

Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER/ PROFESSIONAL
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REMARK: TC=25C

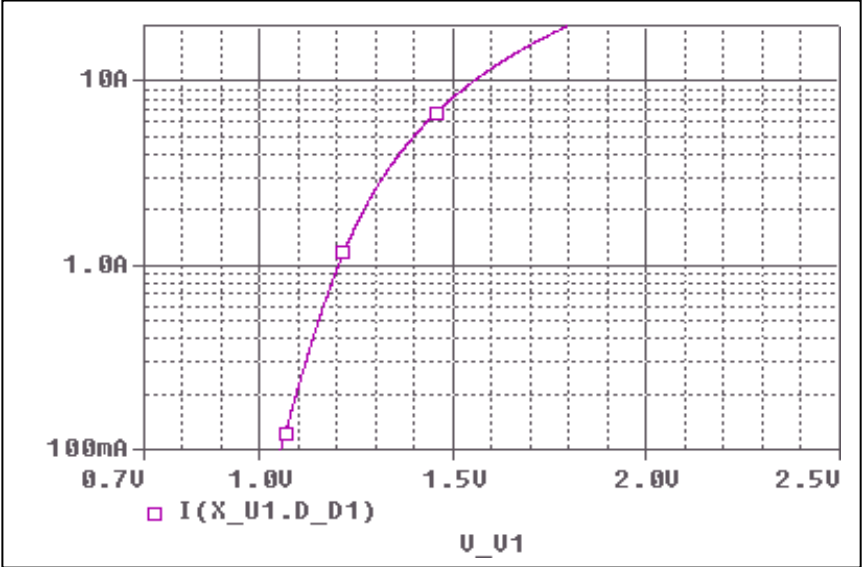


Bee Technologies Inc.

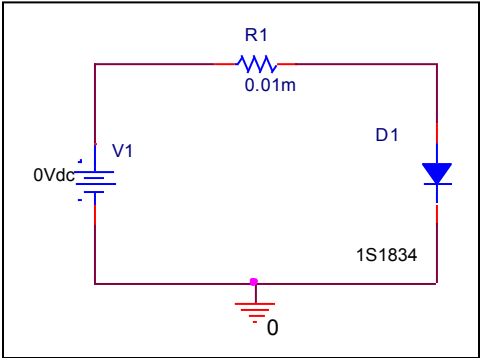
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

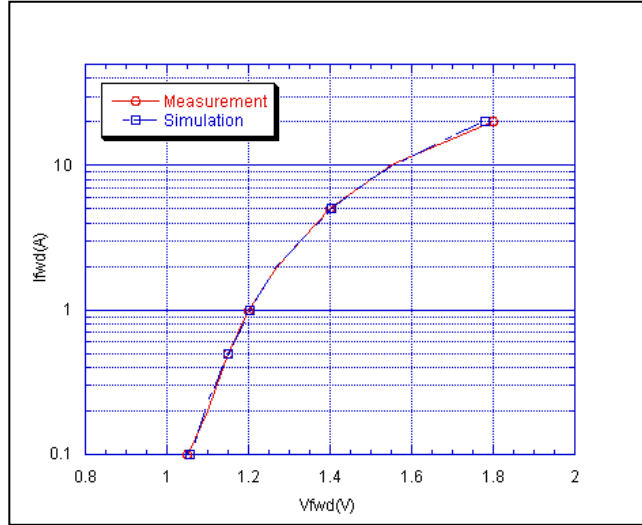


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

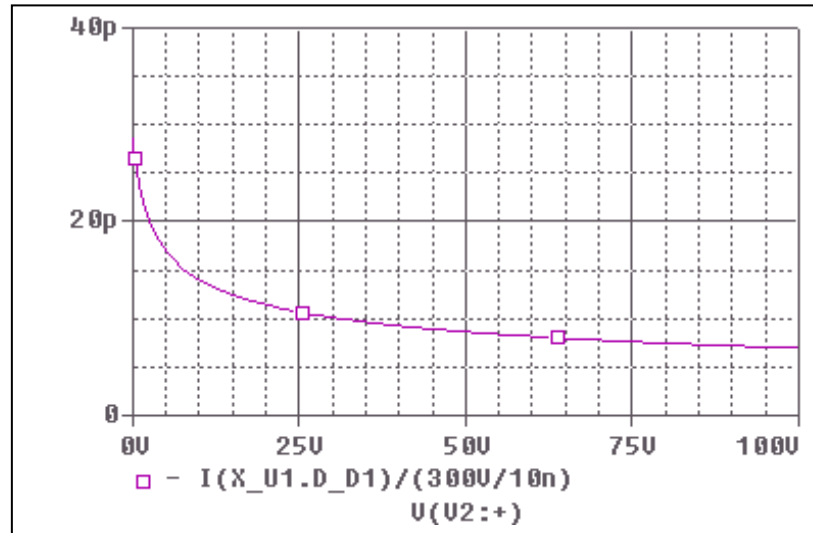


Simulation Result

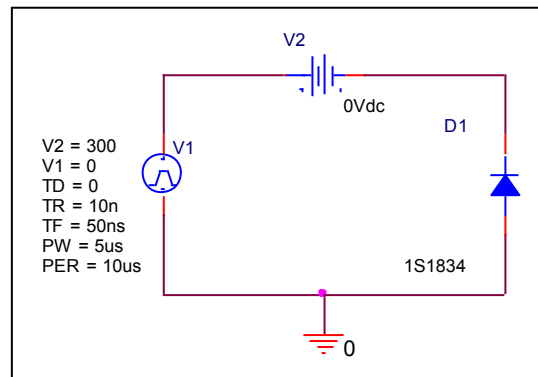
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.1	1.050	1.055	-0.495
0.2	1.100	1.094	0.573
0.5	1.150	1.152	-0.148
1	1.200	1.203	-0.250
2	1.270	1.267	0.228
5	1.400	1.404	-0.293
10	1.550	1.553	-0.181
20	1.800	1.780	1.117

Junction Capacitance Characteristic

Circuit Simulation Result

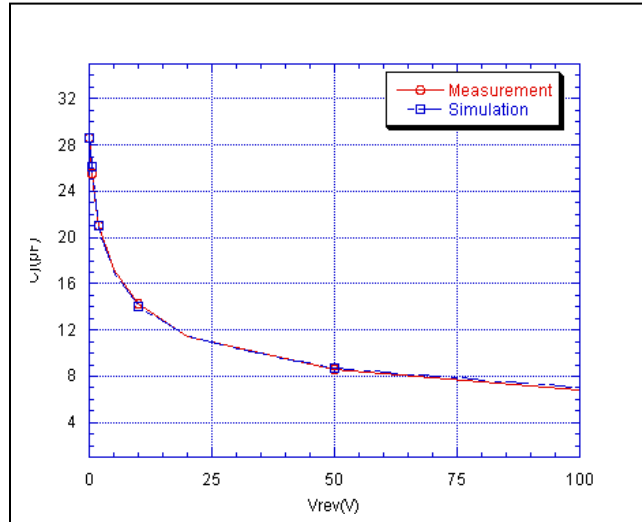


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

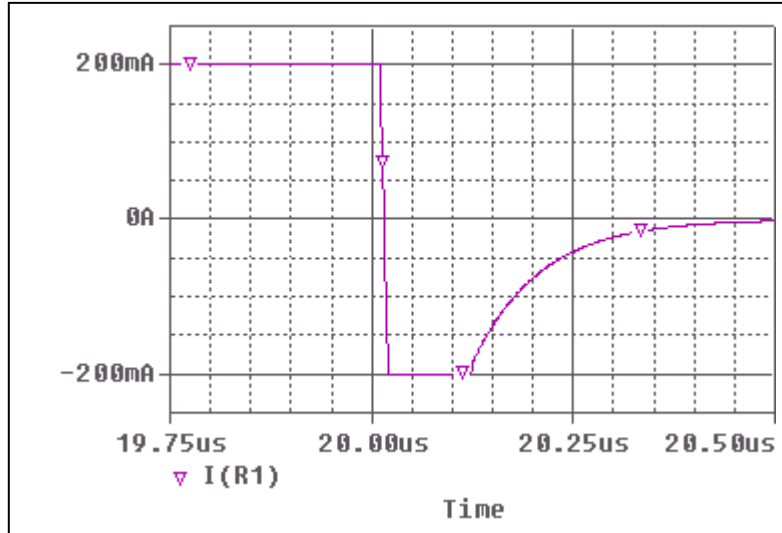


Simulation Result

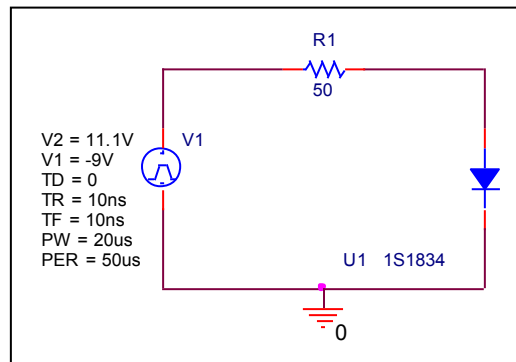
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	29.432	29.432	0.000
0.1	28.555	28.625	-0.245
0.2	27.555	27.879	-1.176
0.5	25.576	26.087	-1.998
1	23.567	23.874	-1.303
2	21.062	21.070	-0.038
5	17.285	16.953	1.921
10	14.272	14.009	1.843
20	11.399	11.448	-0.430
50	8.555	8.674	-1.398
100	6.735	6.958	-3.319

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit

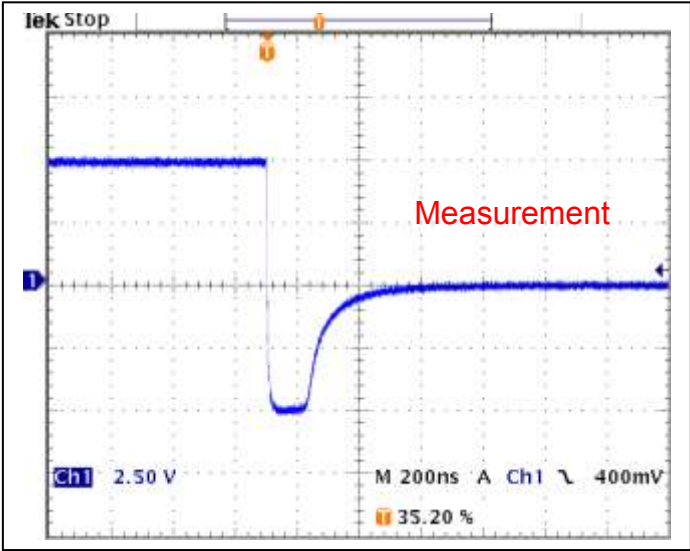


Compare Measurement vs. Simulation

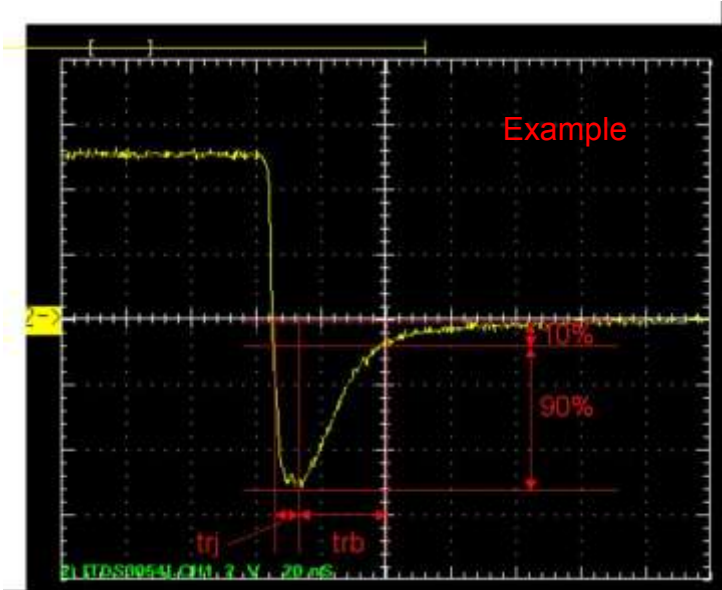
	Measurement		Simulation		%Error
trj	108.00	ns	107.50	ns	0.463
trb	188.00	ns	187.40	ns	0.319

Reverse Recovery Characteristic

Reference



Trj =108(ns)
Trb=188(ns)
Conditions: Ifwd=Irev=0.2(A), RI=50



Relation between trj and trb