

# Device Modeling Report

COMPONENTS:  
DIODE/ SCHOOTKY RECTIFIER / STANDARD  
PART NUMBER: 1SS378  
MANUFACTURER: TOSHIBA

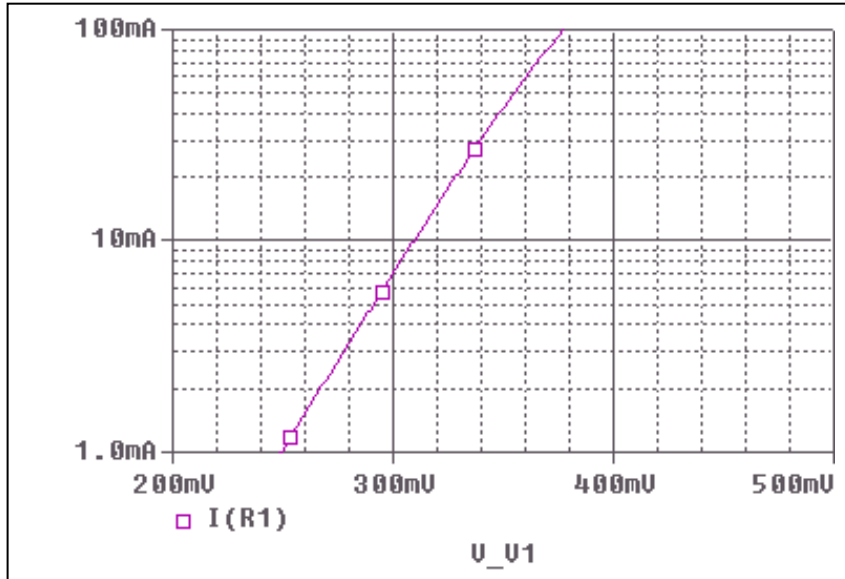


**Bee Technologies Inc.**

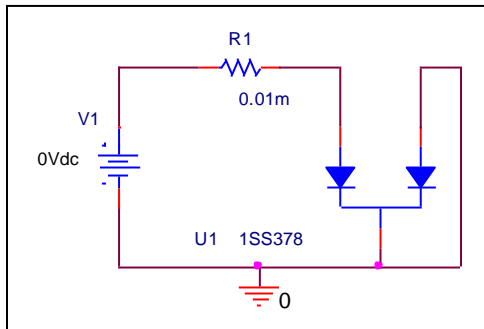
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

# Forward Current Characteristic

## Circuit Simulation Result

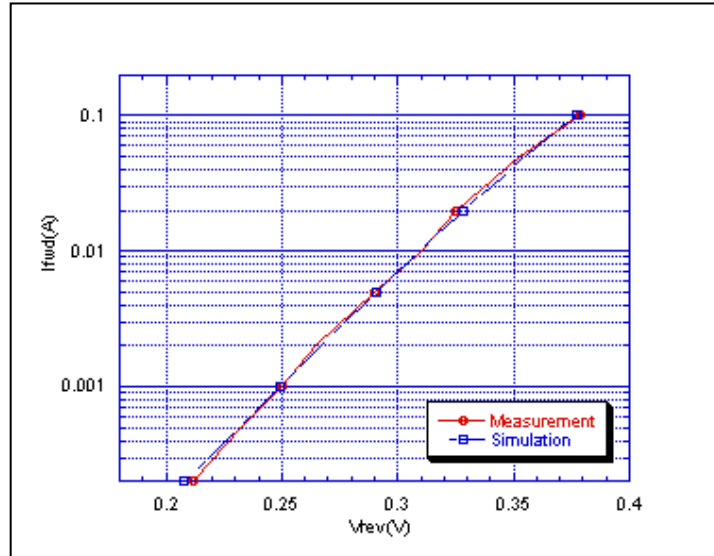


## Evaluation Circuit



# Comparison Graph

## Circuit Simulation Result

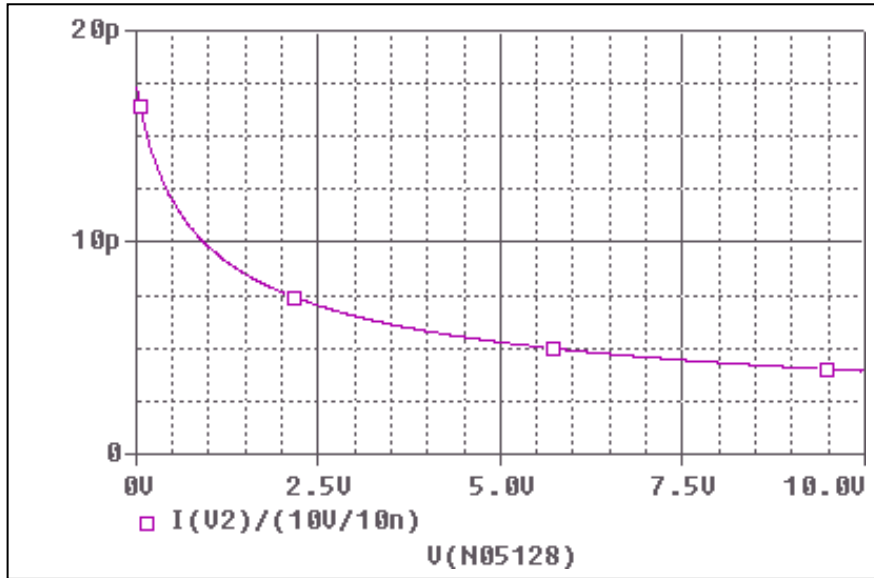


## Simulation Result

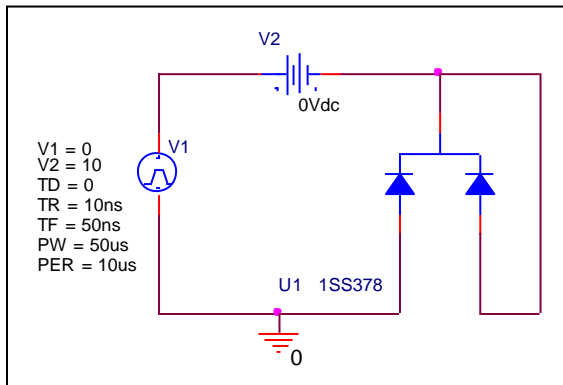
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.0002	0.212	0.207	-2.17
0.0005	0.232	0.231	-0.39
0.001	0.250	0.249	-0.36
0.002	0.265	0.267	0.79
0.005	0.290	0.291	0.38
0.01	0.310	0.309	-0.19
0.02	0.325	0.328	1.02
0.05	0.353	0.355	0.51
0.1	0.379	0.377	-0.45

# Junction Capacitance Characteristic

## Circuit Simulation Result

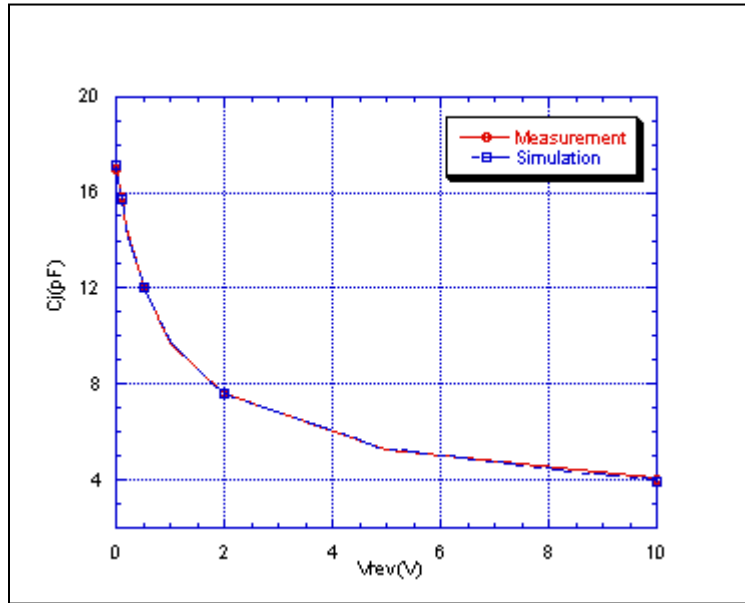


## Evaluation Circuit



# Comparison Graph

## Circuit Simulation Result



## Simulation Result

$V_{rev}$ (V)	$C_j$ (pF) Measurement	$C_j$ (pF) Simulation	%Error
0.02	17.000	17.100	0.59
0.05	16.500	16.570	0.42
0.1	15.800	15.700	-0.63
0.2	14.500	14.440	-0.41
0.5	12.050	12.000	-0.41
1	9.700	9.790	0.93
2	7.600	7.650	0.66
5	5.300	5.280	-0.38
10	4.000	3.940	-1.50