

Device Modeling Report

COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER / PROFESSIONAL
PART NUMBER: XBS304S17R
MANUFACTURER: TOREX SEMICONDUCTOR

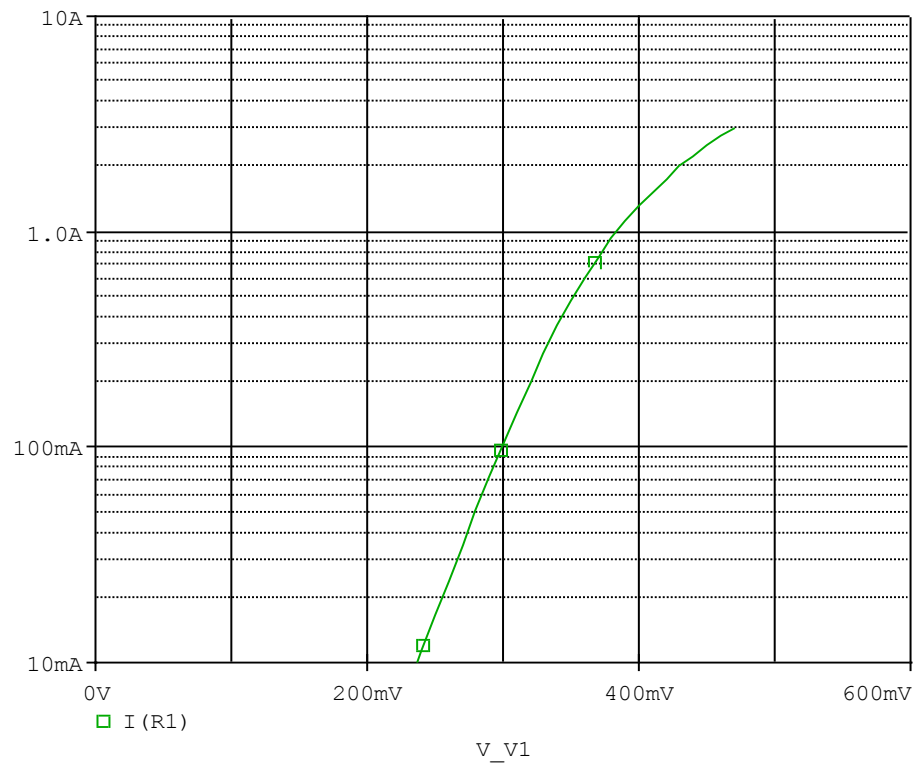


Bee Technologies Inc.

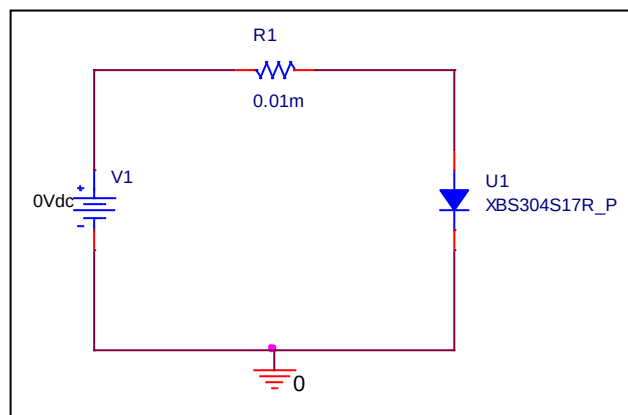
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

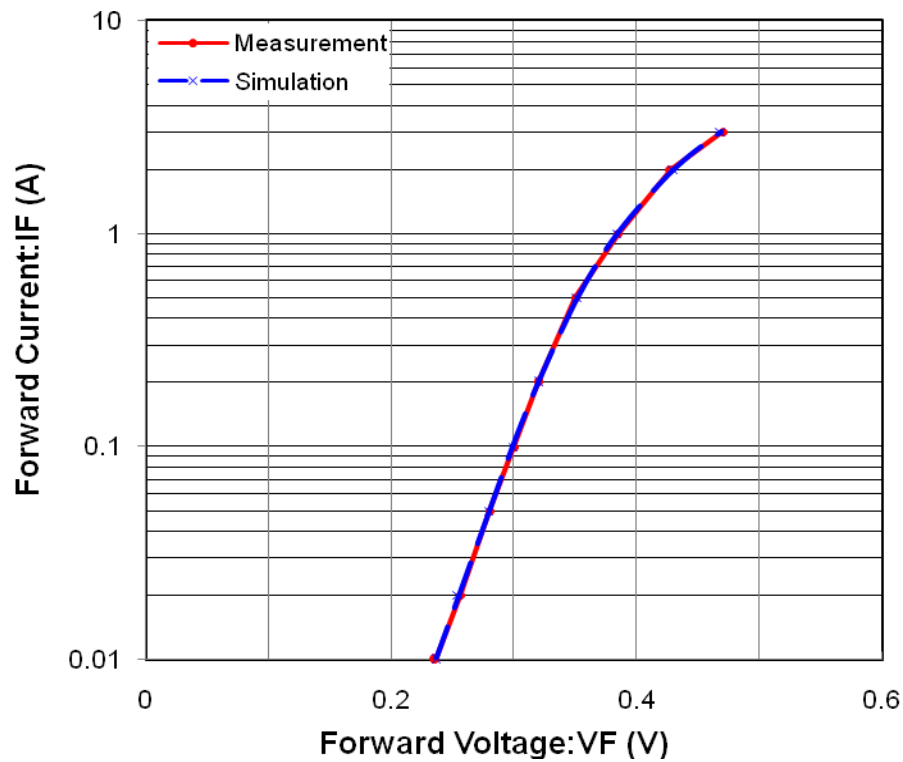


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

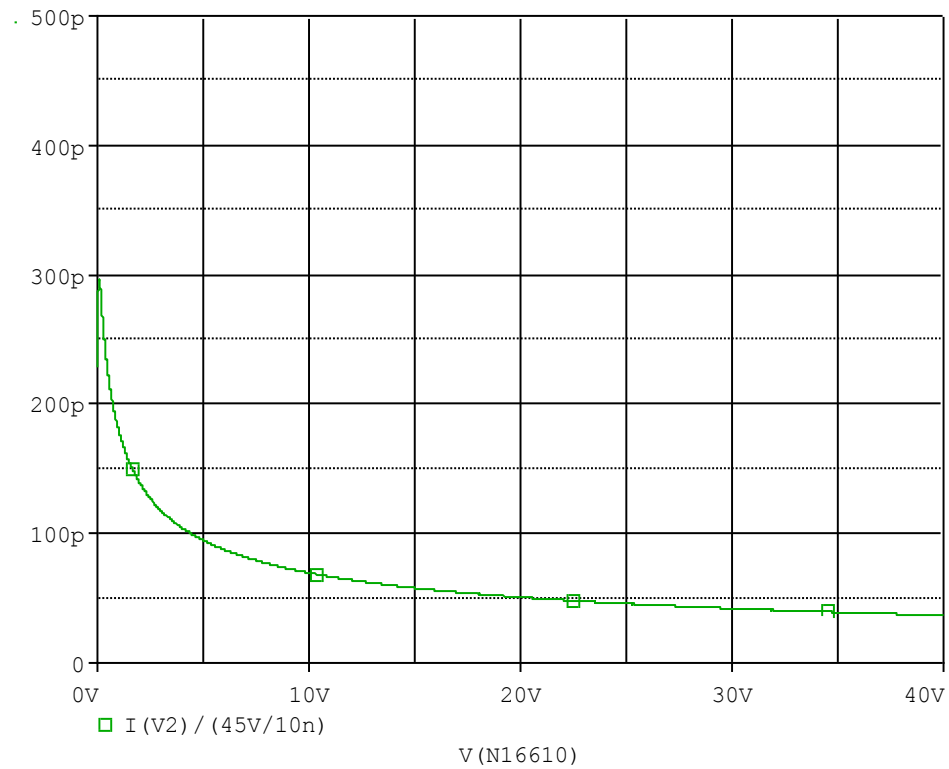


Simulation Result

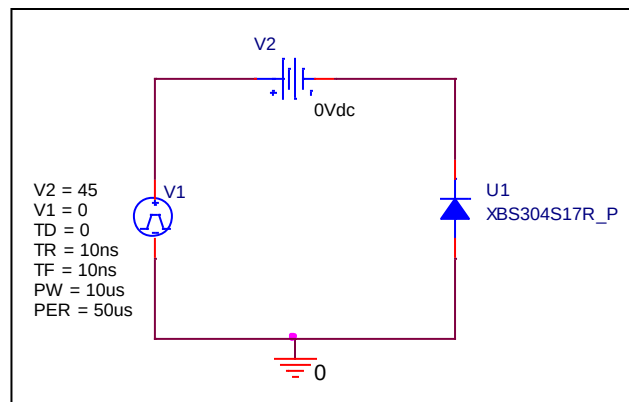
I_F (A)	V_F (V)		%Error
	Measurement	Simulation	
0.01	0.236	0.236	0.21
0.02	0.256	0.255	-0.53
0.05	0.280	0.280	-0.15
0.1	0.300	0.299	-0.39
0.2	0.320	0.320	-0.09
0.5	0.350	0.352	0.51
1	0.385	0.384	-0.30
2	0.428	0.430	0.48
3	0.470	0.469	-0.26

Capacitance Characteristic

Circuit Simulation Result

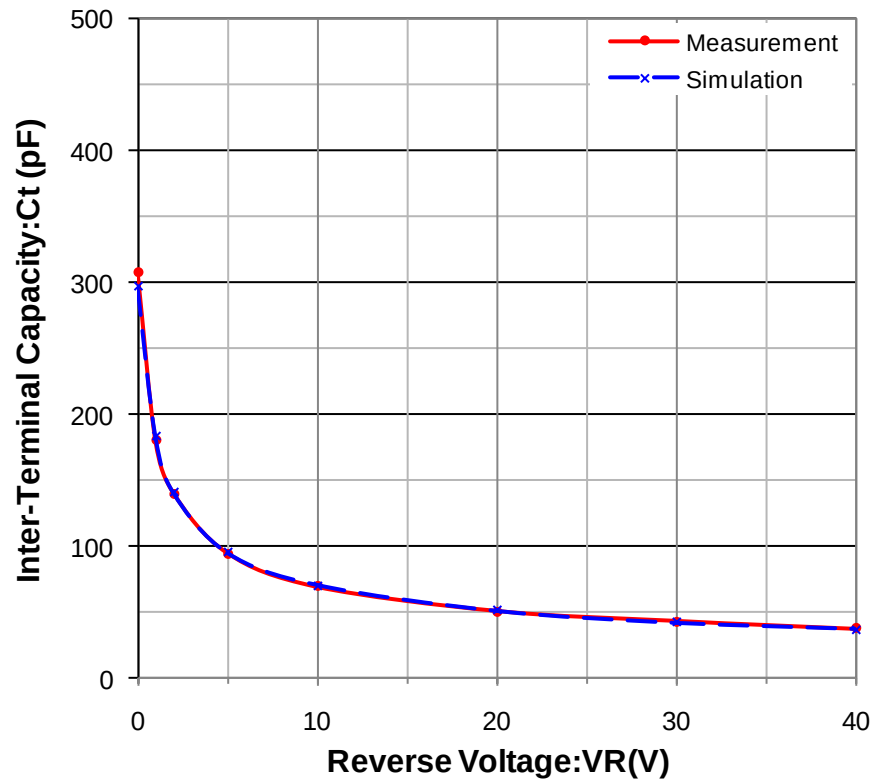


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

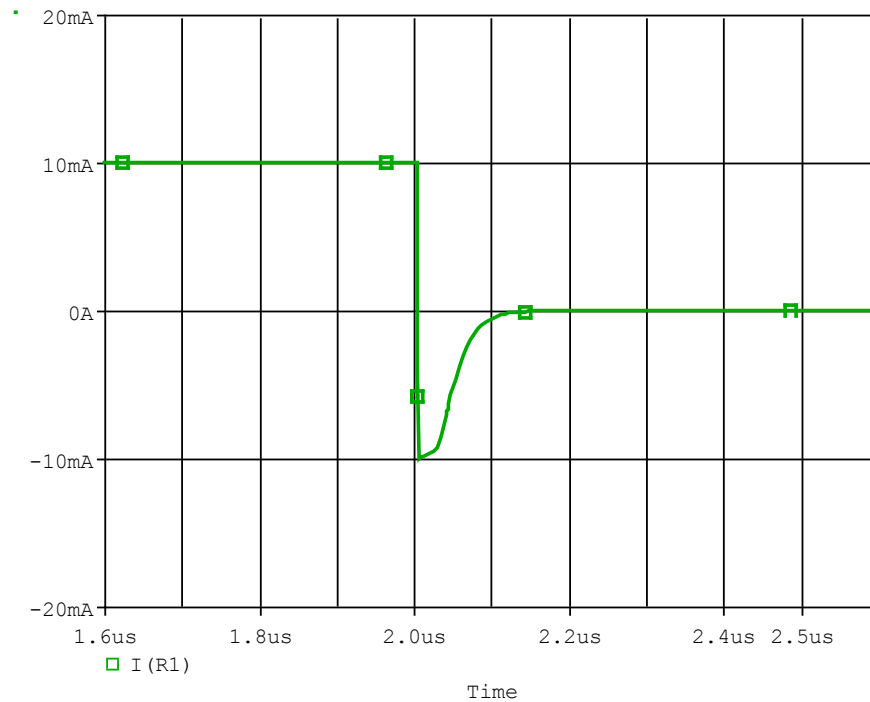


Simulation Result

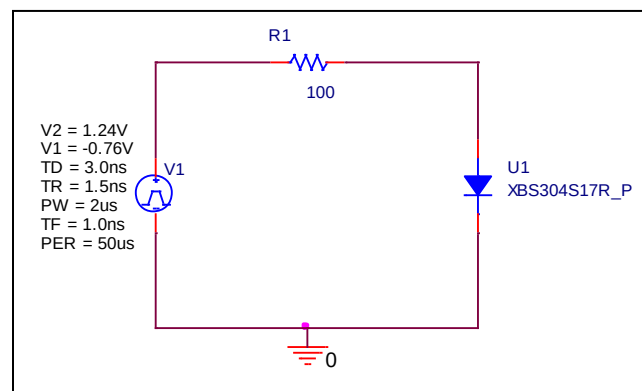
V _R (V)	C _t (pF)		%Error
	Measurement	Simulation	
0	308.000	296.176	-3.84
1	180.000	182.888	1.60
2	140.000	140.244	0.17
5	94.000	95.159	1.23
10	69.000	69.769	1.11
20	50.000	50.827	1.65
30	42.750	42.122	-1.47
40	37.500	36.818	-1.82

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit

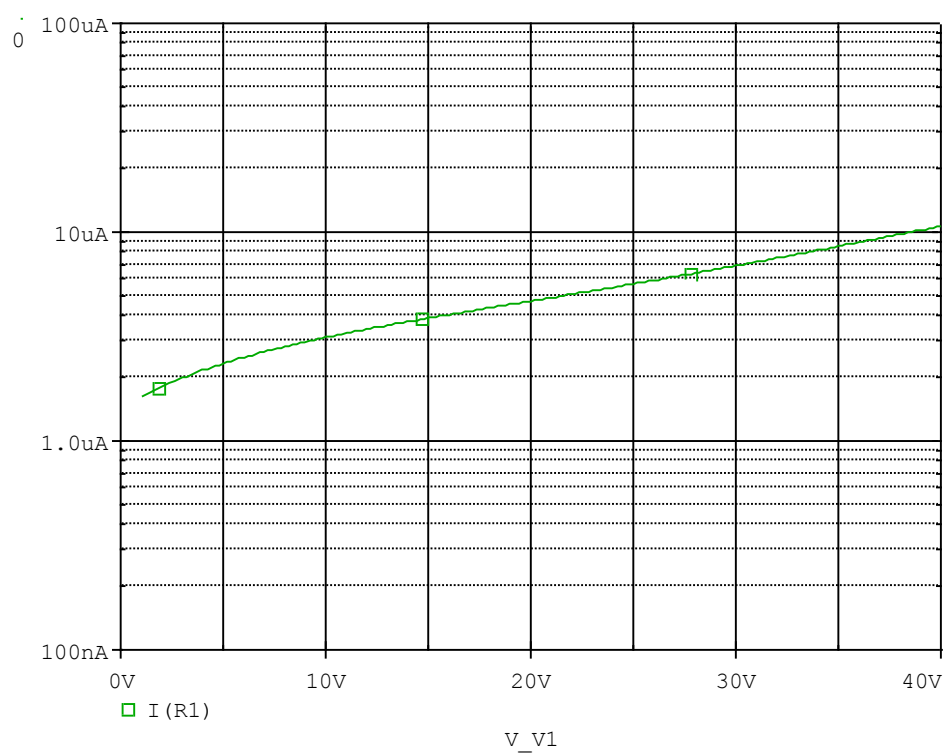


Compare Measurement vs. Simulation

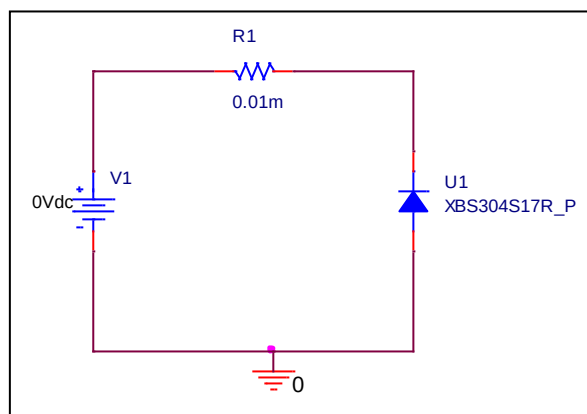
Parameter	Unit	Measurement	Simulation	%Error
trr	ns	82.000	82.211	0.26

Reverse Characteristic

Circuit Simulation Result

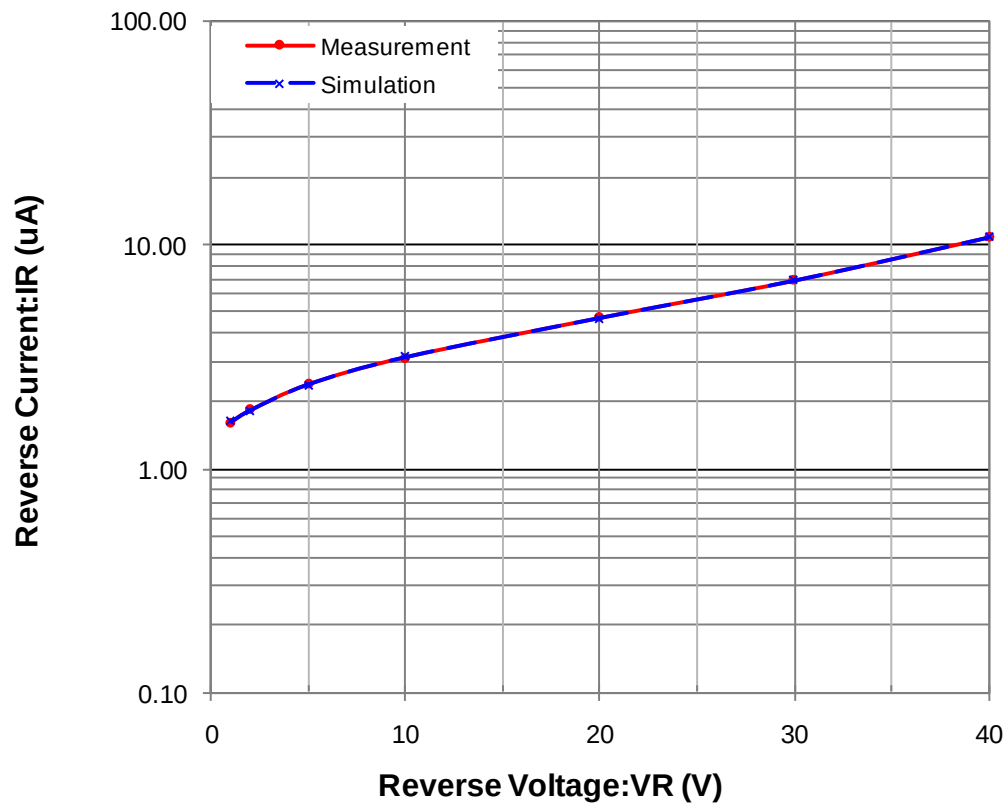


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R (V)	I_R (uA)		%Error
	Measurement	Simulation	
1.00	1.600	1.618	1.14
2.00	1.828	1.813	-0.78
5.00	2.370	2.350	-0.84
10.00	3.120	3.134	0.45
20.00	4.700	4.678	-0.46
30.00	6.900	6.911	0.16
40.00	10.700	10.698	-0.02

