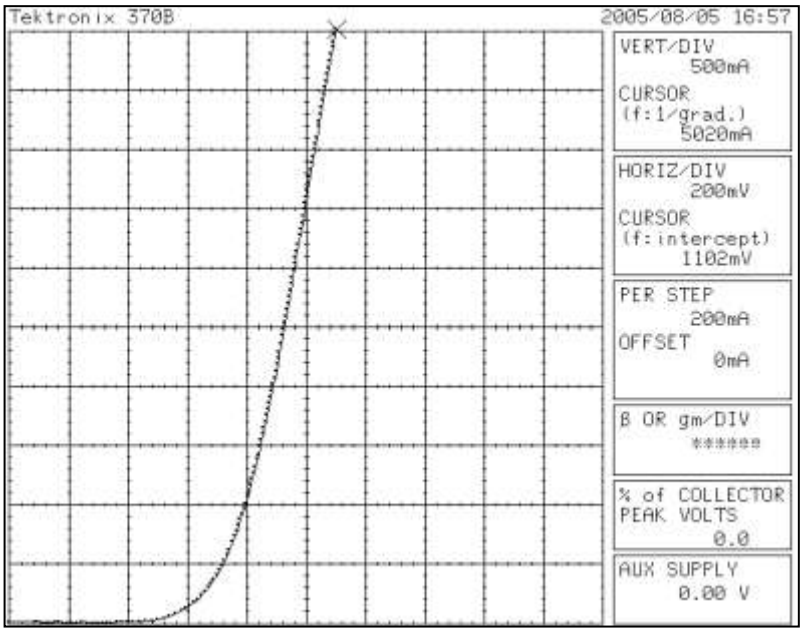
Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER/ PROFESSIONAL
PART NUMBER: RURD660S
MANUFACTURER: FAIRCHILD
REMARK: TC=25 degree

Bee Technologies Inc.

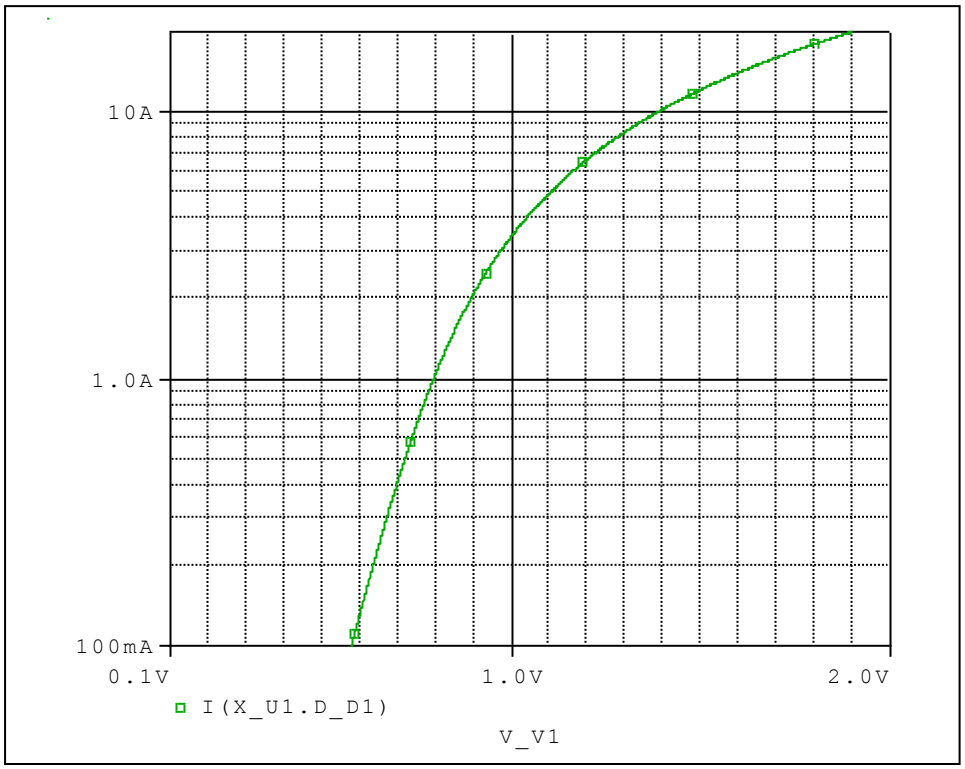
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic Reference

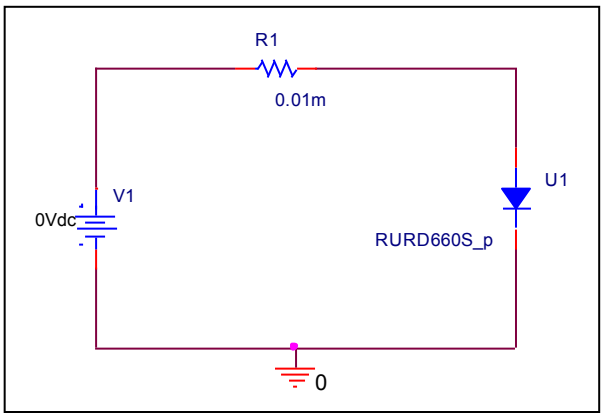


Forward Current Characteristic

Circuit Simulation Result

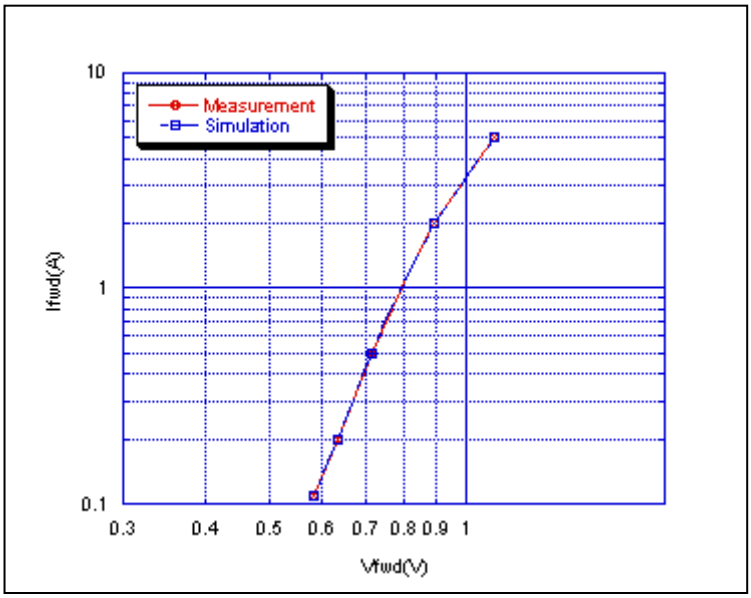


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

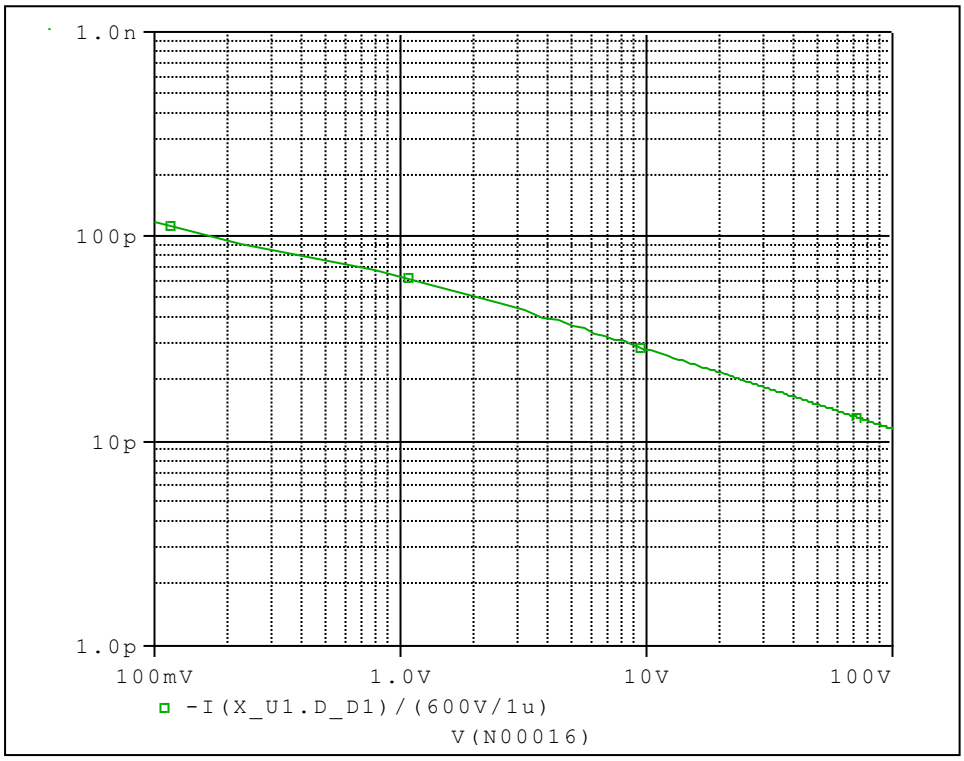


Simulation Result

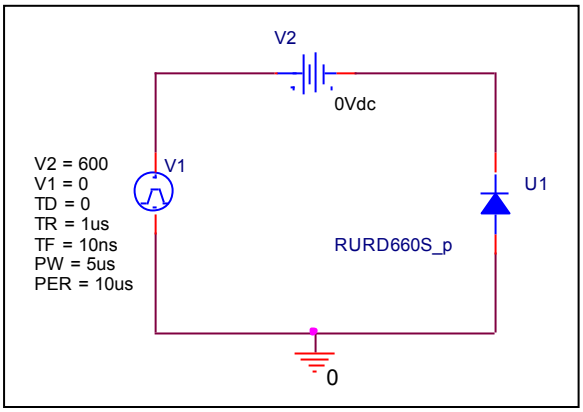
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.1	0.584	0.585	-0.171
0.2	0.636	0.637	-0.157
0.5	0.718	0.717	0.139
1	0.796	0.795	0.126
2	0.890	0.892	-0.225
5	1.102	1.102	0.000

Capacitance Characteristic

Circuit Simulation Result

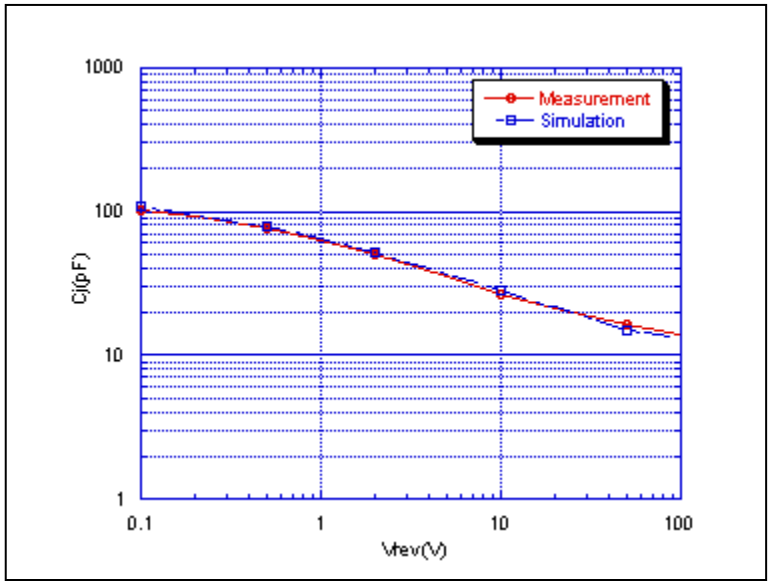


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

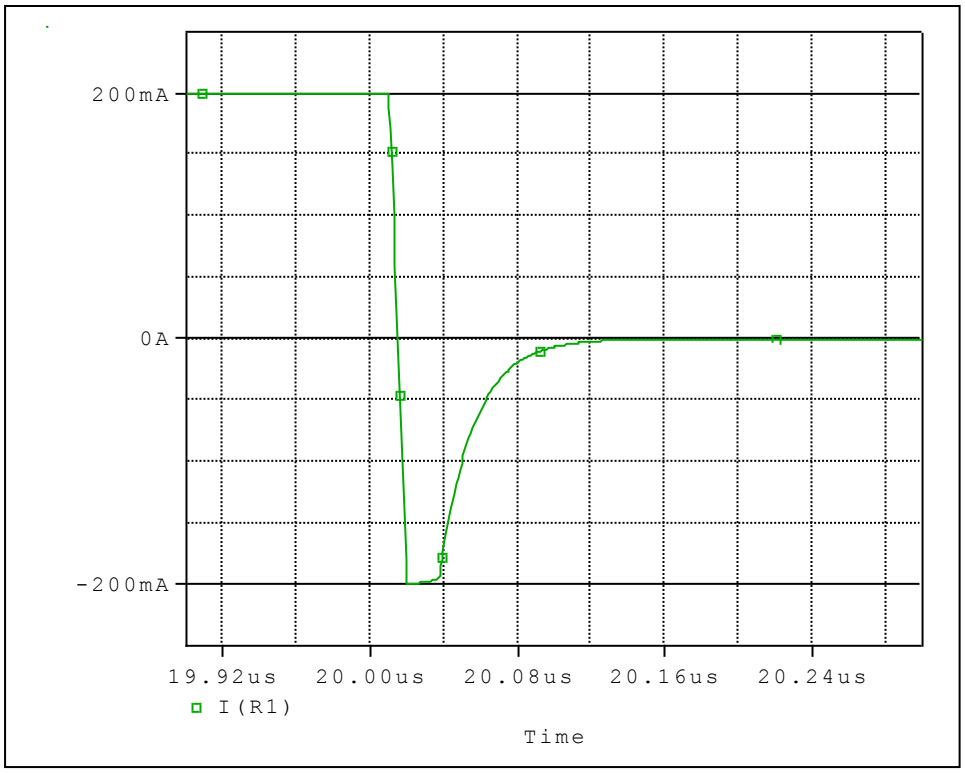


Simulation Result

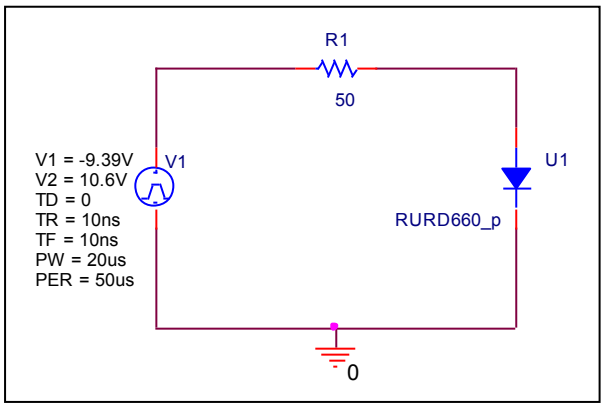
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0.1	100.140	109.066	-8.914
0.2	92.626	96.425	-4.101
0.5	76.650	77.397	-0.975
1	63.195	64.145	-1.503
2	49.714	51.118	-2.824
5	34.951	36.471	-4.349
10	26.719	28.000	-4.794
20	21.000	21.618	-2.943

Reverse Recovery Characteristic

Circuit Simulation Result



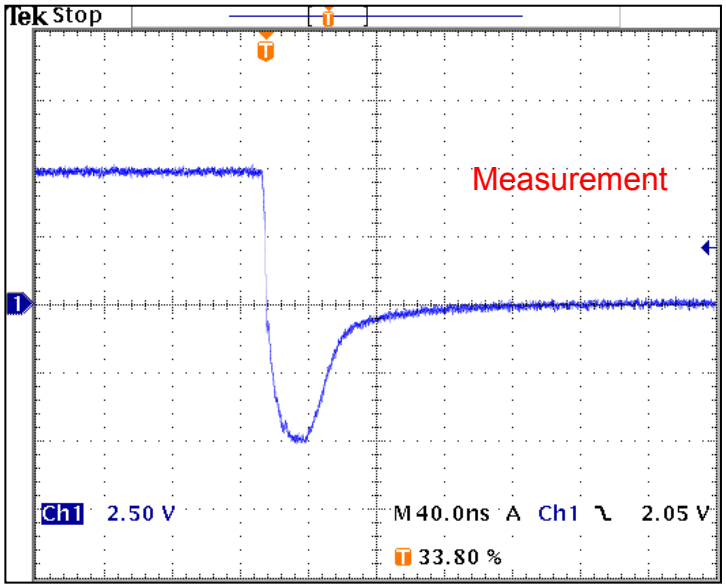
Evaluation Circuit



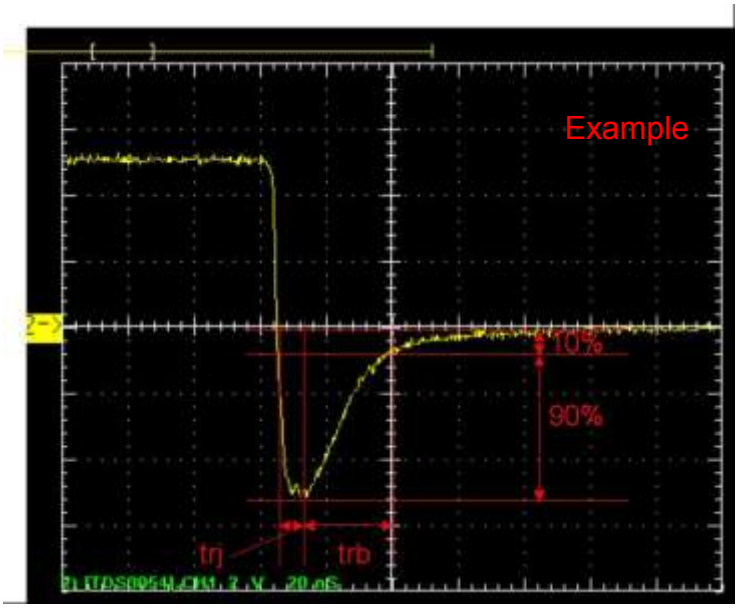
Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trj	21.6	ns	21.66	ns	0.277
trb	42.4	ns	42.47	ns	0.165

Reverse Recovery Characteristic Reference



Trj = 21.6 (ns)
Trb= 42.4 (ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb