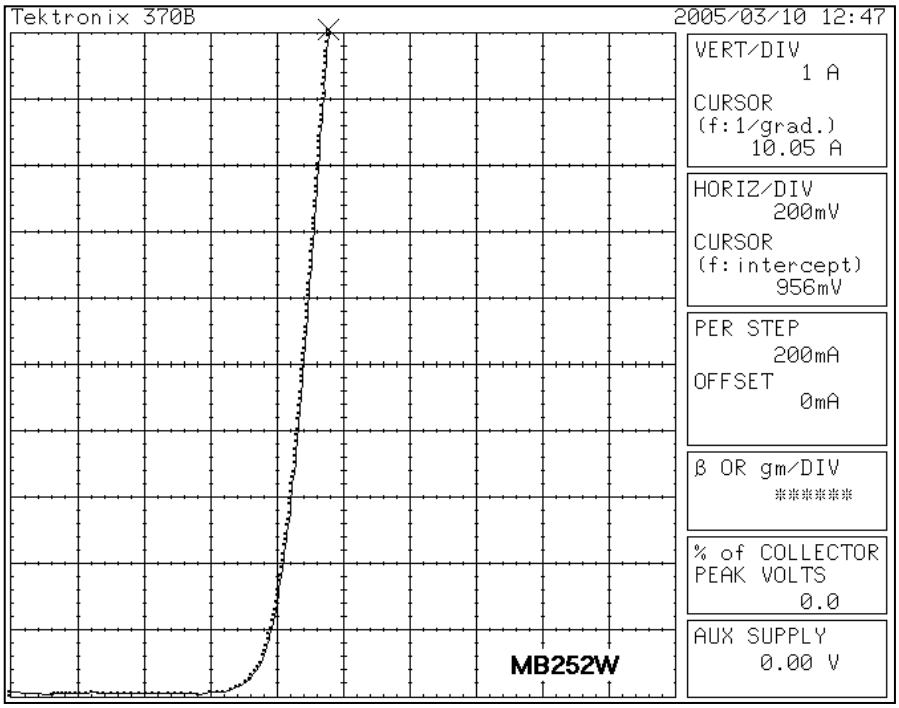
Device Modeling Report

COMPONENTS:
DIODE/ GENERAL PURPOSE RECTIFIER/ PROFESSIONAL
PART NUMBER: MB252W
MANUFACTURER: Micro Commercial Component
REMARK: TC=25C

Bee Technologies Inc.

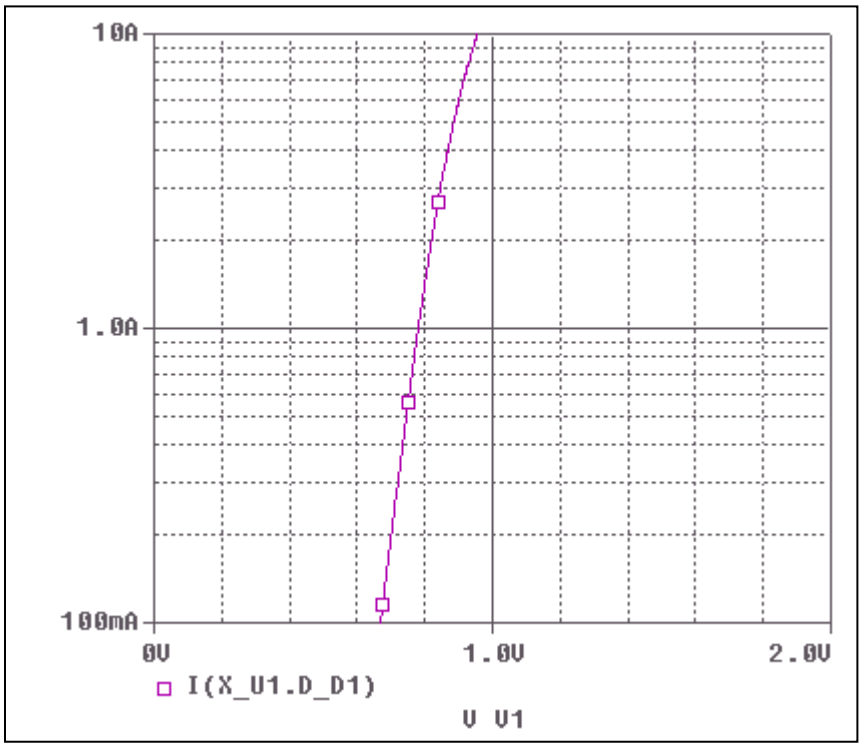
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic Reference

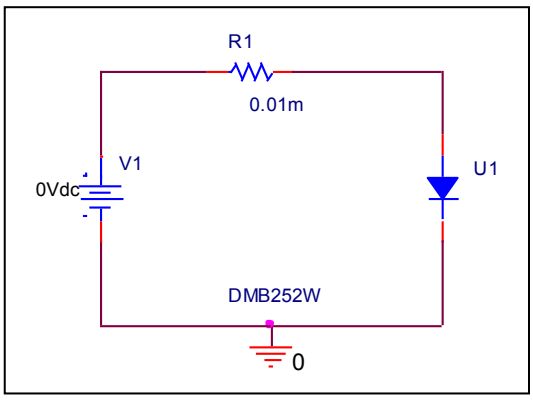


Forward Current Characteristic

Circuit Simulation Result

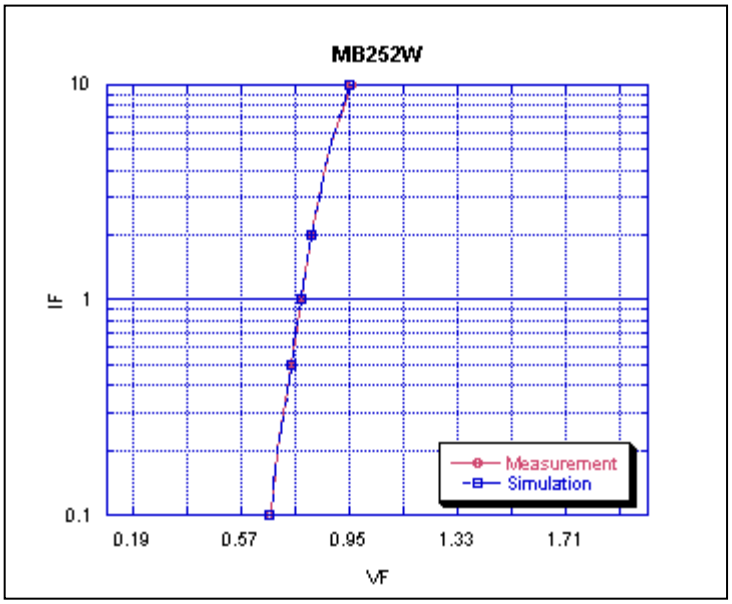


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

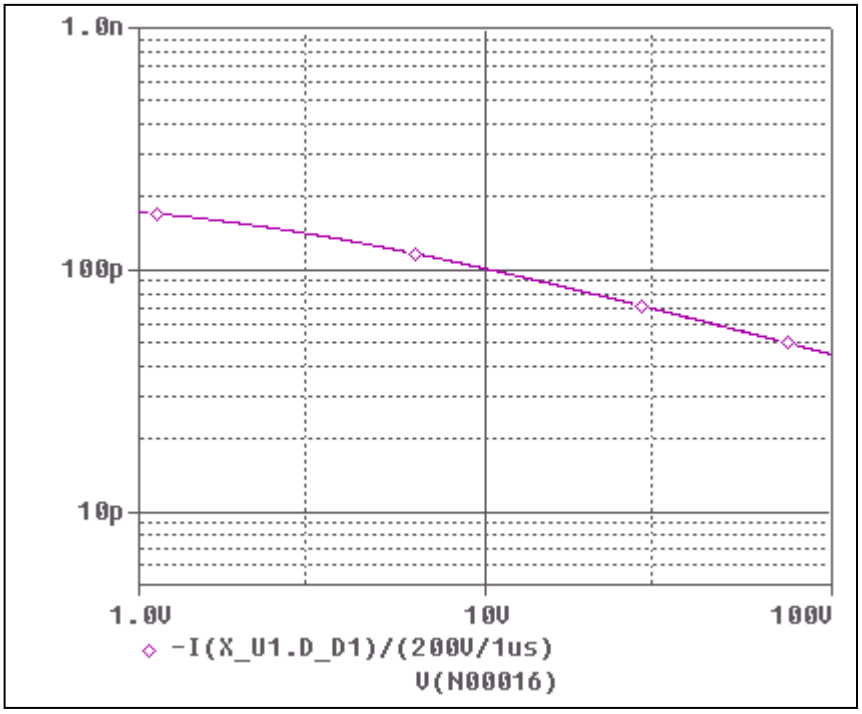


Simulation Result

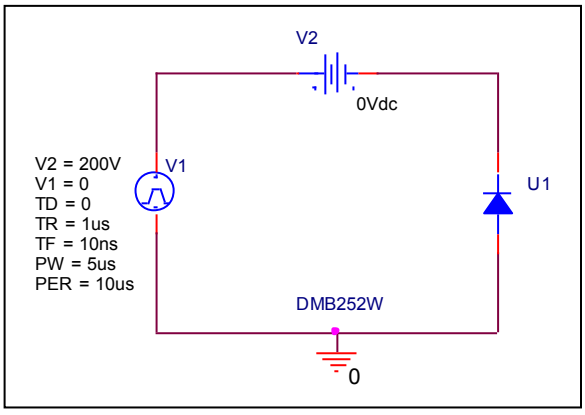
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.1	0.669	0.668	0.15
0.2	0.700	0.701	-0.14
0.5	0.745	0.745	0.00
1	0.780	0.781	-0.13
2	0.820	0.820	0.00
5	0.882	0.883	-0.11
10	0.956	0.954	0.21

Capacitance Characteristic

Circuit Simulation Result

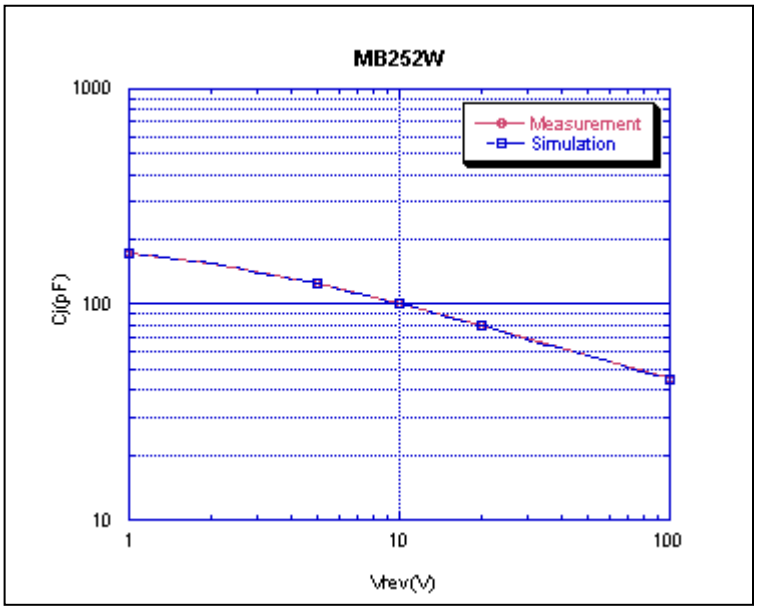


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

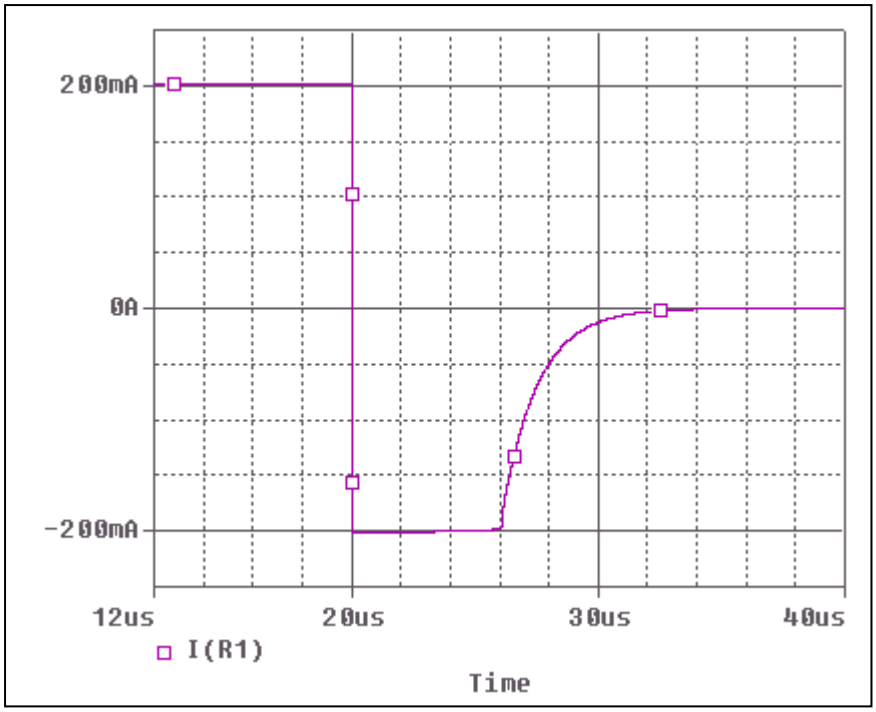


Simulation Result

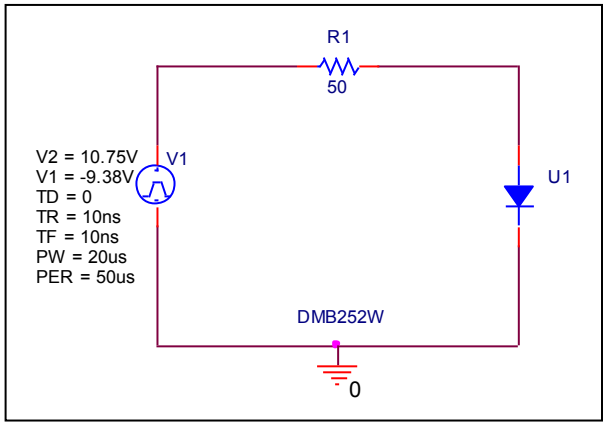
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	180.133	180.133	0.00
1	173.770	173.745	0.01
2	154.980	154.898	0.05
5	125.080	124.646	0.35
10	100.990	101.215	-0.22
20	79.414	80.074	-0.83
50	58.014	58.100	-0.15
100	45.006	44.680	0.72

Reverse Recovery Characteristic

Circuit Simulation Result



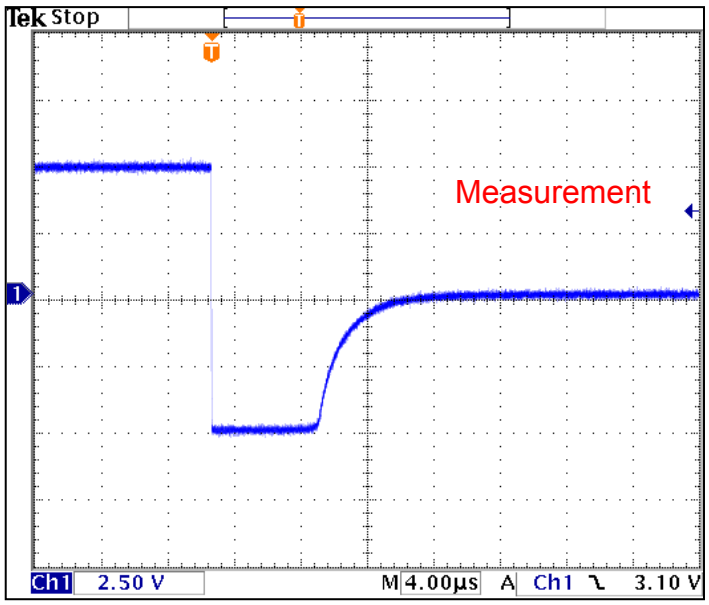
Evaluation Circuit



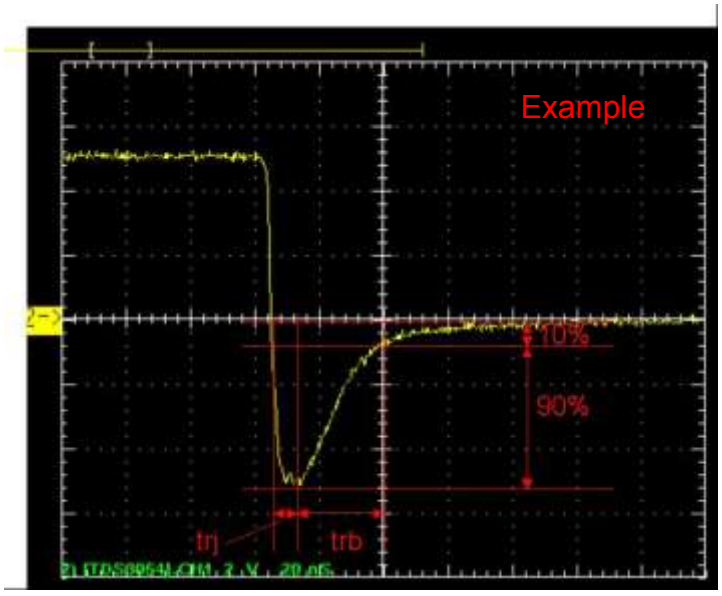
Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trj	**6.08**	**us**	**6.06**	**us**	**0.328**
trb	**3.28**	**us**	**3.25**	**us**	**0.914**

Reverse Recovery Characteristic Reference



Trj =6.08 (us)
Trb=3.28 (us)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb