Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER / PROFESSIONAL
PART NUMBER: RURG5060
MANUFACTURER: INTERSIL
REMARK: TC=80C

Bee Technologies Inc.

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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

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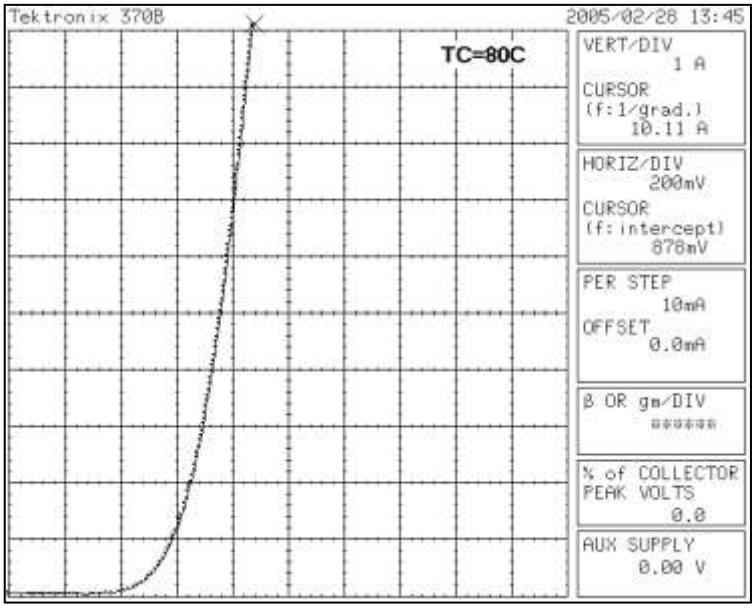
Forward Current Characteristic Reference



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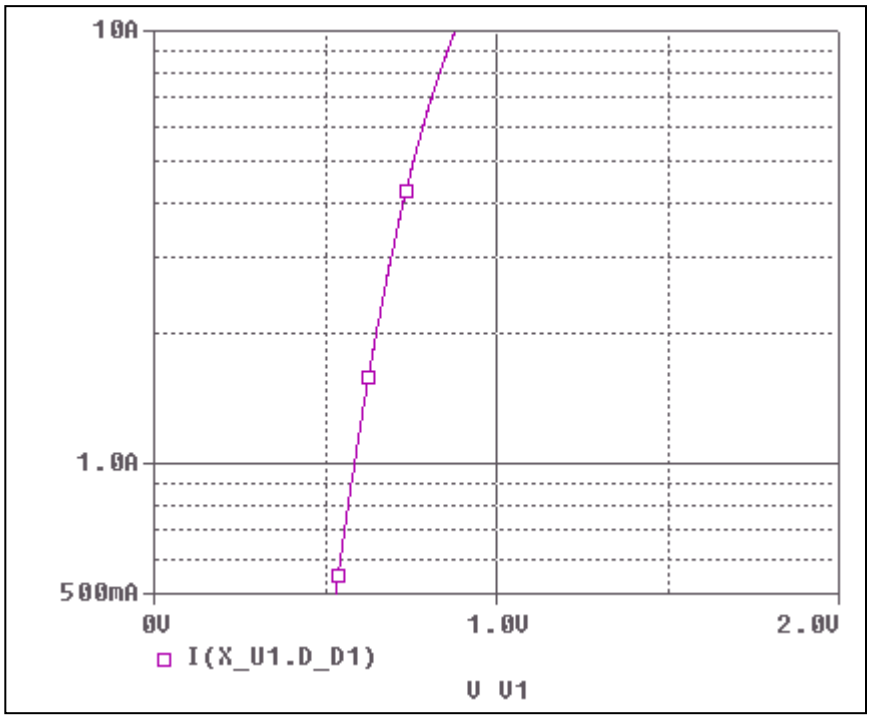
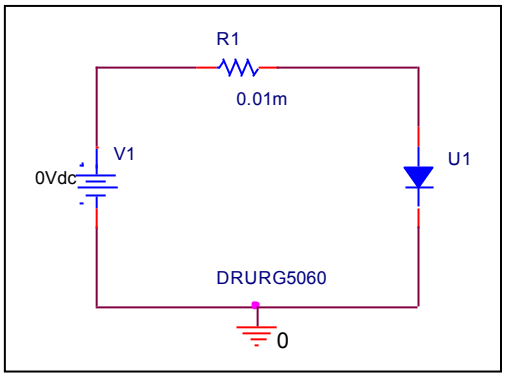
Forward Current Characteristic

Circuit Simulation Result



Evaluation Circuit



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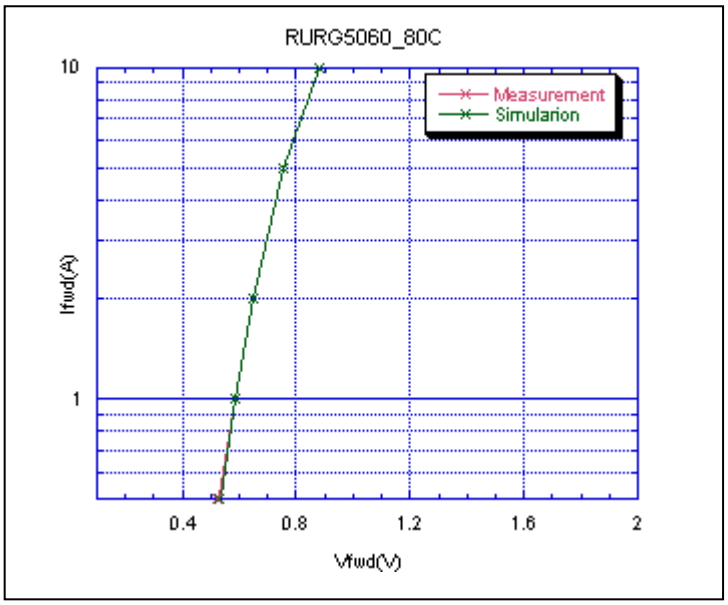
Comparison Graph

Circuit Simulation Result



Simulation Result

Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.5	0.526	0.529	-0.57
1	0.586	0.585	0.17
2	0.652	0.648	0.61
5	0.758	0.758	0.00
10	0.878	0.880	-0.23

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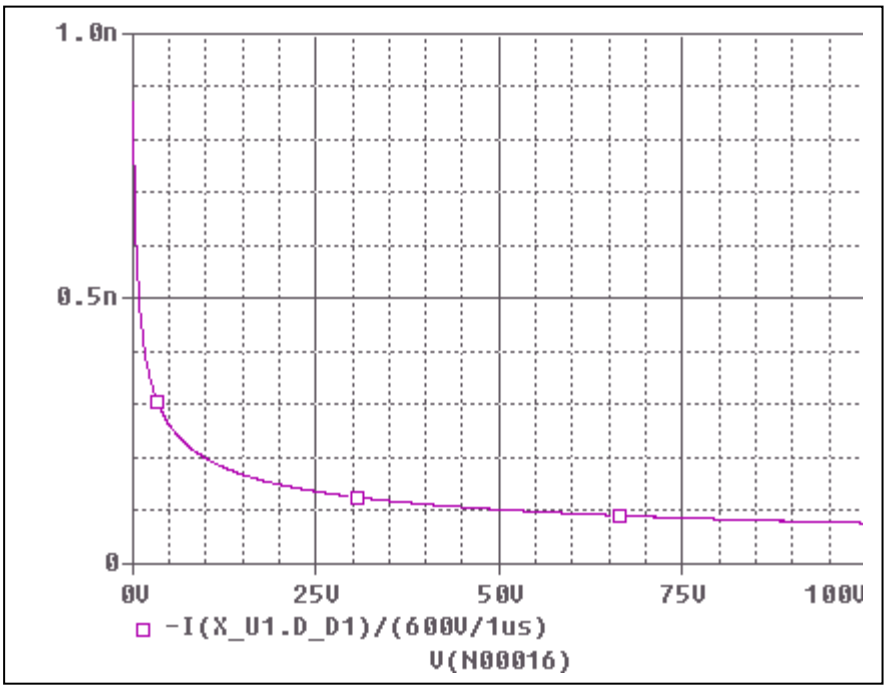
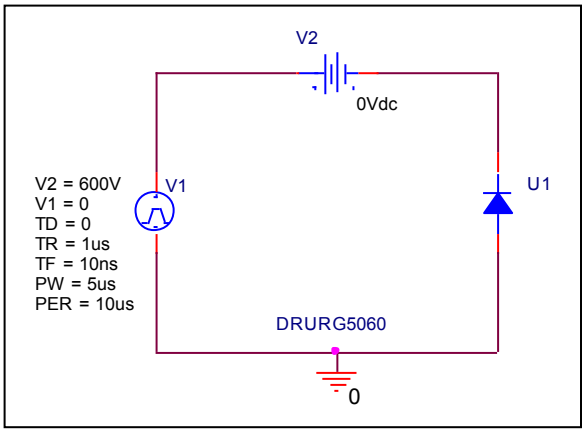
Capacitance Characteristic

Circuit Simulation Result



Evaluation Circuit



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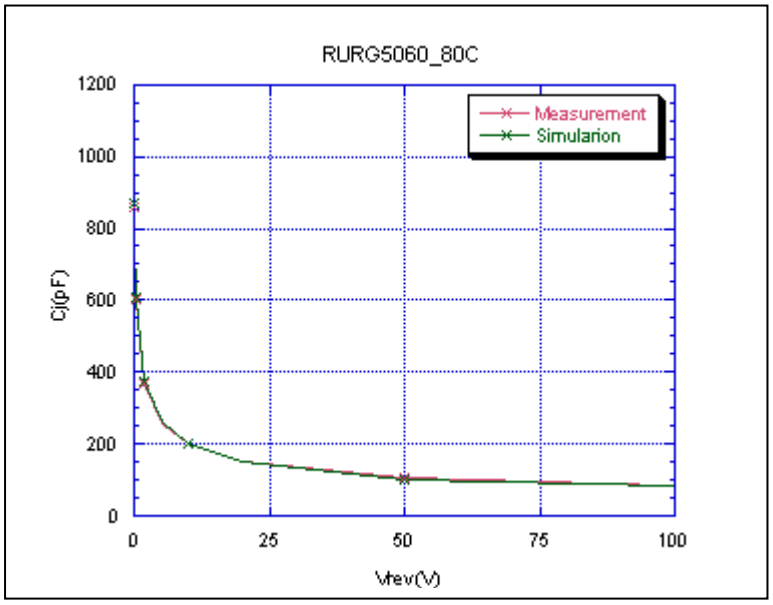
Comparison Graph

Circuit Simulation Result



Simulation Result

Vrev(V)	Cj(pF)		%Error
	Measurement	Simulation	
0	1000.300	1000.300	0.00
0.1	856.165	872.036	-1.85
0.2	758.956	768.802	-1.30
0.5	601.994	606.599	-0.76
1	486.325	484.520	0.37
2	369.611	376.430	-1.84
5	259.101	263.253	-1.60
10	200.001	199.128	0.44
20	150.005	149.859	0.10
50	108.007	102.748	4.87
100	80.992	77.127	4.77

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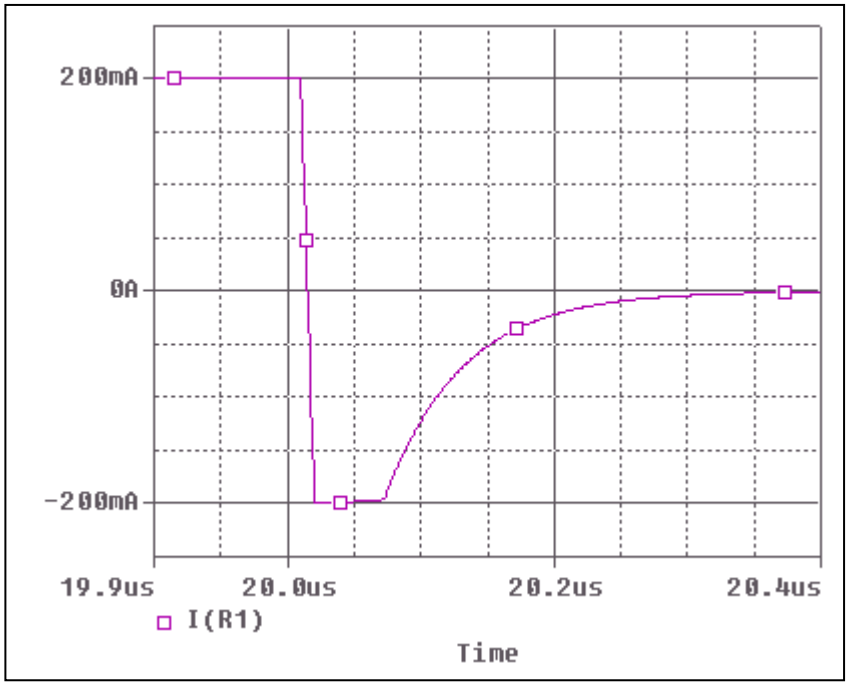
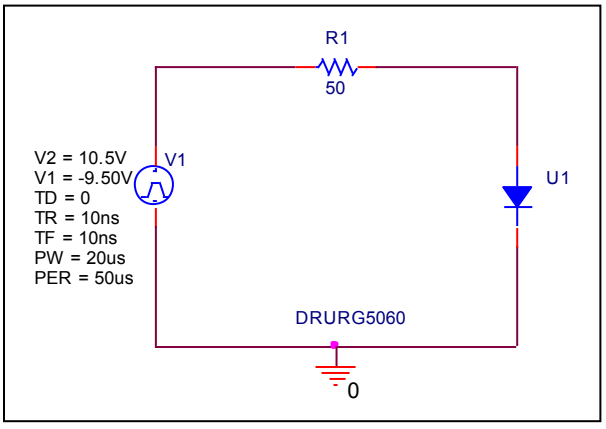
Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit



Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trj	**58.0**	**ns**	**57.3**	**ns**	**1.206**
trb	**132.0**	**ns**	**132.5**	**ns**	**0.378**

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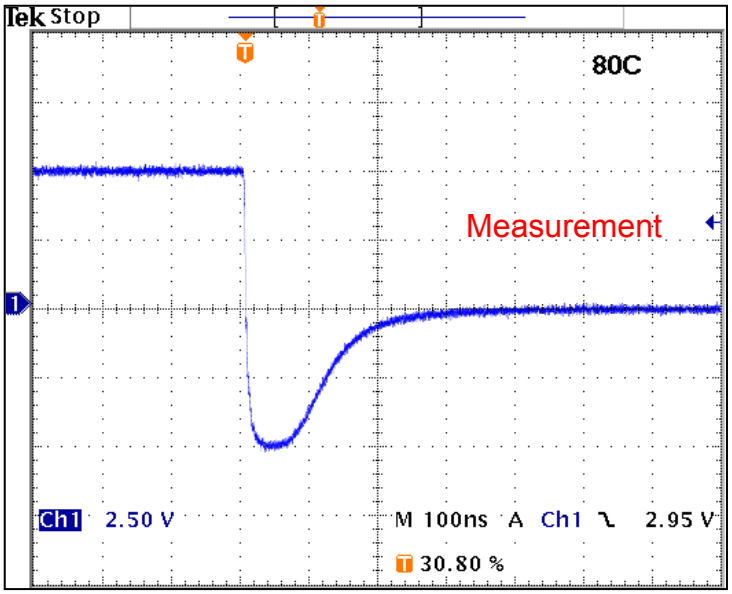
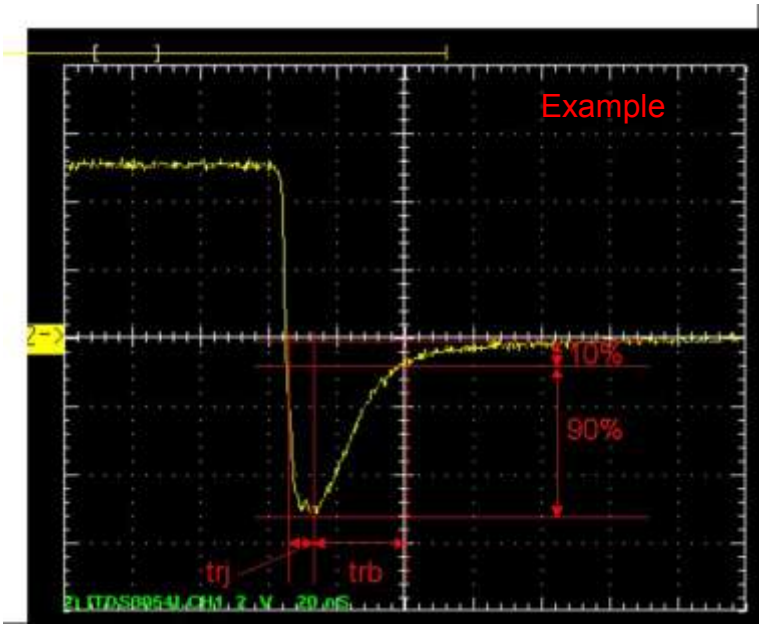
Reverse Recovery Characteristic Reference



Trj =58 (ns)
Trb=132 (ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb

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