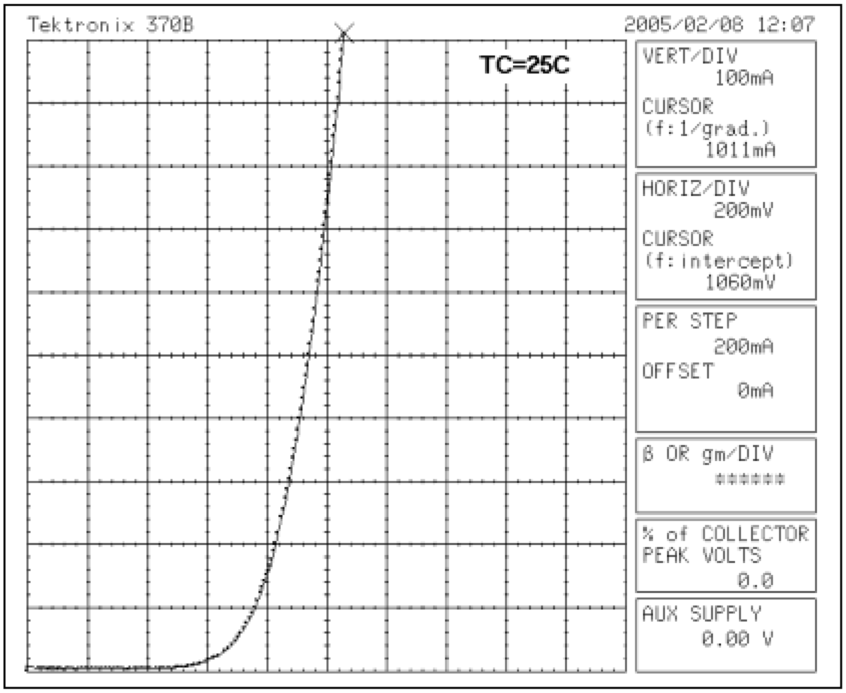
Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER / STANDARD
PART NUMBER: 1SR156-400
MANUFACTURER: ROHM
REMARK: TC=25C

Bee Technologies Inc.

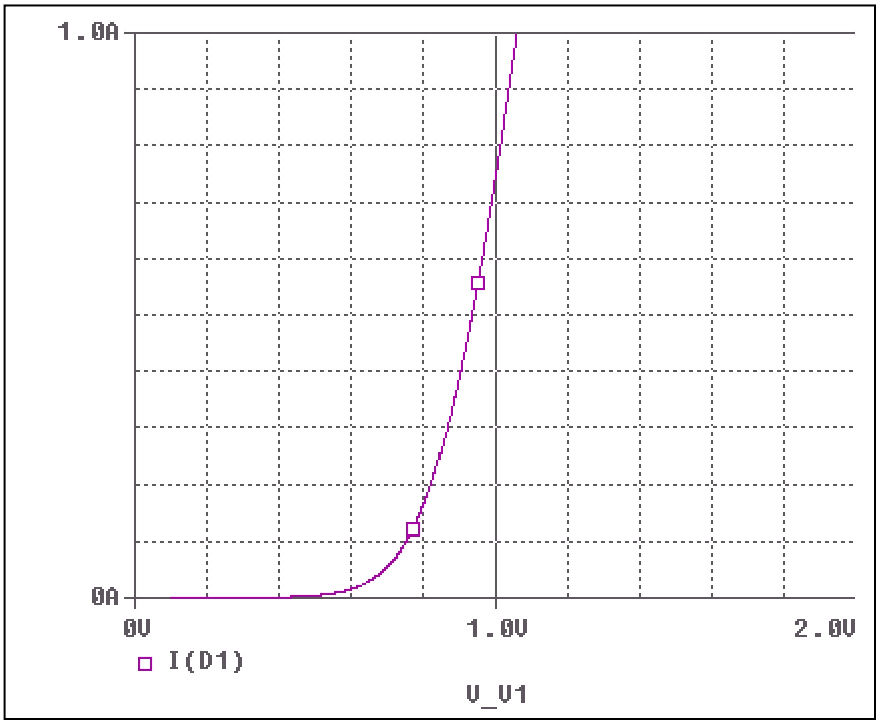
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic Reference

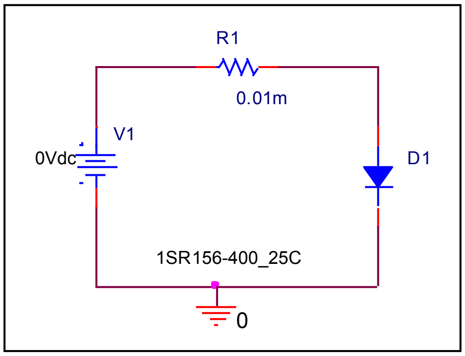


Forward Current Characteristic

Circuit Simulation Result

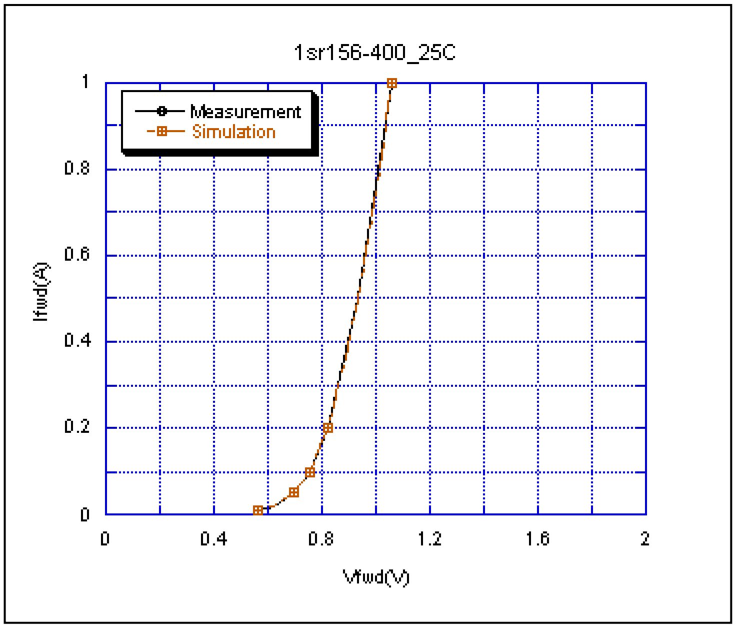


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

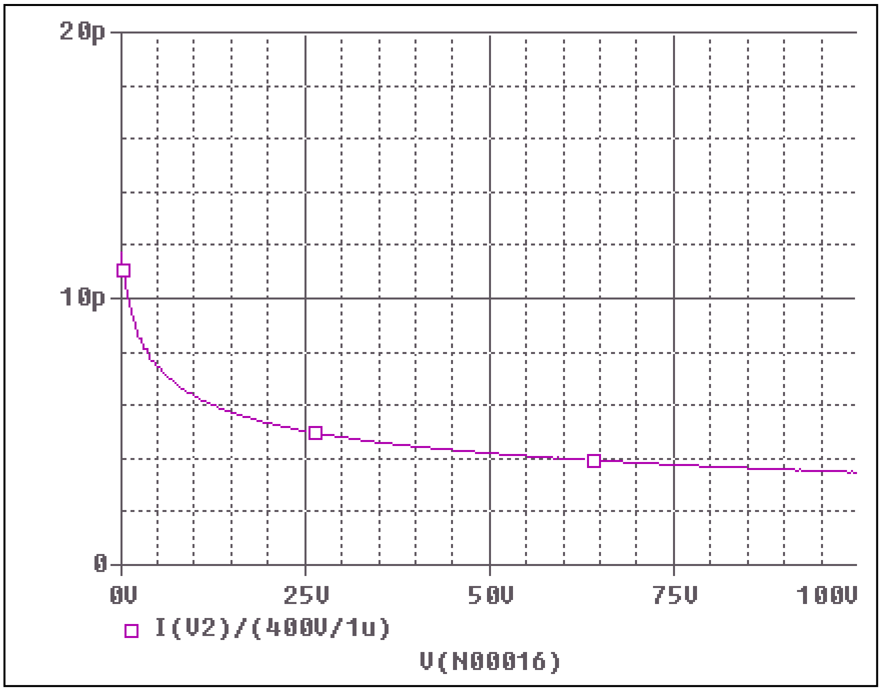


Simulation Result

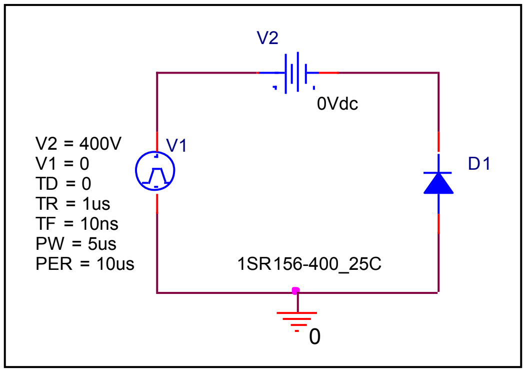
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.562	0.564	-0.36
0.02	0.620	0.618	0.32
0.05	0.696	0.693	0.43
0.1	0.755	0.753	0.26
0.2	0.820	0.820	0.00
0.5	0.930	0.933	-0.32
1	1.060	1.058	0.19

Capacitance Characteristic

Circuit Simulation Result

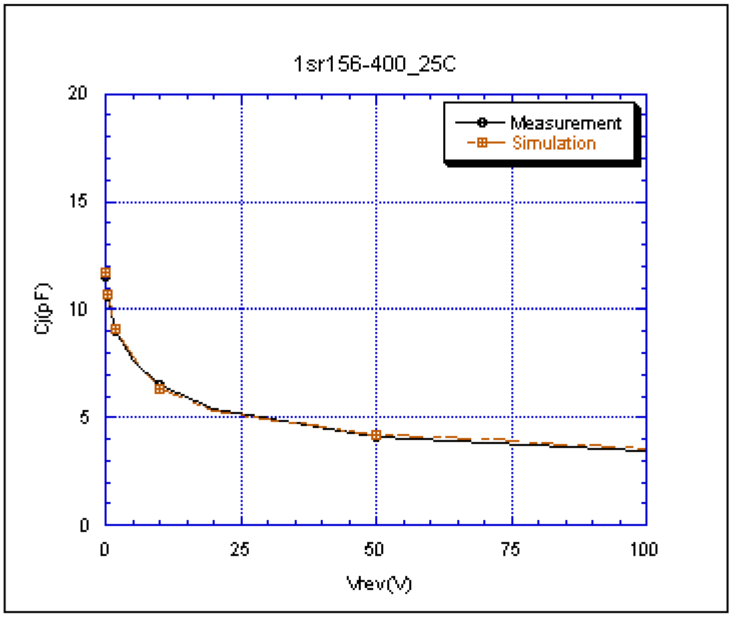


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

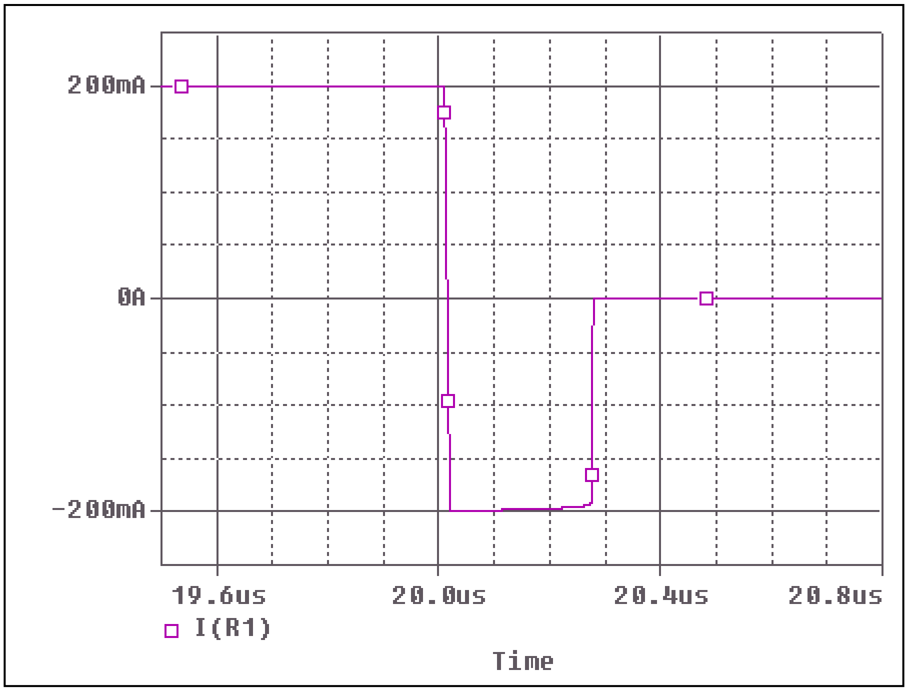


Simulation Result

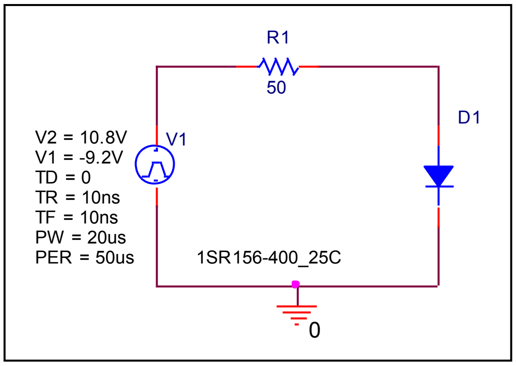
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	12.000	12.000	0.00
0.1	11.528	11.747	-1.90
0.2	11.241	11.234	0.06
0.5	10.568	10.672	-0.98
1	9.875	9.957	-0.83
2	8.975	9.078	-1.15
5	7.601	7.846	-3.22
10	6.477	6.361	1.79
20	5.388	5.344	0.82
50	4.129	4.200	-1.72
100	3.394	3.492	-2.89

Reverse Recovery Characteristic

Circuit Simulation Result



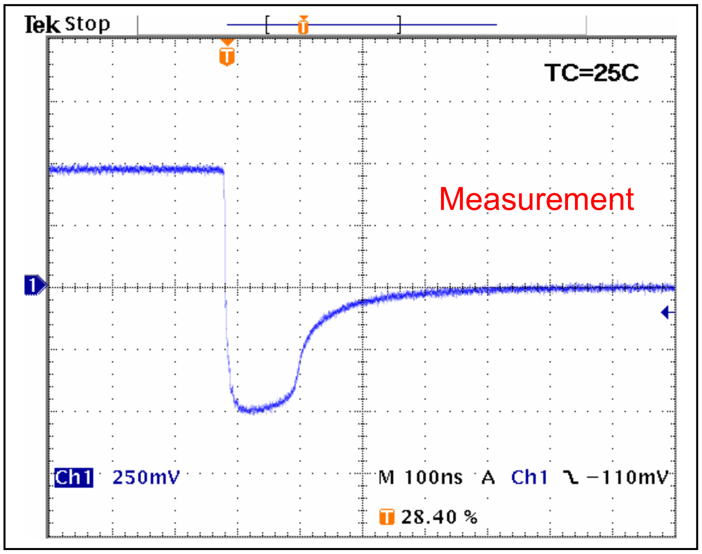
Evaluation Circuit



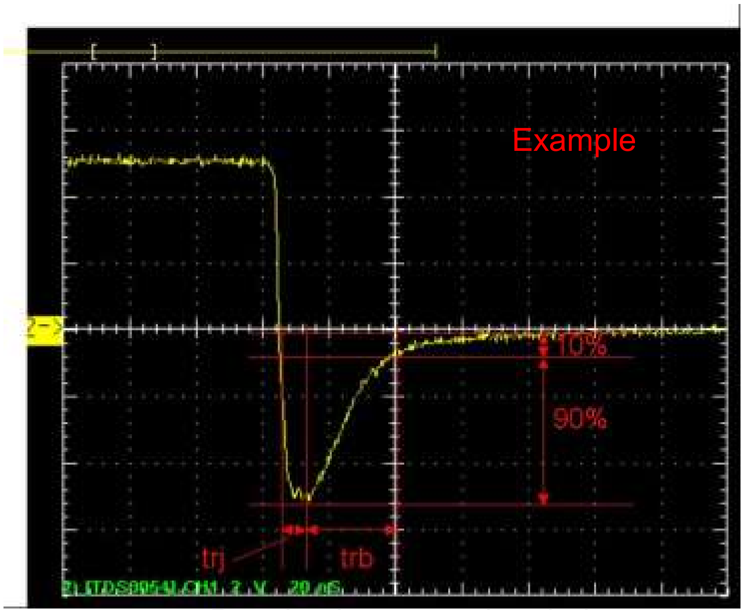
Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trr	**260.0**	**ns**	**262.0**	**ns**	**0.76**

Reverse Recovery Characteristic   Reference



Trj =40(ns)
Trb=220(ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb