Device Modeling Report

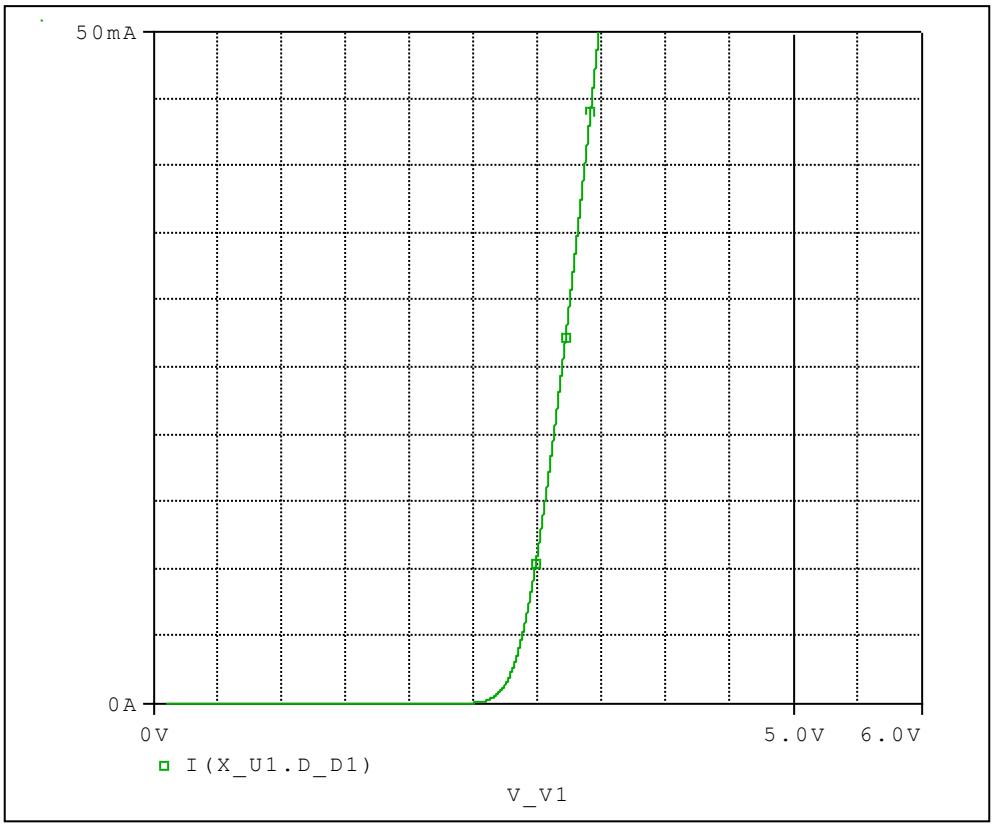
COMPONENTS: Lamp/ Bluish-Green Diode / Professional
PART NUMBER: E1L5-YC1A
MANUFACTURER: TOYODA GOSEI
REMARK: 25 degree C
COLER: GREEN

Bee Technologies Inc.

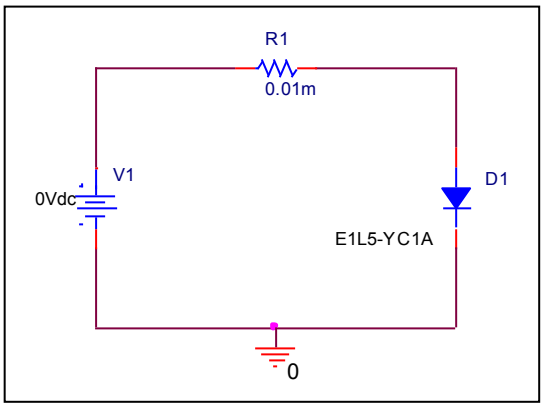
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

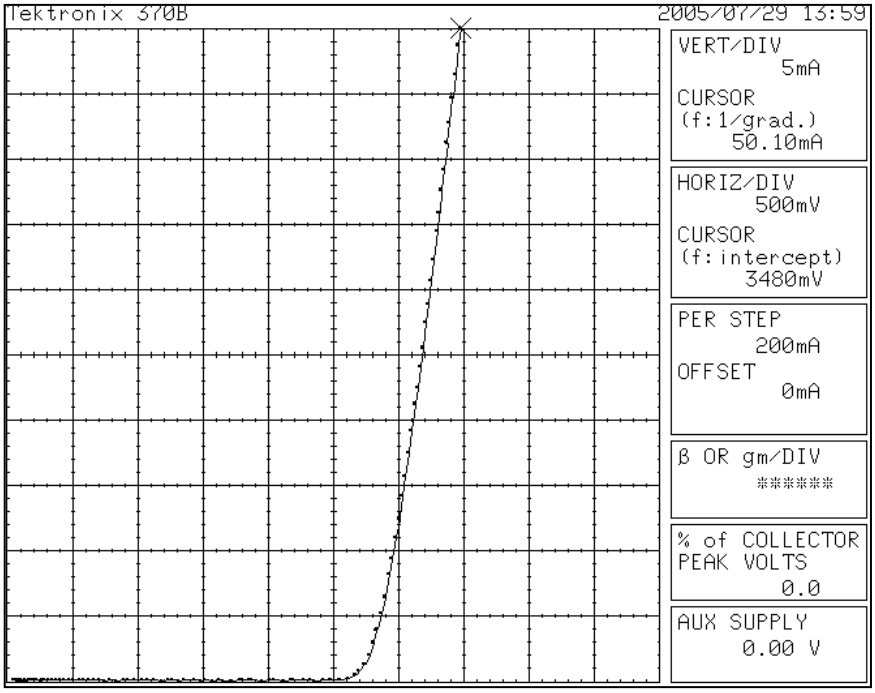
Circuit Simulation Result



Evaluation Circuit

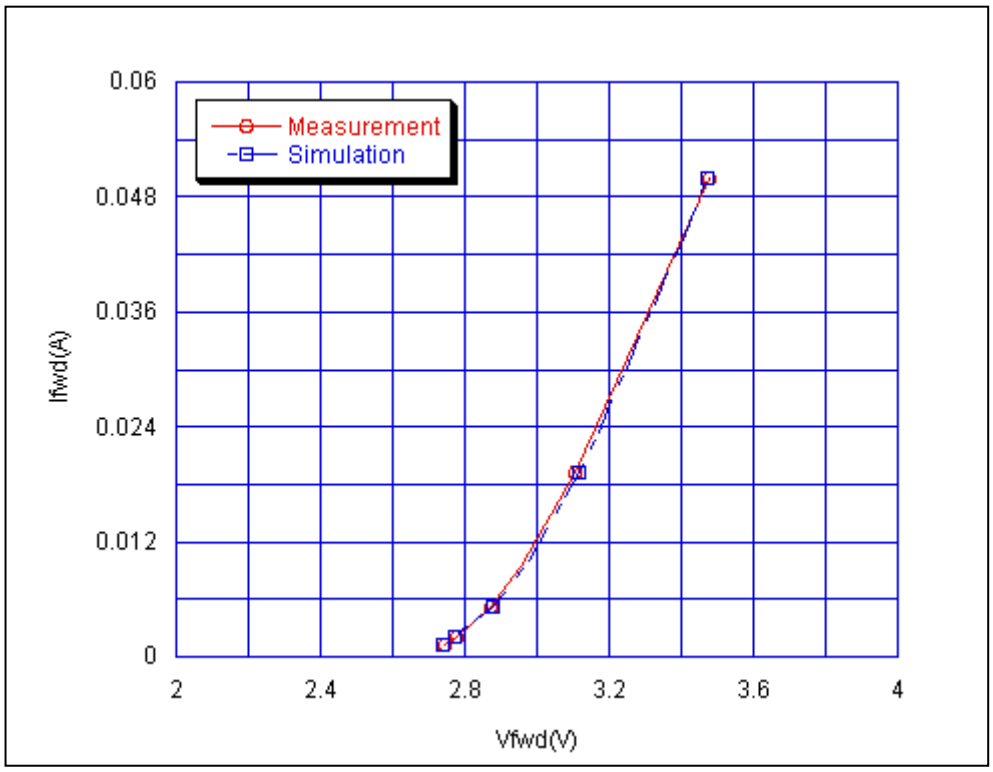


Forward Current Characteristic Reference



Comparison Graph

Circuit Simulation Result

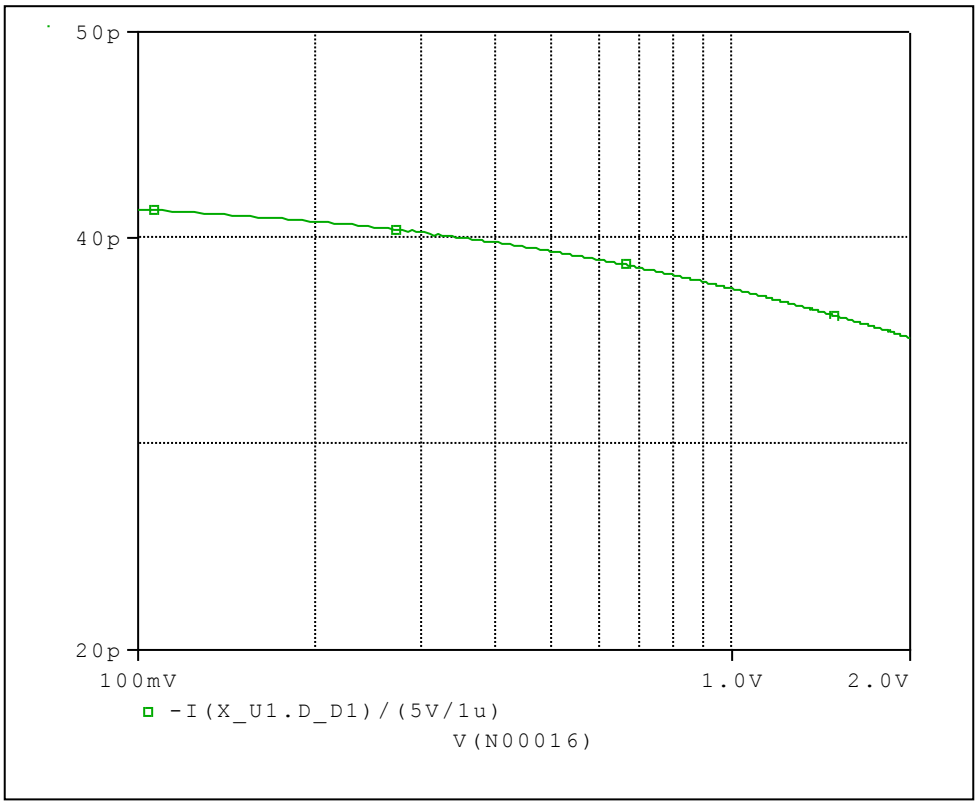


Simulation Result

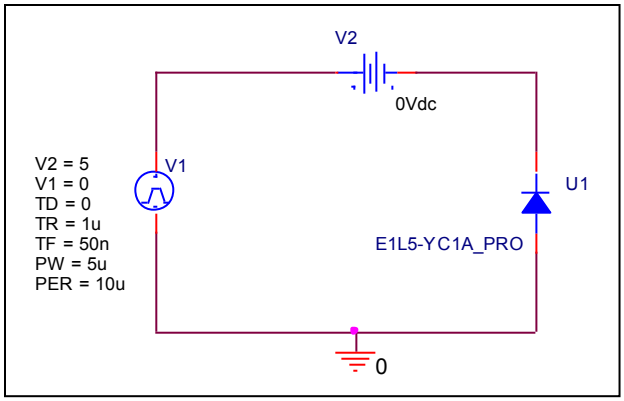
Ifwd(A)	Vfwd(V)		%Error
	Measurement	Simulation	
0.00135	2.745	2.738	0.25500
0.00205	2.78	2.775	0.17985
0.0052	2.875	2.879	0.13913
0.0094	2.955	2.967	0.40609
0.0192	3.105	3.118	0.41867
0.05	3.48	3.475	0.14367

Capacitance Characteristic

Circuit Simulation Result

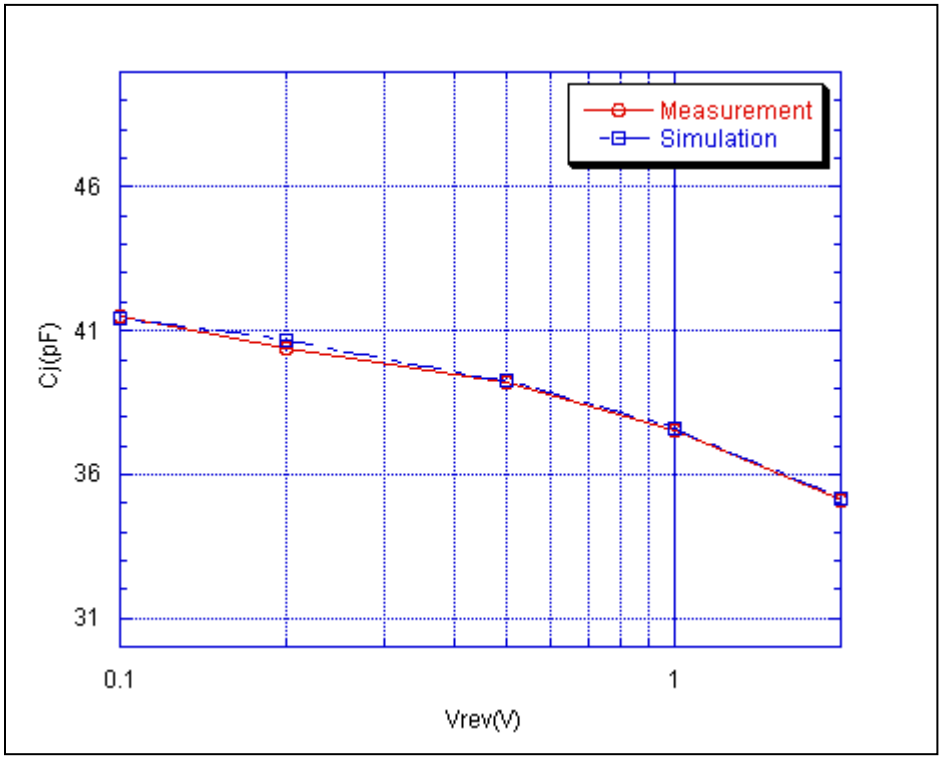


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

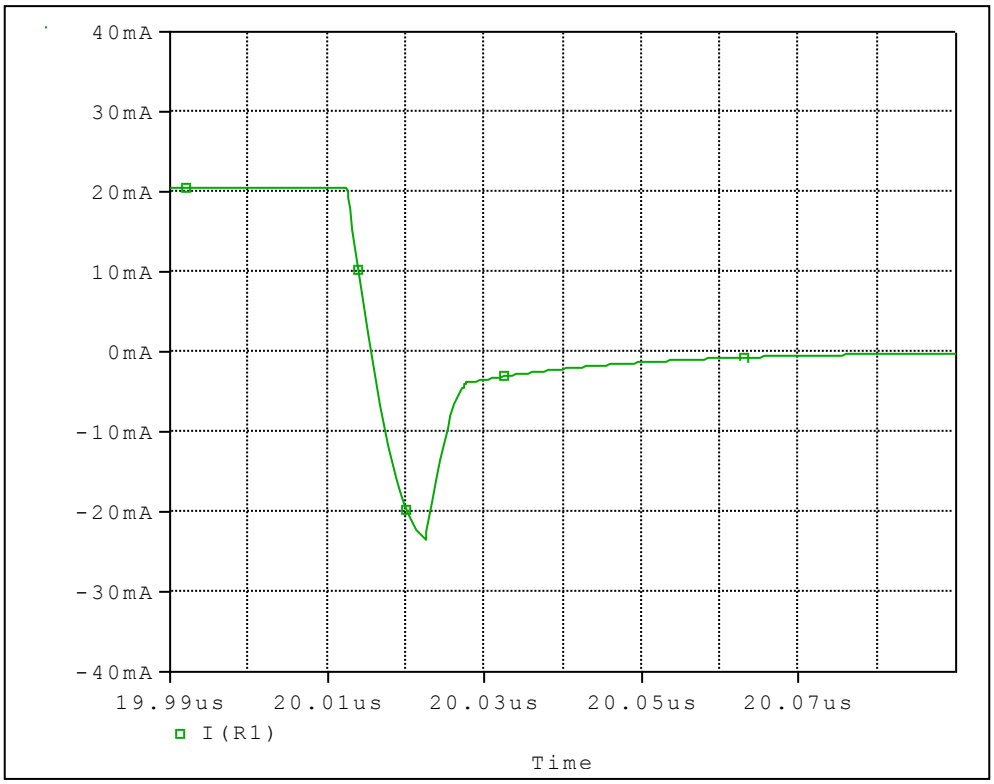


Simulation Result

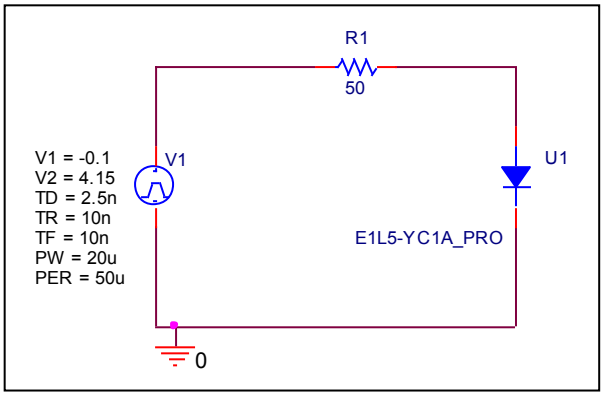
Vrev(V)	Cj(pF)		%Error
	Measurement	Simulation	
0	41.9	41.9	0
0.1	41.47	41.414	0.1350
0.2	40.4	40.693	0.7252
0.5	39.2	39.29	0.2295
1	37.5	37.604	0.2773
2	35.07	35.188	0.3364

Reverse Recovery Characteristic

Circuit Simulation Result



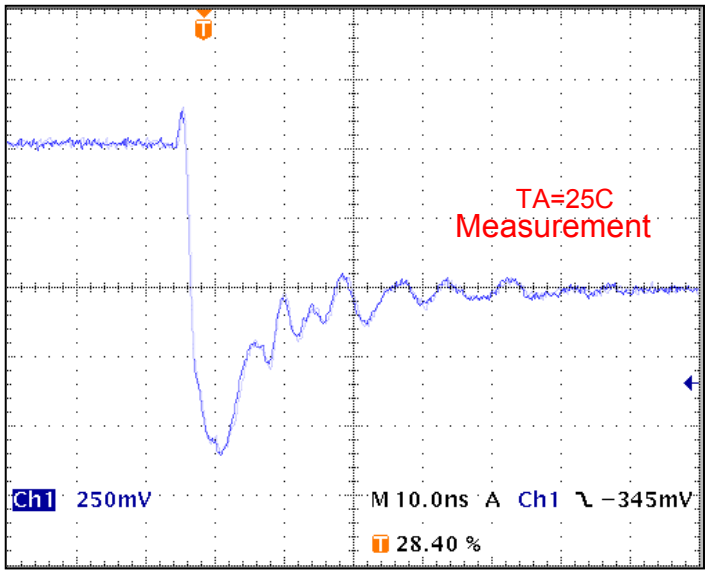
Evaluation Circuit



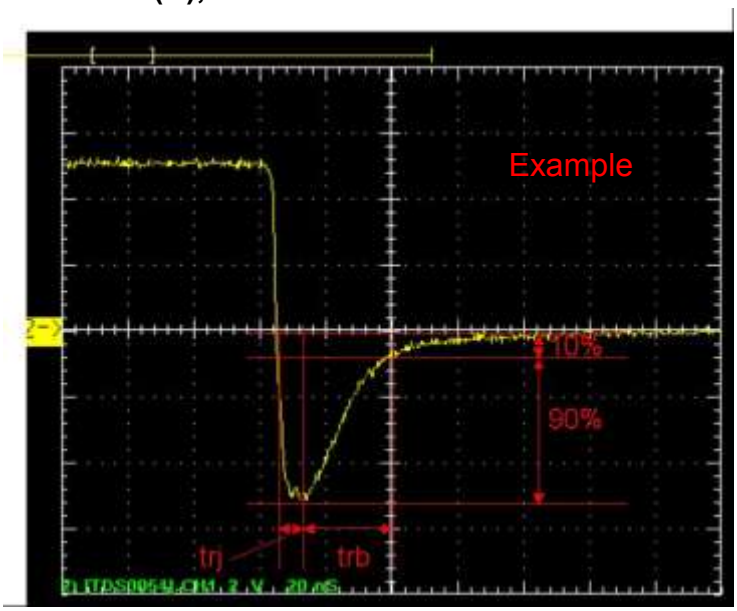
Compare Measurement vs. Simulation

Symbol	Measurement	Unit	Simulation	Unit	%Error
trj	5.4	ns	5.37	ns	- 0.03
trb	20	ns	20	ns	0

Reverse Recovery Characteristic Reference



Trj = 5.4(ns)
Trb= 20(ns)
Conditions: Ifwd=Irev=0.02(A), Rl=50



Relation between trj and trb