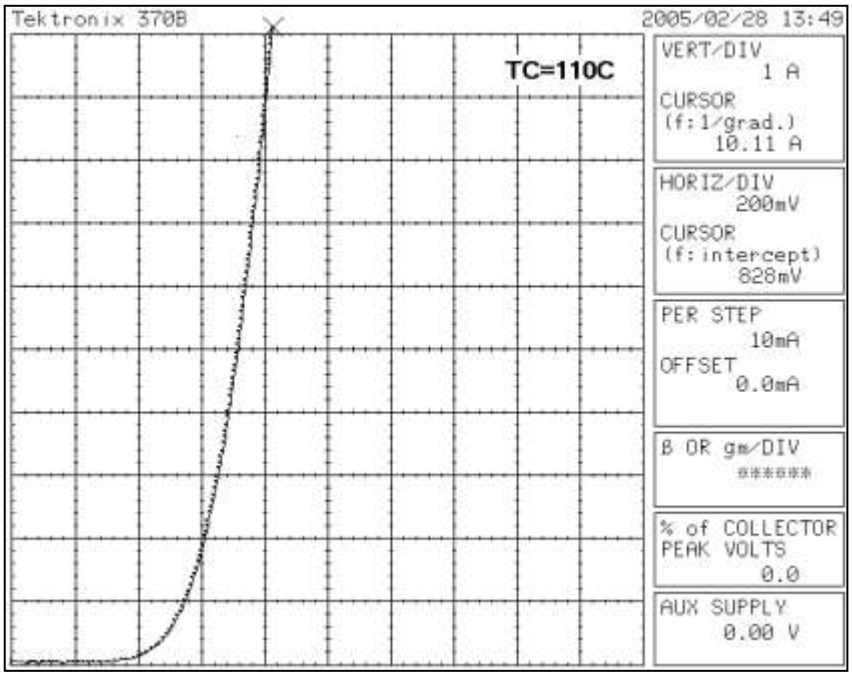
Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER / PROFESSIONAL
PART NUMBER: RURG5060
MANUFACTURER: INTERSIL
REMRAK: TC=110C

Bee Technologies Inc.

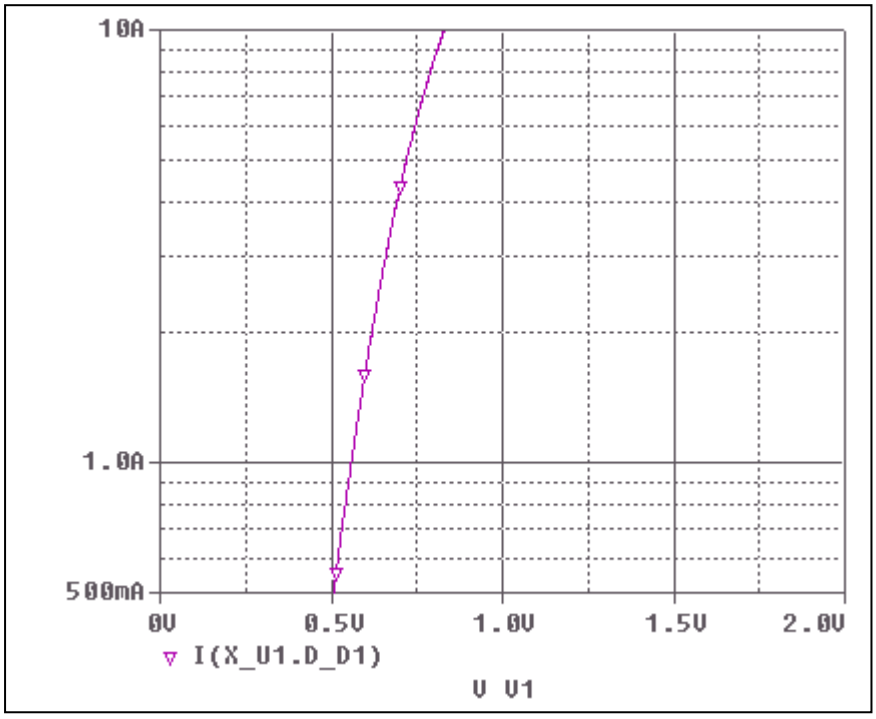
PSpice model parameter	Model description
S	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a positive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

Forward Current Characteristic Reference

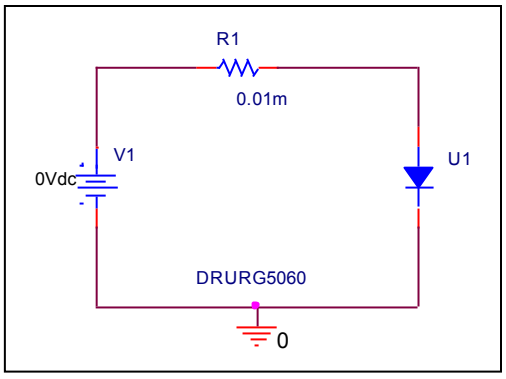


Forward Current Characteristic

Circuit Simulation Result

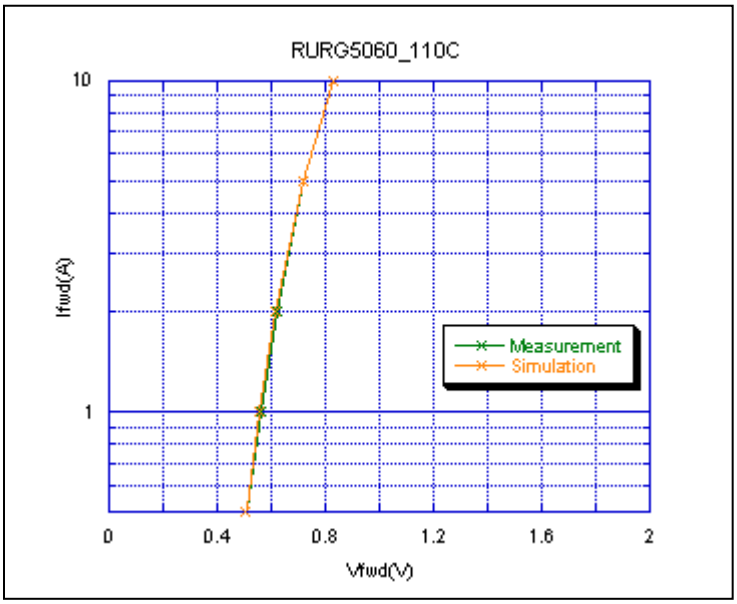


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

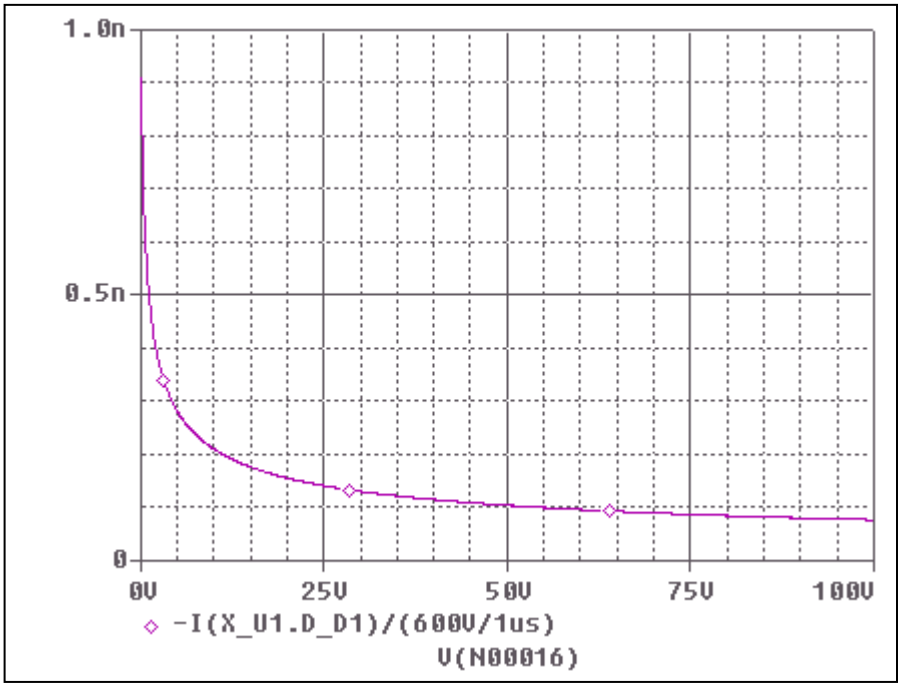


Simulation Result

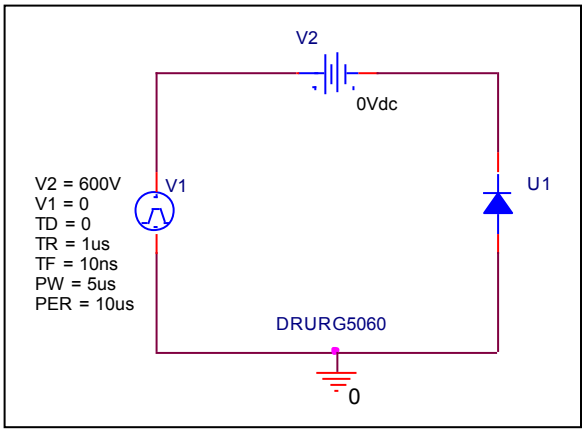
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.5	0.500	0.505	-1.00
1	0.560	0.558	0.36
2	0.622	0.618	0.64
5	0.721	0.719	0.28
10	0.828	0.829	-0.12

Capacitance Characteristic

Circuit Simulation Result

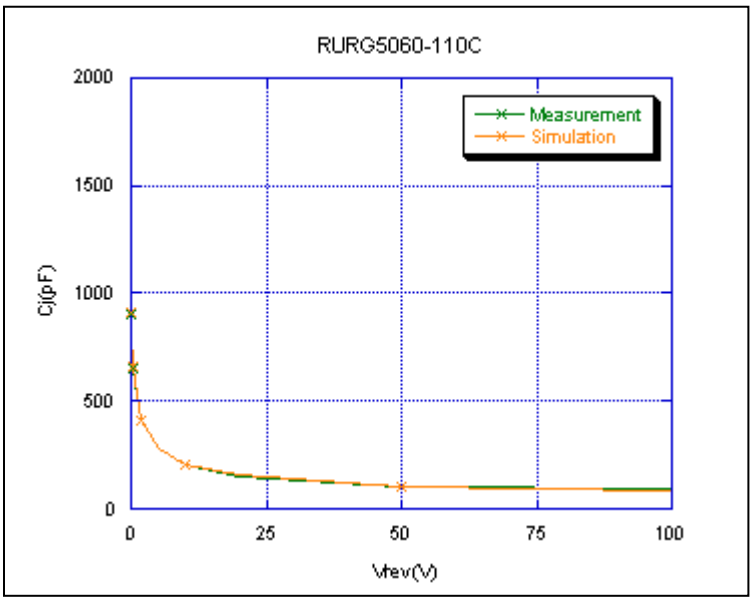


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

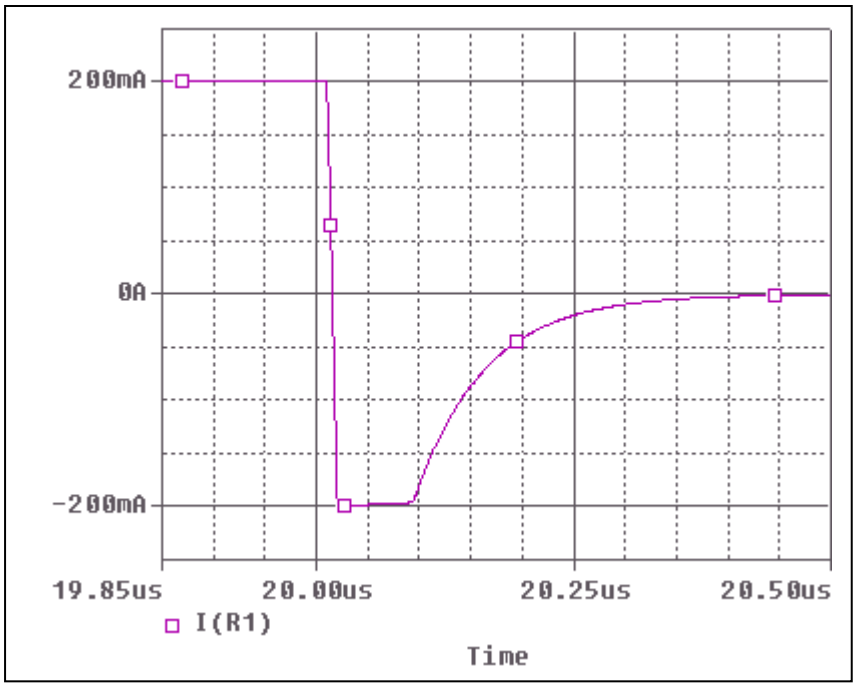


Simulation Result

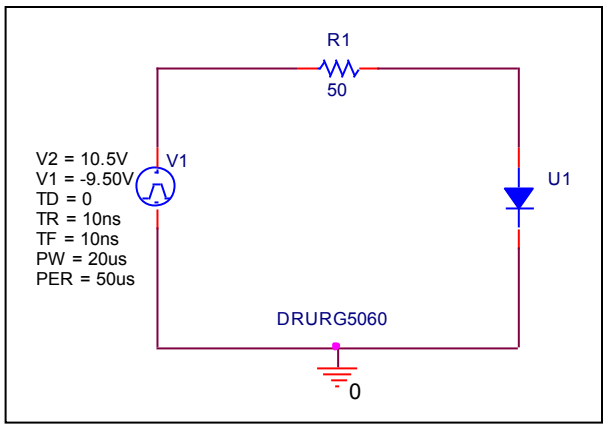
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	1015.300	1015.300	0.00
0.1	899.359	910.925	-1.29
0.2	818.092	818.088	0.00
0.5	650.305	658.357	-1.24
1	520.625	528.628	-1.54
2	410.957	409.216	0.42
5	281.052	282.702	-0.59
10	210.485	210.728	-0.12
20	150.863	156.107	-3.48
50	108.678	104.377	3.96

Reverse Recovery Characteristic

Circuit Simulation Result



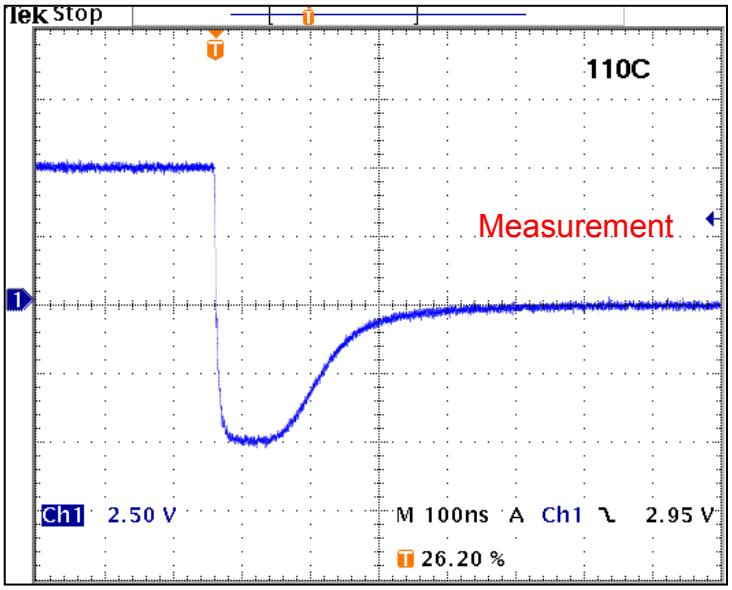
Evaluation Circuit



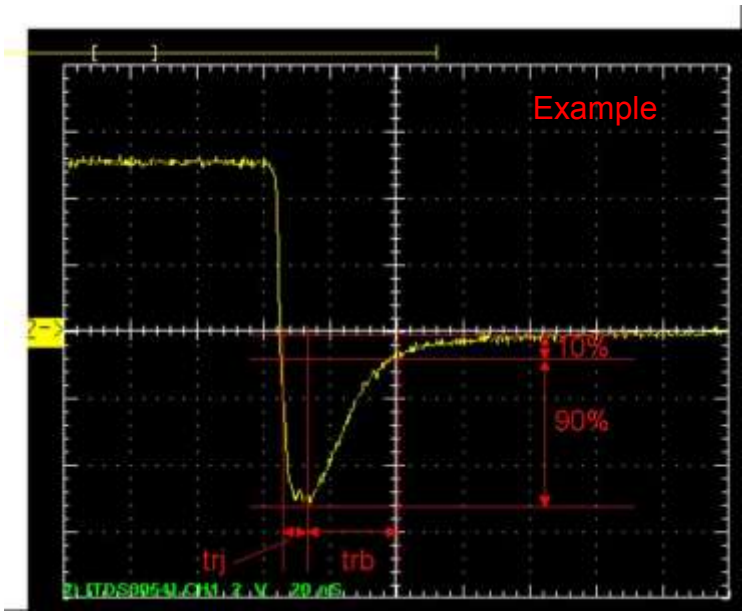
Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trj	**78.0**	**ns**	**77.9**	**ns**	**0.128**
trb	**156.0**	**ns**	**155.7**	**ns**	**0.192**

Reverse Recovery Characteristic Reference



Trj =78 (ns)
Trb=156 (ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb