Device Modeling Report

COMPONENTS:
DIODE/ ENHANCED POWER LED / STANDARD
PART NUMBER: EP204K-35G1R1B1-CA
MANUFACTURER: PARA Light
EMARK: 25 degree C
COLER: Green

Bee Technologies Inc.

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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

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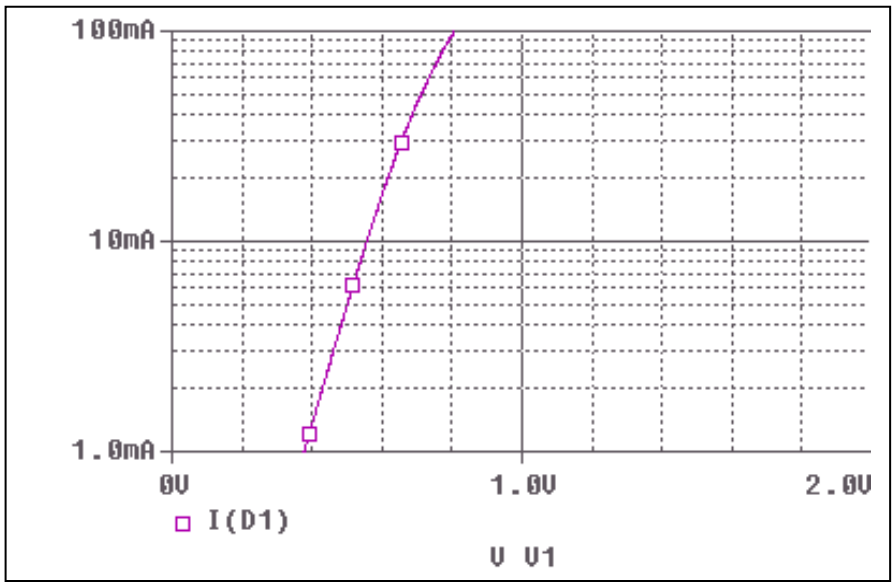
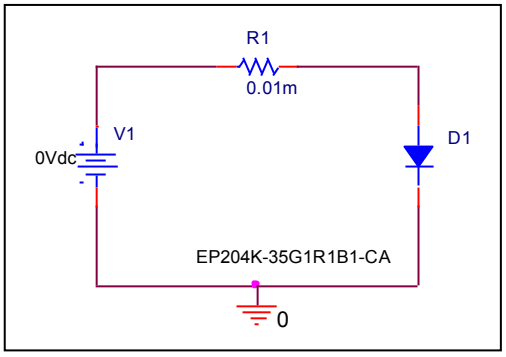
Forward Current Characteristic

Circuit Simulation Result



Evaluation Circuit



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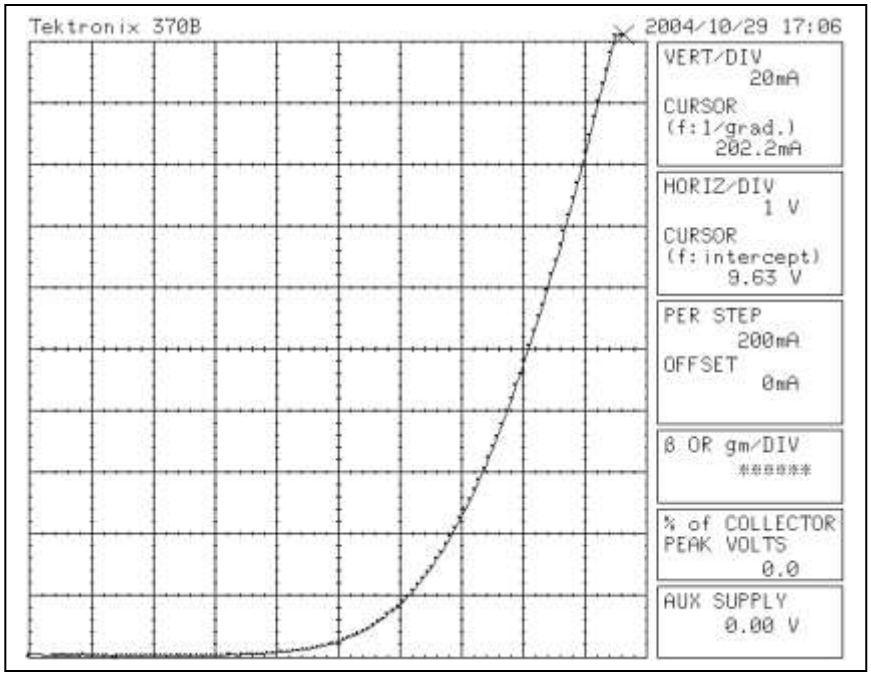
Forward Current Characteristic Reference



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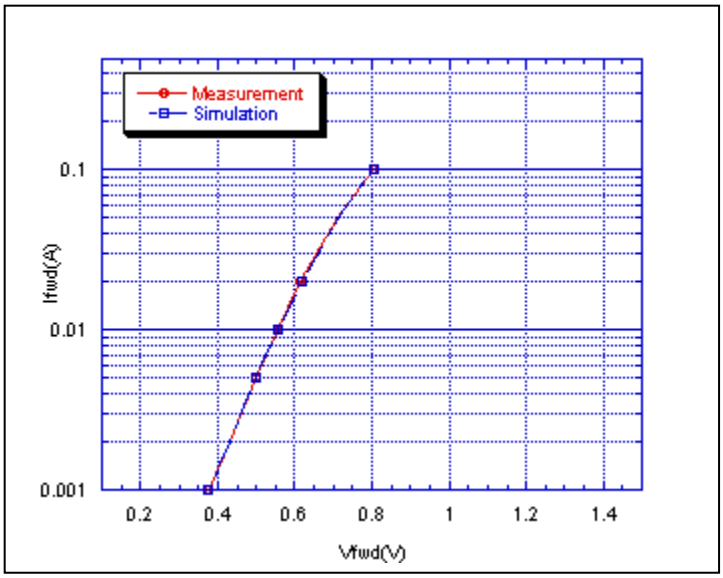
Comparison Graph

Circuit Simulation Result



Simulation Result

Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.001	0.375	0.377	0.533
0.002	0.434	0.4341	0.023
0.005	0.5	0.5	0
0.01	0.556	0.5564	0.071
0.02	0.616	0.6167	0.113
0.05	0.712	0.7114	0.084
0.1	0.807	0.8072	0.024

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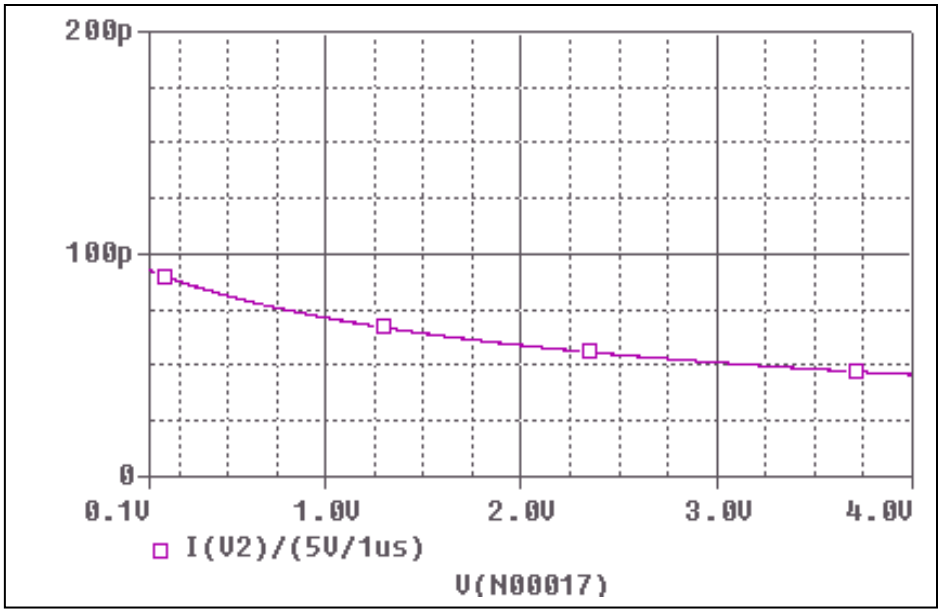
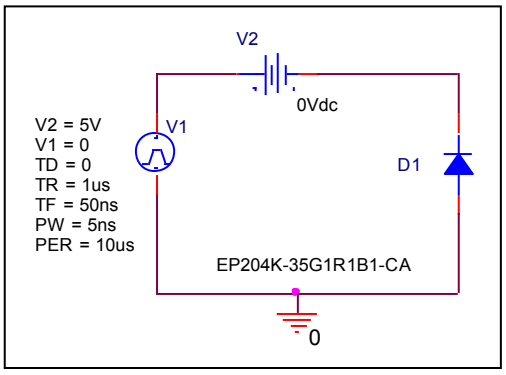
Capacitance Characteristic

Circuit Simulation Result



Evaluation Circuit



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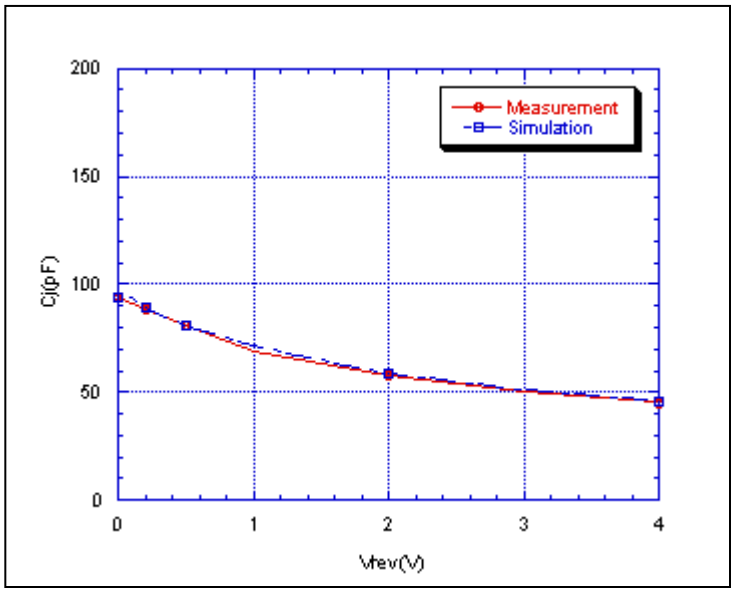
Comparison Graph

Circuit Simulation Result



Simulation Result

Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	94	94	0
0.1	91.54	93.473	2.111
0.2	88.71	89.473	0.860
0.5	81.37	81.286	0.103
1	68.6	71.507	4.237
2	57.7	59.046	2.332
3	50	51.336	2.672
4	45	45.849	1.886

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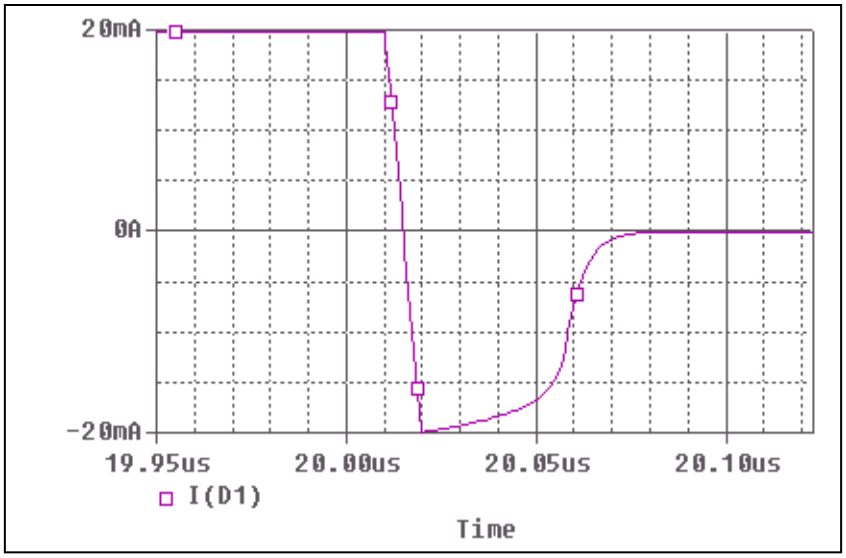
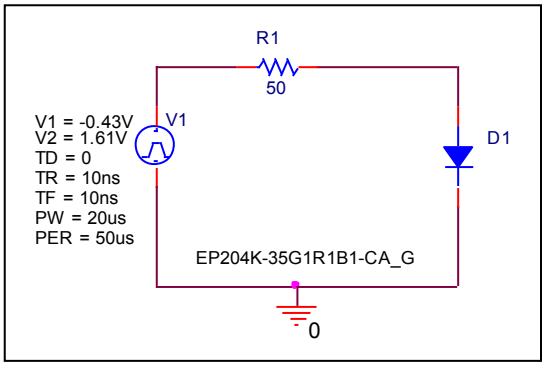
Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit



Compare Measurement vs. Simulation

Symbol	Measurement	Unit	Simulation	Unit	%Error
Trr=trj+trb	37.2	ns	37.4	ns	0.537

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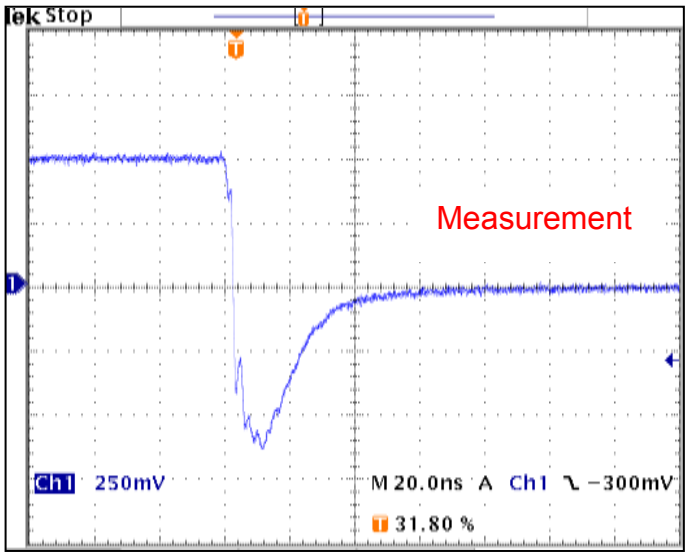
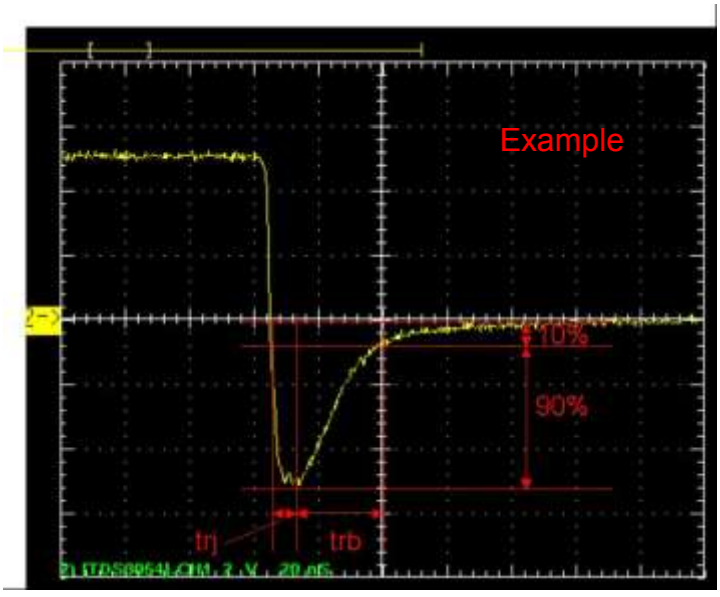
Reverse Recovery Characteristic Reference



Trj =9.20(ns)
Trb= 28.0(ns)
Conditions: Ifwd=Irev=0.2(A), Rl=50



Relation between trj and trb

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