

Device Modeling Report

COMPONENTS:
DIODE/ SCHOOTKY RECTIFIER / STANDARD
PART NUMBER: DF20SC4M
MANUFACTURER: SHINDENGEN

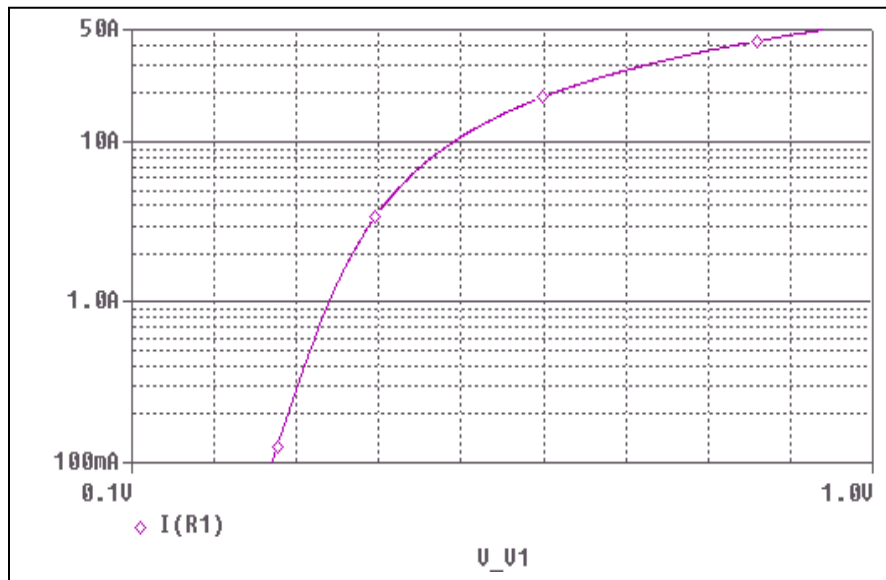


Bee Technologies Inc.

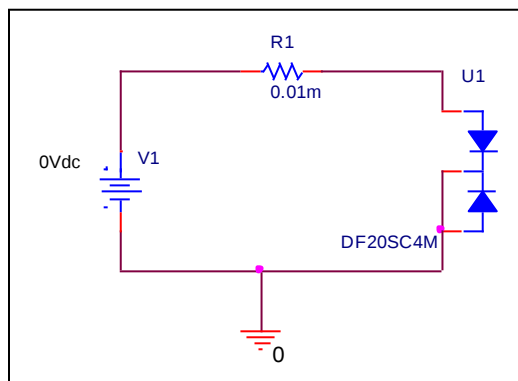
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

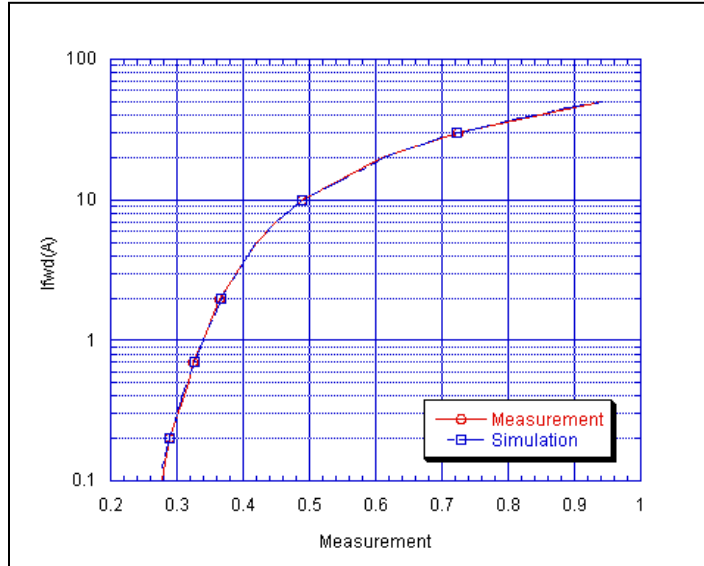


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

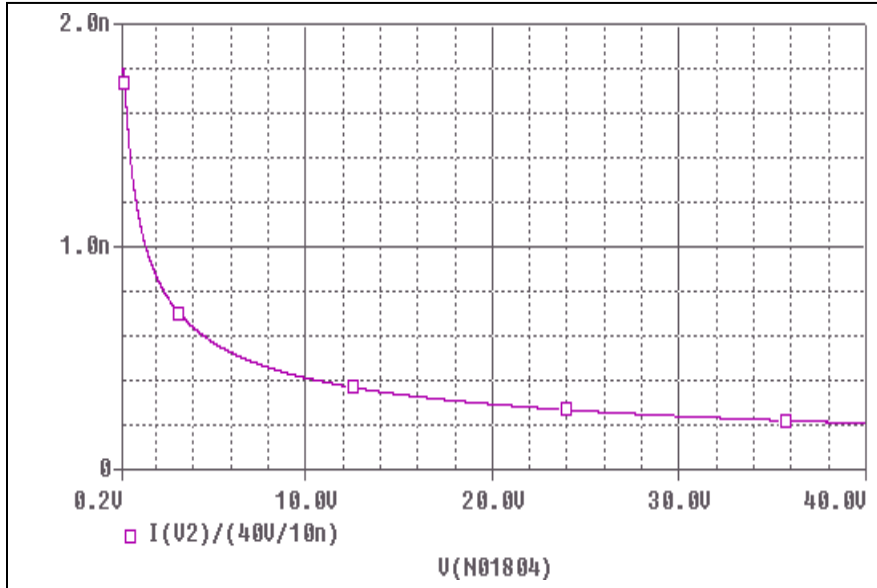


Simulation Result

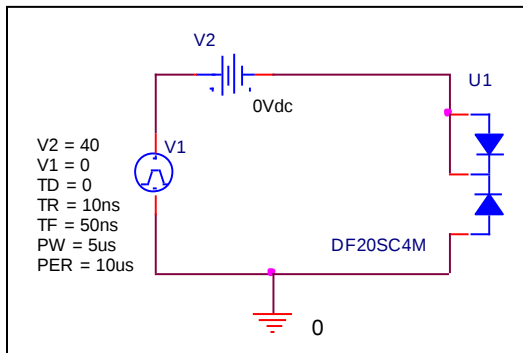
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.1	0.275	0.271	-1.64
0.2	0.290	0.290	-0.07
0.5	0.318	0.316	-0.50
1	0.340	0.339	-0.18
2	0.365	0.367	0.66
5	0.420	0.421	0.19
10	0.492	0.490	-0.41
20	0.608	0.611	0.49
50	0.943	0.940	-0.32

Junction Capacitance Characteristic

Circuit Simulation Result

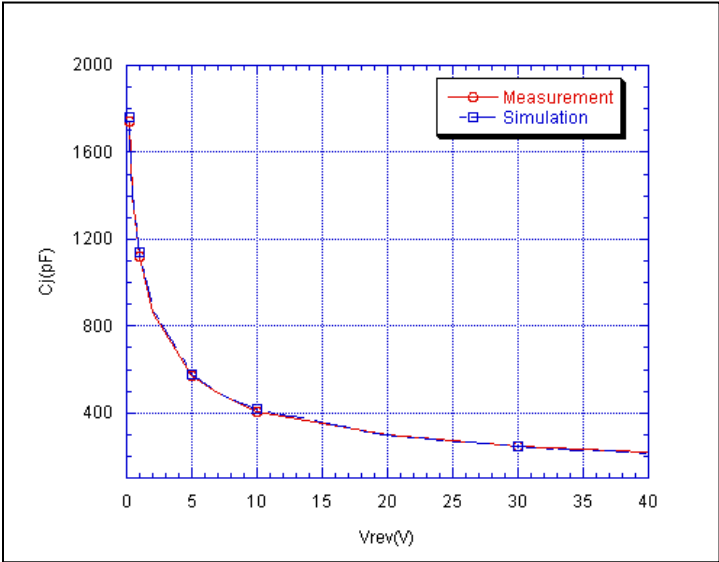


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_{rev} (V)	C_j (pF) Measurement	C_j (pF) Simulation	%Error
0.2	1740.000	1760.000	1.15
0.5	1400.000	1420.000	1.43
1	1120.000	1140.000	1.79
2	860.000	872.400	1.44
5	570.000	575.200	0.91
10	407.000	417.300	2.53
20	300.000	296.800	-1.07
40	215.000	209.500	-2.56