

Device Modeling Report

COMPONENTS:
DIODE/ SCHOTTKY RECTIFIER / PROFESSIONAL
PART NUMBER: XBS104V14R
MANUFACTURER: TOREX SEMICONDUCTOR

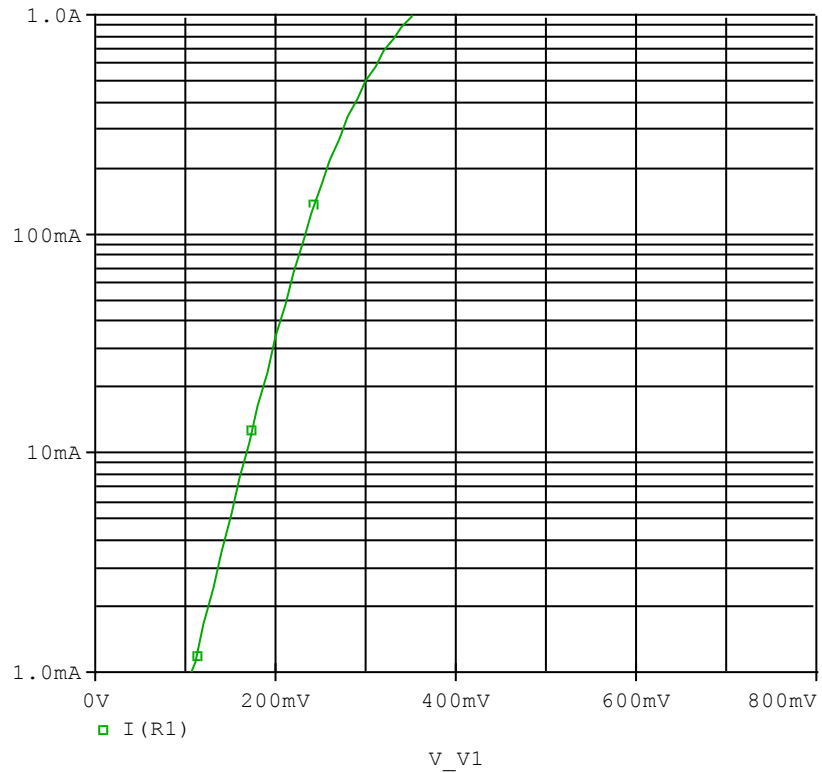


Bee Technologies Inc.

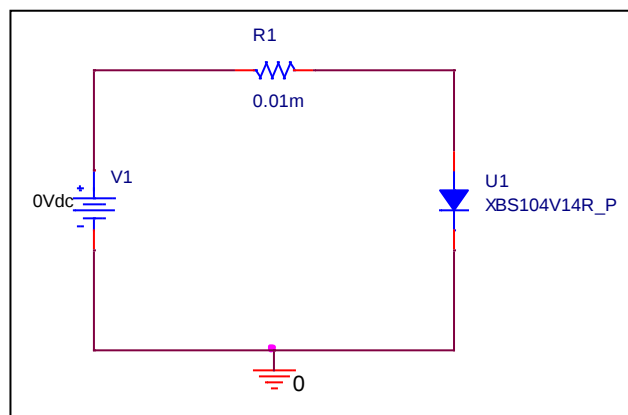
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

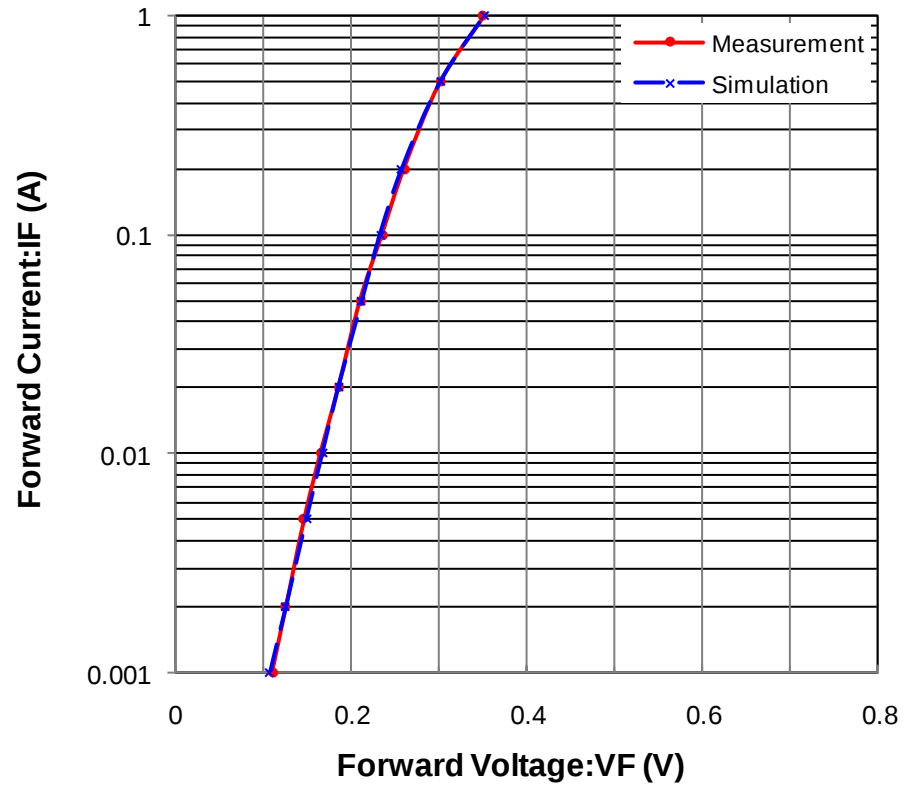


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

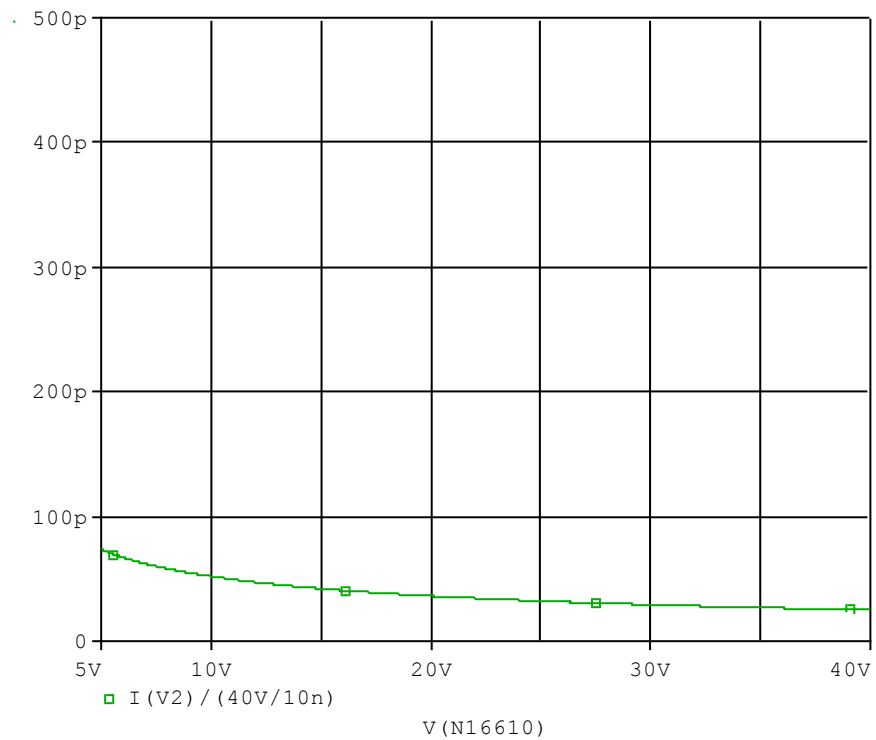


Simulation Result

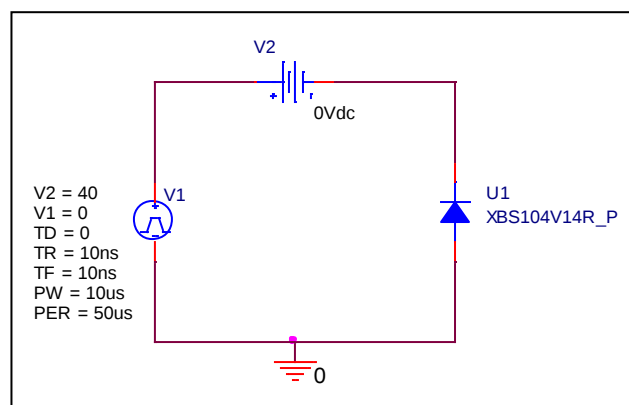
I_F (A)	V_F (V)		%Error
	Measurement	Simulation	
0.001	0.110	0.107	-2.830
0.002	0.125	0.125	-0.329
0.005	0.145	0.149	2.507
0.01	0.165	0.167	1.006
0.02	0.185	0.185	0.098
0.05	0.210	0.211	0.529
0.1	0.235	0.232	-1.168
0.2	0.260	0.257	-1.240
0.5	0.301	0.300	-0.221
1	0.350	0.351	0.306

Capacitance Characteristic

Circuit Simulation Result

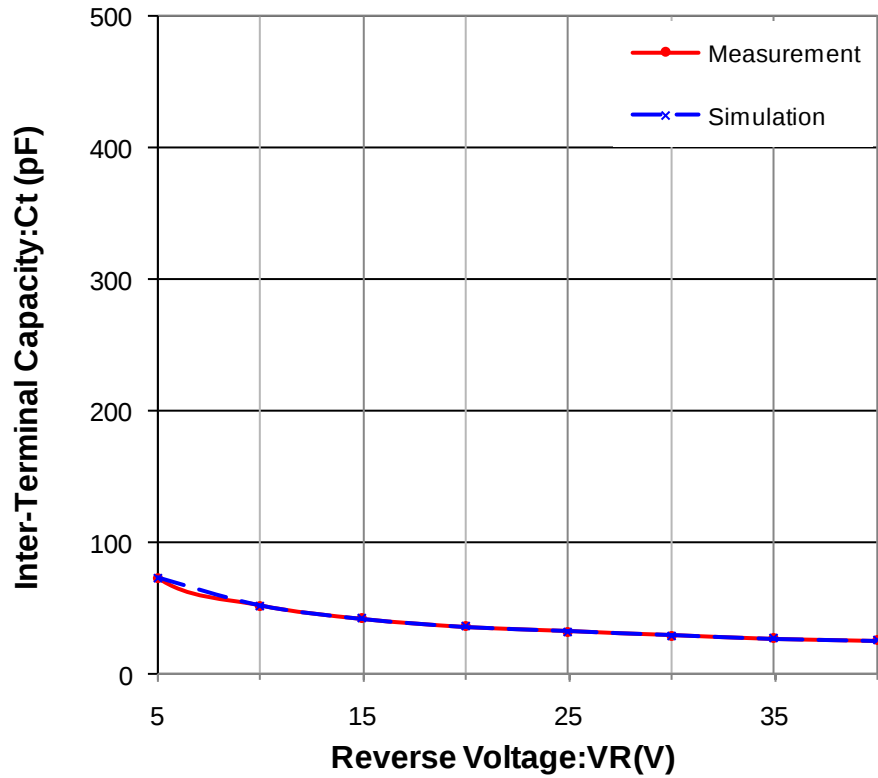


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

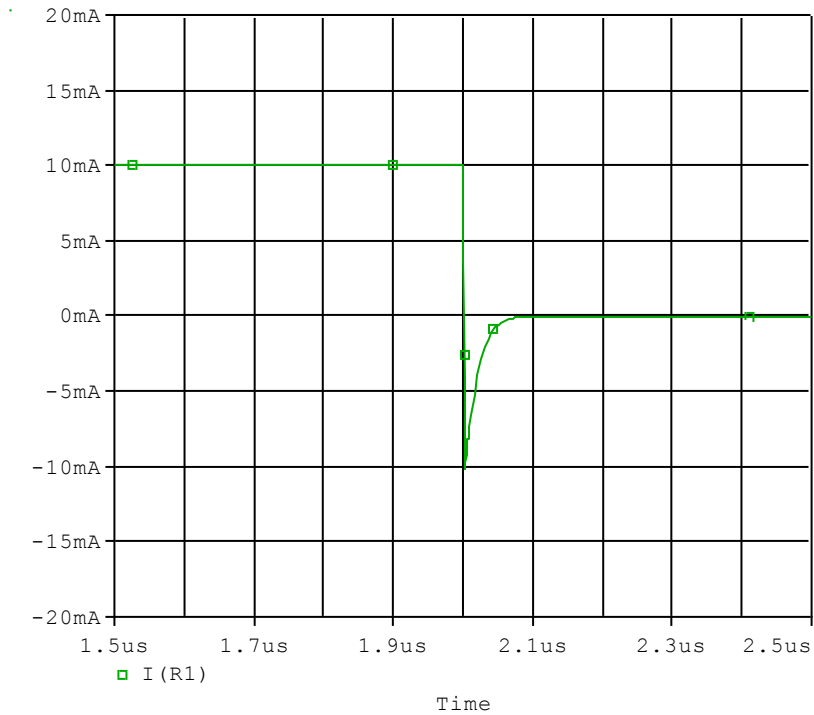


Simulation Result

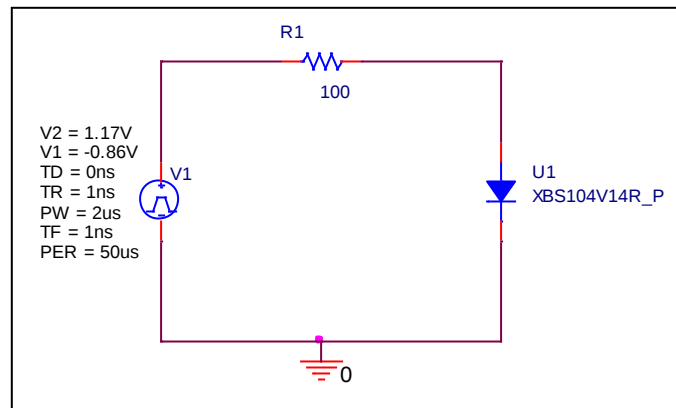
V _R (V)	C _t (pF)		%Error
	Measurement	Simulation	
5	73.000	73.257	0.35
10	52.000	51.974	-0.05
15	42.000	42.101	0.24
20	36.000	36.172	0.48
25	32.000	32.144	0.45
30	29.000	29.151	0.52
35	27.000	26.894	-0.39
40	25.000	25.051	0.20

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit

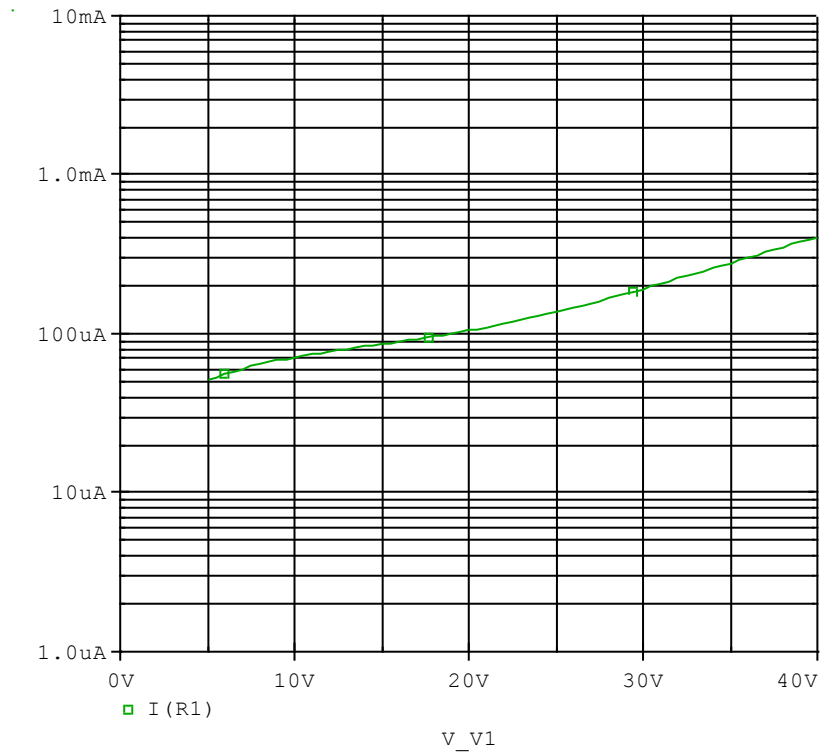


Compare Measurement vs. Simulation

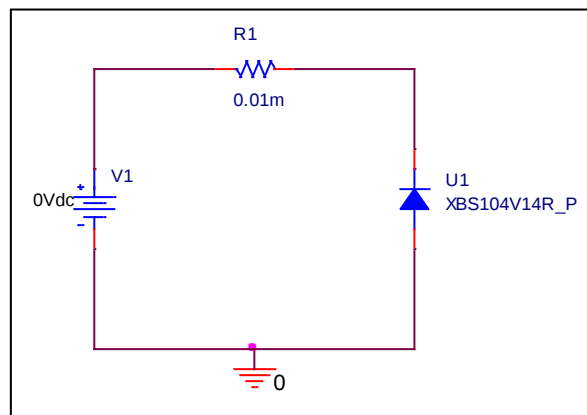
Parameter	Unit	Measurement	Simulation	%Error
trr	ns	41.000	41.084	0.20

Reverse Characteristic

Circuit Simulation Result

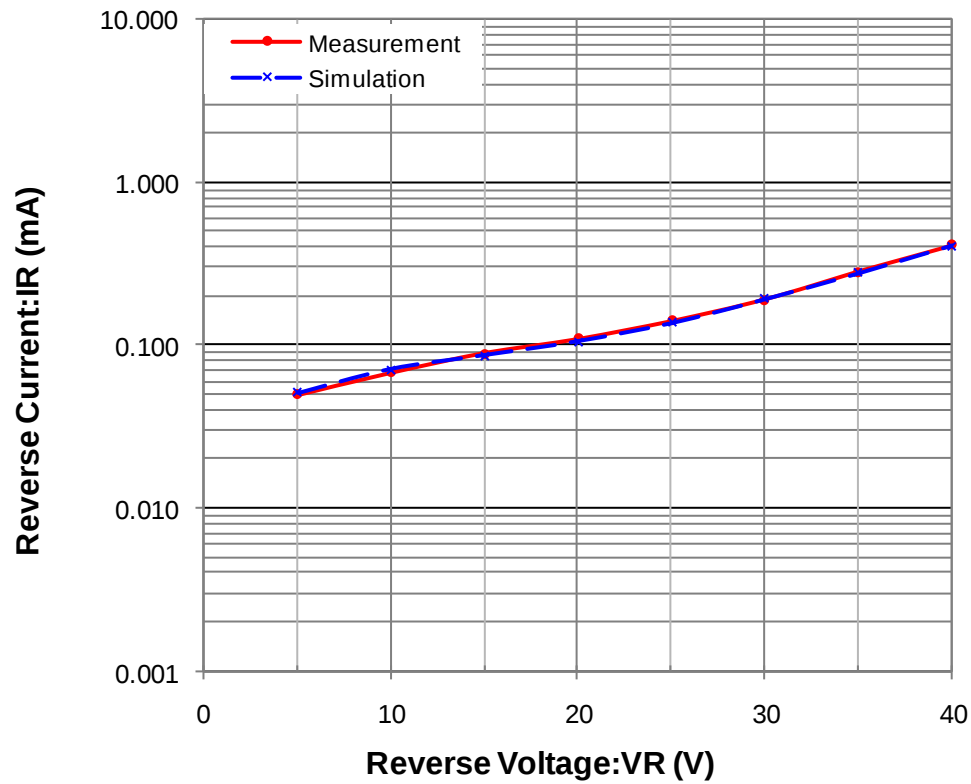


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R (V)	I_R (mA)		%Error
	Measurement	Simulation	
5	0.0500	0.0509	1.88
10	0.0680	0.0710	4.45
15	0.0890	0.0859	-3.53
20	0.1100	0.1047	-4.80
25	0.1420	0.1369	-3.60
30	0.1900	0.1917	0.88
35	0.2800	0.2784	-0.58
40	0.4150	0.4062	-2.11