

Device Modeling Report

COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER / PROFESSIONAL
PART NUMBER: XBS013S15R-G
MANUFACTURER: TOREX SEMICONDUCTOR

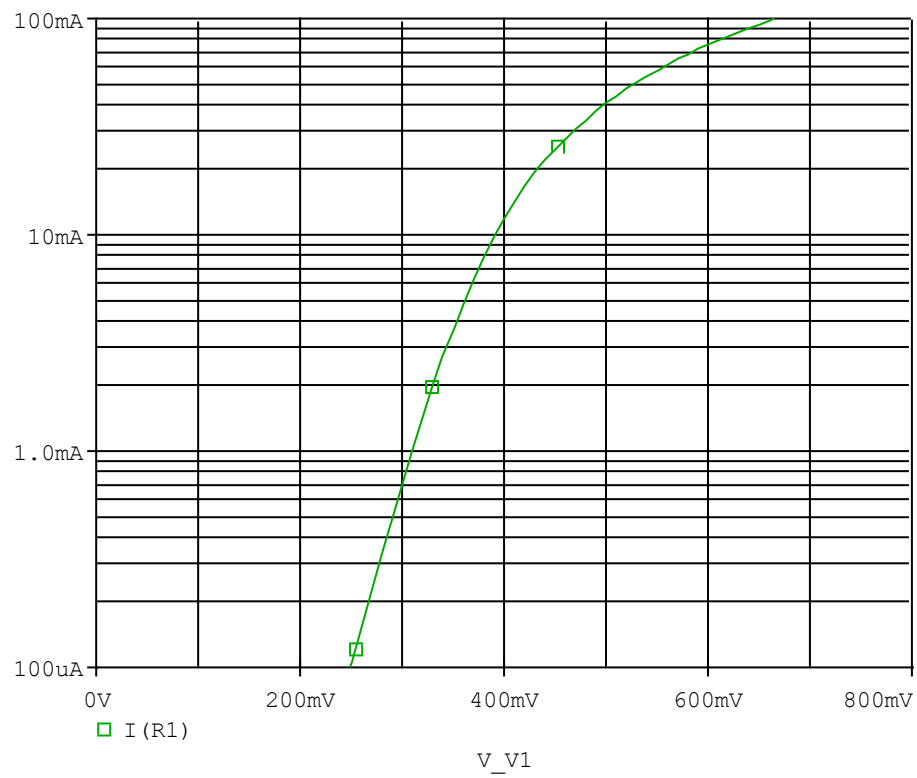


Bee Technologies Inc.

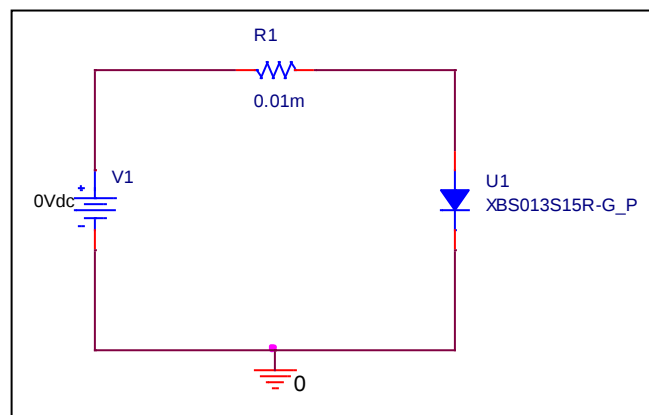
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

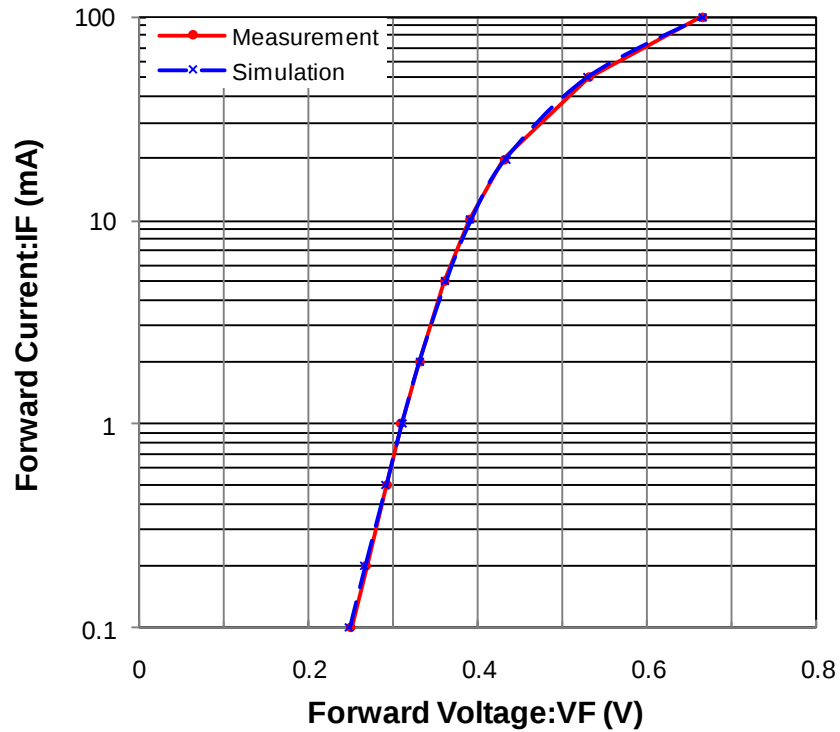


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

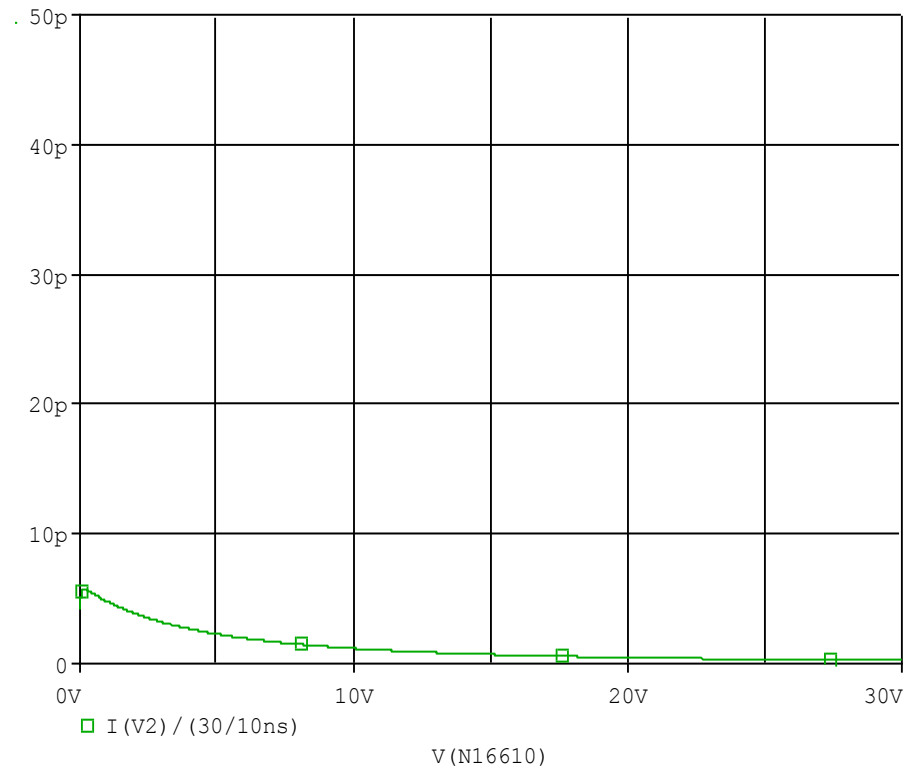


Simulation Result

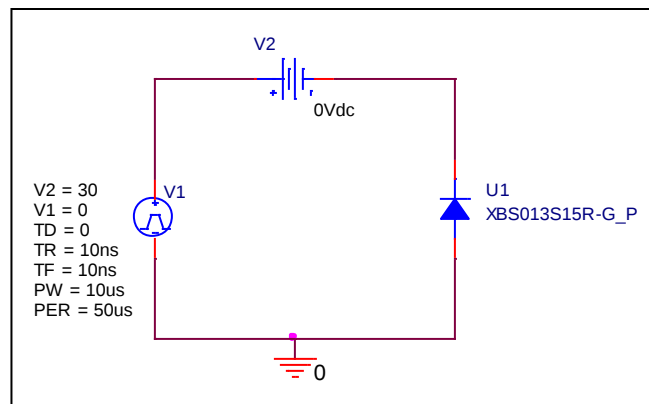
I_F (mA)	V_F (V)		%Error
	Measurement	Simulation	
0.1	0.250	0.248	-0.81
0.2	0.268	0.266	-0.82
0.5	0.292	0.291	-0.44
1	0.309	0.310	0.31
2	0.330	0.330	0.07
5	0.360	0.361	0.29
10	0.390	0.391	0.24
20	0.430	0.433	0.64
50	0.530	0.528	-0.37
100	0.665	0.665	0.04

Capacitance Characteristic

Circuit Simulation Result

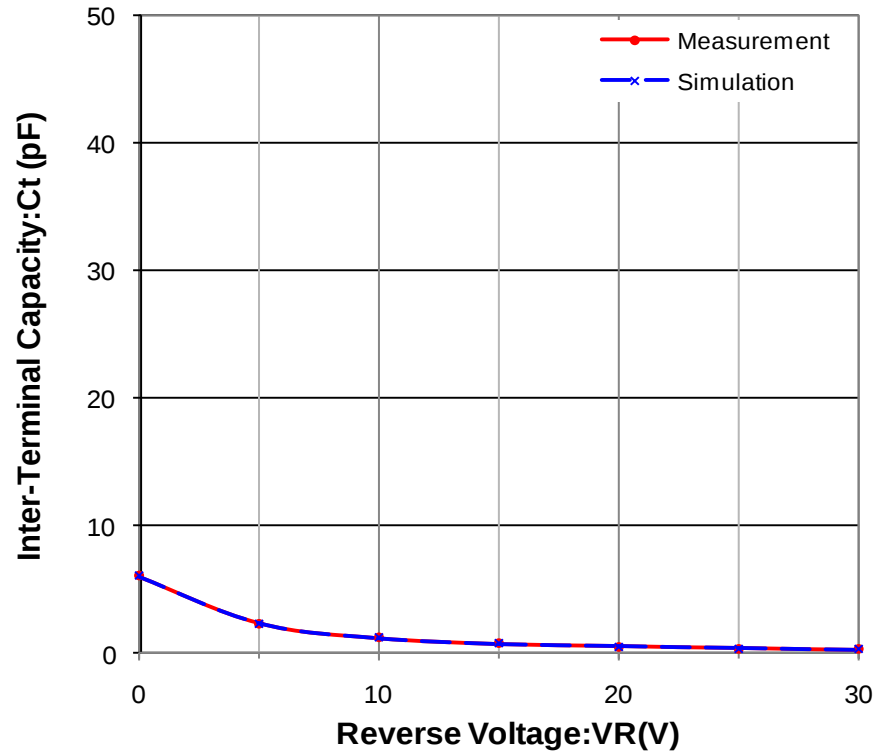


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

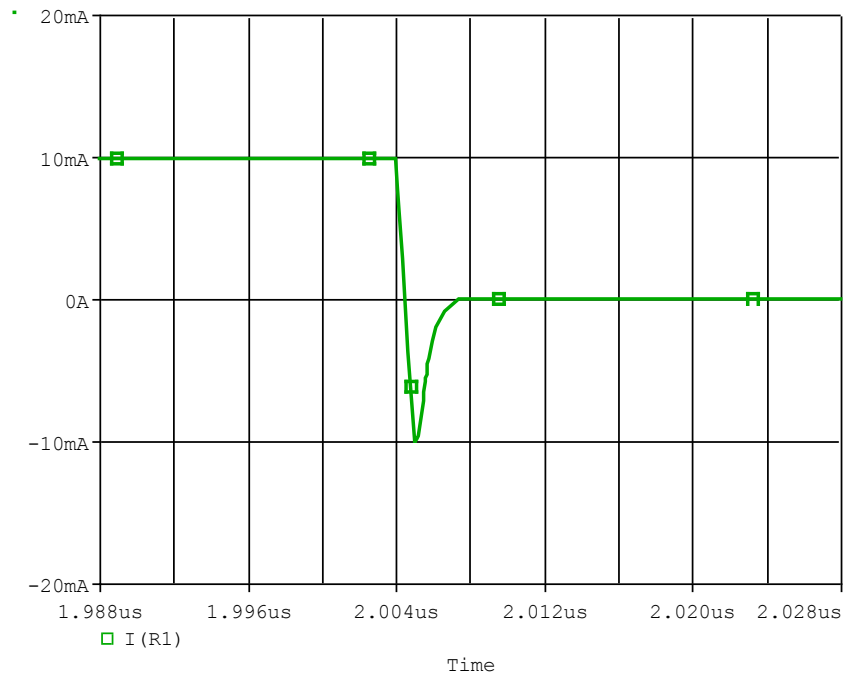


Simulation Result

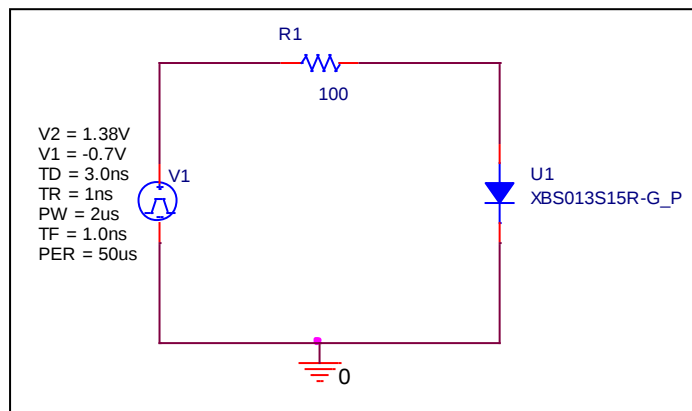
V _R (V)	C _t (pF)		%Error
	Measurement	Simulation	
0	6.000	6.000	0.00
5	2.280	2.288	0.36
10	1.170	1.173	0.24
15	0.700	0.705	0.78
20	0.464	0.468	0.91
25	0.335	0.332	-0.93
30	0.258	0.247	-4.35

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit

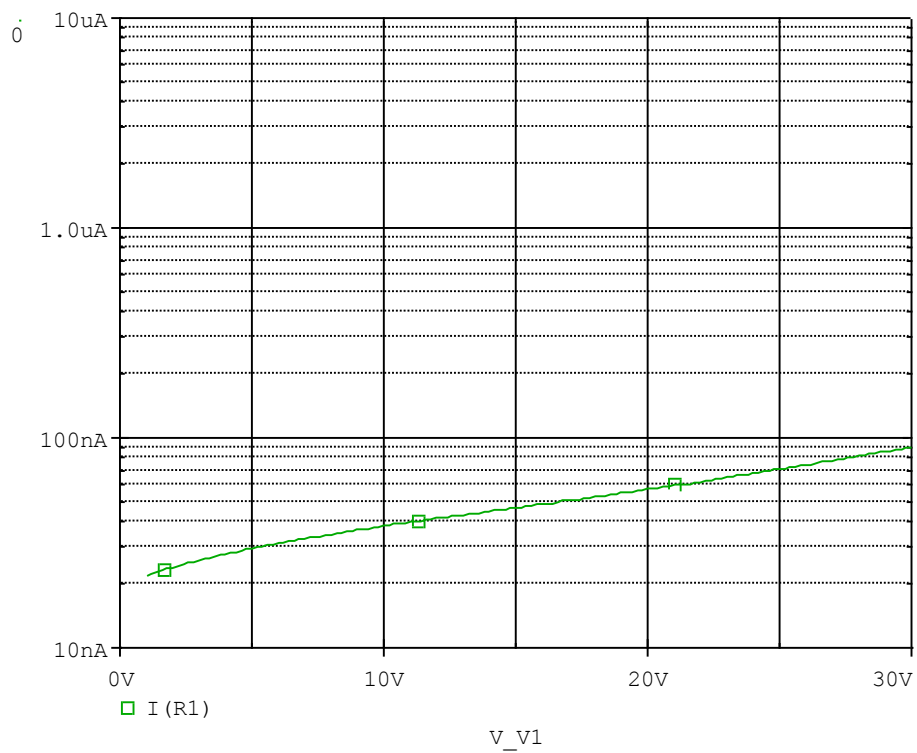


Compare Measurement vs. Simulation

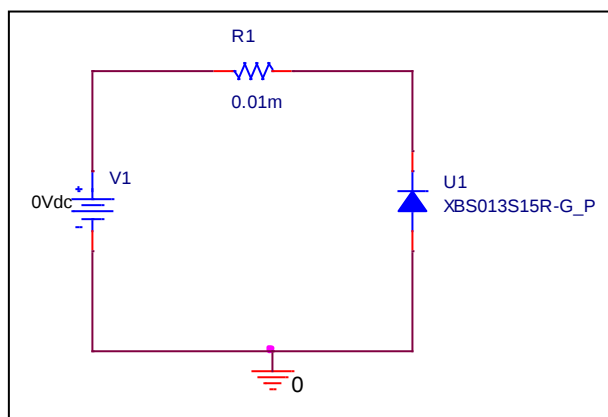
Parameter	Unit	Measurement	Simulation	%Error
trr	ns	2.000	2.017	0.83

Reverse Characteristic

Circuit Simulation Result

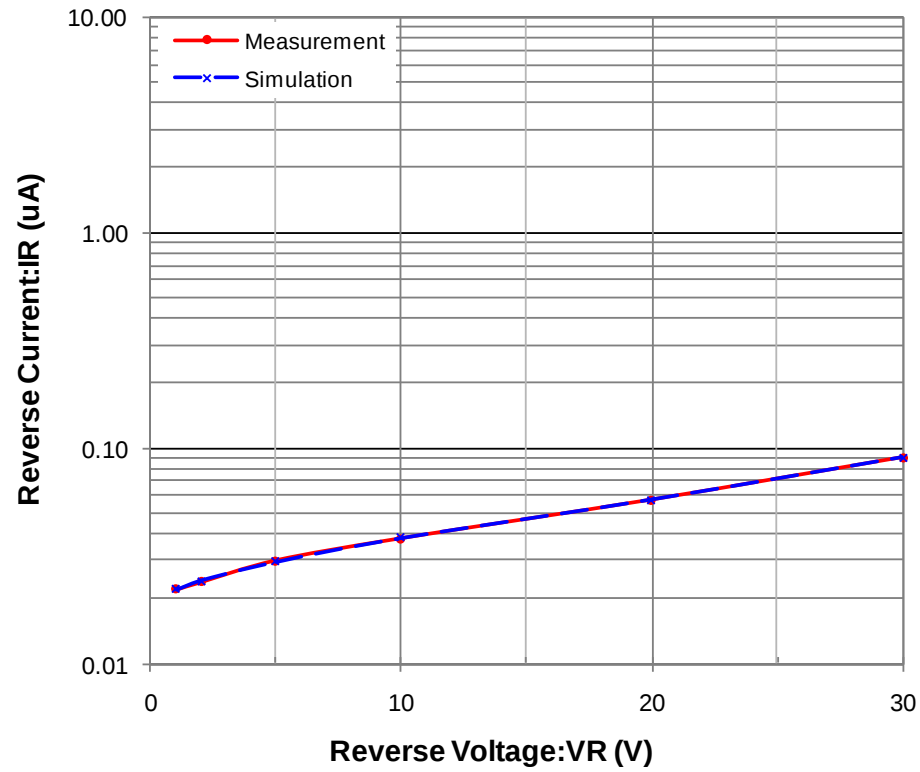


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R (V)	I_R (μA)		%Error
	Measurement	Simulation	
1	0.022	0.022	0.27
2	0.024	0.024	0.47
5	0.030	0.030	-0.82
10	0.038	0.038	0.51
20	0.058	0.058	0.09
30	0.090	0.090	0.27