

# Device Modeling Report

COMPONENTS:  
DIODE/ SCHOTTKY RECTIFIER / STANDARD  
PART NUMBER: U1FWJ44L  
MANUFACTURER: TOSHIBA

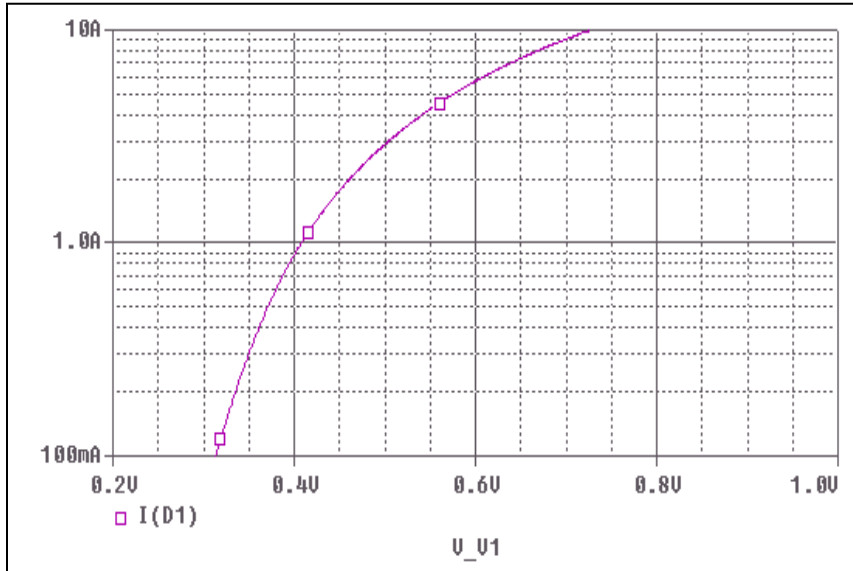


**Bee Technologies Inc.**

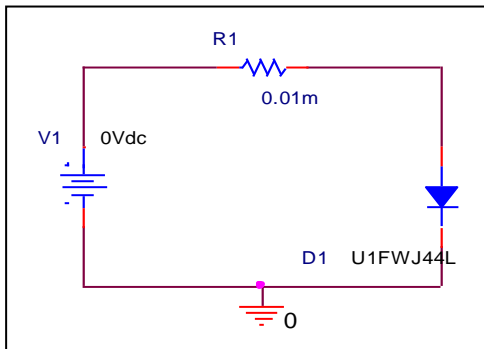
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

# Forward Current Characteristic

## Circuit Simulation Result

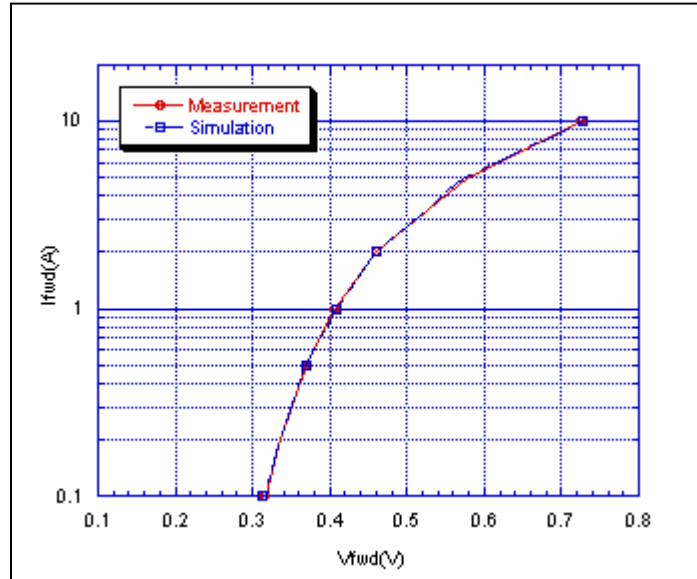


## Evaluation Circuit



# Comparison Graph

## Circuit Simulation Result

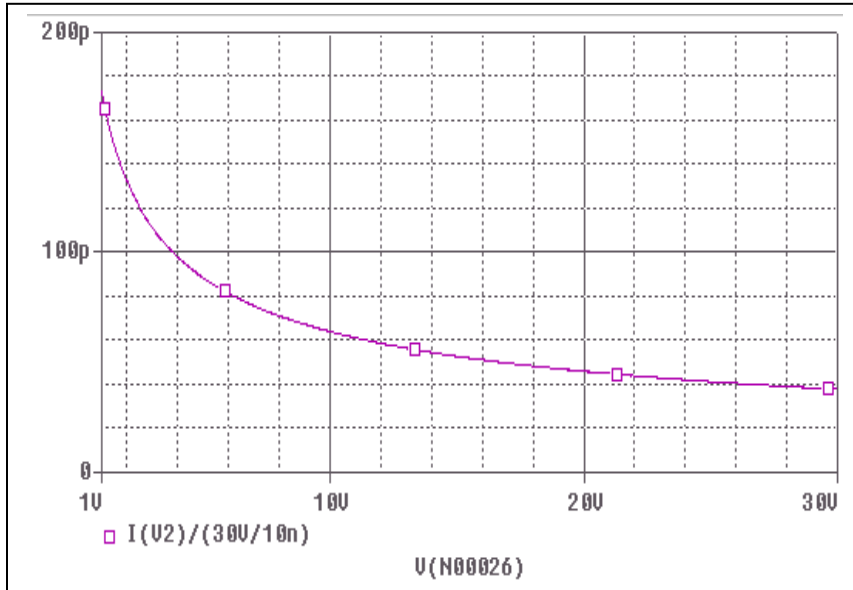


## Simulation Result

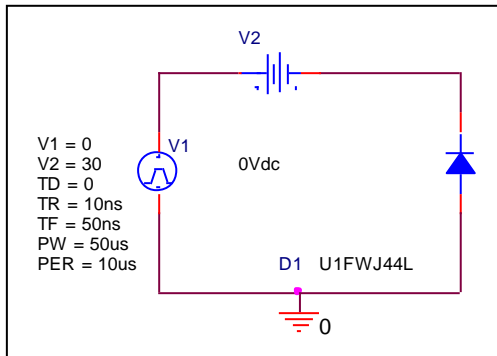
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.1	0.315	0.313	-0.63
0.2	0.337	0.335	-0.59
0.5	0.370	0.371	0.16
1	0.405	0.408	0.69
2	0.460	0.461	0.24
5	0.580	0.576	-0.78
10	0.725	0.727	0.22

# Junction Capacitance Characteristic

## Circuit Simulation Result

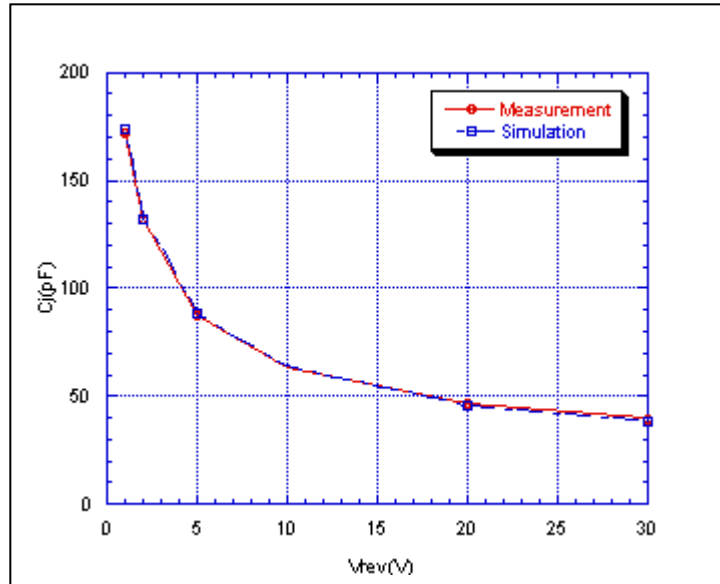


## Evaluation Circuit



# Comparison Graph

## Circuit Simulation Result



## Simulation Result

$V_{rev}$ (V)	$C_j$ (pF) Measurement	$C_j$ (pF) Simulation	%Error
1	172.00	173.30	0.76
2	132.00	132.20	0.15
5	87.50	88.40	1.03
10	63.00	63.90	1.43
20	46.50	45.90	-1.29
30	39.00	38.00	-2.56