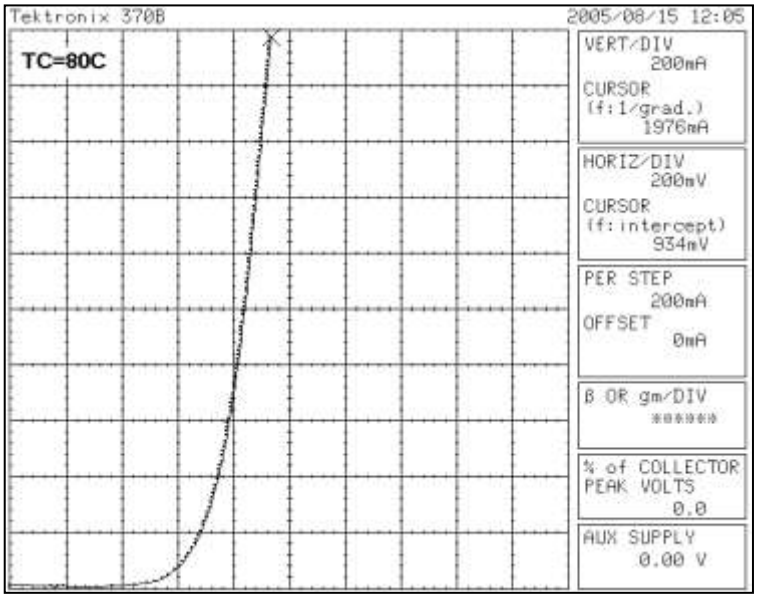
Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER/ PROFESSIONAL
PART NUMBER: RURD660S
MANUFACTURER: FAIRCHILD
REMARK: TC=80 degree

Bee Technologies Inc.

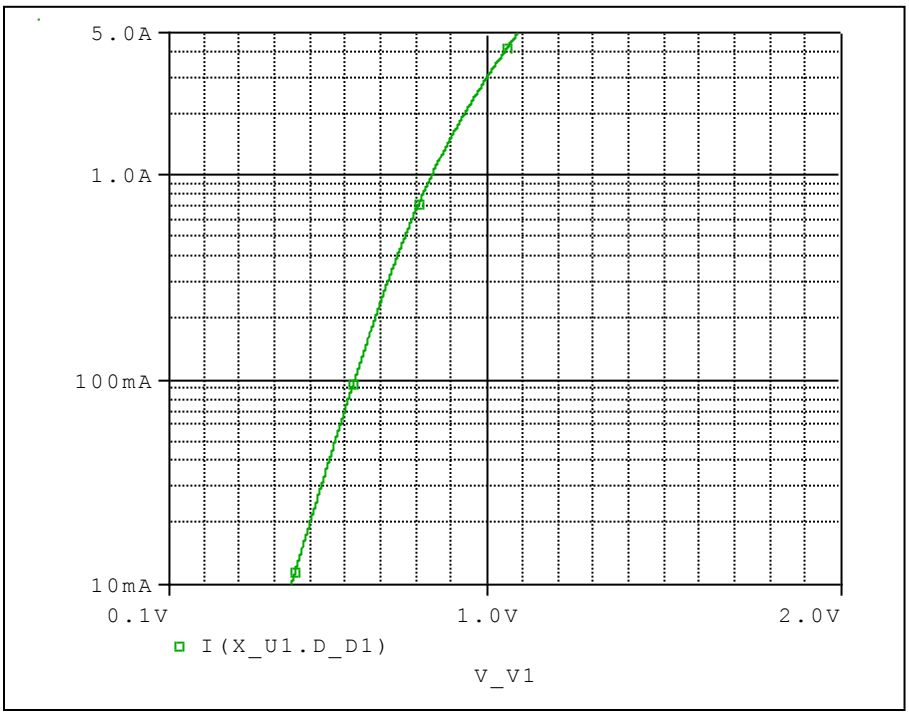
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic Reference

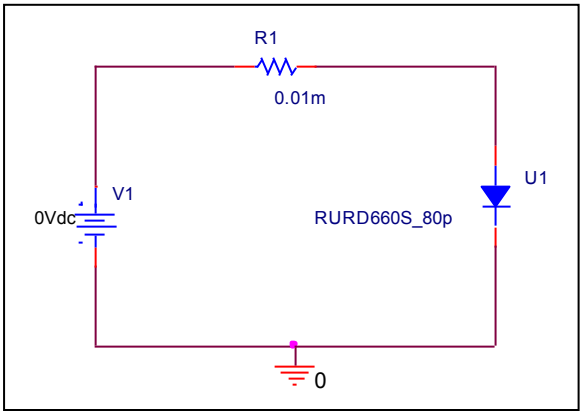


Forward Current Characteristic

Circuit Simulation Result

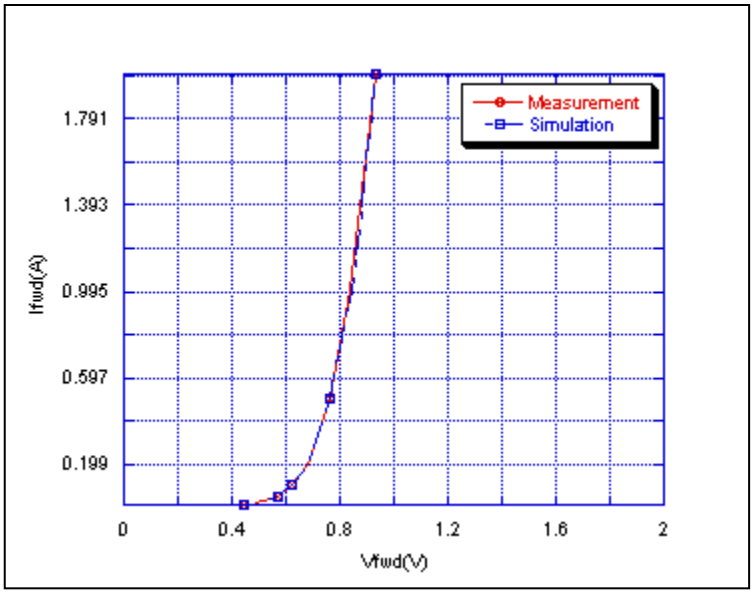


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

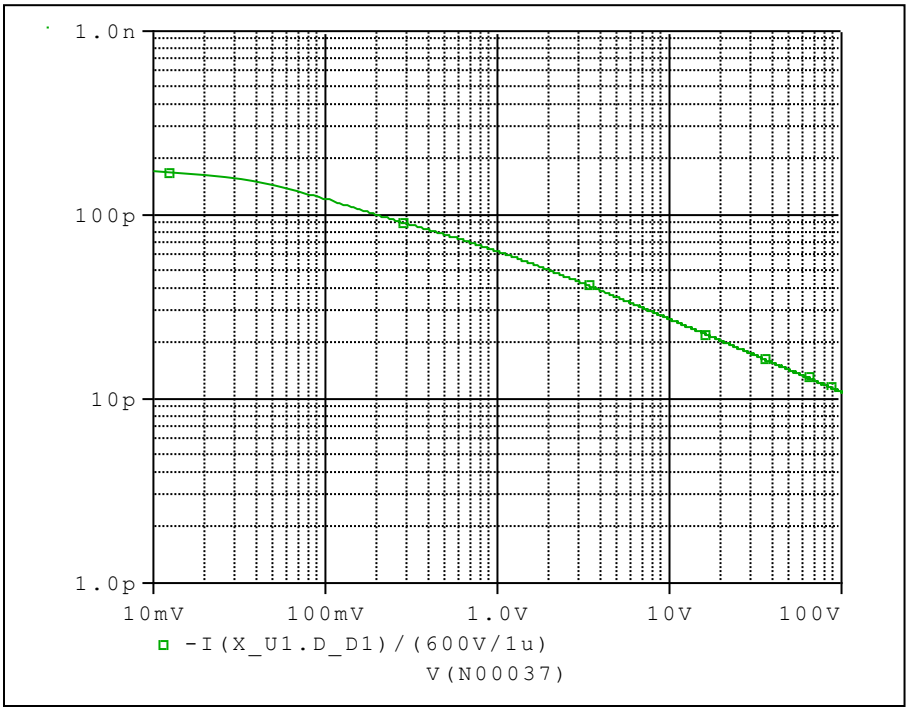


Simulation Result

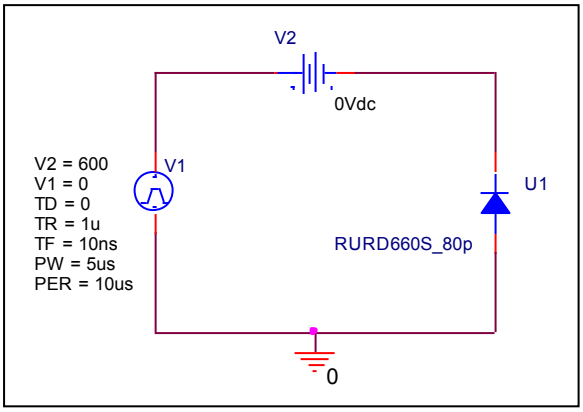
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.448	0.444	0.893
0.02	0.492	0.497	-1.016
0.05	0.570	0.568	0.351
0.1	0.620	0.623	-0.484
0.2	0.684	0.680	0.585
0.5	0.766	0.765	0.131
1	0.840	0.841	-0.119
2	0.934	0.933	0.107

Capacitance Characteristic

Circuit Simulation Result

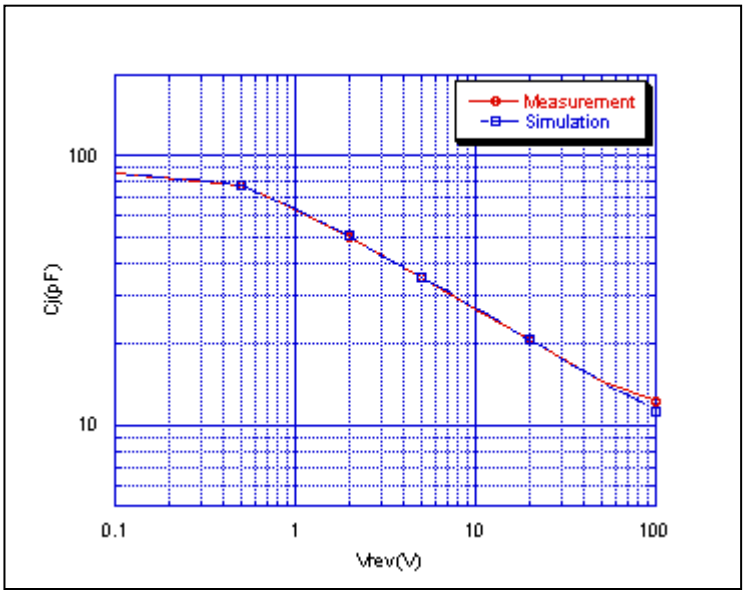


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

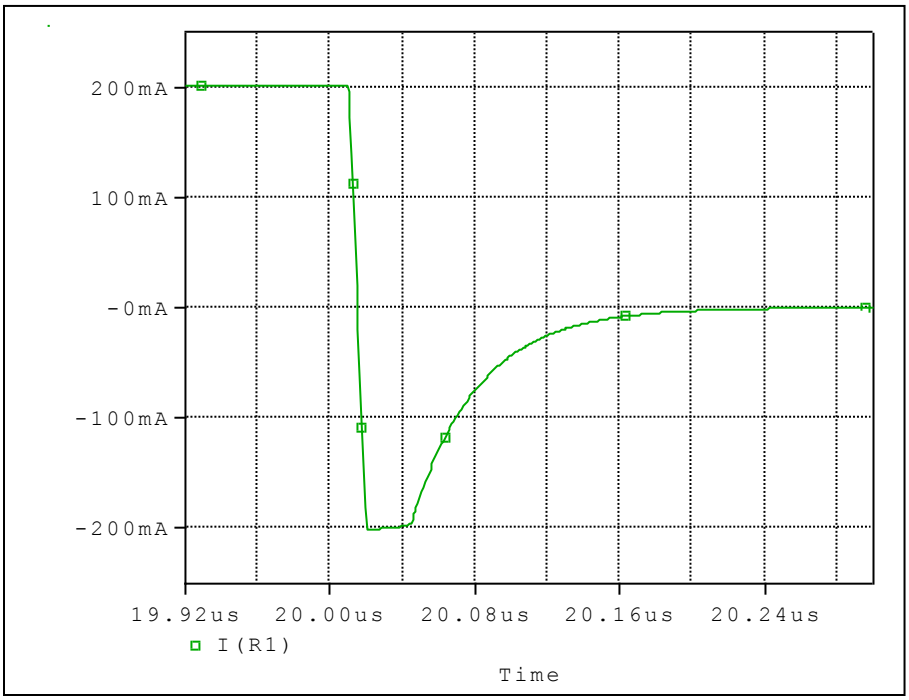


Simulation Result

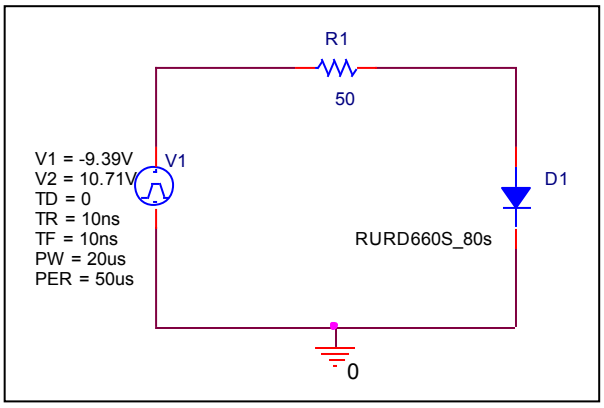
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	120.800	120.800	0.000
0.5	77.800	78.159	-0.461
1	62.800	63.576	-1.236
2	50.000	50.173	-0.346
5	35.000	35.500	-1.429
10	27.000	27.200	-0.741
20	20.800	20.893	-0.447
50	14.500	14.454	0.317

Reverse Recovery Characteristic

Circuit Simulation Result



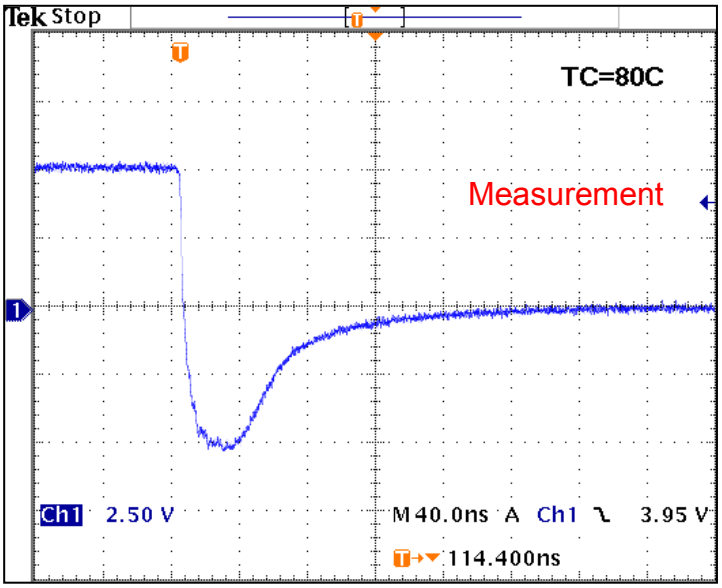
Evaluation Circuit



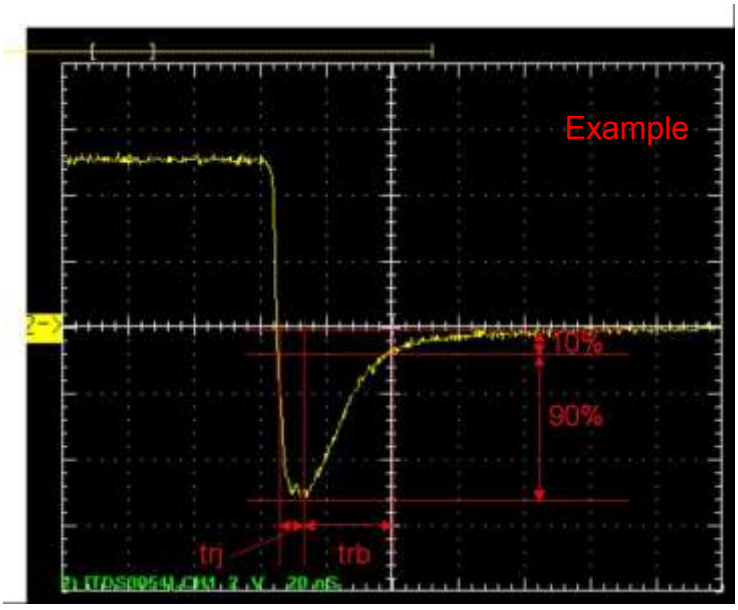
Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trj	28.8	ns	28.90	ns	0.347
trb	84.0	ns	84.07	ns	0.083

Reverse Recovery Characteristic Reference



Trj =28.8 (ns)
Trb= 84.0(ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb