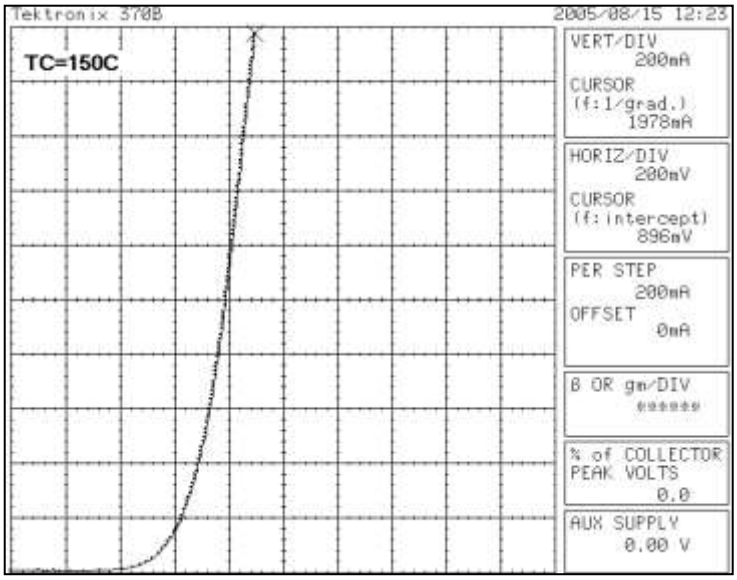
Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER/ STANDARD
PART NUMBER: RURD660S
MANUFACTURER: FAIRCHILD
REMARK: TC=150 degree

Bee Technologies Inc.

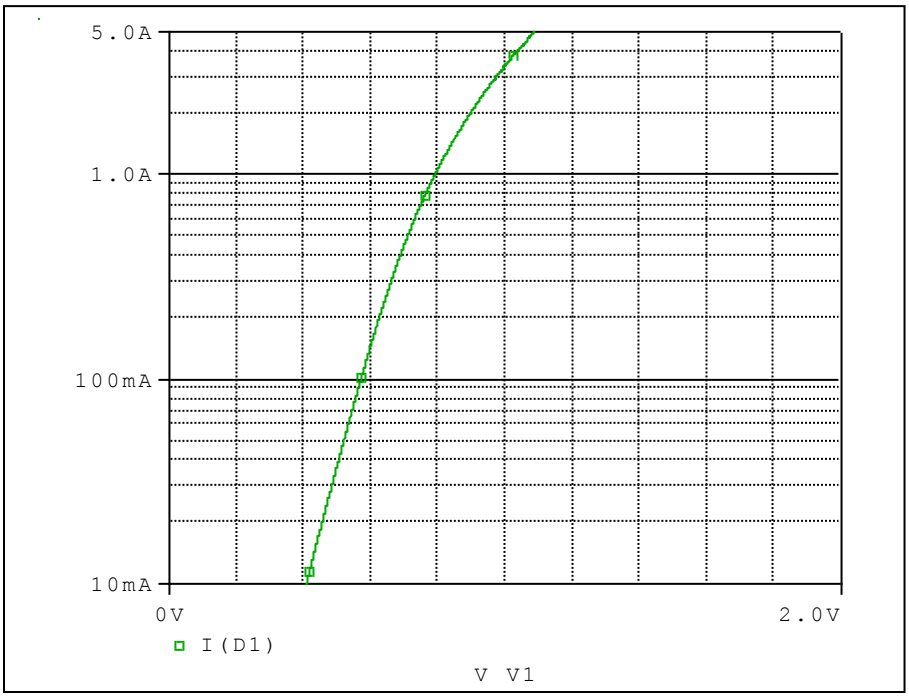
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic Reference

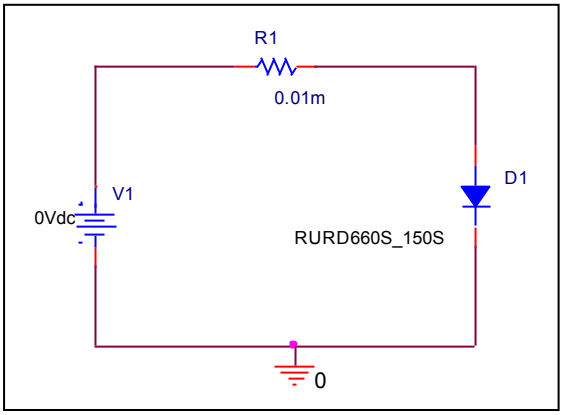


Forward Current Characteristic

Circuit Simulation Result

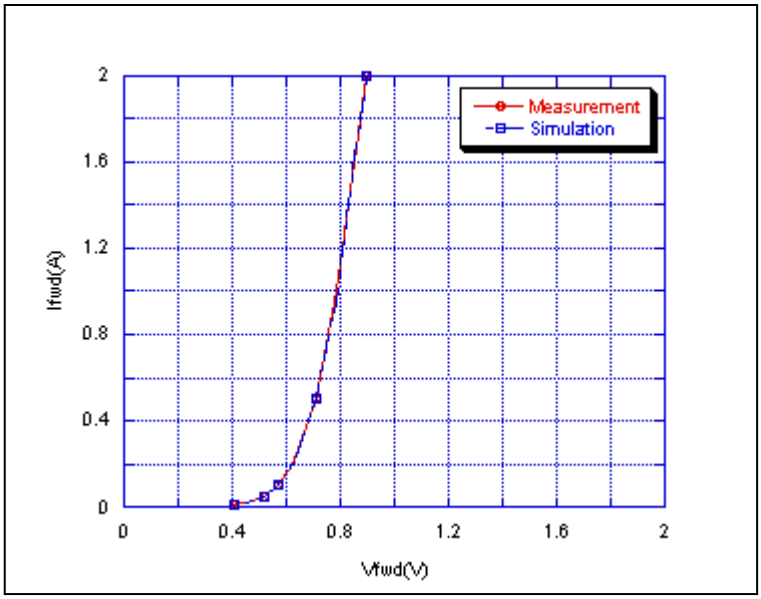


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

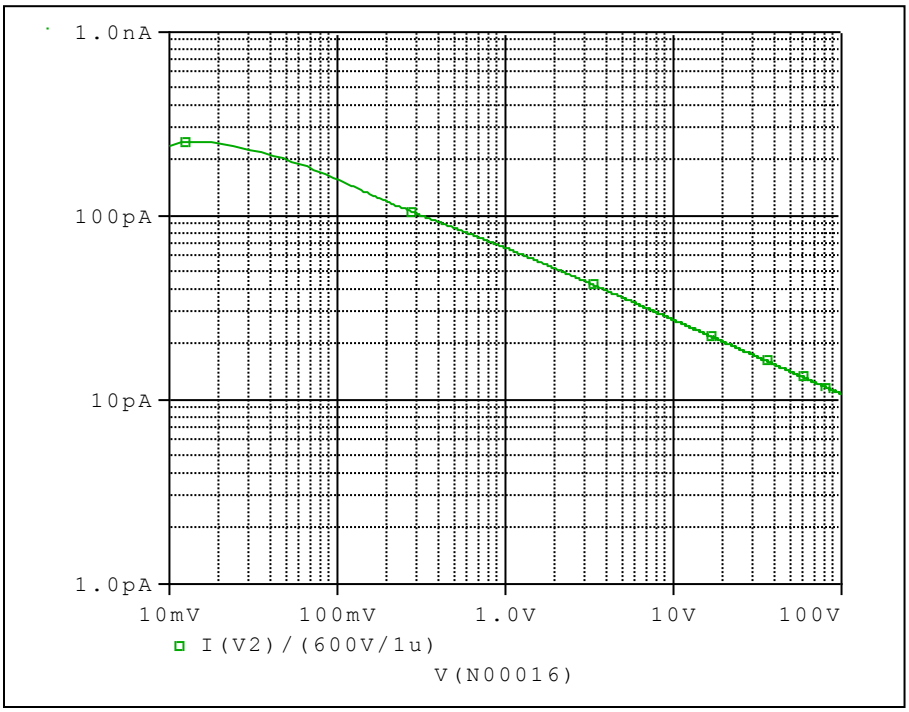


Simulation Result

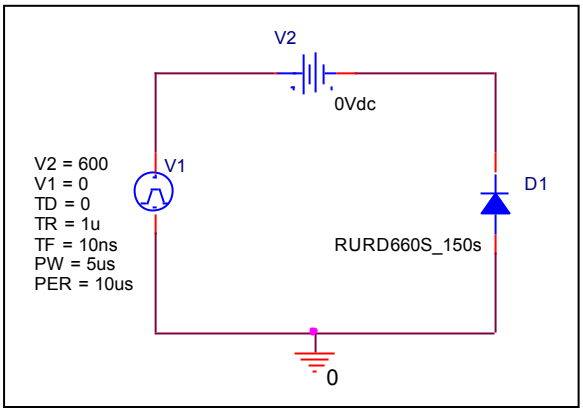
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.410	0.407	0.732
0.02	0.450	0.454	-0.889
0.05	0.522	0.520	0.383
0.1	0.568	0.569	-0.176
0.2	0.624	0.624	0.000
0.5	0.712	0.708	0.562
1	0.788	0.790	-0.254
2	0.896	0.895	0.112

Capacitance Characteristic

Circuit Simulation Result

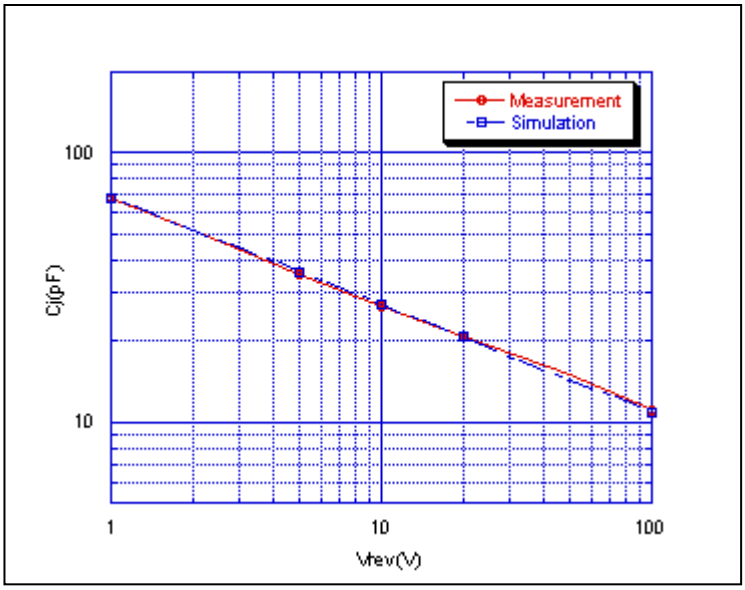


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

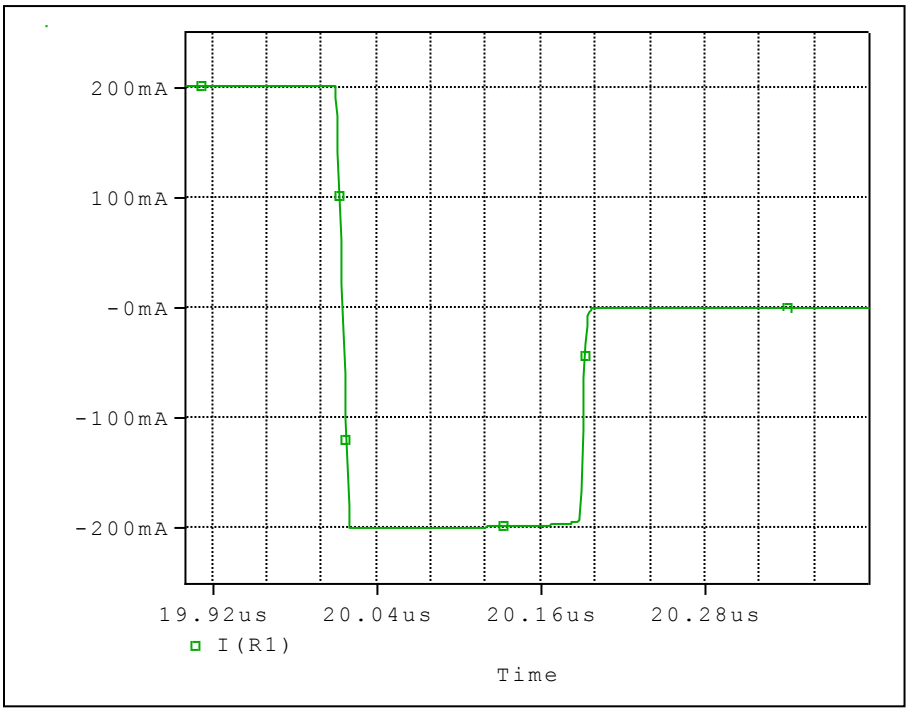


Simulation Result

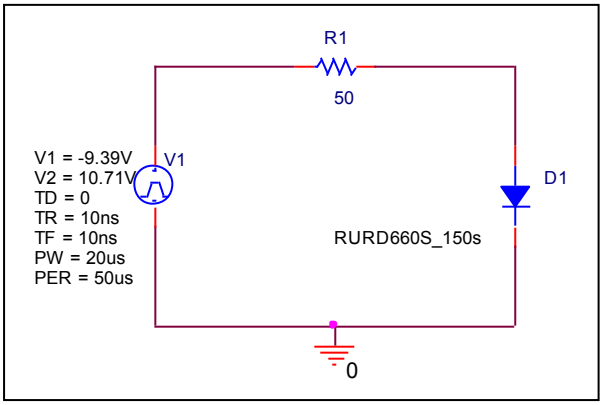
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	175.200	175.200	0.000
1	67.638	67.180	0.677
2	51.100	51.756	-1.284
5	35.580	35.660	-0.225
10	26.900	27.300	-1.487
20	20.600	20.800	-0.971
50	14.900	14.300	4.027
100	11.070	10.750	2.891

Reverse Recovery Characteristic

Circuit Simulation Result



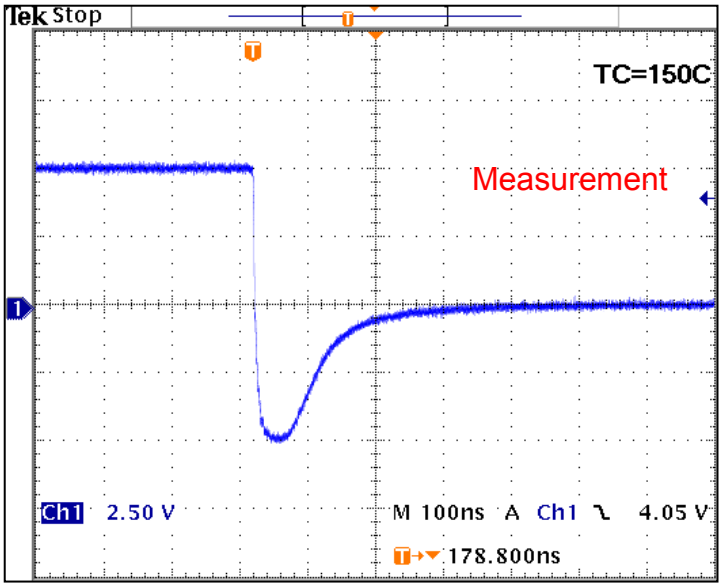
Evaluation Circuit



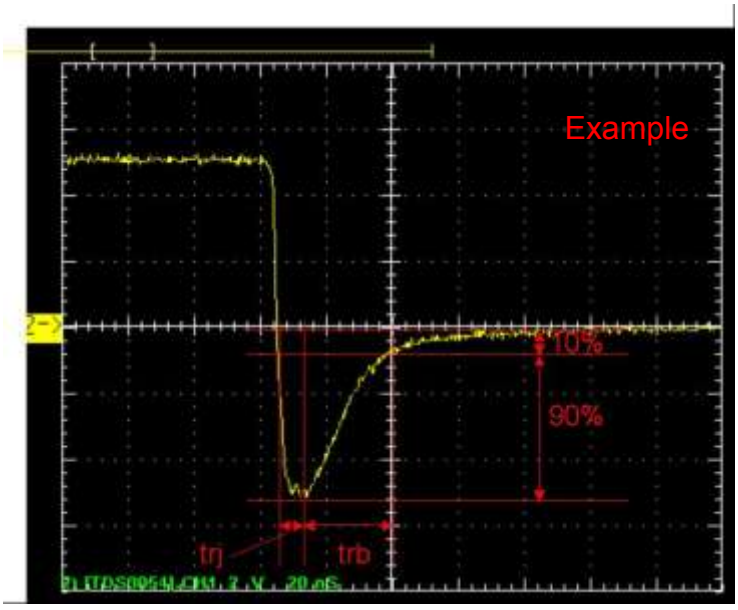
Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trr=trj+trb	**178**	**ns**	**177.7**	**ns**	**0.168**

Reverse Recovery Characteristic Reference



Trj = 48.0 (ns)
Trb= 130.0 (ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb