

Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER / PROFESSIONAL
PART NUMBER: RURG8060
MANUFACTURER: INTERSIL
REMARK: TC=110C

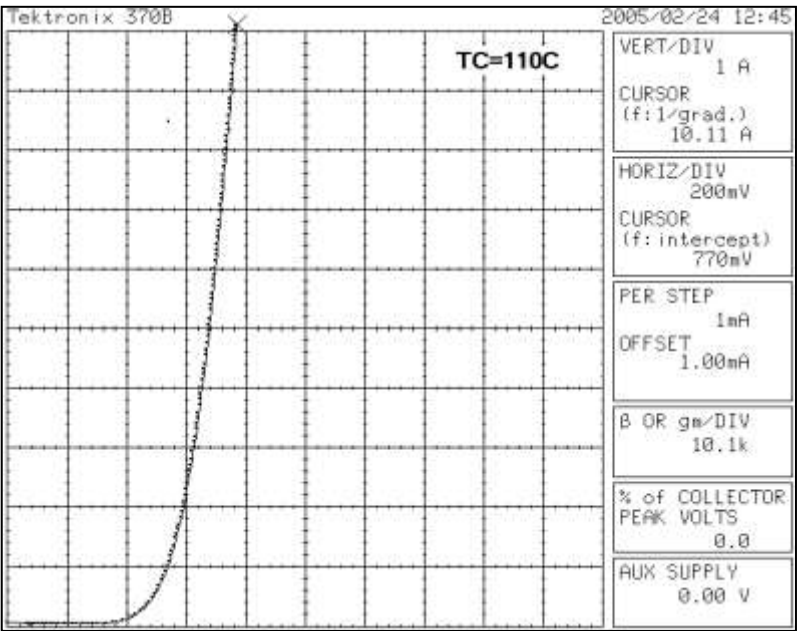


Bee Technologies Inc.

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

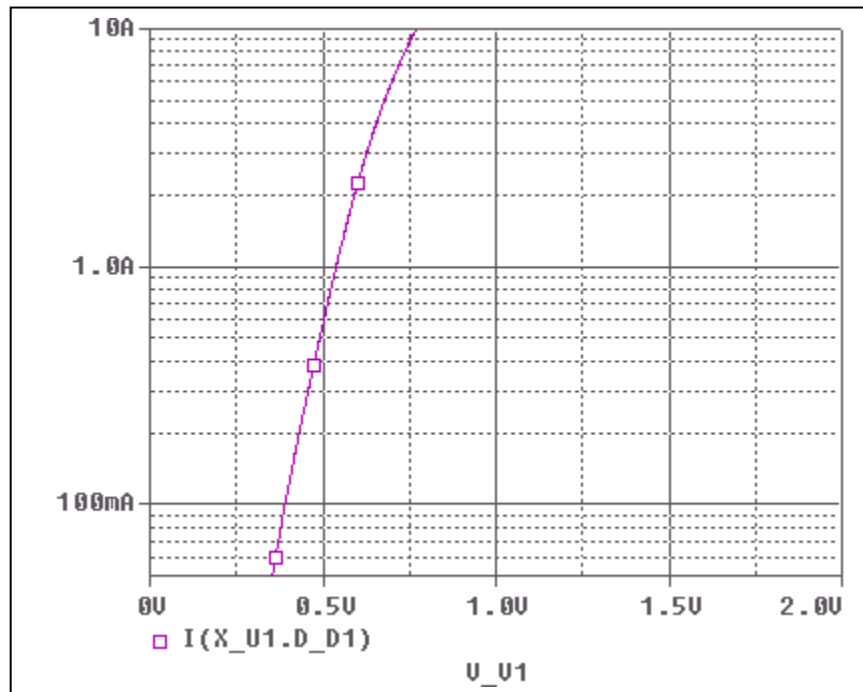
Forward Current Characteristic

Reference

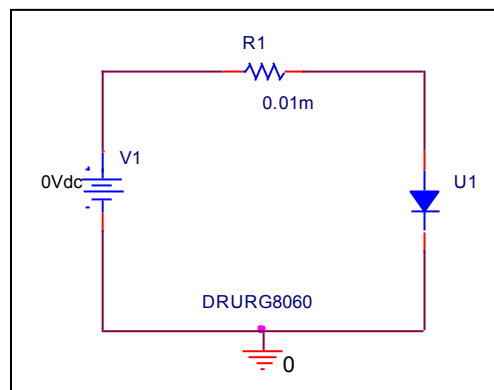


Forward Current Characteristic

Circuit Simulation Result

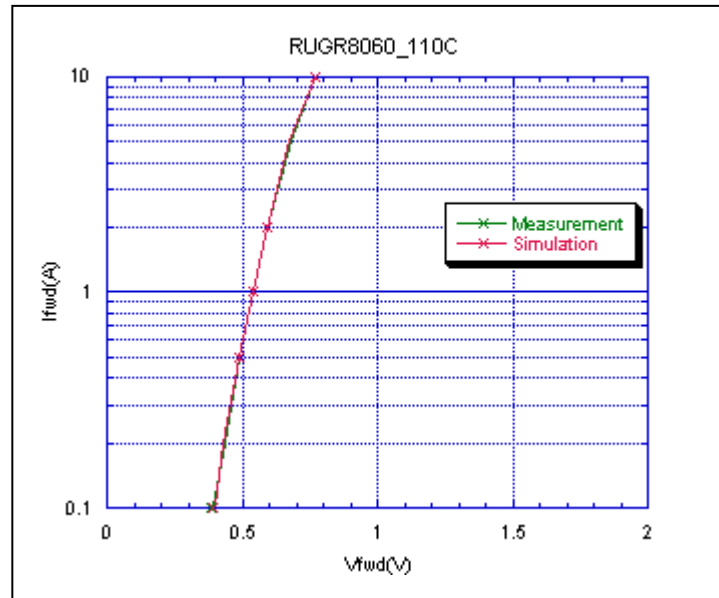


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

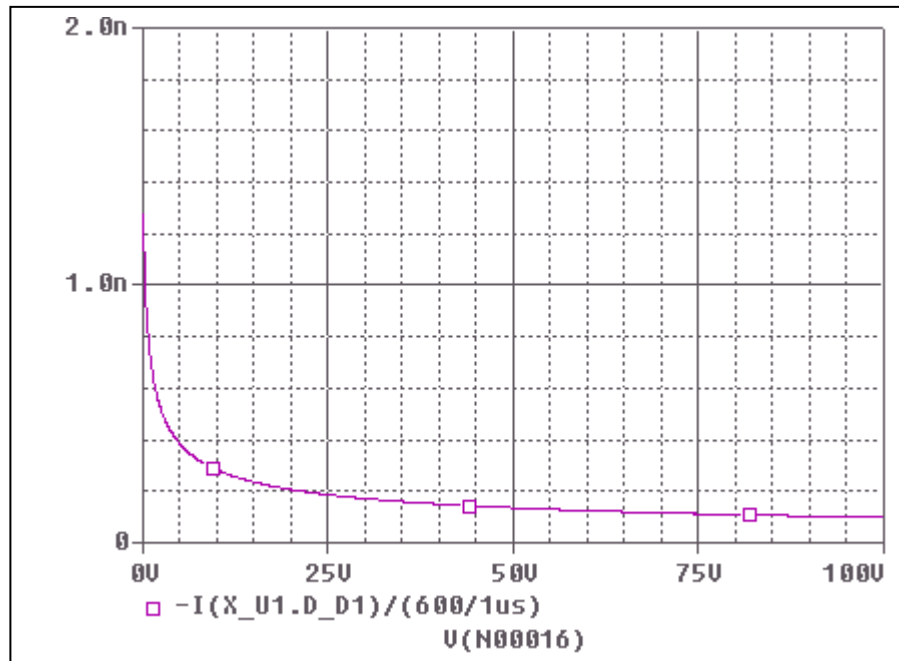


Simulation Result

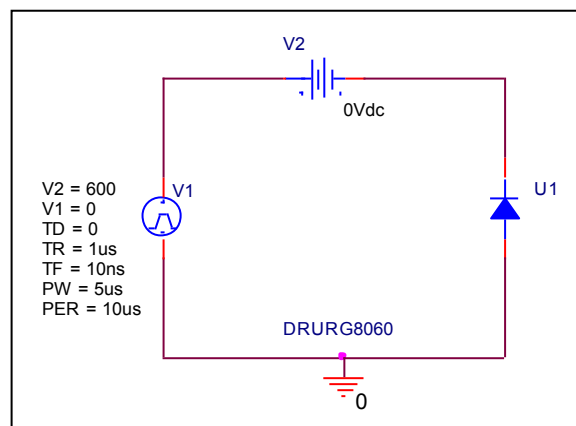
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.1	0.388	0.391	-0.77
0.2	0.434	0.431	0.69
0.5	0.490	0.491	-0.20
1	0.538	0.538	0.00
2	0.592	0.590	0.34
5	0.678	0.677	0.15
10	0.770	0.770	0.00

Capacitance Characteristic

Circuit Simulation Result

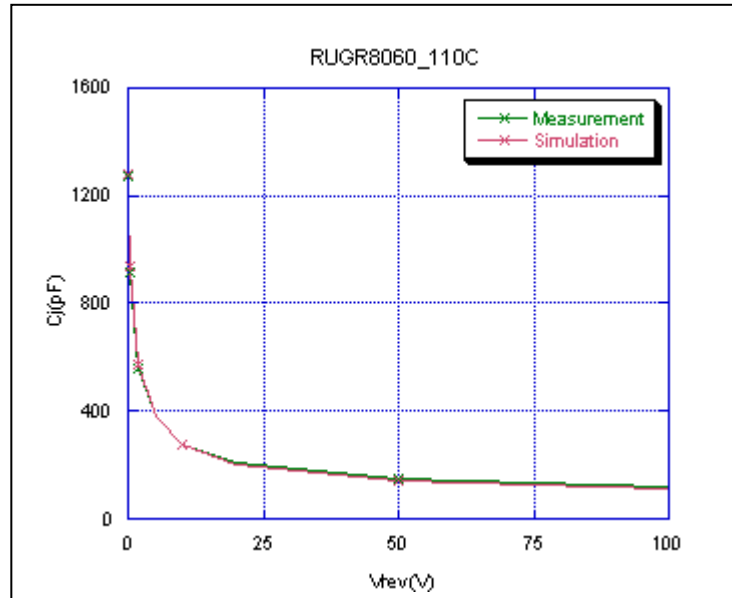


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

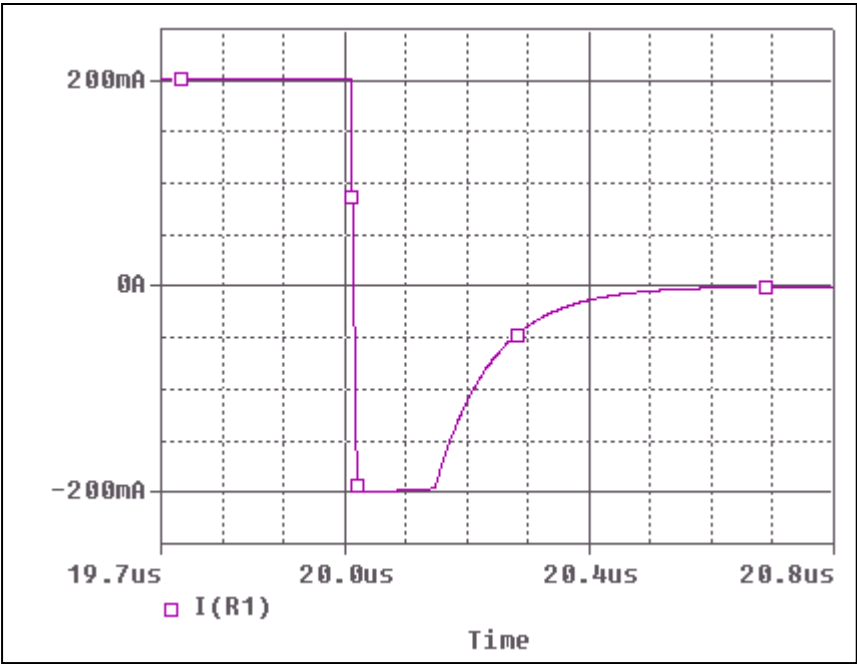


Simulation Result

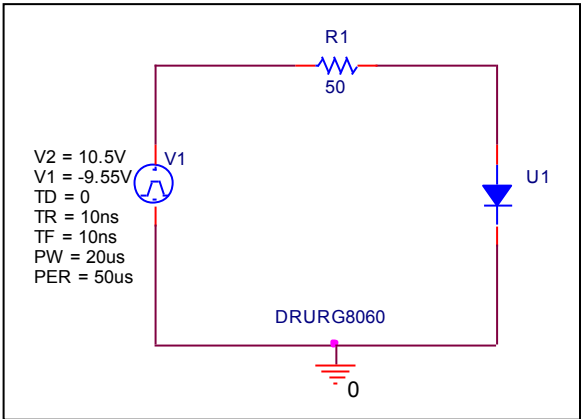
V_{rev} (V)	C_j (pF) Measurement	C_j (pF) Simulation	%Error
0	1403.000	1403.000	0.00
0.1	1273.000	1274.900	-0.15
0.2	1146.000	1156.500	-0.92
0.5	915.880	937.959	-2.41
1	730.510	749.930	-2.66
2	557.290	572.269	-2.69
5	378.090	382.467	-1.16
10	279.300	276.124	1.14
20	212.240	202.441	4.62
50	149.960	145.067	3.26
100	112.290	107.253	4.49

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit

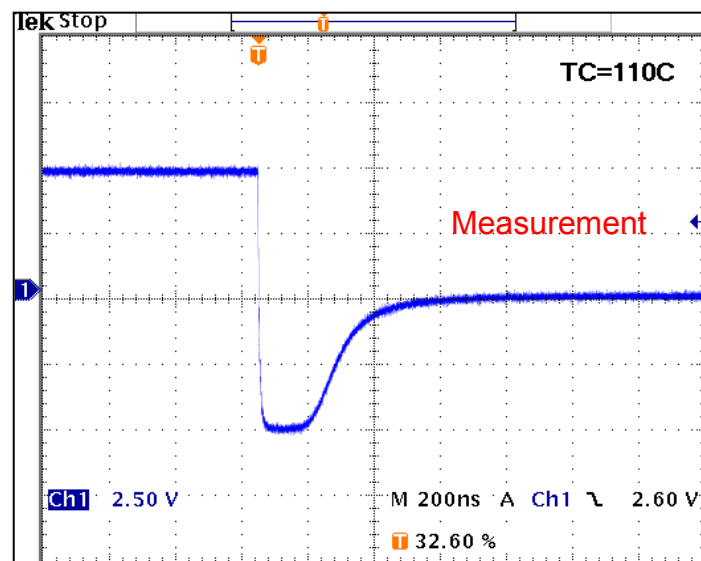


Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trj	132.0	ns	132.3	ns	0.227
trb	212.0	ns	213.5	ns	0.707

Reverse Recovery Characteristic

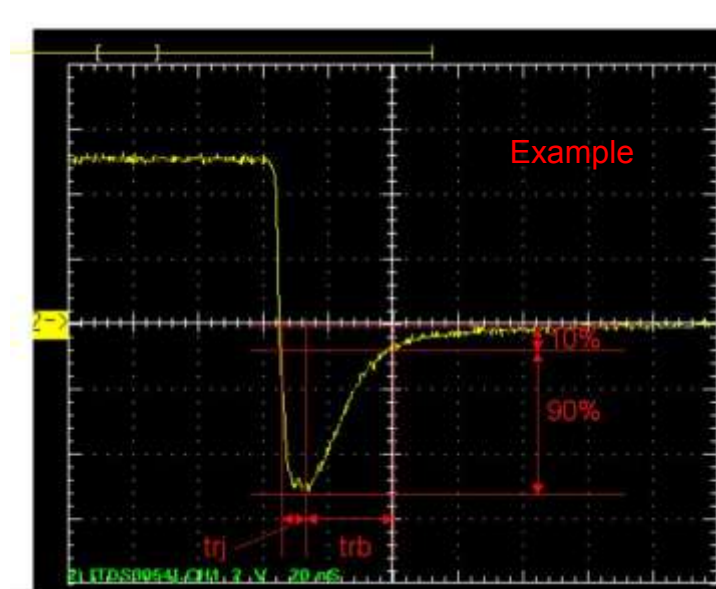
Reference



$T_{rj} = 132(\text{ns})$

$T_{rb} = 212(\text{ns})$

Conditions: $I_{fwd} = I_{rev} = 0.2(\text{A})$, $R_I = 50$



Relation between t_{rj} and t_{rb}