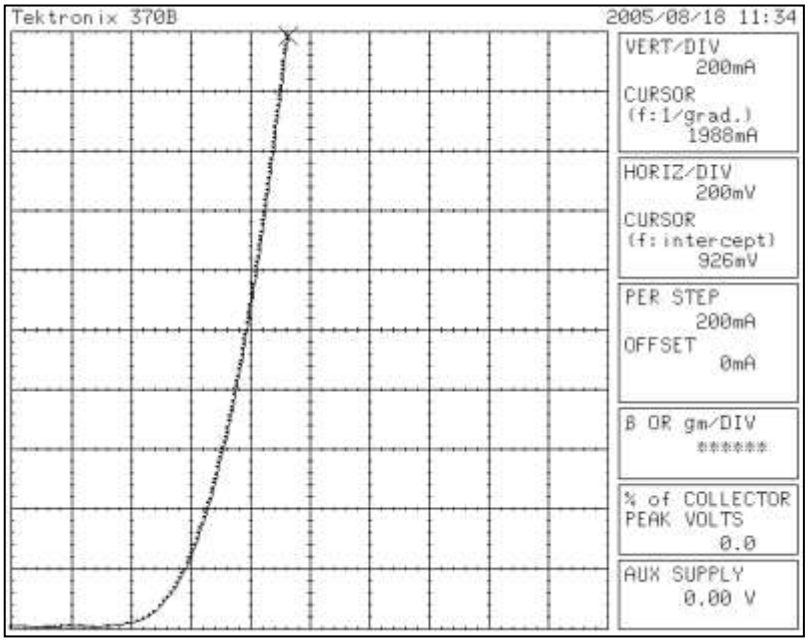
Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER/ PROFESSIONAL
PART NUMBER: RURG3060
MANUFACTURER: FAIRCHILD
REMARK: TC=80 degree

Bee Technologies Inc.

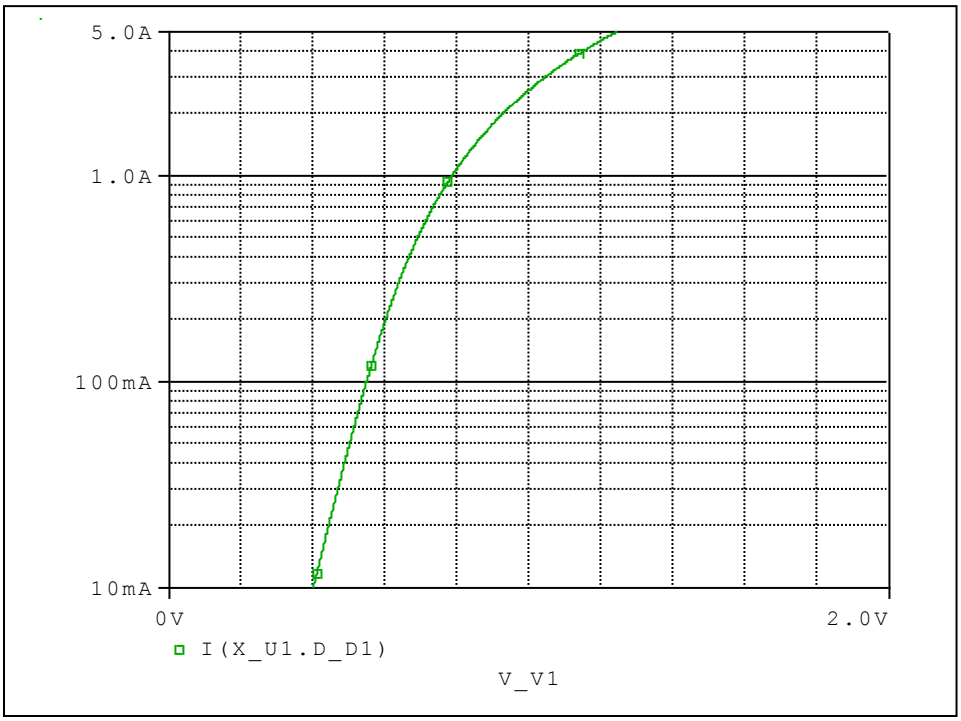
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic Reference

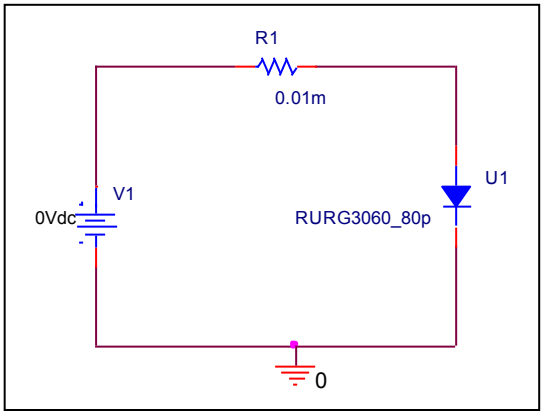


Forward Current Characteristic

Circuit Simulation Result

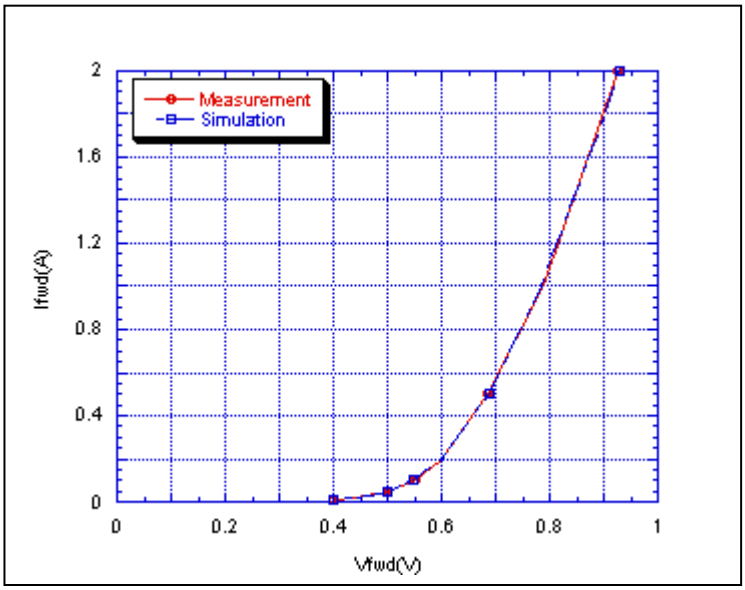


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

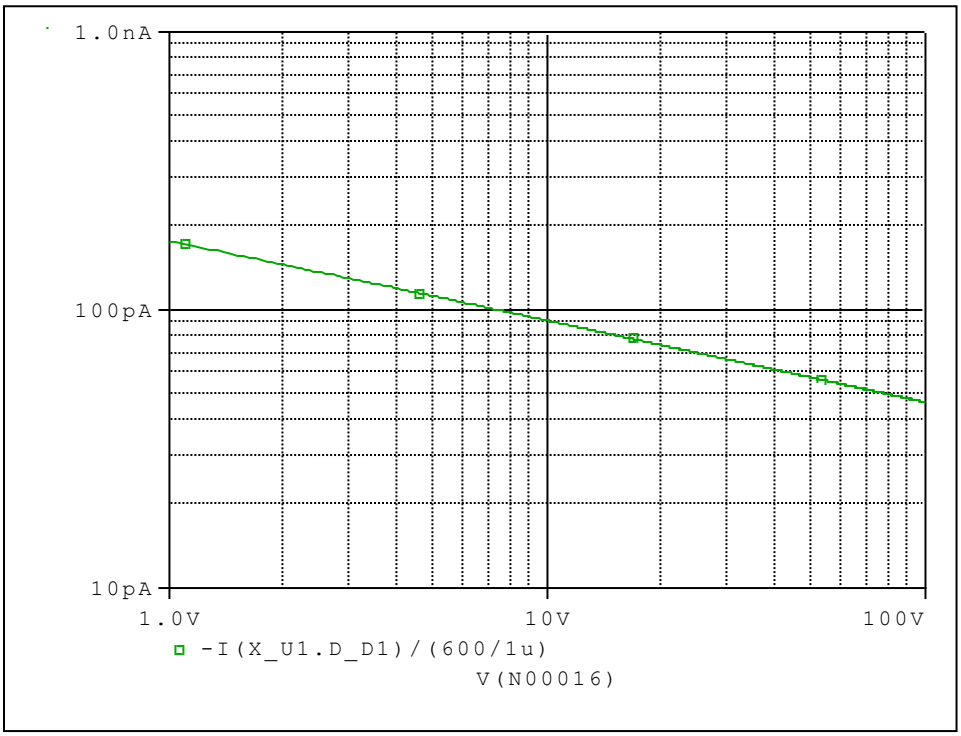


Simulation Result

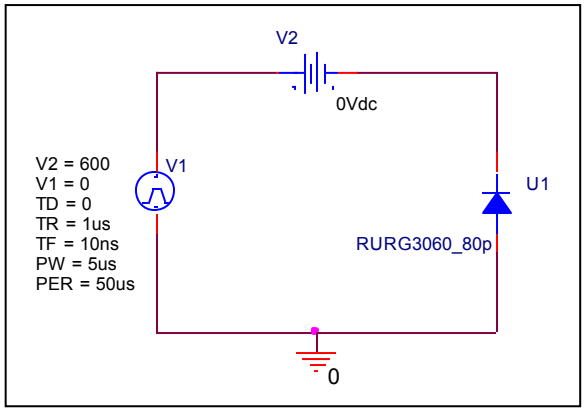
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.400	0.399	0.250
0.02	0.440	0.442	-0.455
0.05	0.500	0.500	0.000
0.1	0.552	0.549	0.543
0.2	0.600	0.601	-0.167
0.5	0.684	0.688	-0.585
1	0.788	0.784	0.508
2	0.926	0.928	-0.216

Capacitance Characteristic

Circuit Simulation Result

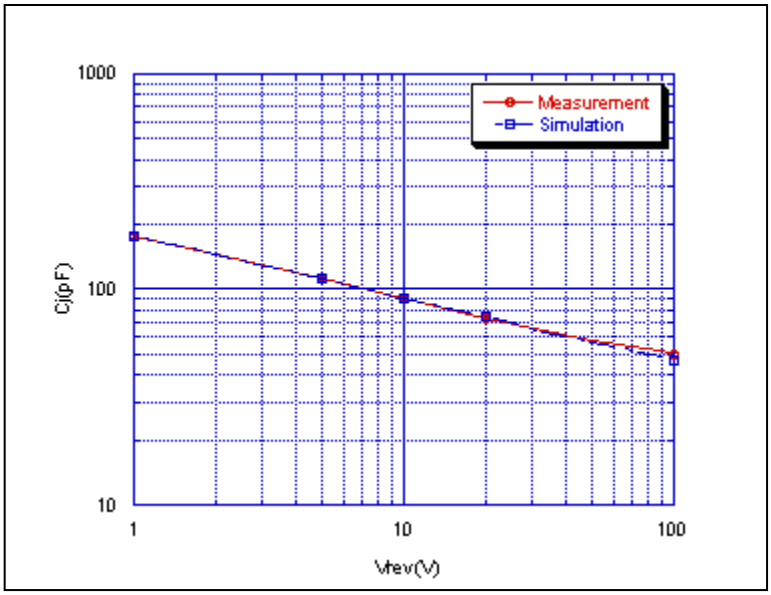


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

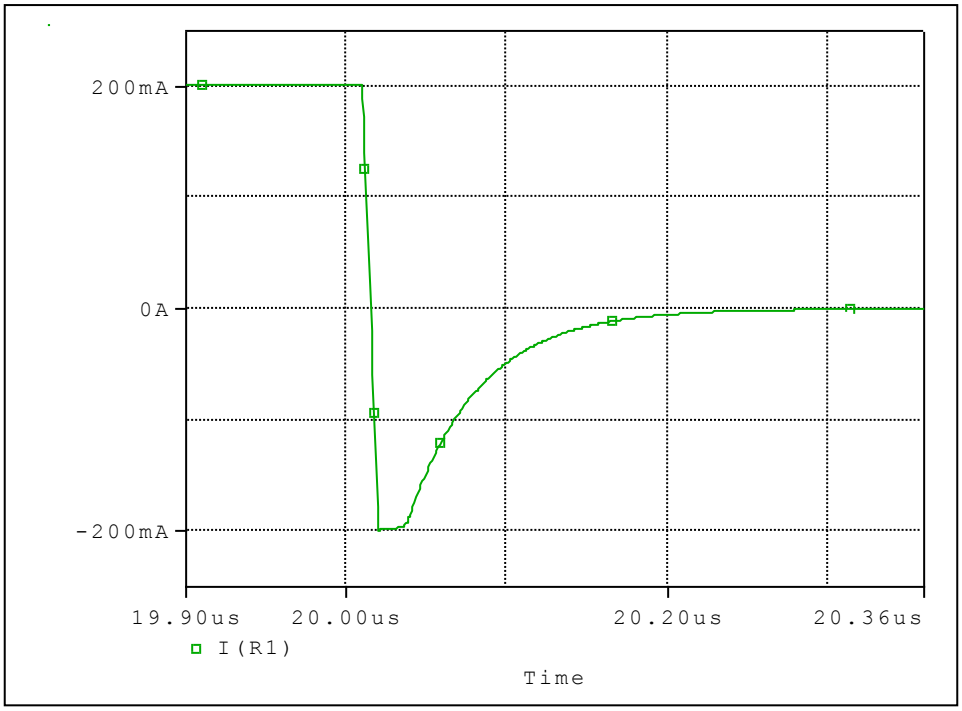


Simulation Result

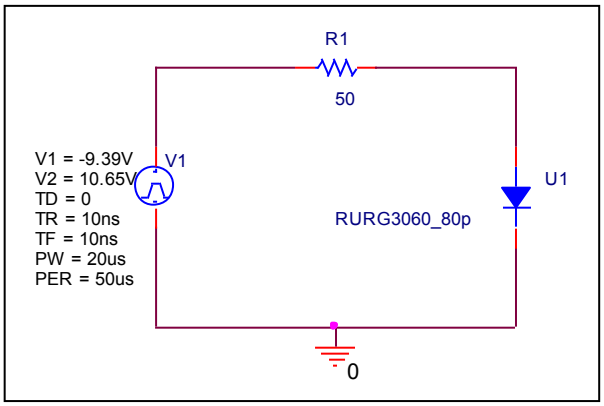
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
1	175.800	176.880	-0.614
2	145.500	145.730	-0.158
5	112.500	112.130	0.329
10	90.900	91.610	-0.781
20	73.700	74.890	-1.615
50	58.000	56.790	2.086

Reverse Recovery Characteristic

Circuit Simulation Result



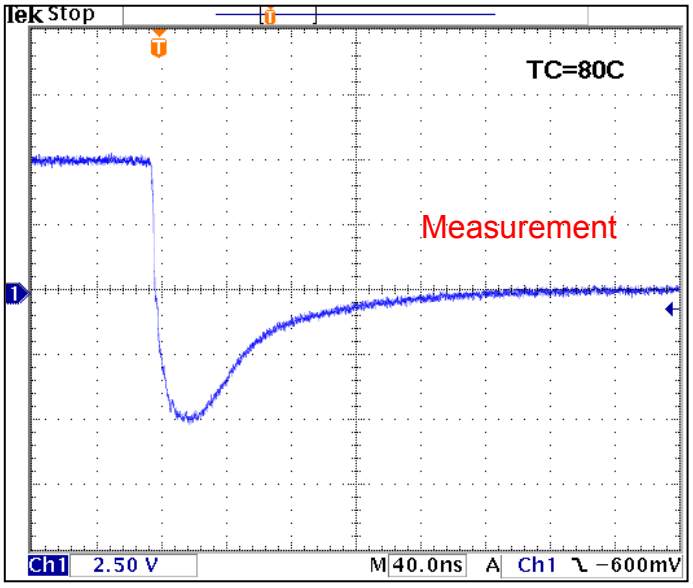
Evaluation Circuit



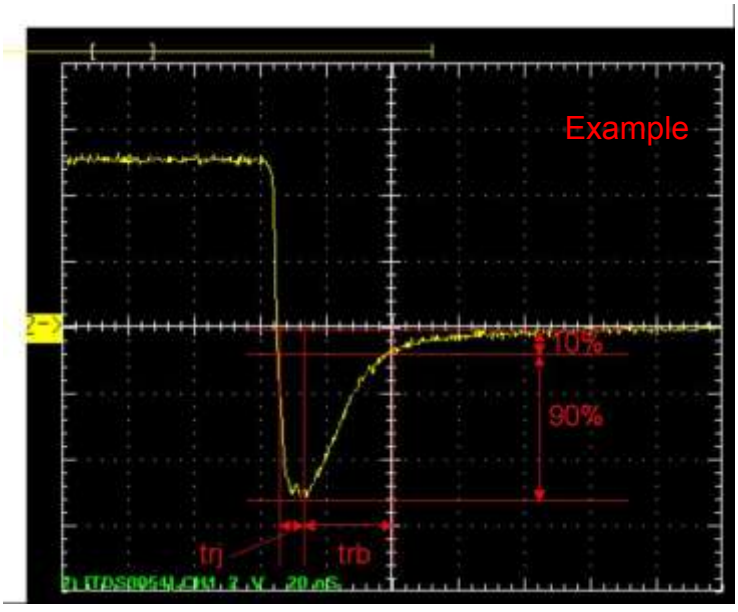
Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trj	**21.6**	**ns**	**21.44**	**ns**	**0.7407**
trb	**101**	**ns**	**102.22**	**ns**	**1.2079**

Reverse Recovery Characteristic Reference



Trj = 21.6 (ns)
Trb= 101 (ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb