

Device Modeling Report

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

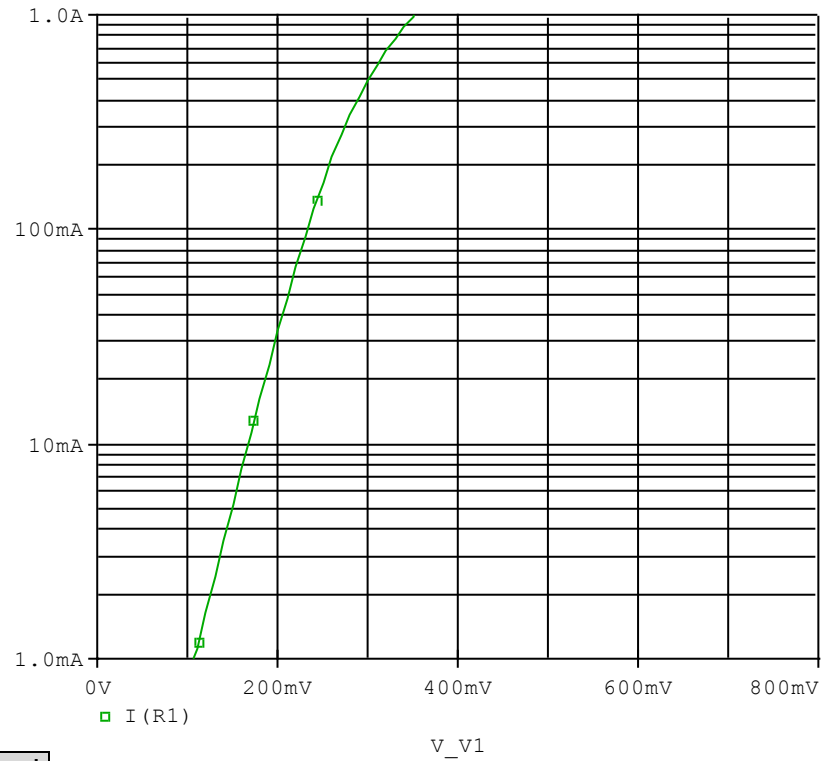


Bee Technologies Inc.

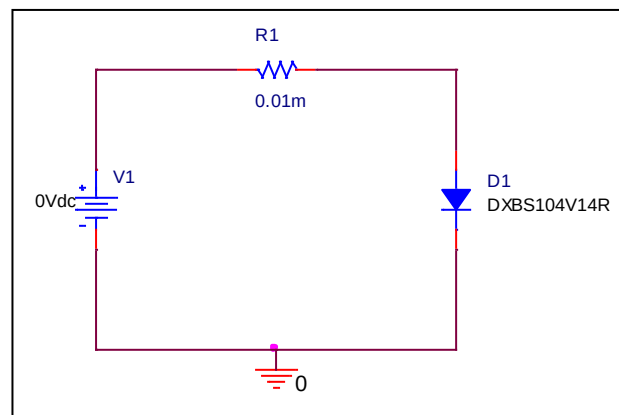
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

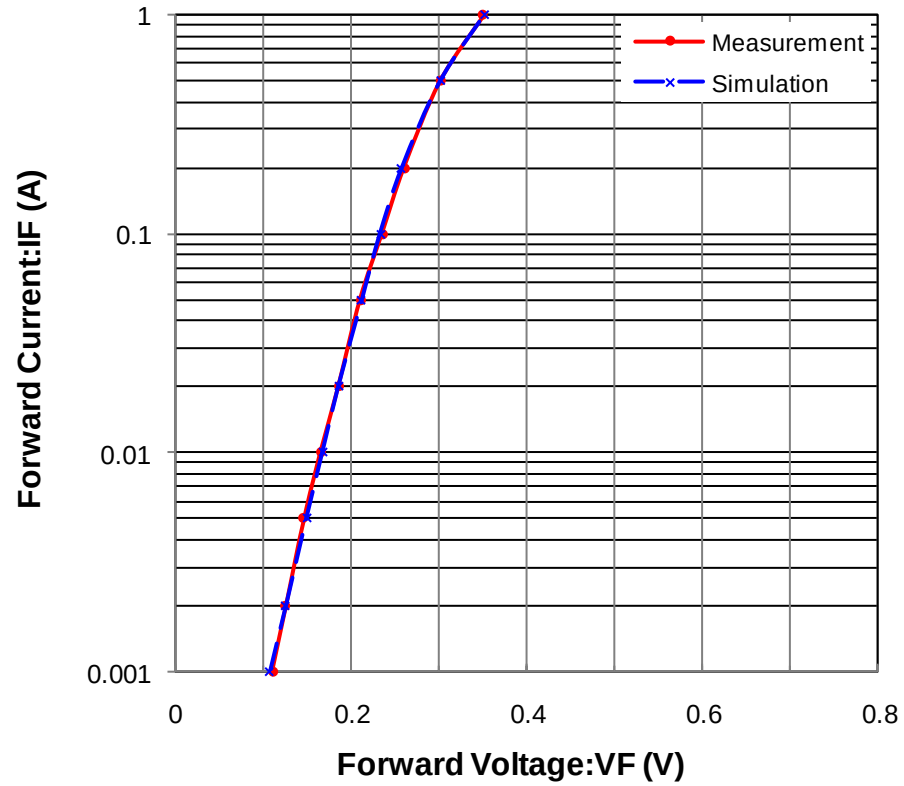


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

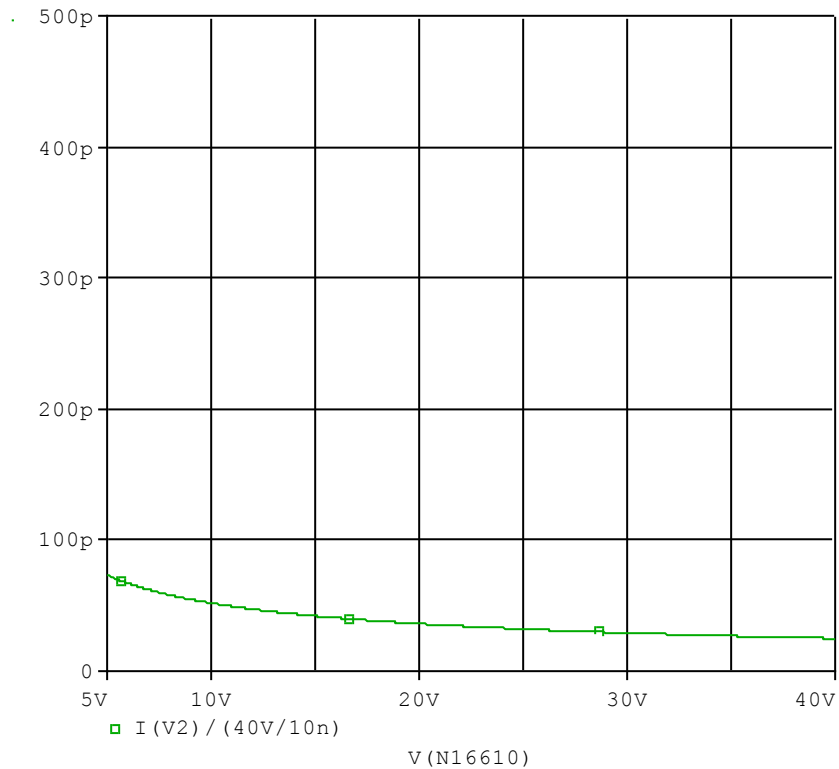


Simulation Result

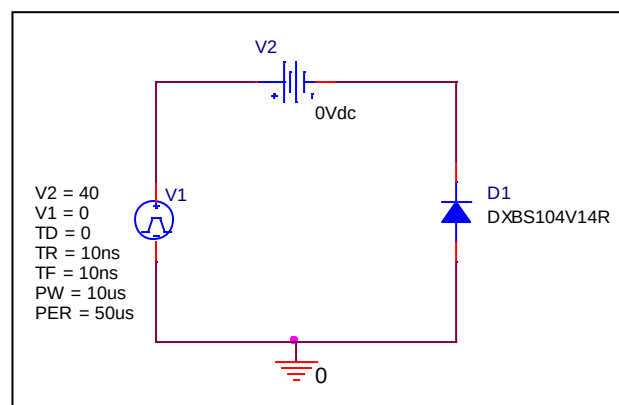
I_F (A)	V_F (V)		%Error
	Measurement	Simulation	
0.001	0.110	0.107	-2.830
0.002	0.125	0.125	-0.329
0.005	0.145	0.149	2.507
0.01	0.165	0.167	0.970
0.02	0.185	0.185	0.098
0.05	0.210	0.211	0.529
0.1	0.235	0.232	-1.168
0.2	0.260	0.257	-1.240
0.5	0.301	0.300	-0.221
1	0.350	0.351	0.306

Capacitance Characteristic

Circuit Simulation Result

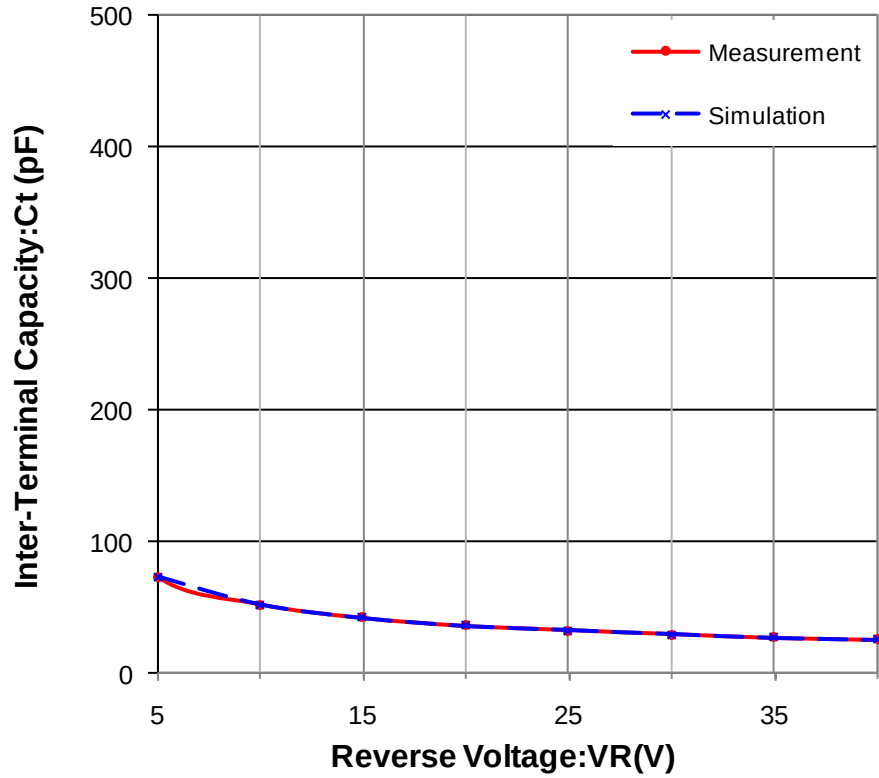


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

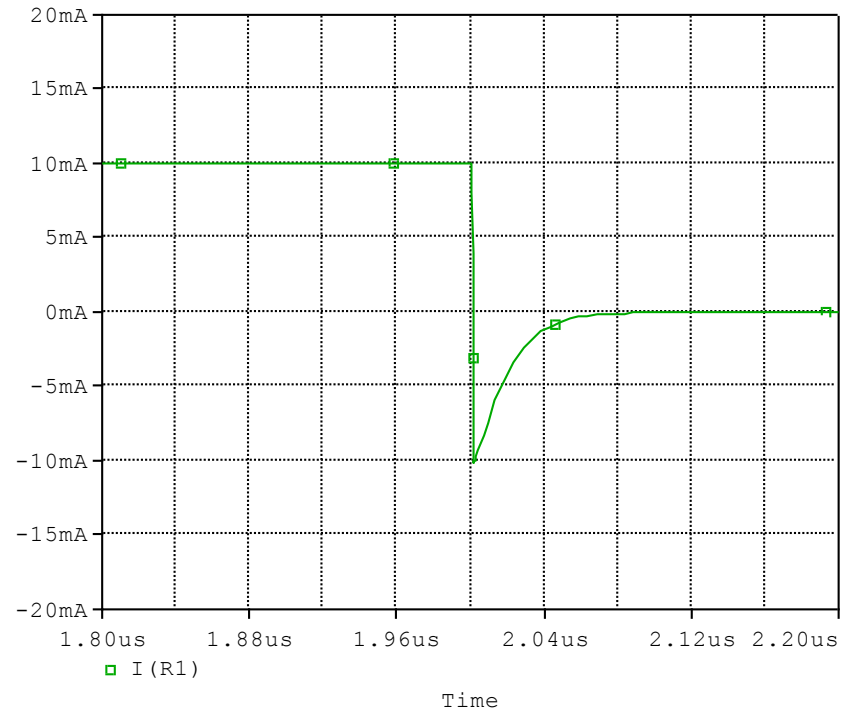


Simulation Result

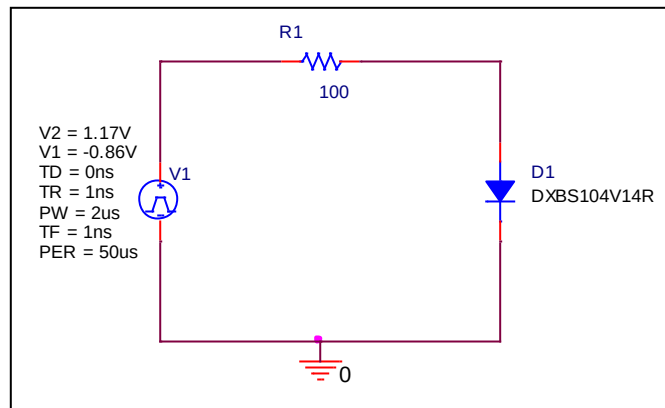
V _R (V)	C _t (pF)		%Error
	Measurement	Simulation	
5	73.000	73.248	0.34
10	52.000	51.961	-0.08
15	42.000	42.084	0.20
20	36.000	36.150	0.42
25	32.000	32.114	0.36
30	29.000	29.107	0.37
35	27.000	26.829	-0.63
40	25.000	24.953	-0.19

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit



Compare Measurement vs. Simulation

Parameter	Unit	Measurement	Simulation	%Error
trr	ns	41.000	41.004	0.01