

Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER / PROFESSIONAL
PART NUMBER: RHRG7560
MANUFACTURER: INTERSIL
REMARK: TC=110C

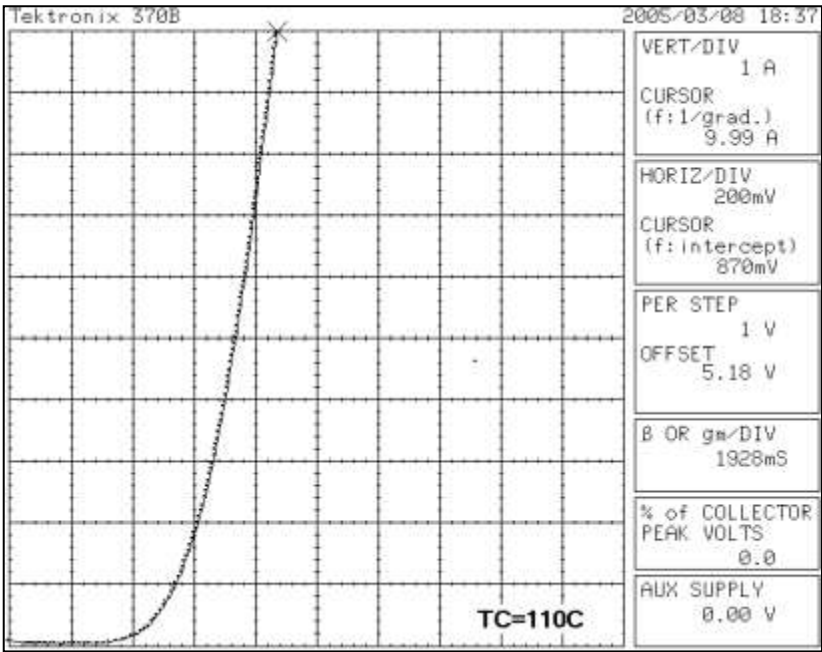


Bee Technologies Inc.

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

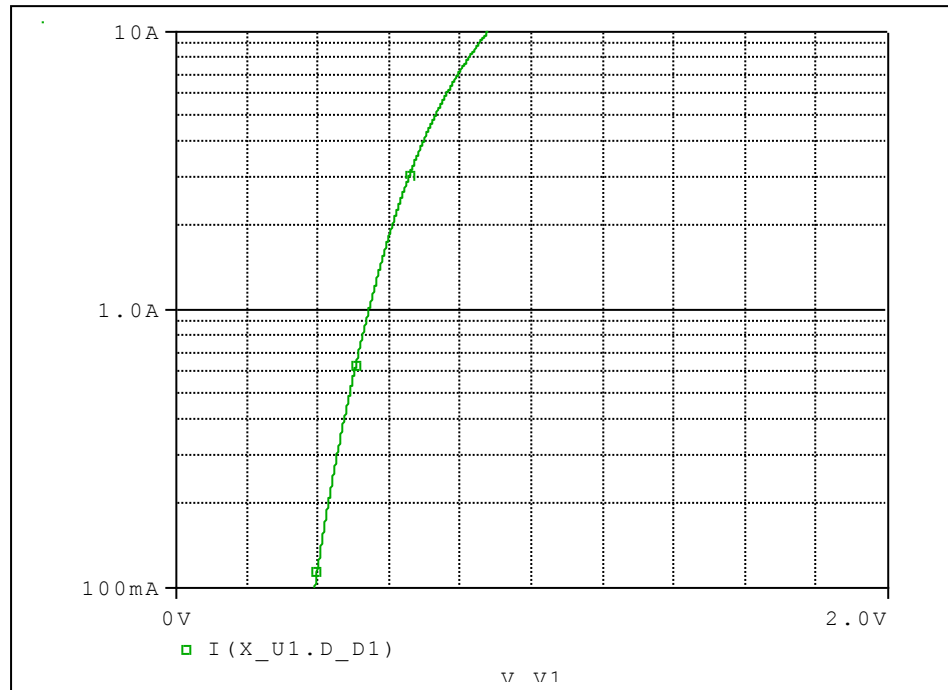
Forward Current Characteristic

Reference

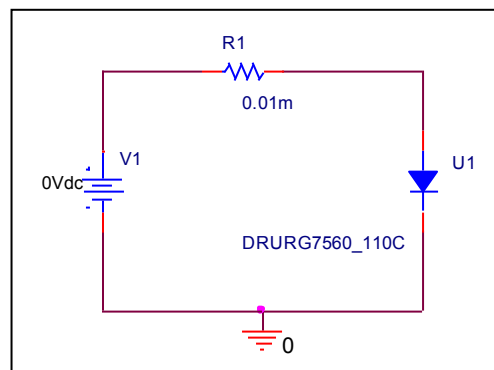


Forward Current Characteristic

Circuit Simulation Result

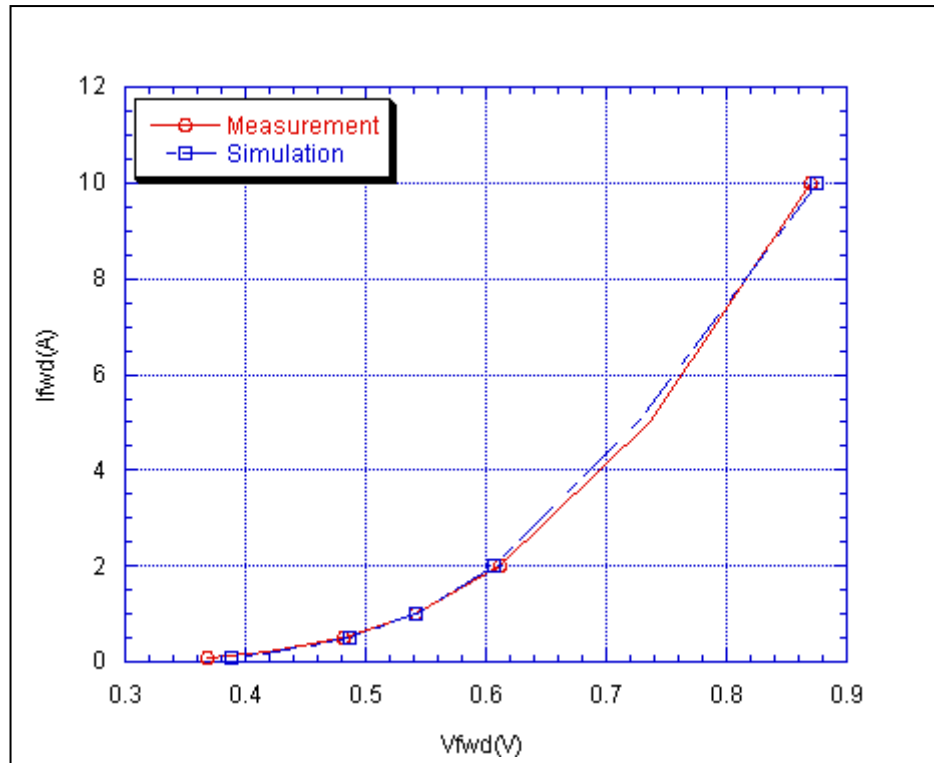


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

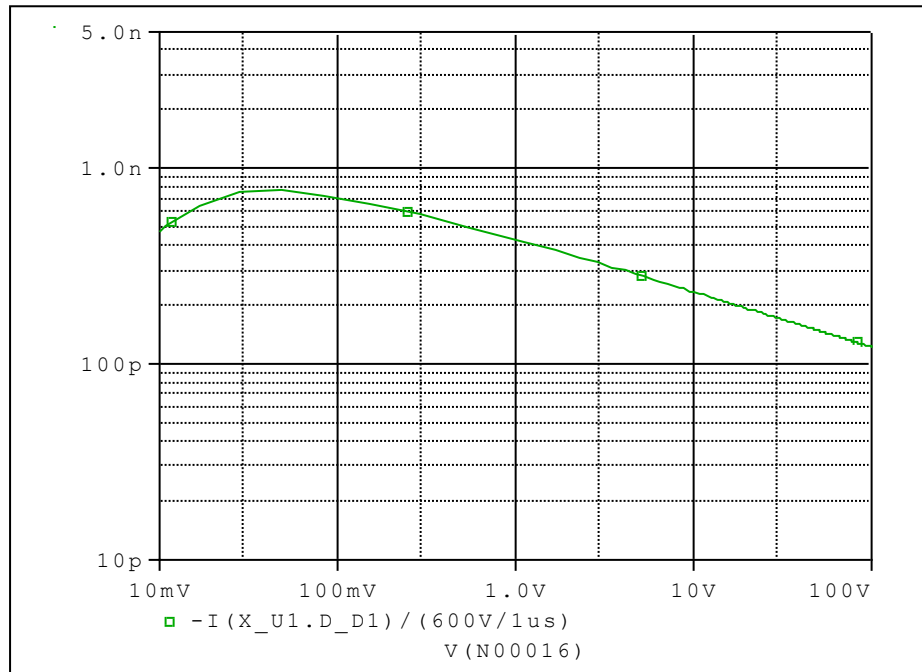


Simulation Result

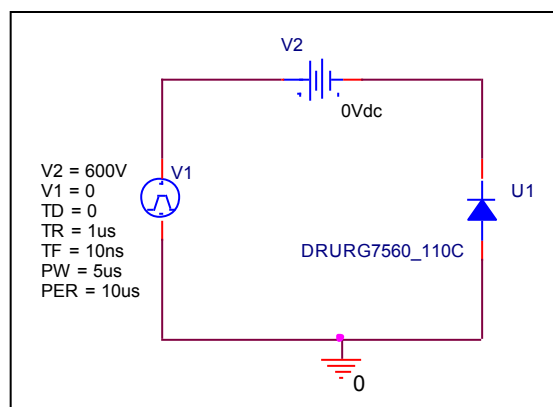
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.1	0.368	0.388	-5.43
0.2	0.418	0.426	-1.87
0.5	0.482	0.487	-0.98
1	0.542	0.541	0.15
2	0.612	0.606	0.93
5	0.736	0.727	1.28
10	0.870	0.875	-0.62

Capacitance Characteristic

Circuit Simulation Result

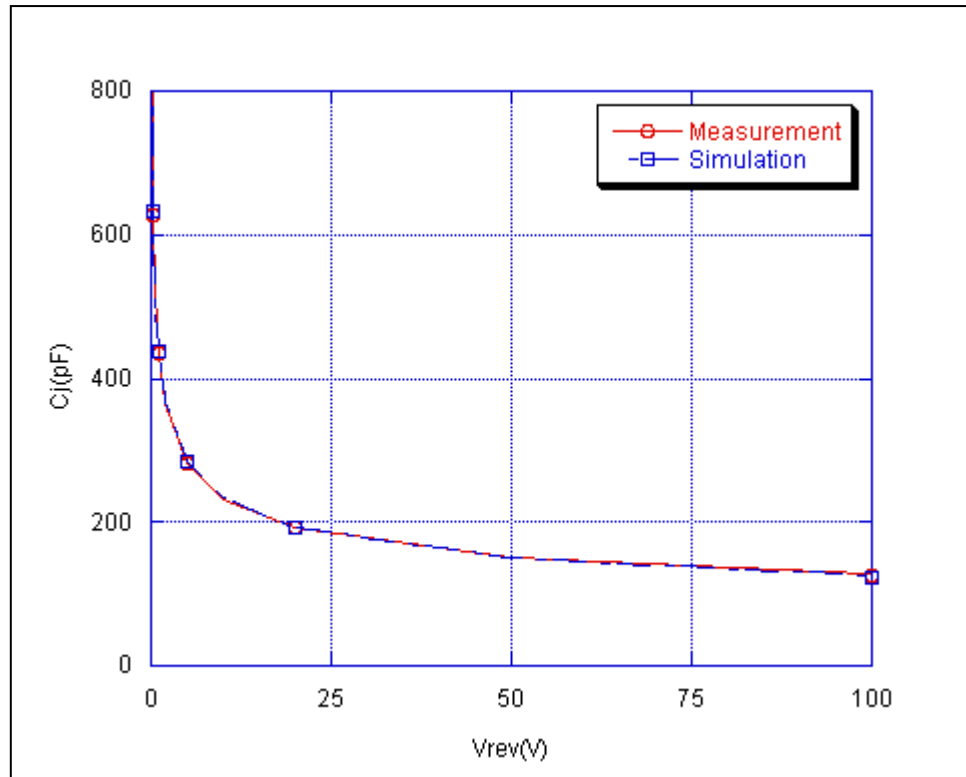


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

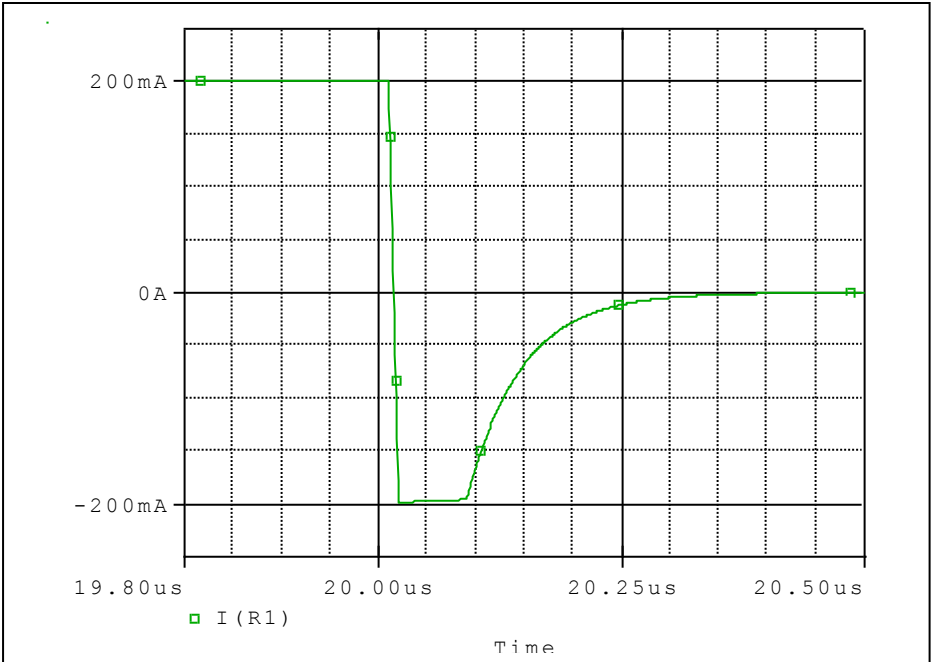


Simulation Result

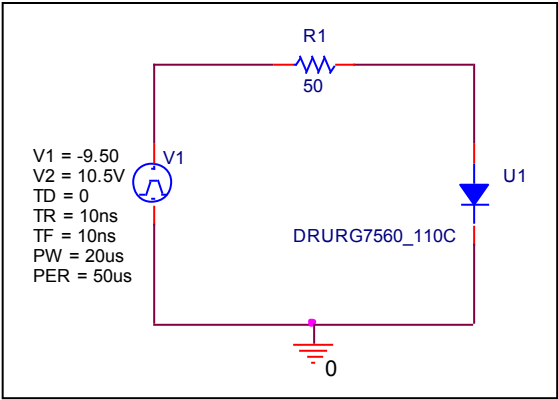
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	827.110	827.110	0.00
0.2	627.100	633.835	-1.07
0.5	517.330	519.817	-0.48
1	435.220	438.373	-0.72
2	364.100	364.814	-0.20
5	281.200	284.275	-1.09
10	232.302	234.130	-0.79
20	193.311	193.000	0.16
50	151.302	150.000	0.86
100	126.350	122.350	3.17

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit

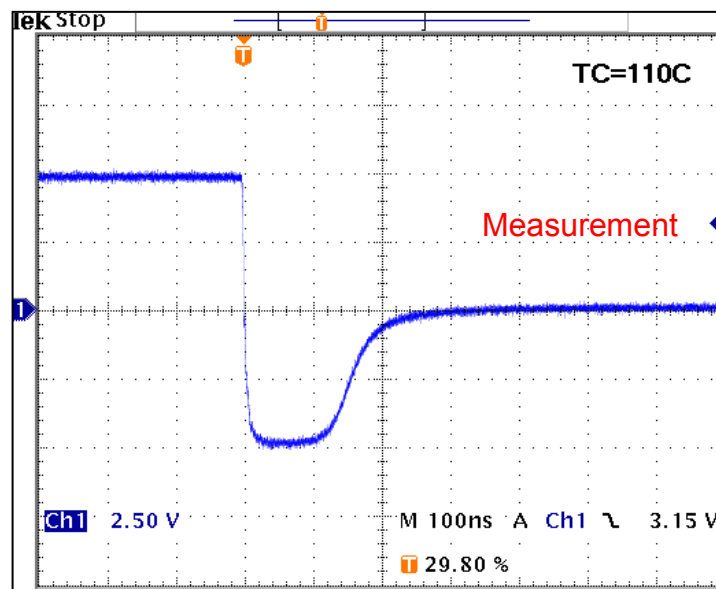


Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trj	74	ns	73.4	ns	-0.810
trb	128	ns	128.8	ns	0.625

Reverse Recovery Characteristic

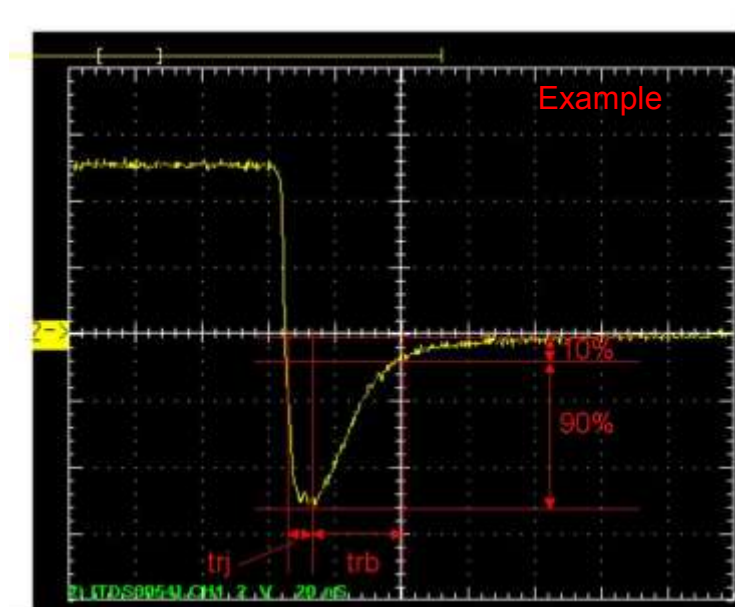
Reference



$T_{rr} = 74$ (ns)

$T_{rb} = 128$ (ns)

Conditions: $I_{fwd} = I_{rev} = 0.2$ (A), $R_L = 50$



Relation between t_{rr} and t_{rb}