 A
CURSOR
(f:1/grad.)
10.11 A

HORIZ/DIV
200mV
CURSOR
(f:intercept)
1342mV

PER STEP
200mA
OFFSET
0mA

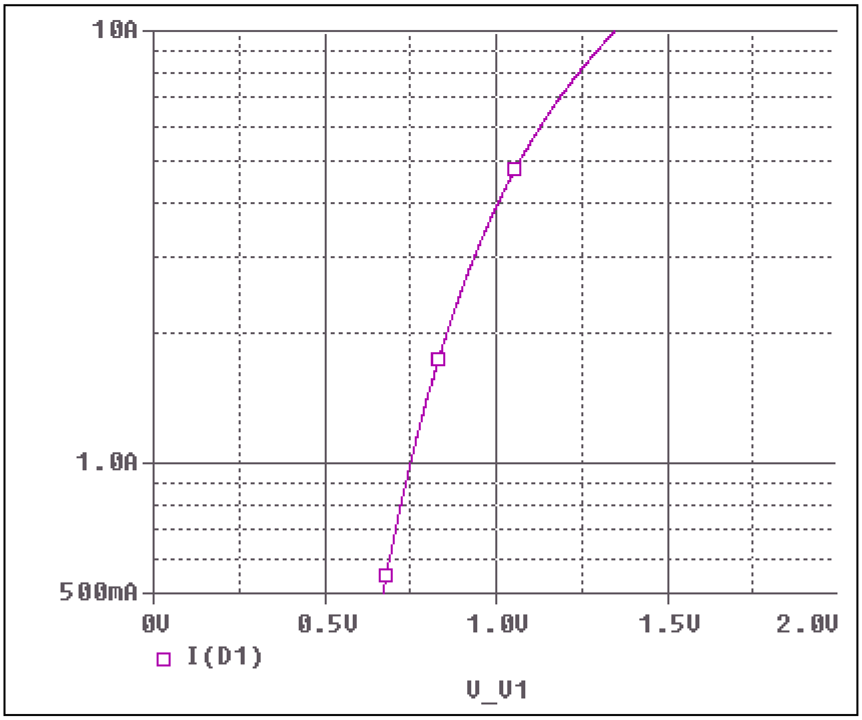
β OR gm/DIV
******

% of COLLECTOR
PEAK VOLTS
0.0

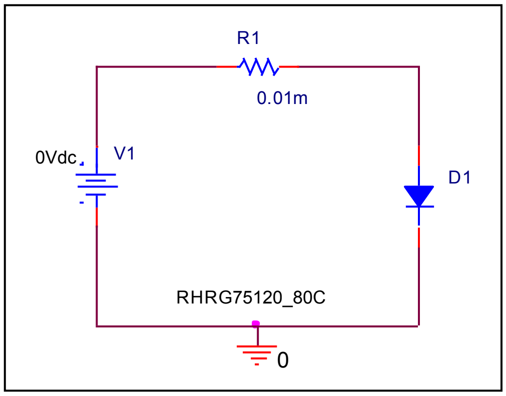
AUX SUPPLY
0.00 V

Forward Current Characteristic

Circuit Simulation Result

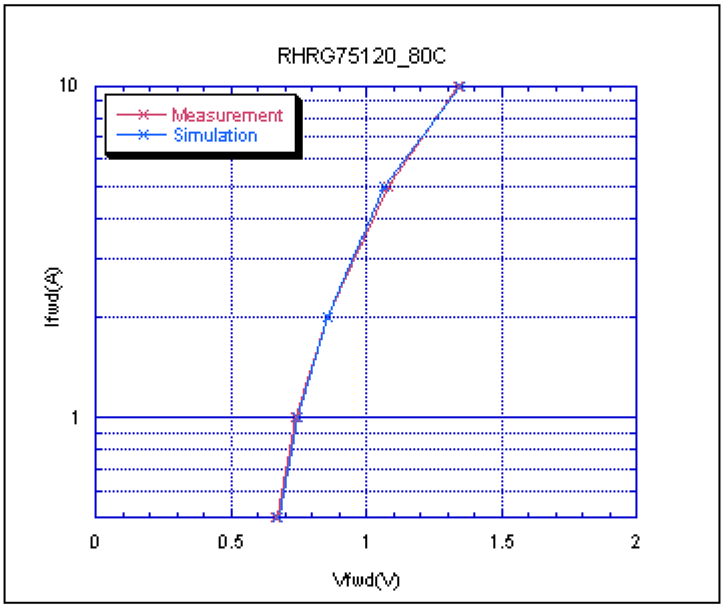


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

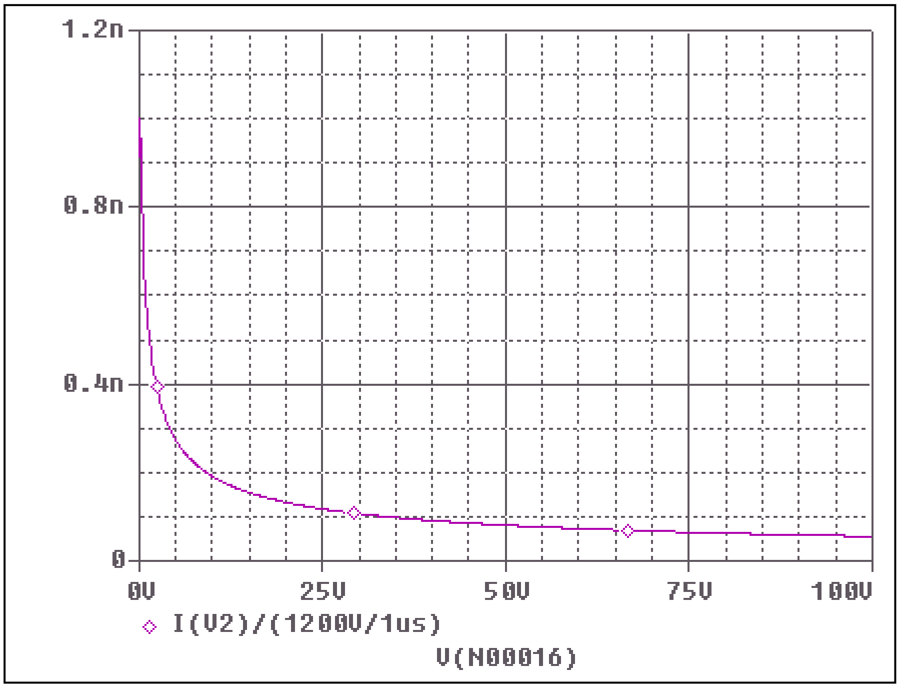


Simulation Result

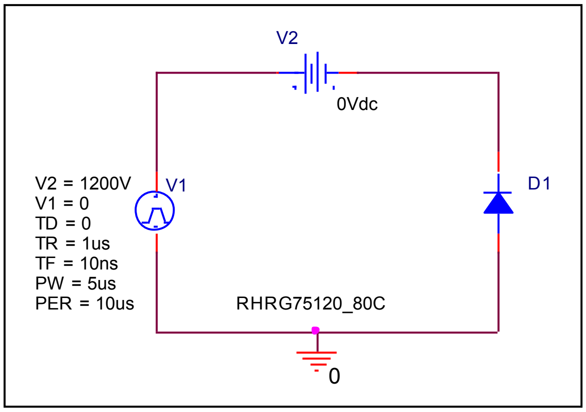
Ifwd(A)	Vfwd(V)		%Error
	Measurement	Simulation	
0.5	0.664	0.671	-1.05
1	0.744	0.751	-0.94
2	0.862	0.856	0.70
5	1.080	1.068	1.11
10	1.342	1.349	-0.52

Capacitance Characteristic

Circuit Simulation Result

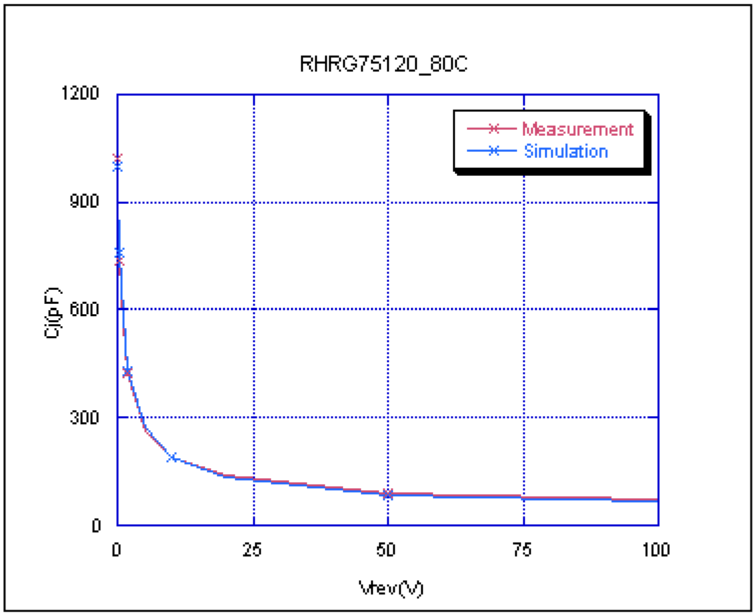


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

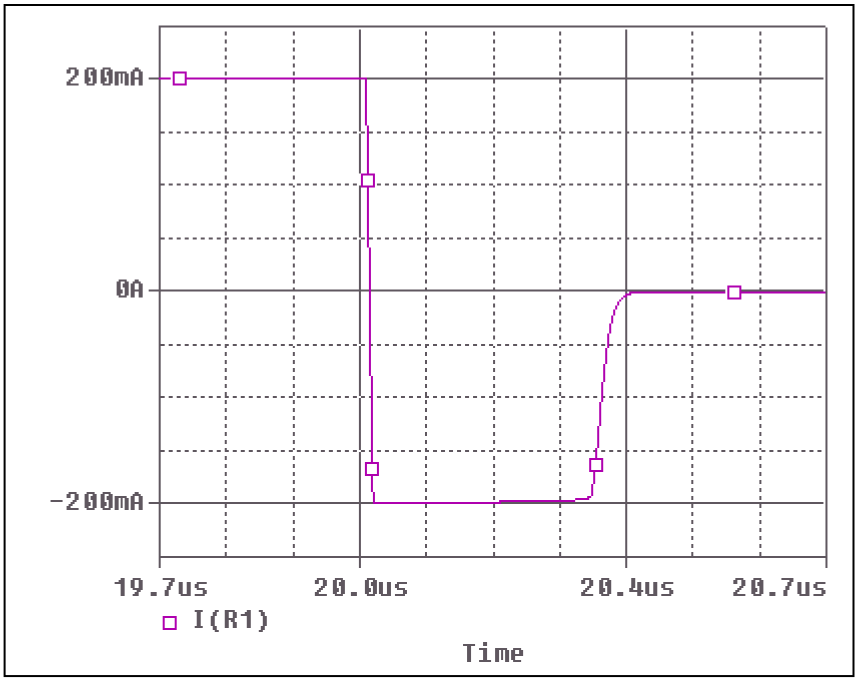


Simulation Result

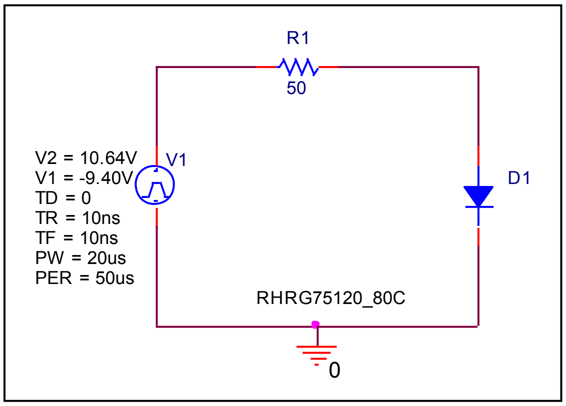
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	1124.000	1124.000	0.00
0.1	1018.000	996.450	2.12
0.2	909.970	934.412	-2.69
0.5	736.170	758.786	-3.07
1	565.450	587.225	-3.85
2	422.040	431.200	-2.17
5	263.380	274.237	-4.12
10	190.800	191.832	-0.54
20	138.540	133.439	3.68

Reverse Recovery Characteristic

Circuit Simulation Result



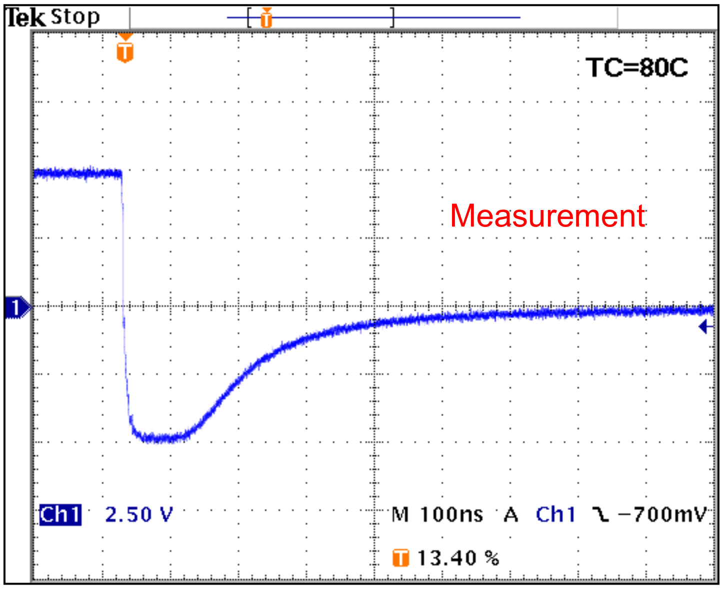
Evaluation Circuit



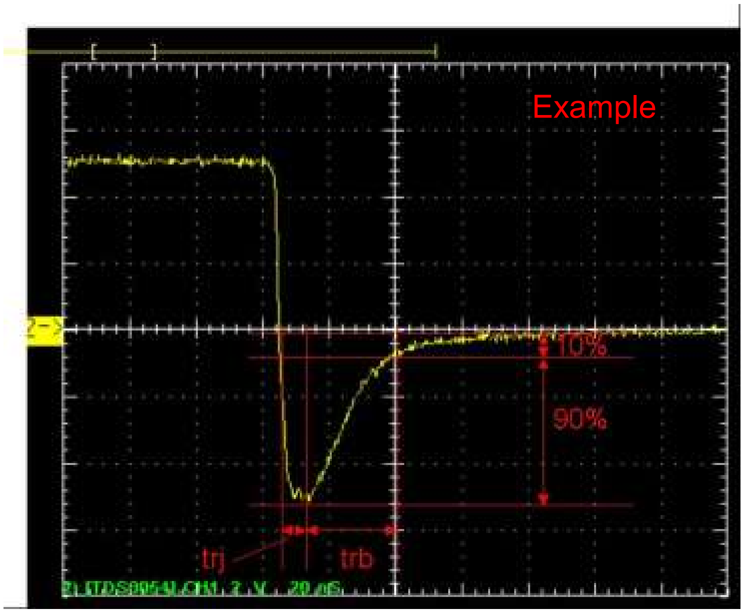
Compare Measurement vs. Simulation

trr	Measurement		Simulation		%Error
	368.0	**ns**	**366.2**	**ns**	**0.489**

Reverse Recovery Characteristic Reference



Trj =86 (ns)
Trb=282 (ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb