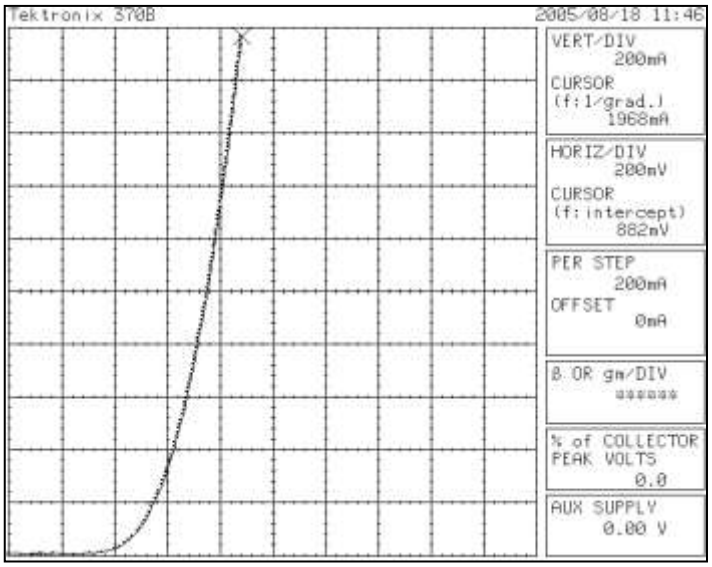
Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER/ STANDARD
PART NUMBER: RURG3060
MANUFACTURER: FAIRCHILD
REMARK: TC=110 degree

Bee Technologies Inc.

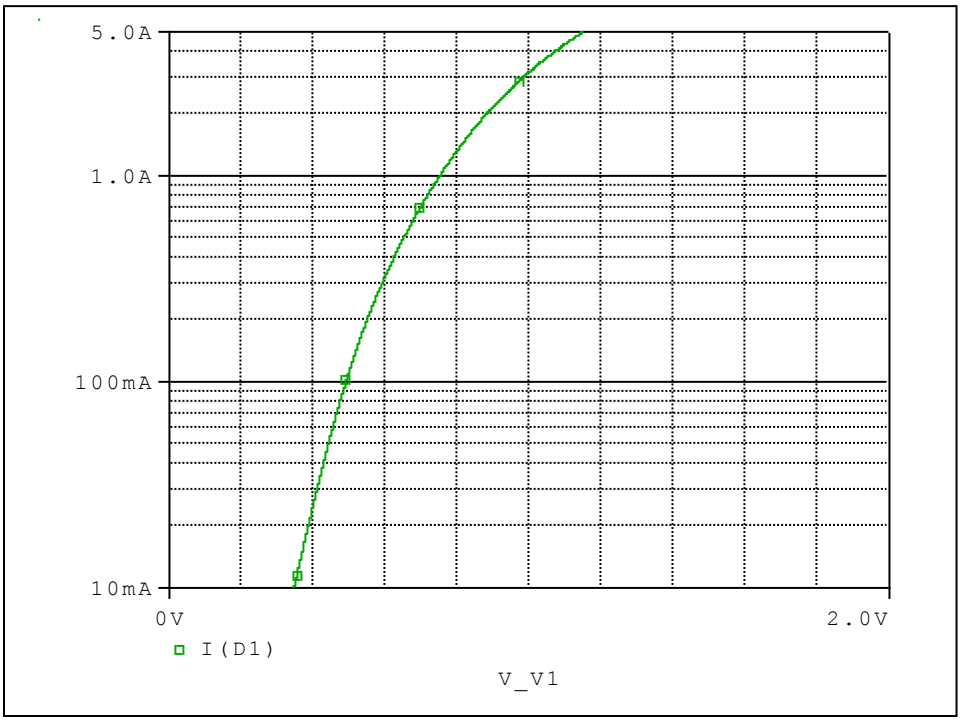
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic Reference

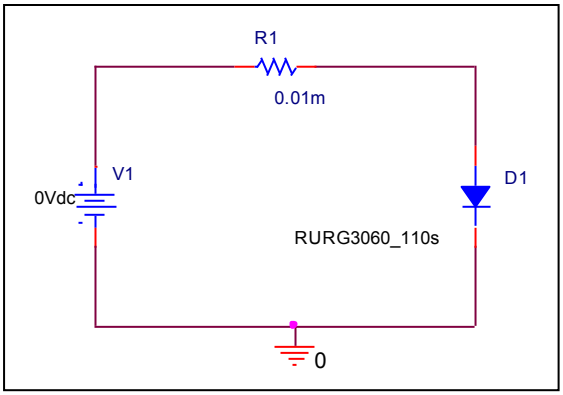


Forward Current Characteristic

Circuit Simulation Result

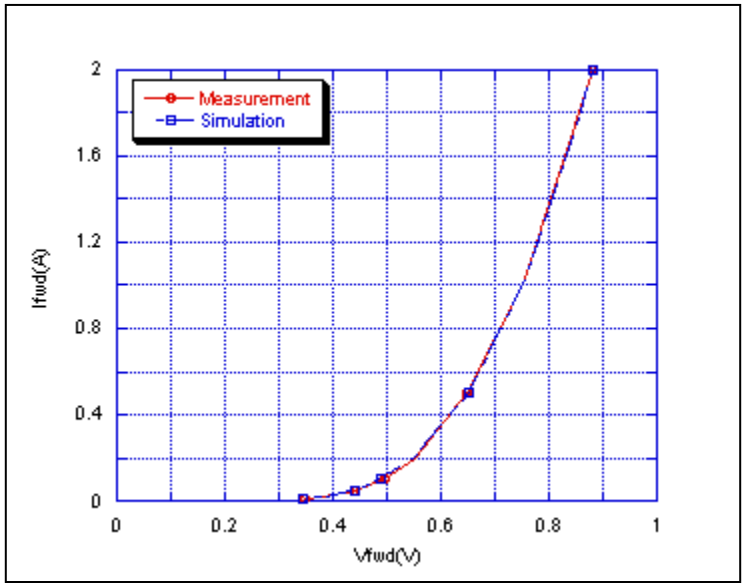


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

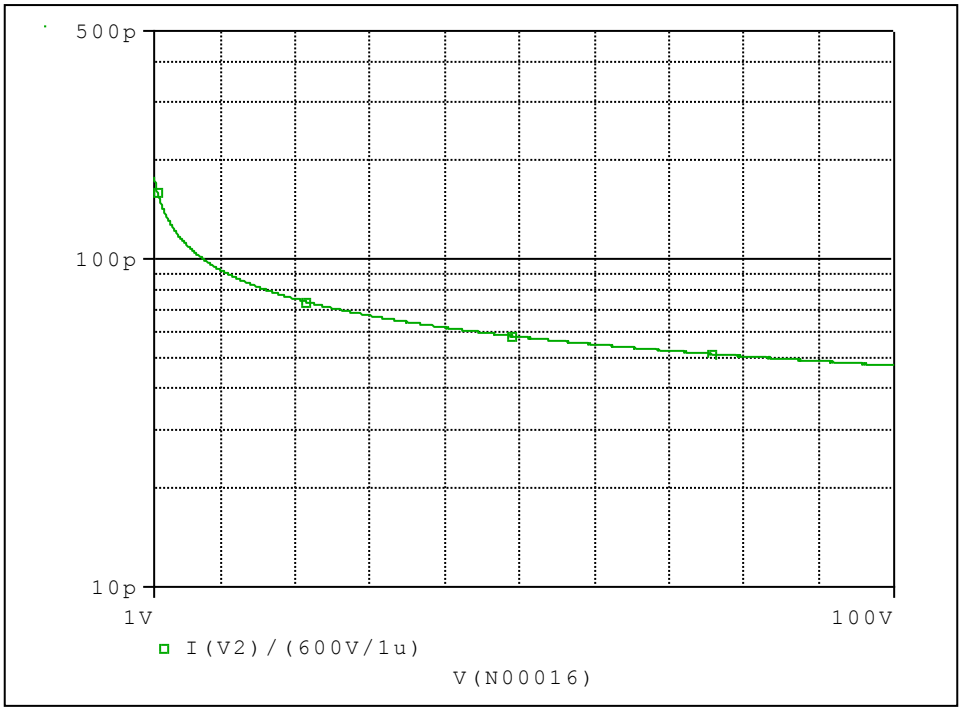


Simulation Result

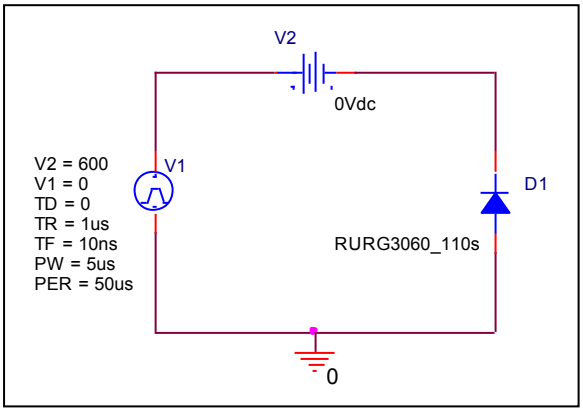
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.350	0.346	1.143
0.02	0.380	0.385	-1.316
0.05	0.440	0.442	-0.455
0.1	0.496	0.490	1.210
0.2	0.550	0.549	0.182
0.5	0.650	0.651	-0.154
1	0.750	0.751	-0.133
2	0.882	0.882	0.000

Capacitance Characteristic

Circuit Simulation Result

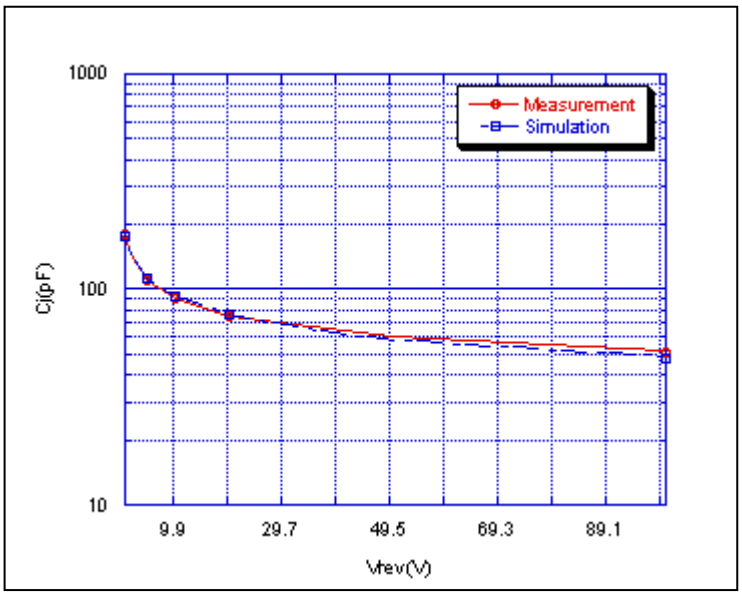


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

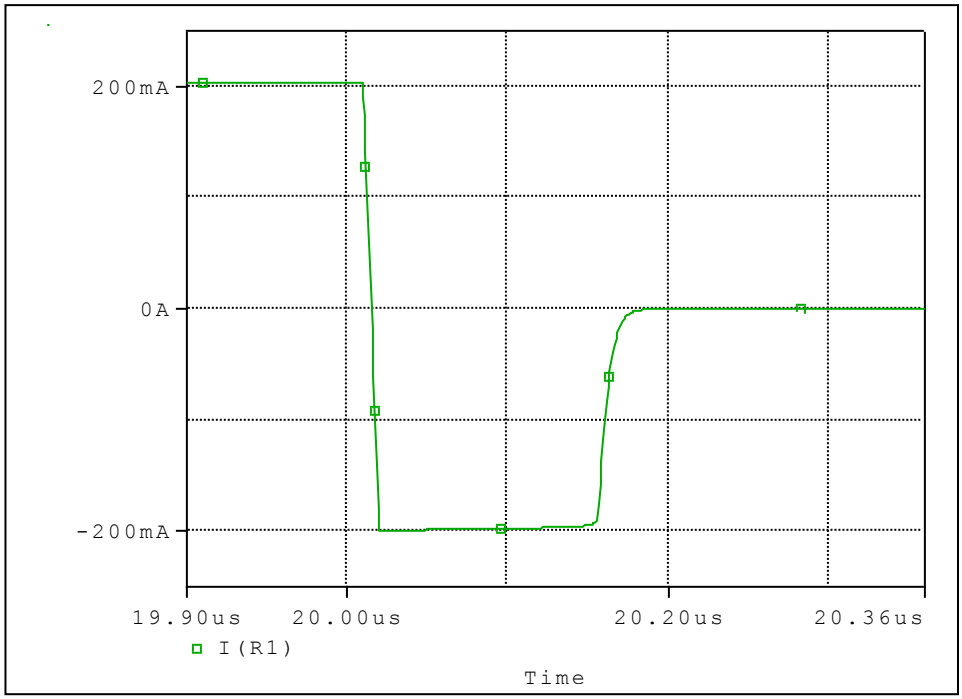


Simulation Result

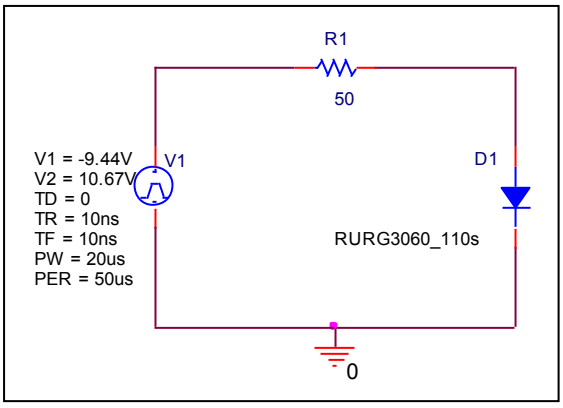
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	377.500	377.500	0.000
1	180.000	177.690	1.283
2	145.100	146.520	-0.979
5	110.700	112.989	-2.068
10	89.900	92.530	-2.925
20	75.100	75.750	-0.866
50	60.200	58.120	3.455

Reverse Recovery Characteristic

Circuit Simulation Result



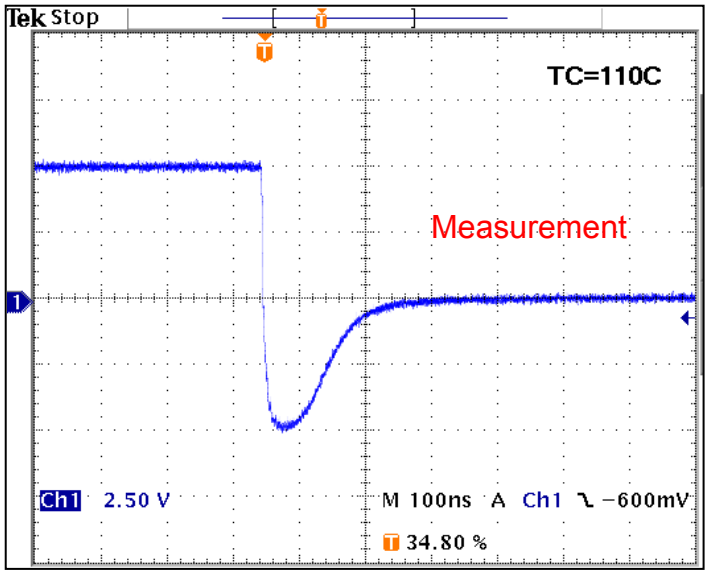
Evaluation Circuit



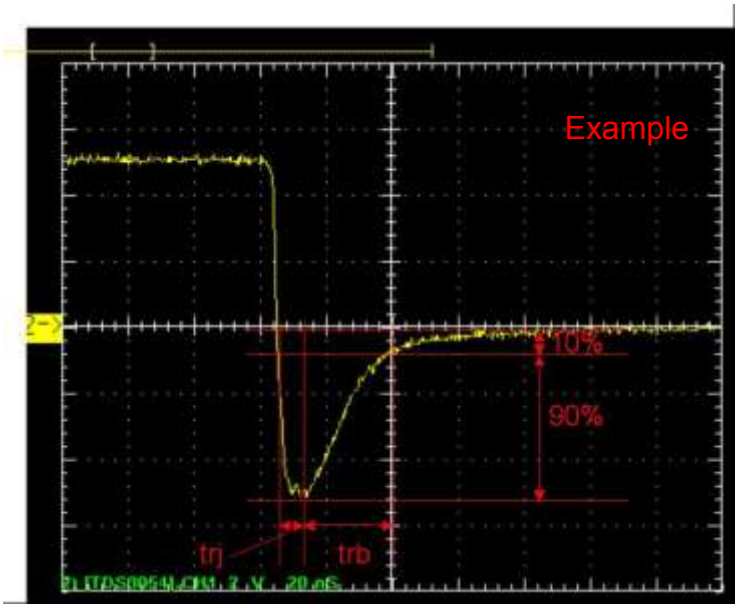
Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trr	**154.00**	**ns**	**153.45**	**ns**	**0.357**

Reverse Recovery Characteristic Reference



Trj = 36 (ns)
Trb= 118 (ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb