Device Modeling Report

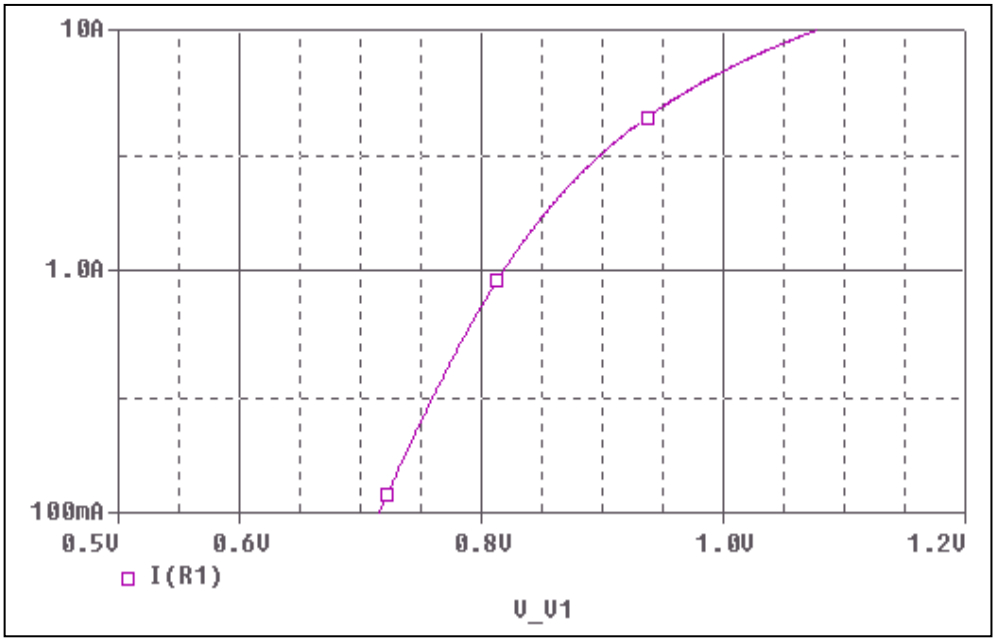
COMPONENTS:
DIODE/GENERALPURPOSE RECTIFIER/ PROFESSIONAL
PART NUMBER: D25XB80
MANUFACTURER: SHINDENGEN
REMARK: TC=25C

Bee Technologies Inc.

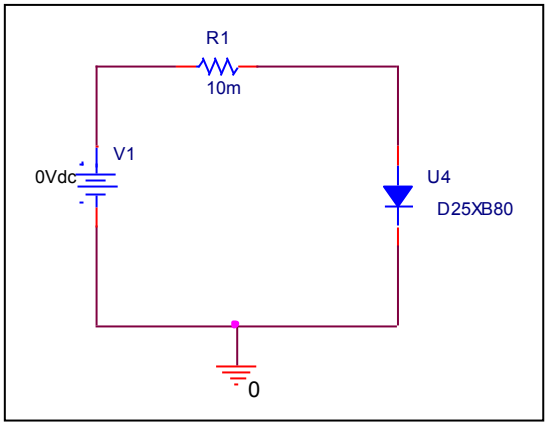
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

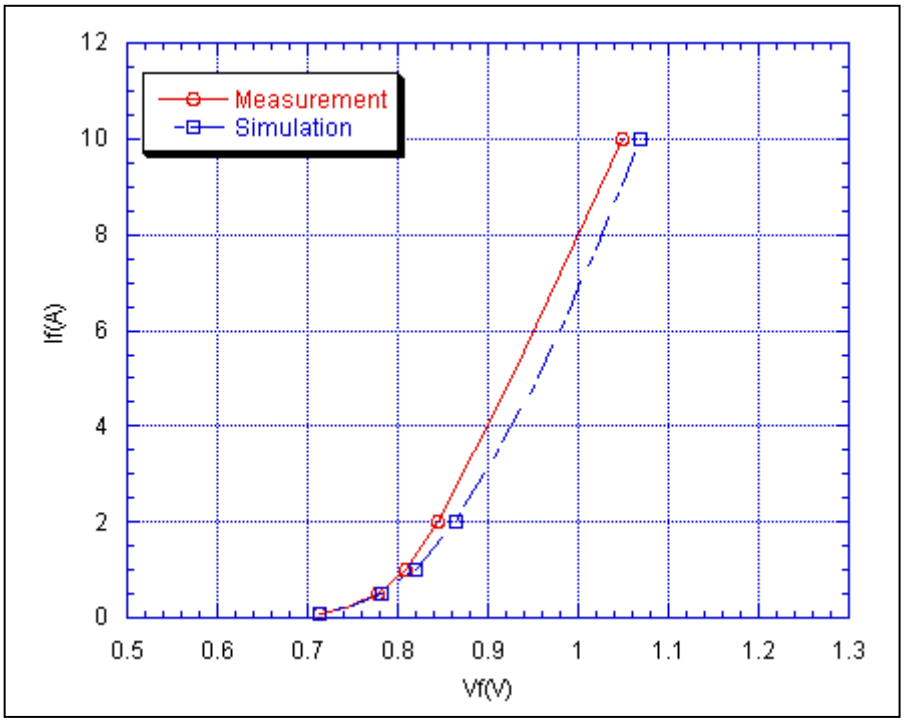


Evaluation circuit



Comparison graph

Circuit Simulation Result

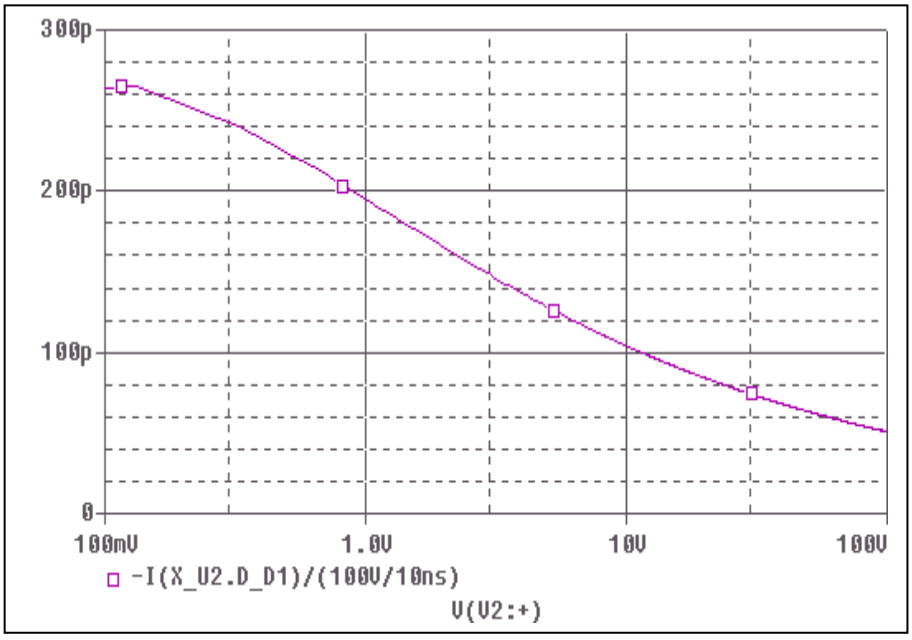


Simulation Result

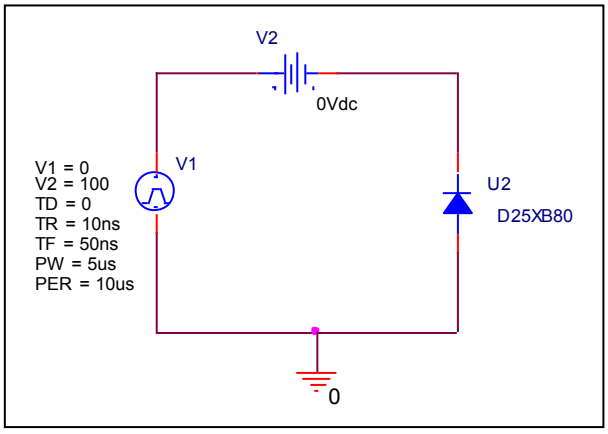
Ifwd (A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.1	0.714	0.714	0.00
0.2	0.742	0.743	-0.13
0.5	0.778	0.783	-0.64
1	0.809	0.819	-1.24
2	0.844	0.864	-2.37
5	0.926	0.955	-3.13
10	1.050	1.070	-1.90

Junction Capacitance Characteristic

Circuit Simulation Result

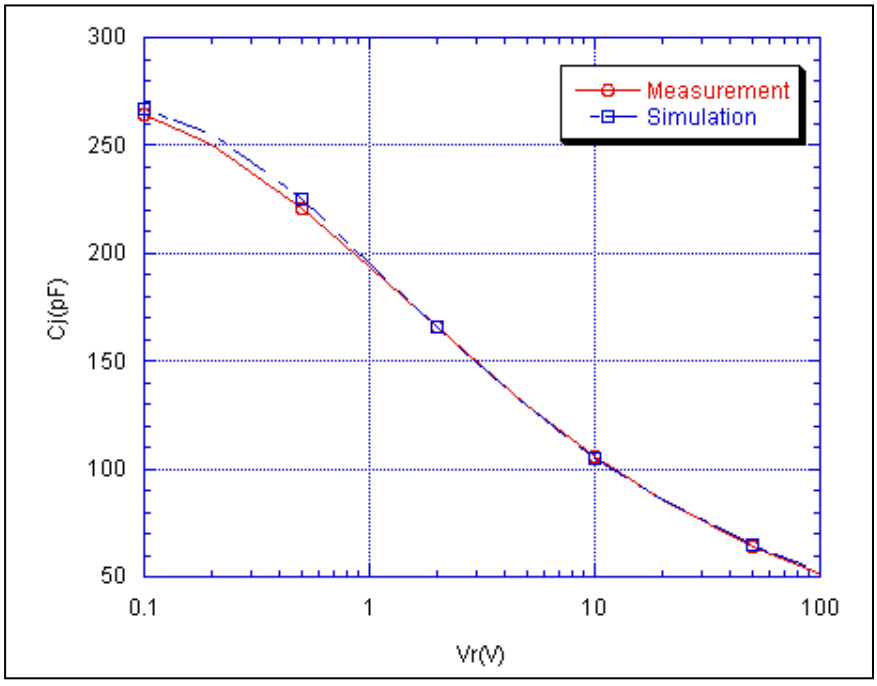


Evaluation circuit



Comparison graph

Circuit Simulation Result

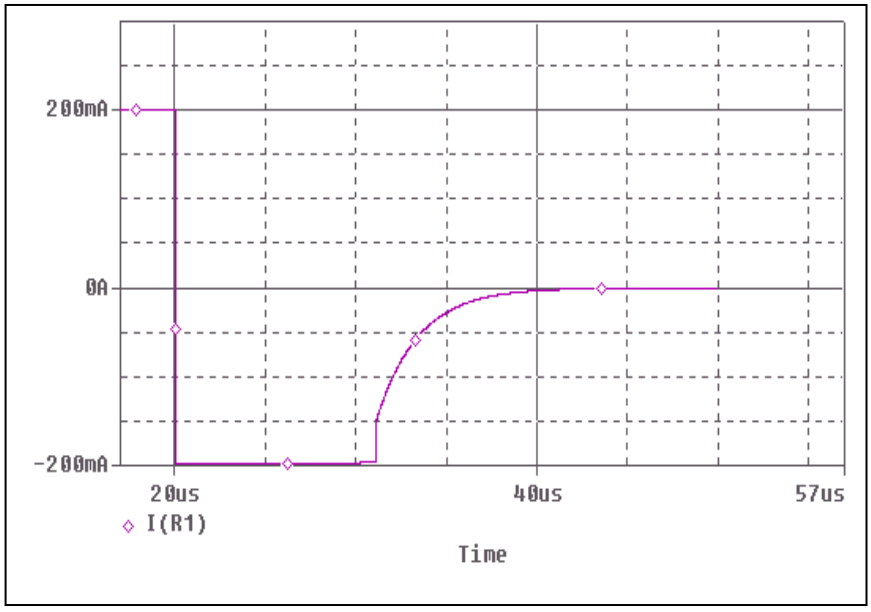


Simulation Result

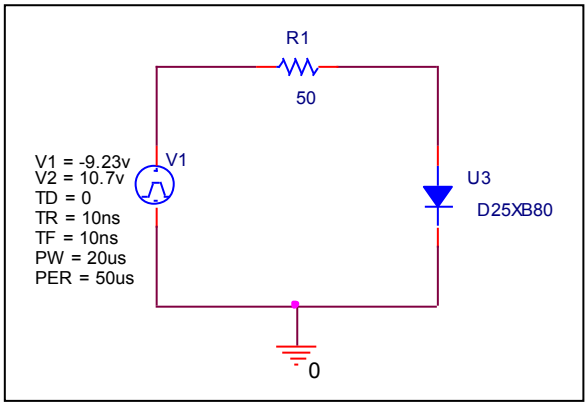
Vrev (V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0.1	263.927	266.877	-1.12
0.2	250.708	255.360	-1.86
0.5	220.989	224.863	-1.75
1	194.193	195.853	-0.85
2	165.617	165.677	-0.04
5	129.540	129.271	0.21
10	106.023	105.290	0.69
20	85.895	85.383	0.60
50	64.212	64.595	-0.60
100	51.030	52.143	-2.18

Reverse Recovery Characteristic

Circuit Simulation Result



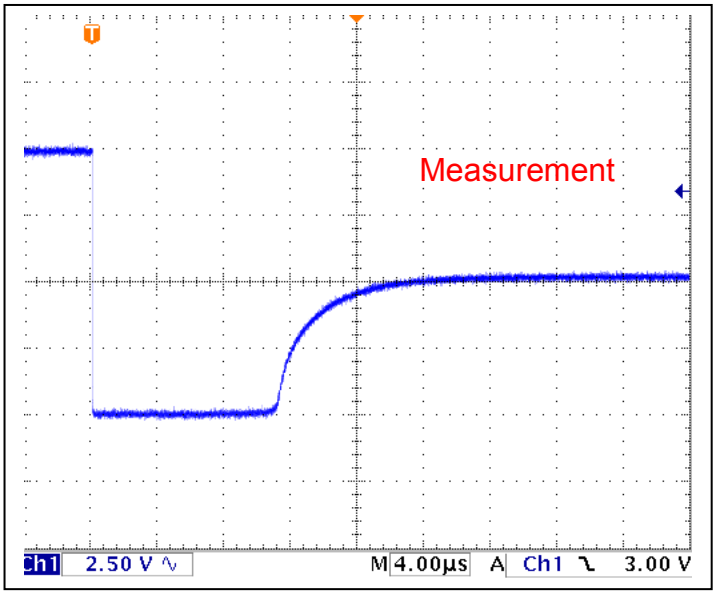
Evaluation circuit



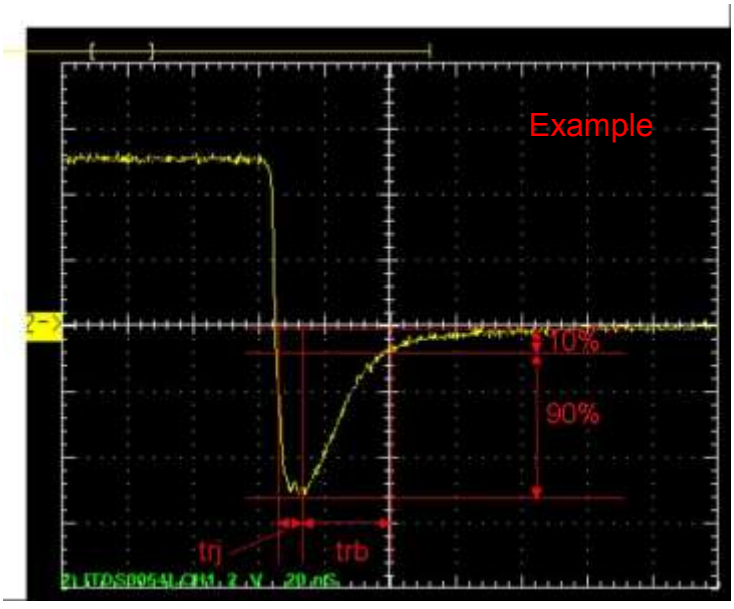
Compare Measurement vs. Simulation

	Measurement		Simulation		Error (%)
trj	**10.80**	**us**	**10.75**	**us**	**0.388**
trb	**4.88**	**us**	**4.80**	**us**	**1.536**

Reverse Recovery Characteristic Reference



trj=10.8(us)
trb=4.88(us)
Conditions:Ifwd=Irev=0.2(A),Rl=50



Relation between trj and trb