

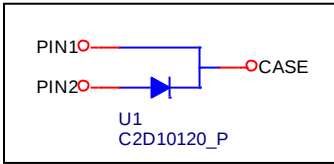
Device Modeling Report

COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: C2D10120
MANUFACTURER: CREE
REMARK: Professional Model



Bee Technologies Inc.

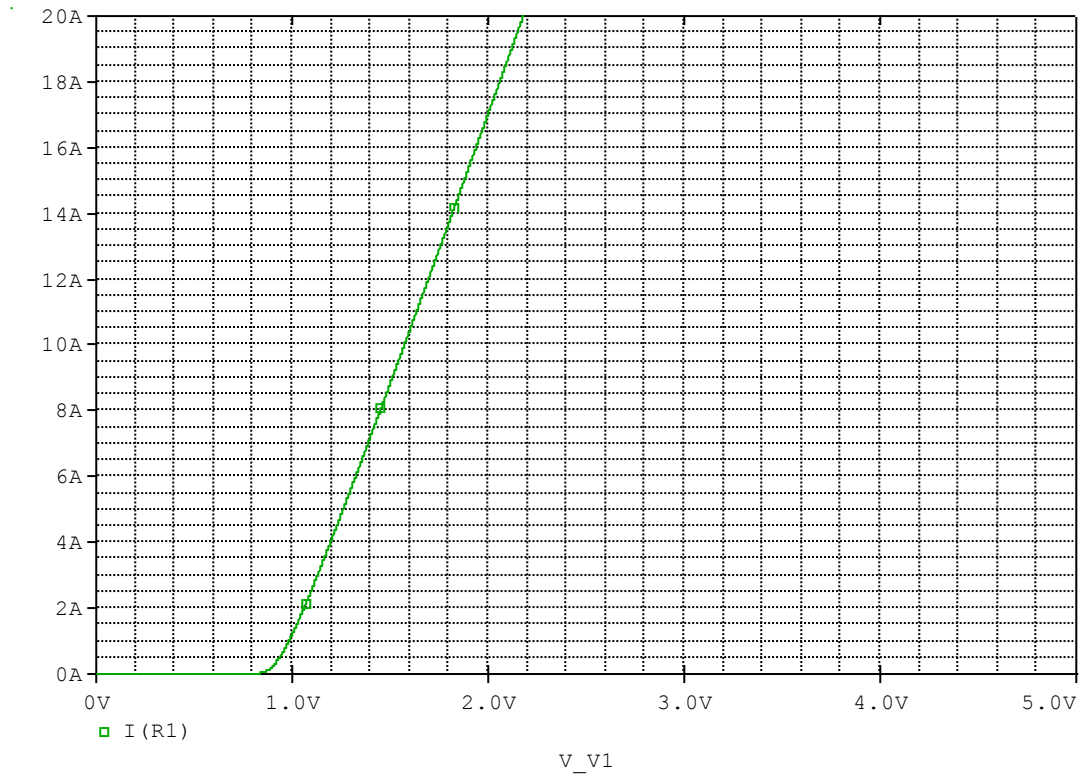
Circuit Configuration



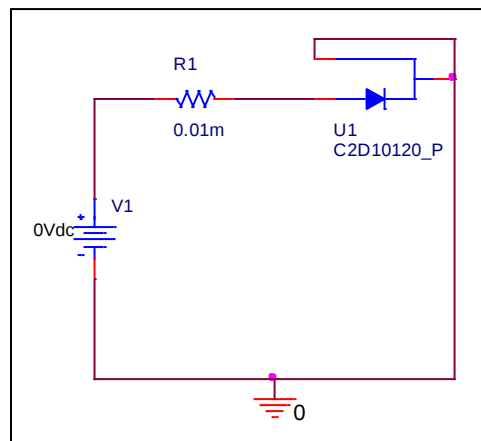
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

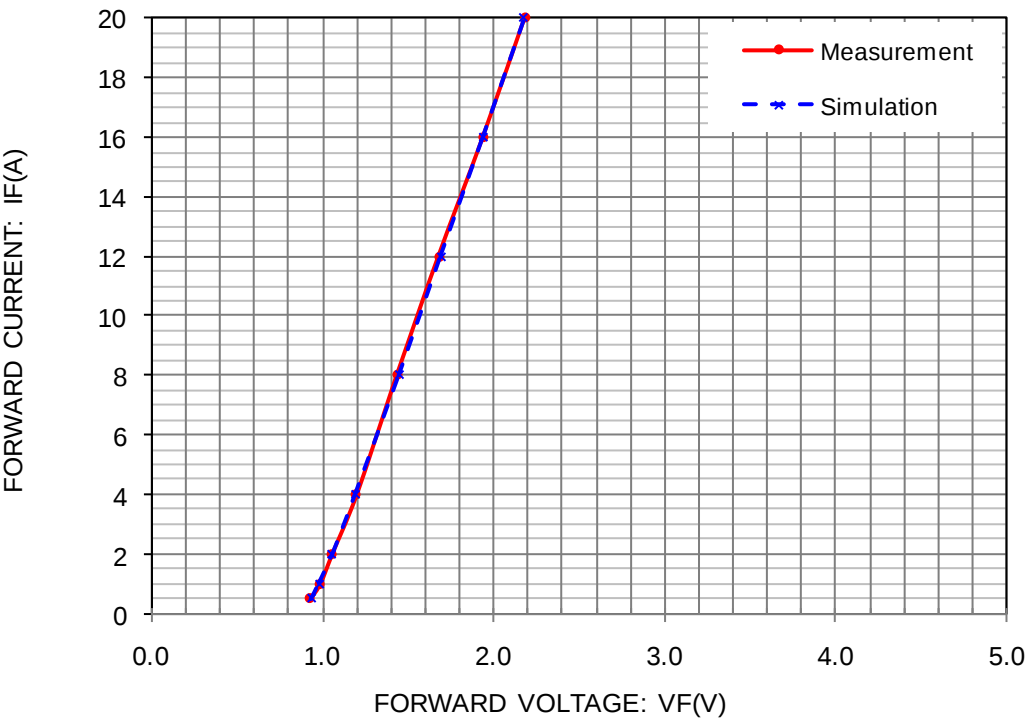


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

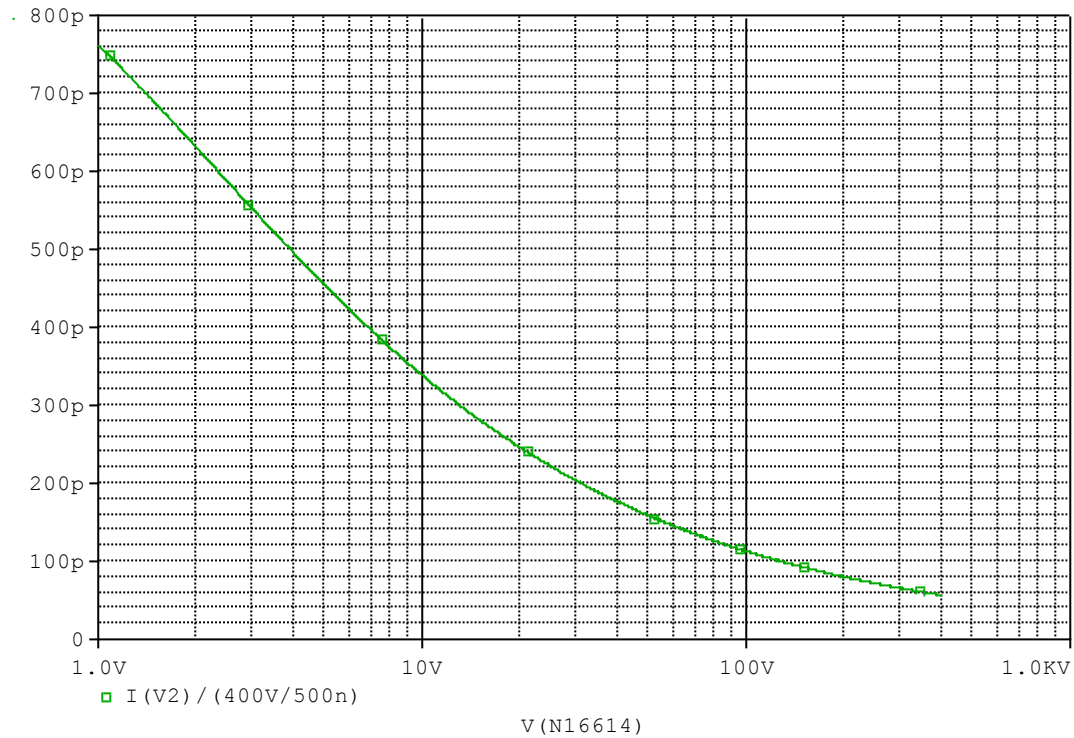


Simulation Result

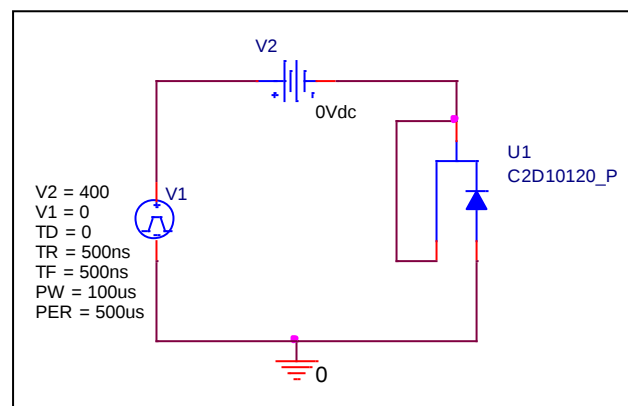
I_F (A)	V_F (V)		Error (%)
	Measurement	Simulation	
0.5	0.9300	0.9350	0.54
1.0	0.9900	0.9824	-0.77
2.0	1.0600	1.0592	-0.08
4.0	1.2000	1.1949	-0.42
8.0	1.4400	1.4484	0.58
12.0	1.6800	1.6945	0.86
16.0	1.9400	1.9375	-0.13
20.0	2.1850	2.1788	-0.28

Junction Capacitance Characteristic

Circuit Simulation Result

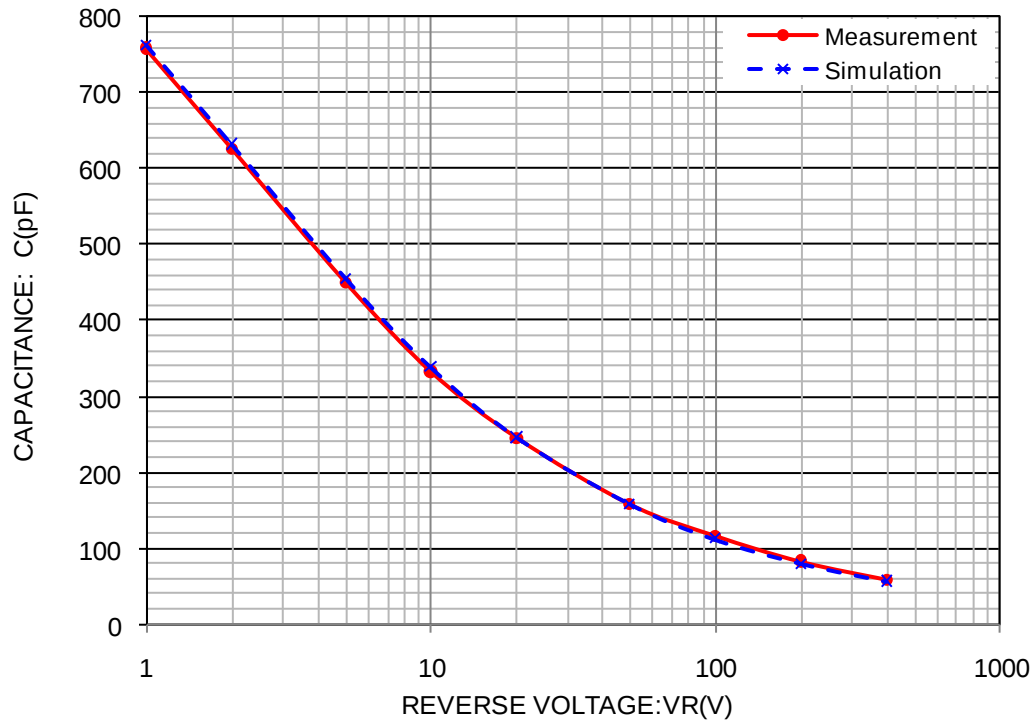


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

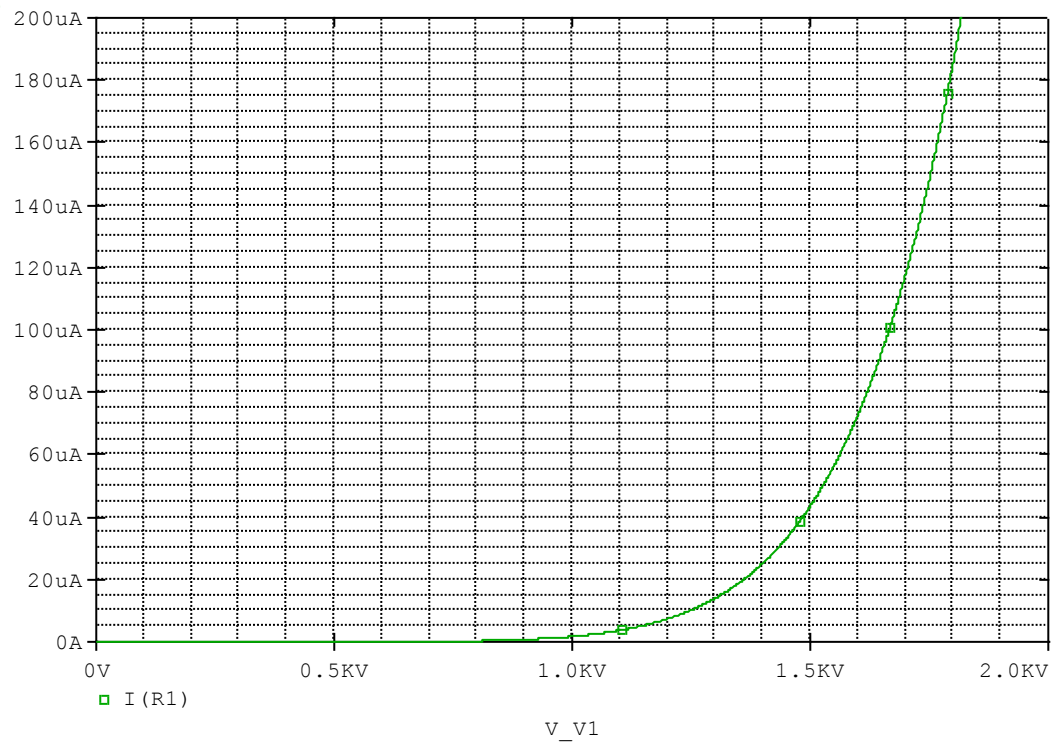


Simulation Result

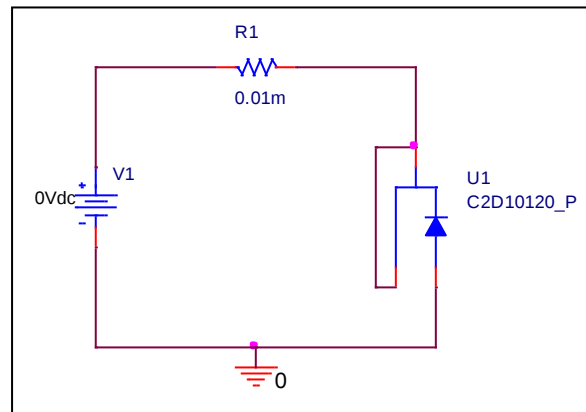
V_R (V)	C (pF)		Error (%)
	Measurement	Simulation	
1	758.000	761.676	0.48
2	625.000	631.357	1.02
5	450.000	454.549	1.01
10	333.000	338.446	1.64
20	245.000	246.401	0.57
50	158.000	158.607	0.38
100	117.000	112.944	-3.47
200	83.000	80.017	-3.59

Reverse Characteristic

Circuit Simulation Result

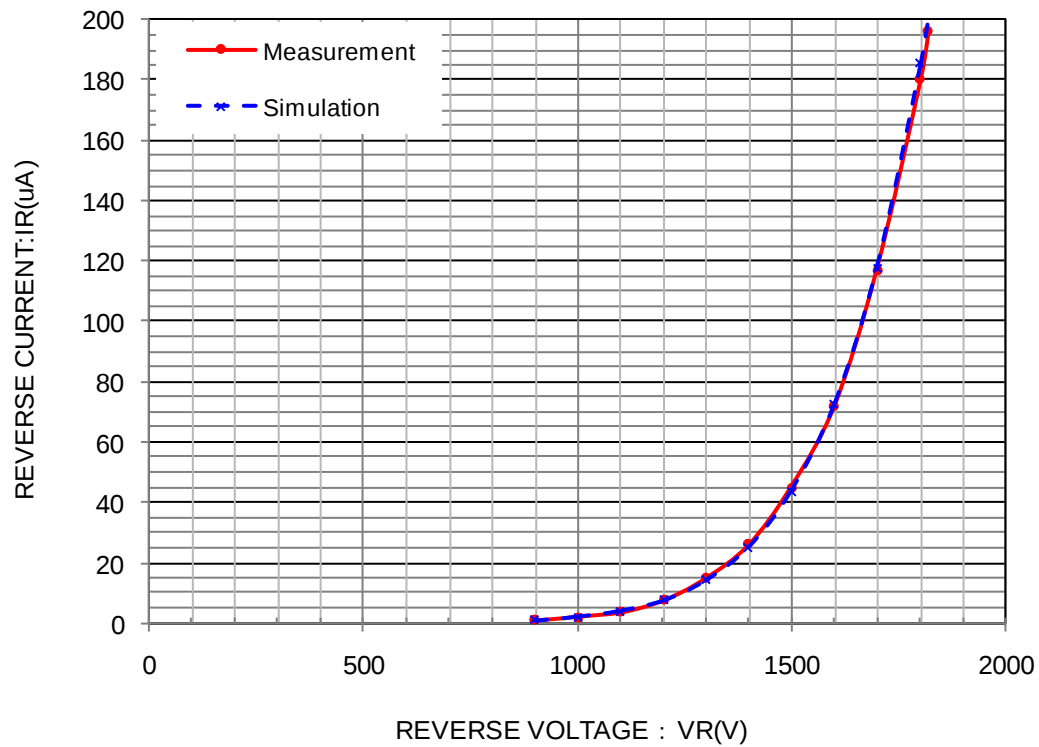


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R (V)	I_R (μA)		Error (%)
	Measurement	Simulation	
900	0.7500	0.7503	0.04
1000	1.7000	1.7280	1.65
1100	3.6000	3.7062	2.95
1200	7.5000	7.3896	-1.47
1300	14.6000	13.9610	-4.38
1400	26.0000	25.1480	-3.28
1500	45.0000	43.5190	-3.29
1600	72.0000	72.6910	0.96
1700	117.0000	117.6890	0.59