

Device Modeling Report

COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER / PROFESSIONAL
PART NUMBER: XBS303V17R
MANUFACTURER: TOREX SEMICONDUCTOR

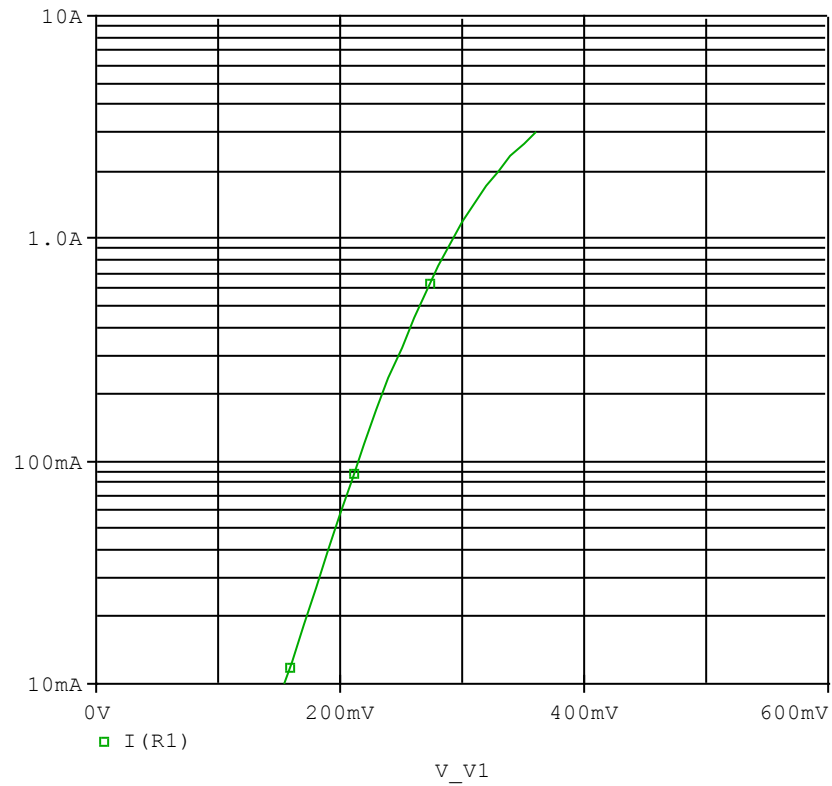


Bee Technologies Inc.

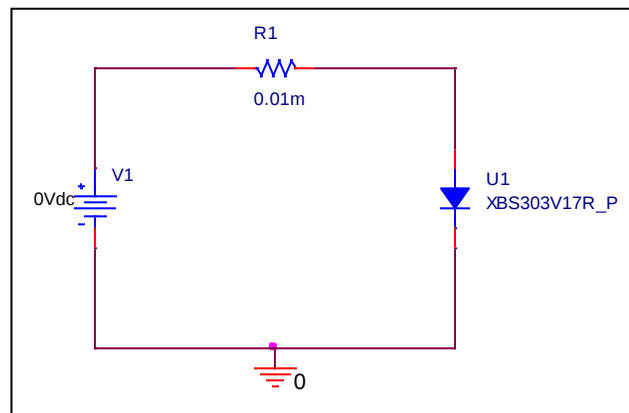
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

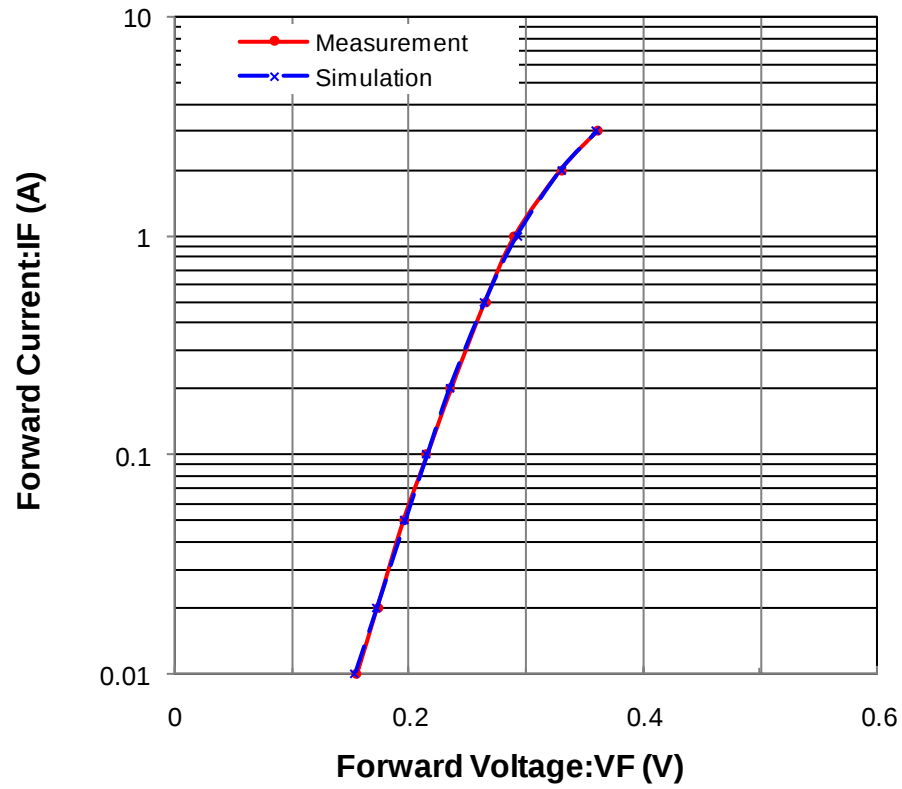


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

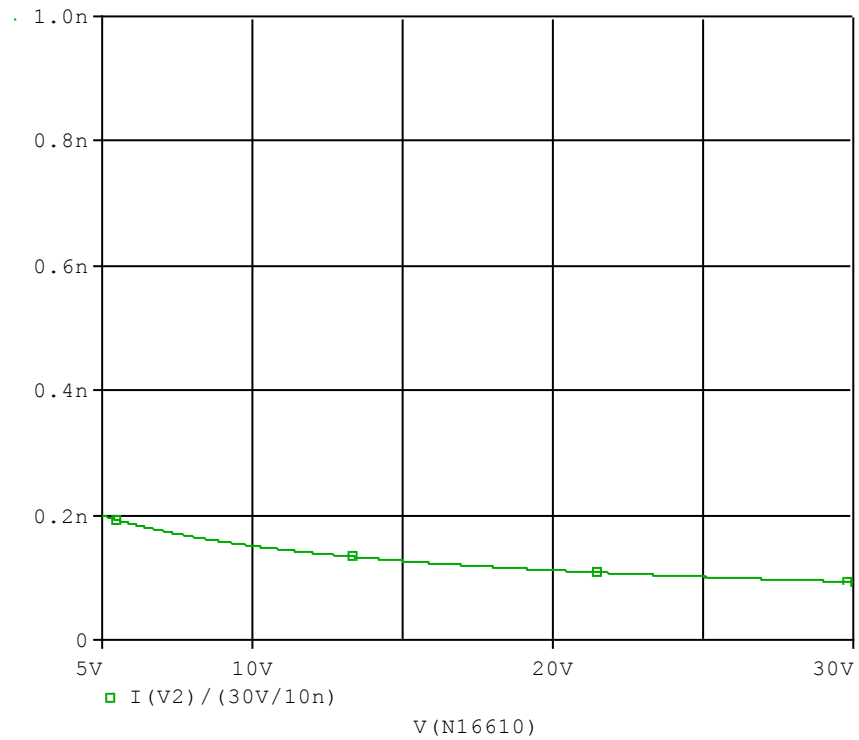


Simulation Result

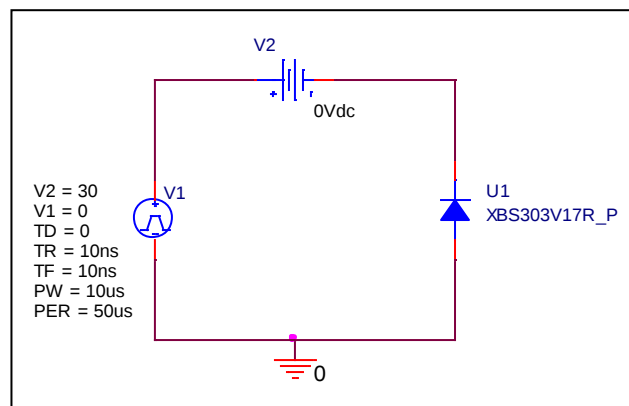
I_F (A)	V_F (V)		%Error
	Measurement	Simulation	
0.01	0.155	0.153	-1.026
0.02	0.173	0.172	-0.775
0.05	0.195	0.196	0.398
0.1	0.215	0.215	-0.147
0.2	0.235	0.235	-0.165
0.5	0.265	0.264	-0.274
1	0.290	0.292	0.724
2	0.330	0.330	-0.114
3	0.360	0.360	-0.106

Capacitance Characteristic

Circuit Simulation Result

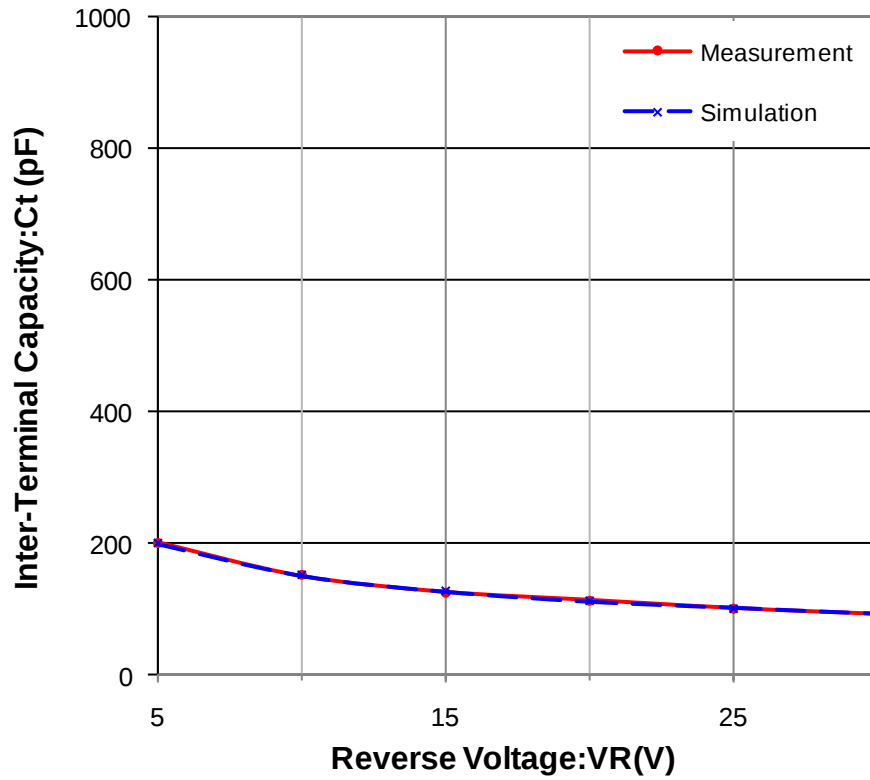


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

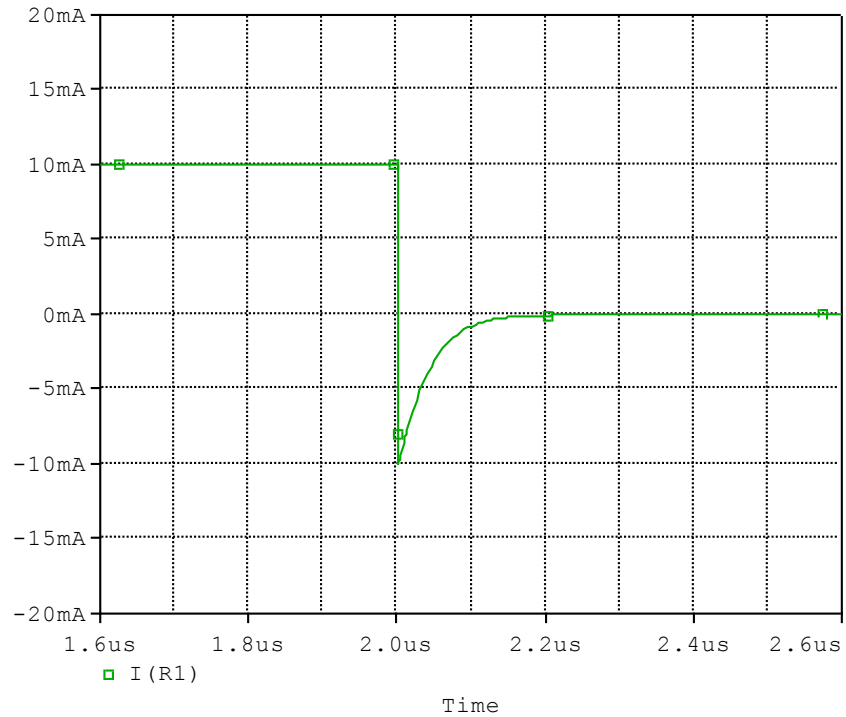


Simulation Result

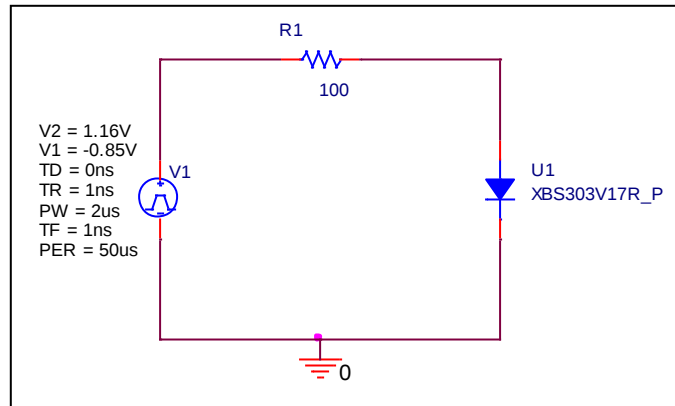
V _R (V)	C _t (pF)		%Error
	Measurement	Simulation	
5	200.000	199.789	-0.11
10	150.000	150.660	0.44
15	125.000	126.707	1.37
20	112.000	111.705	-0.26
25	100.000	101.016	1.02
30	93.000	93.144	0.15

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit

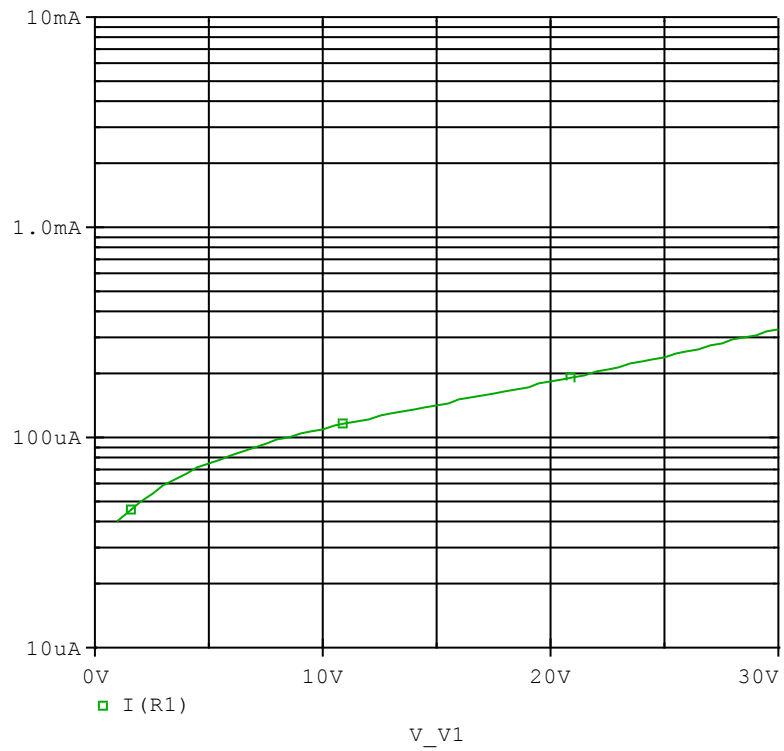


Compare Measurement vs. Simulation

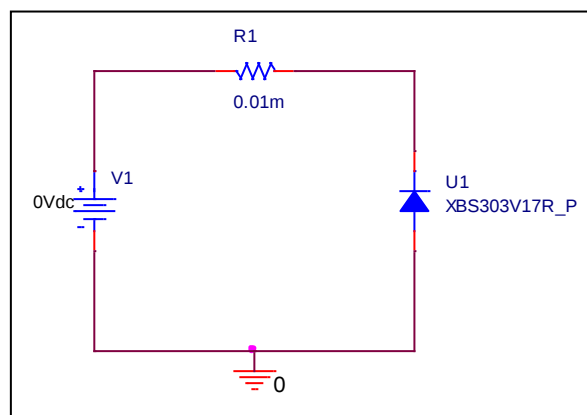
Parameter	Unit	Measurement	Simulation	%Error
trr	ns	90.000	90.280	0.31

Reverse Characteristic

Circuit Simulation Result

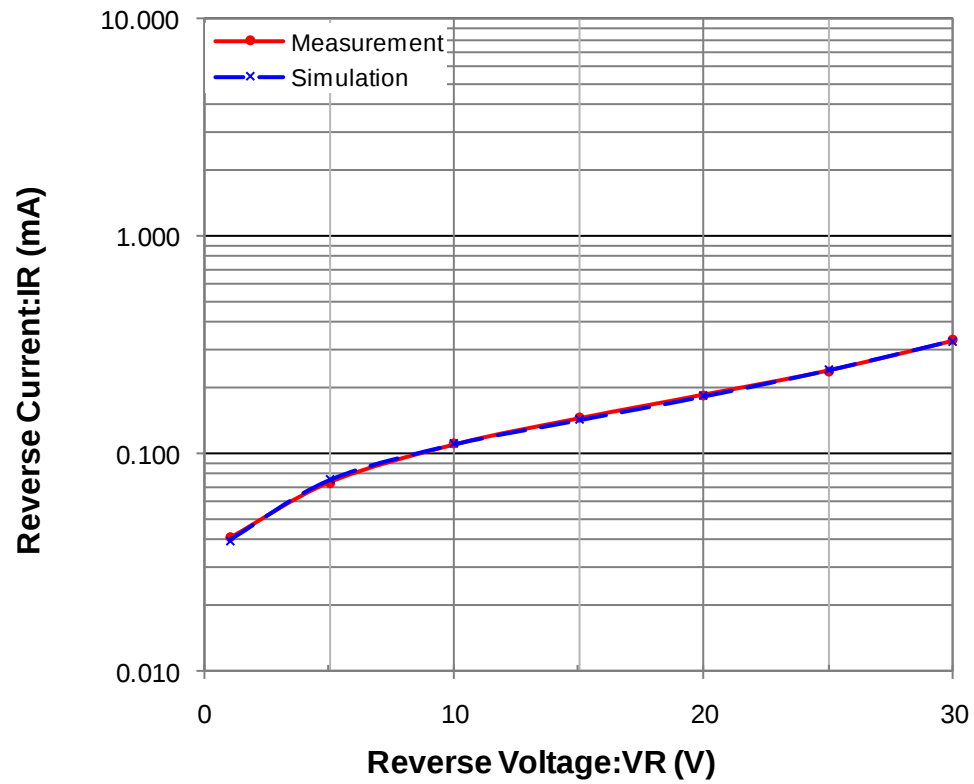


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R (V)	I_R (mA)		%Error
	Measurement	Simulation	
1	0.0410	0.0398	-2.98
5	0.0730	0.0754	3.22
10	0.1100	0.1101	0.07
15	0.1450	0.1431	-1.33
20	0.1850	0.1841	-0.51
25	0.2400	0.2428	1.15
30	0.3300	0.3289	-0.33