Device Modeling Report

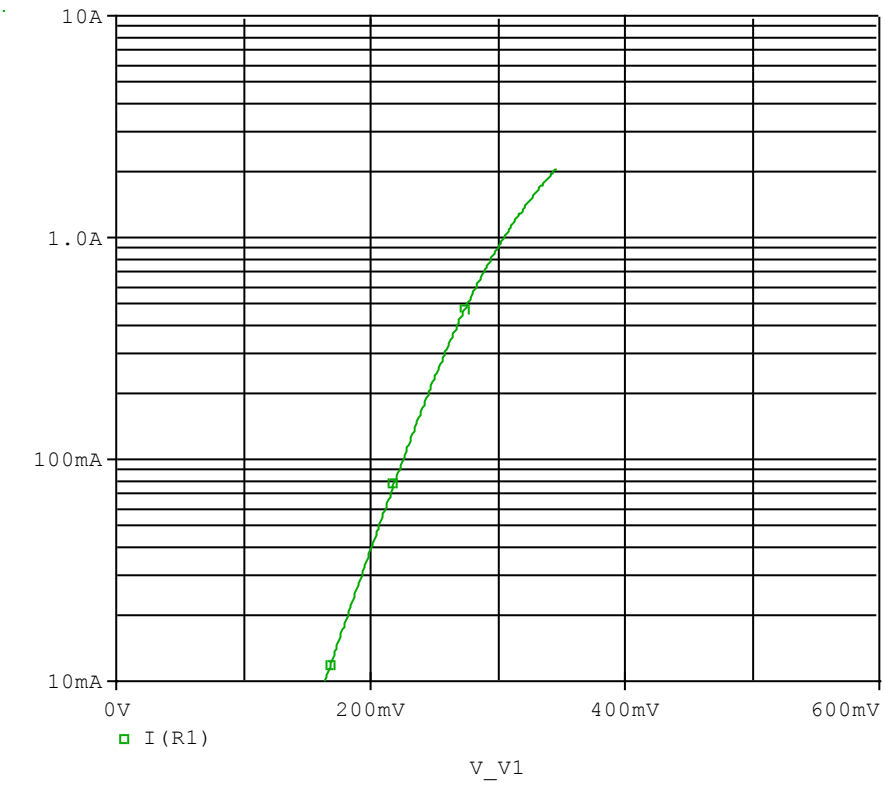
COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER / PROFESSIONAL
PART NUMBER: XBS203V17R
MANUFACTURER: TOREX SEMICONDUCTOR

Bee Technologies Inc.

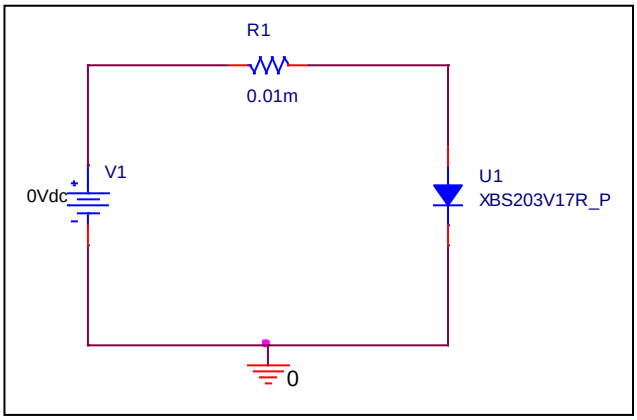
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

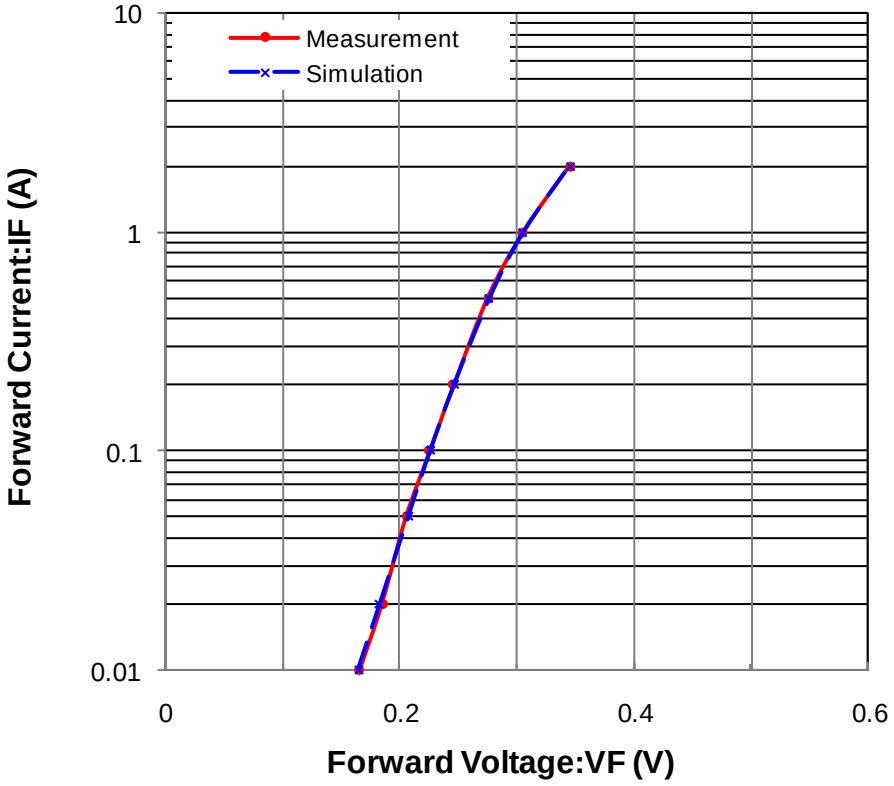


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

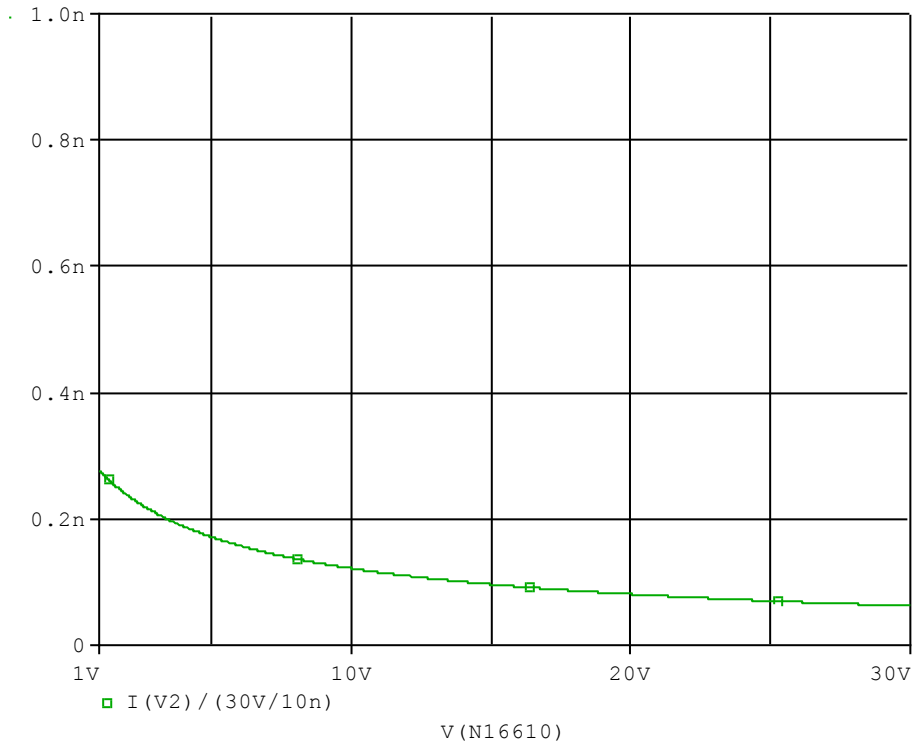


Simulation Result

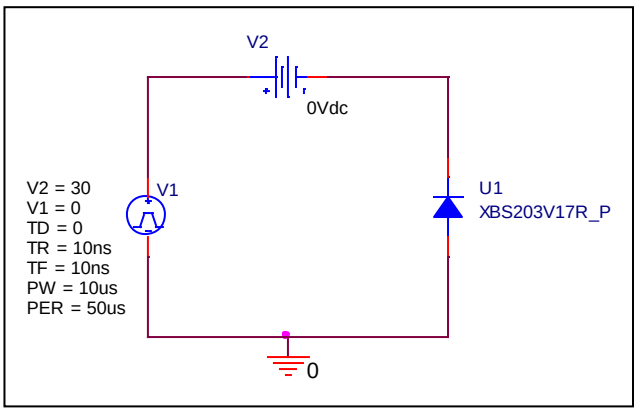
I_F (A)	V_F (V)		%Error
	Measurement	Simulation	
0.01	0.165	0.164	-0.518
0.02	0.185	0.182	-1.476
0.05	0.205	0.207	0.785
0.1	0.225	0.226	0.280
0.2	0.245	0.246	0.304
0.5	0.275	0.276	0.369
1	0.305	0.305	-0.036
2	0.345	0.345	-0.083

Capacitance Characteristic

Circuit Simulation Result

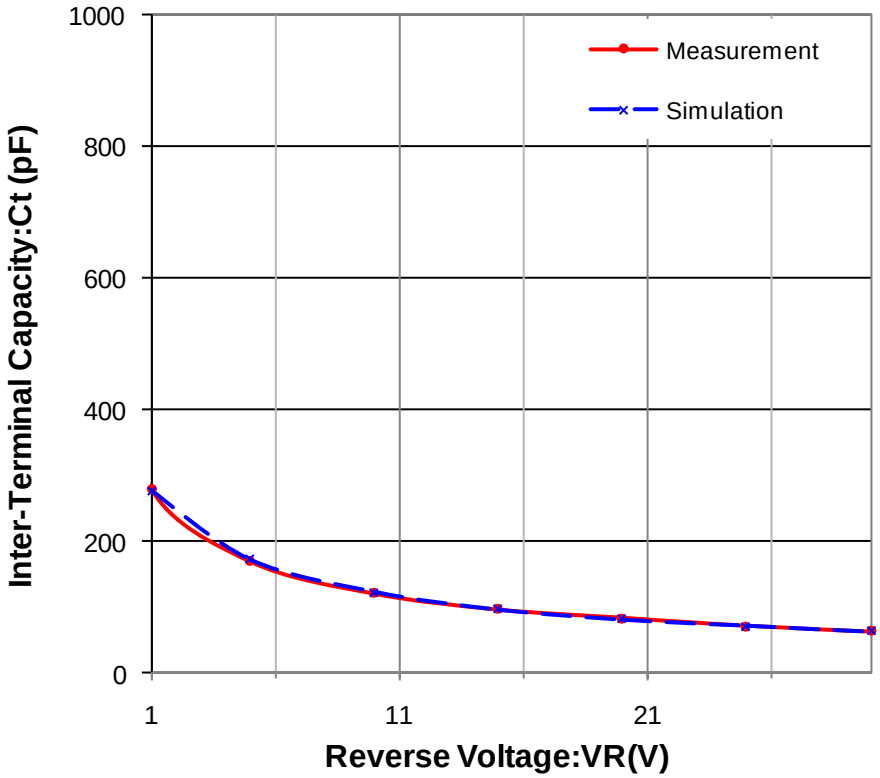


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

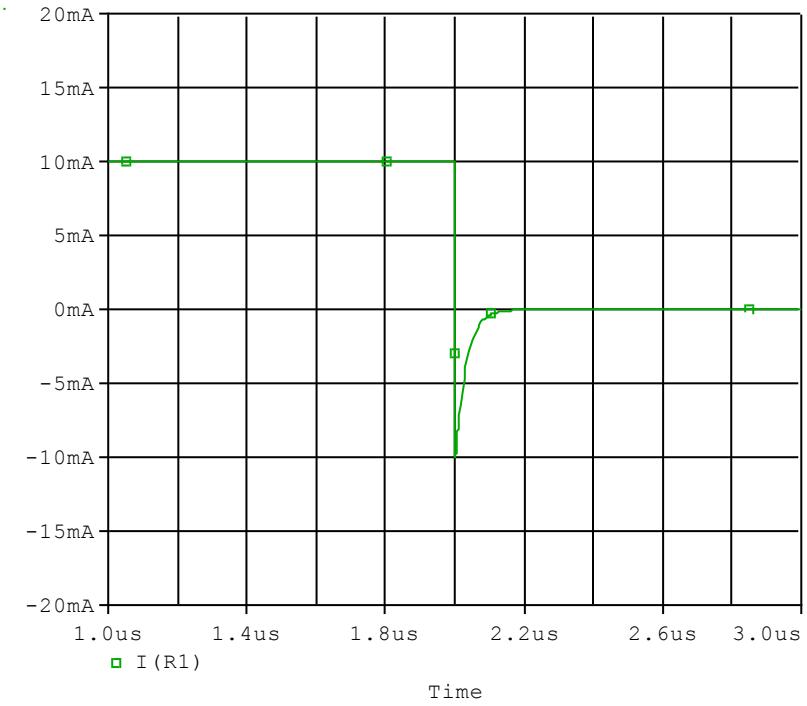


Simulation Result

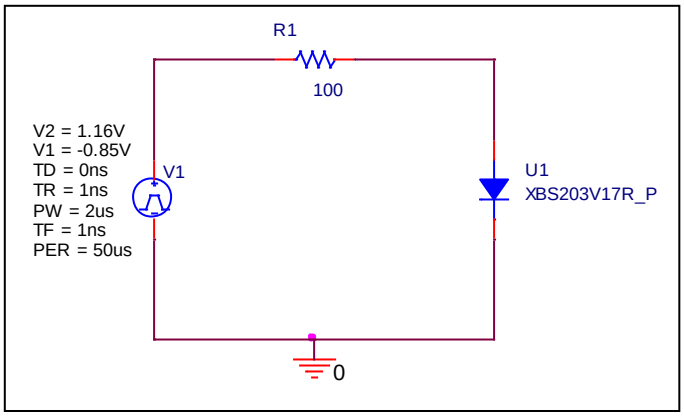
V_R (V)	Ct (pF)		%Error
	Measurement	Simulation	
1	280.000	276.785	-1.15
5	169.000	171.769	1.64
10	120.000	121.741	1.45
15	96.000	96.370	0.39
20	82.000	80.781	-1.49
25	71.000	70.077	-1.30
30	63.000	62.270	-1.16

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit

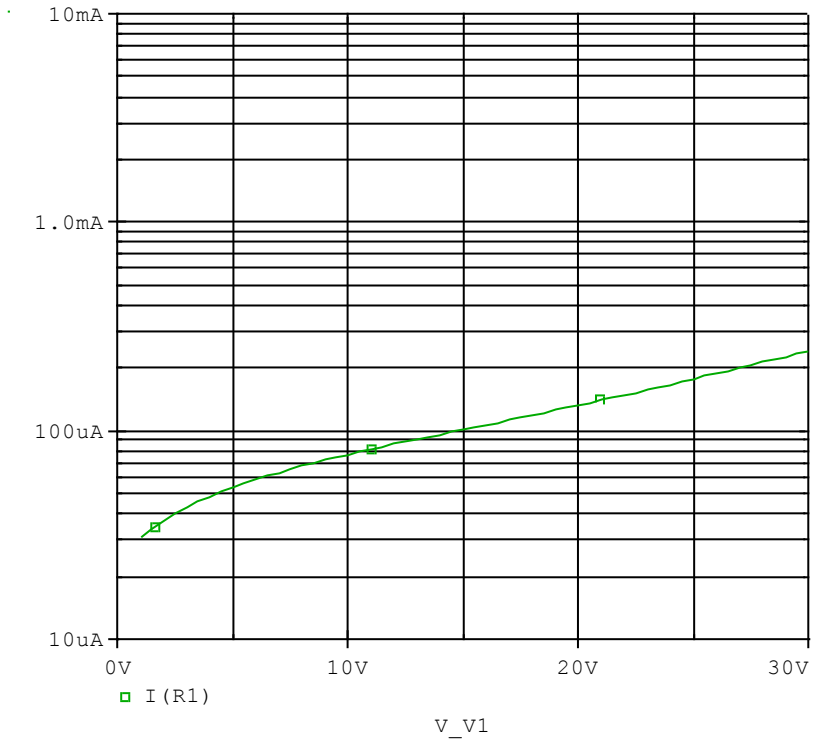


Compare Measurement vs. Simulation

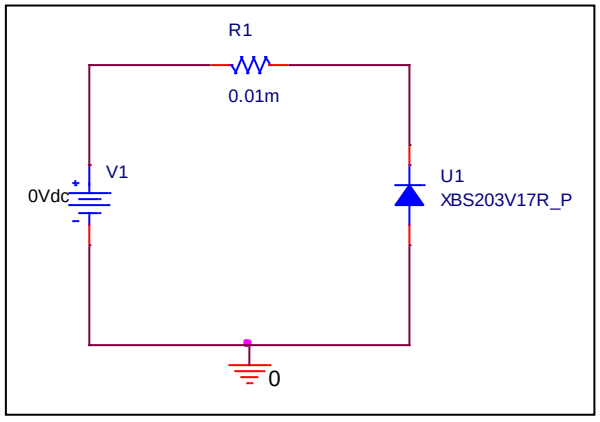
Parameter	Unit	Measurement	Simulation	%Error
trr	ns	70.000	71.151	1.64

Reverse Characteristic

Circuit Simulation Result

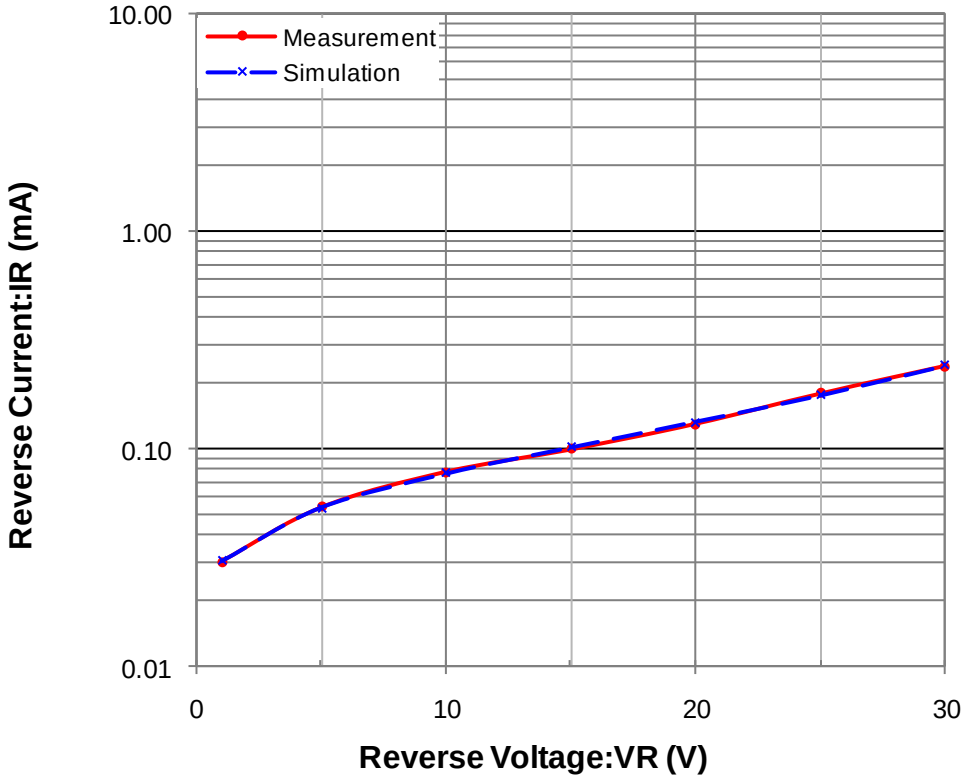


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R (V)	I_R (mA)		%Error
	Measurement	Simulation	
1	0.0300	0.0306	1.96
5	0.0540	0.0533	-1.29
10	0.0780	0.0769	-1.43
15	0.1000	0.1011	1.08
20	0.1300	0.1323	1.74
25	0.1800	0.1768	-1.77
30	0.2400	0.2411	0.47