

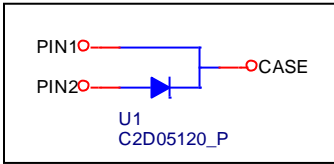
Device Modeling Report

COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: C2D05120
MANUFACTURER: CREE
REMARK: Professional Model



Bee Technologies Inc.

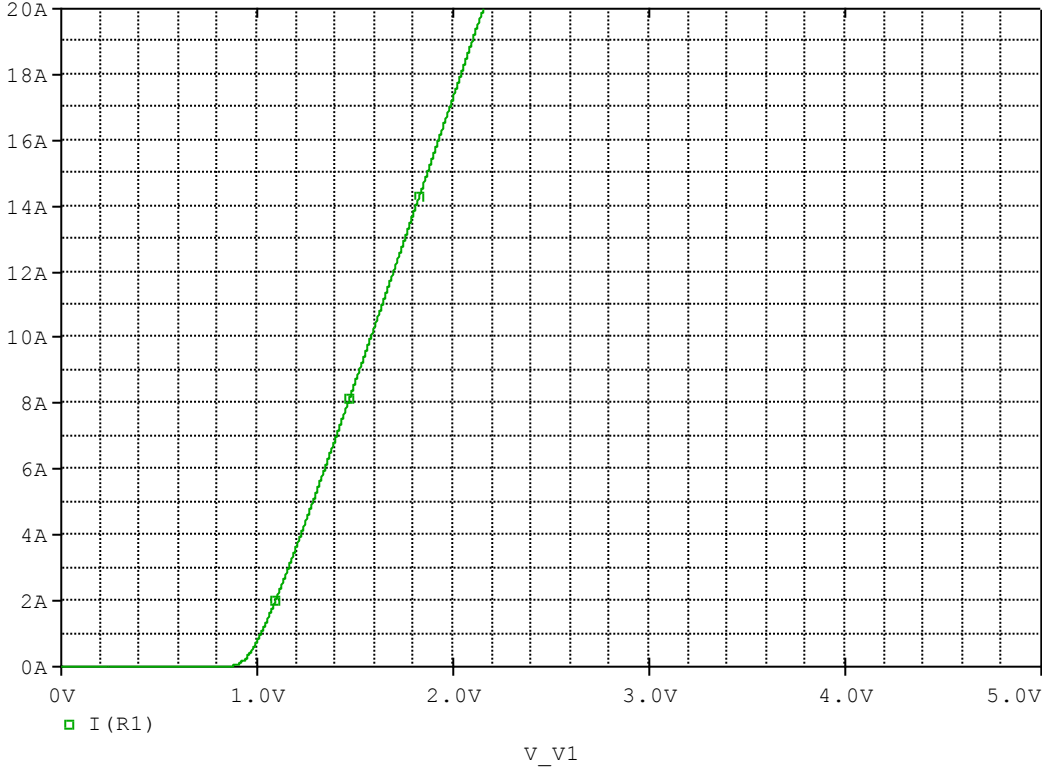
Circuit Configuration



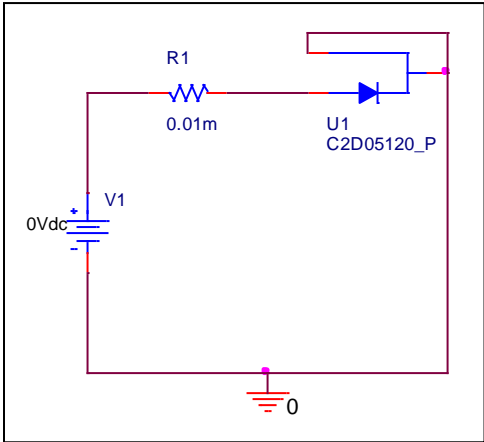
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

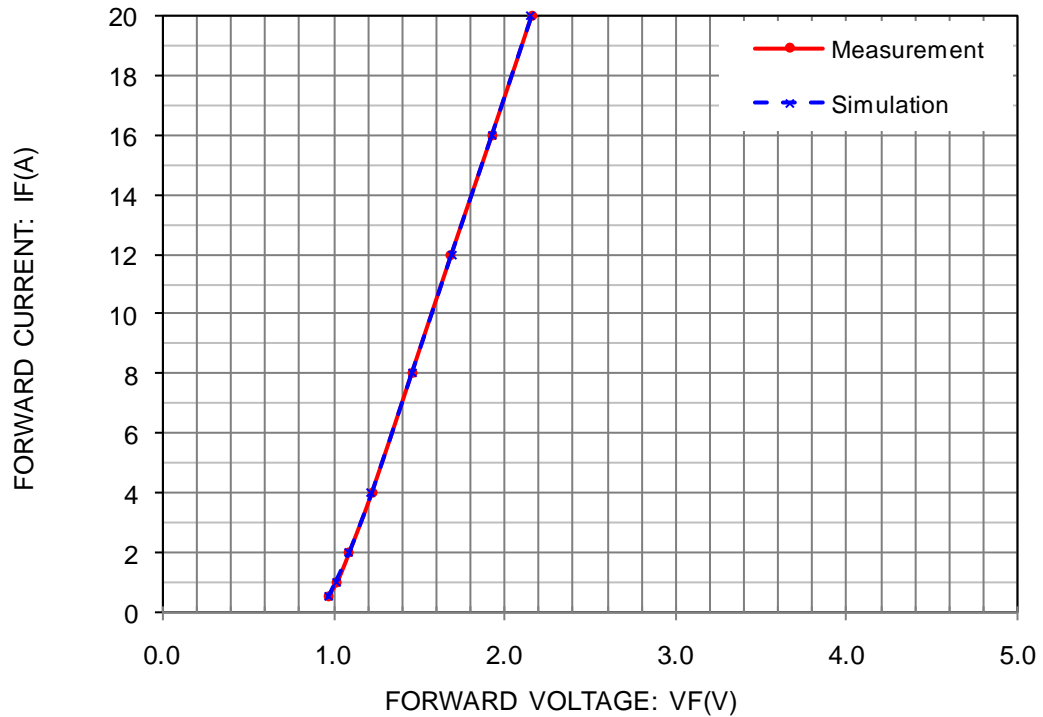


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

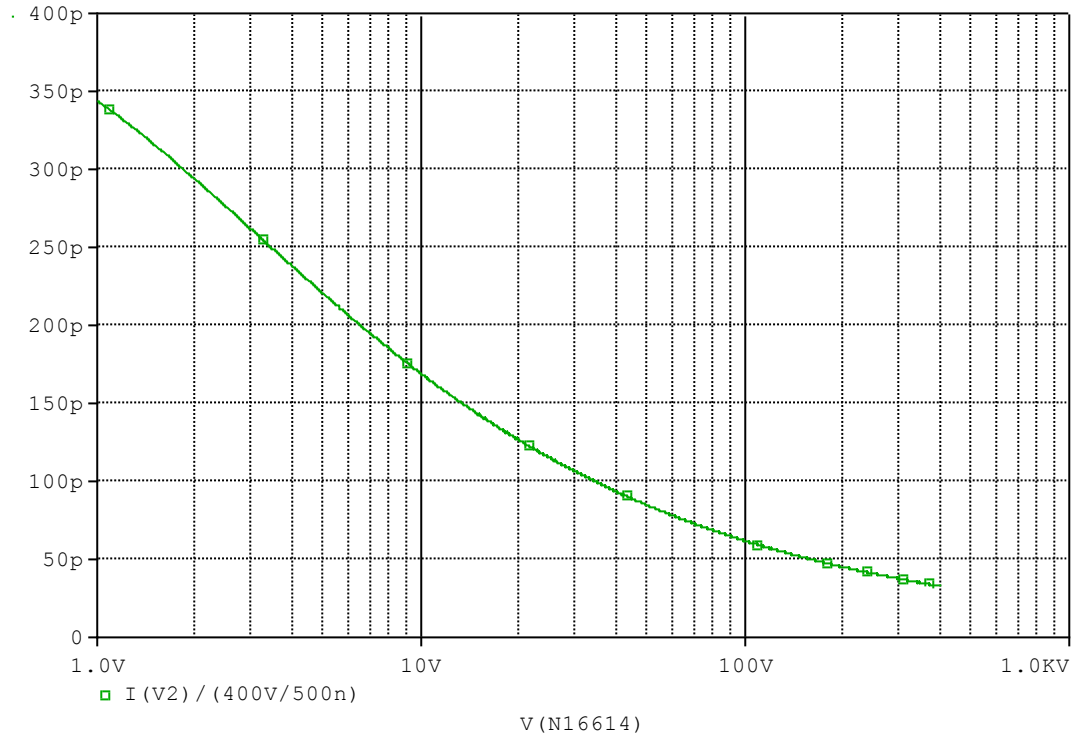


Simulation Result

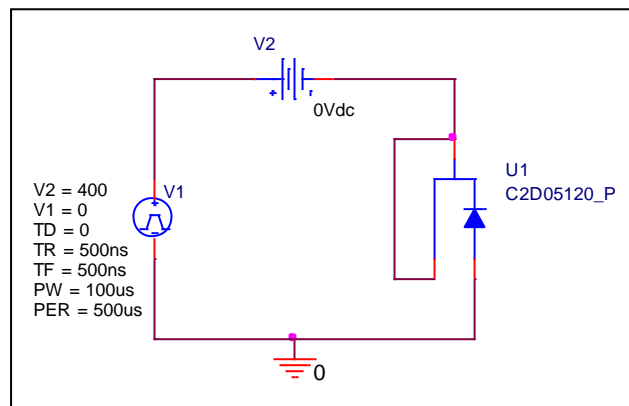
I _F (A)	V _F (V)		Error (%)
	Measurement	Simulation	
0.5	0.9700	0.9730	0.31
1.0	1.0200	1.0188	-0.12
2.0	1.0950	1.0923	-0.25
4.0	1.2250	1.2215	-0.29
8.0	1.4600	1.4620	0.14
12.0	1.6900	1.6950	0.30
16.0	1.9300	1.9249	-0.26
20.0	2.1600	2.1532	-0.31

Junction Capacitance Characteristic

Circuit Simulation Result

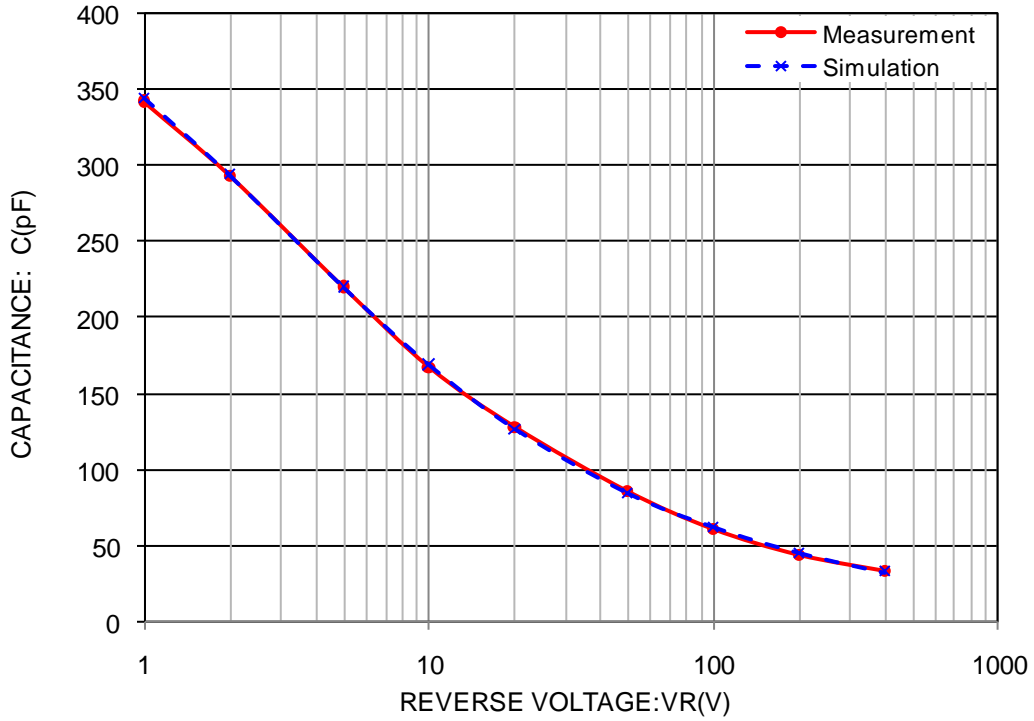


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

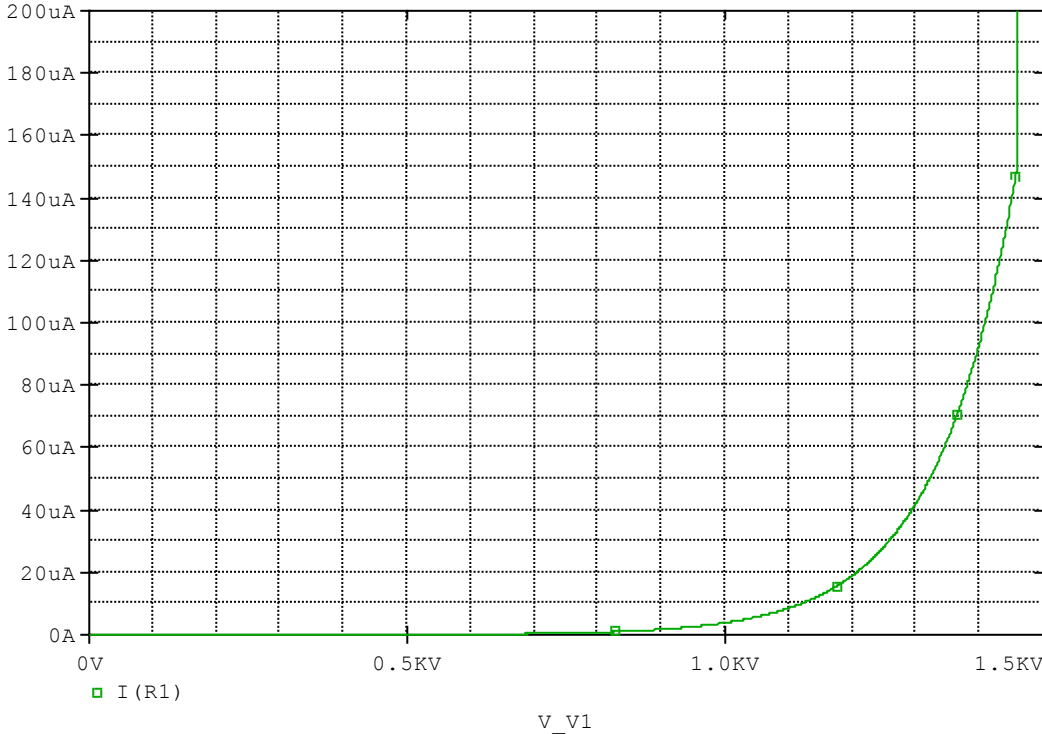


Simulation Result

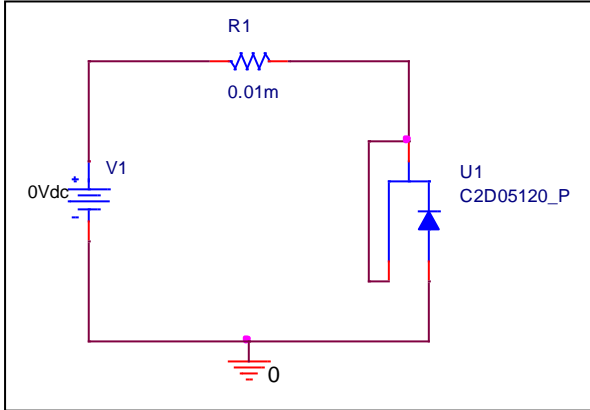
$V_R(V)$	C (pF)		Error (%)
	Measurement	Simulation	
1	342.000	344.146	0.63
2	293.000	293.917	0.31
5	220.000	220.139	0.06
10	167.000	169.037	1.22
20	128.000	126.481	-1.19
50	86.000	84.514	-1.73
100	61.000	61.835	1.37
200	44.000	45.088	2.47

Reverse Characteristic

Circuit Simulation Result

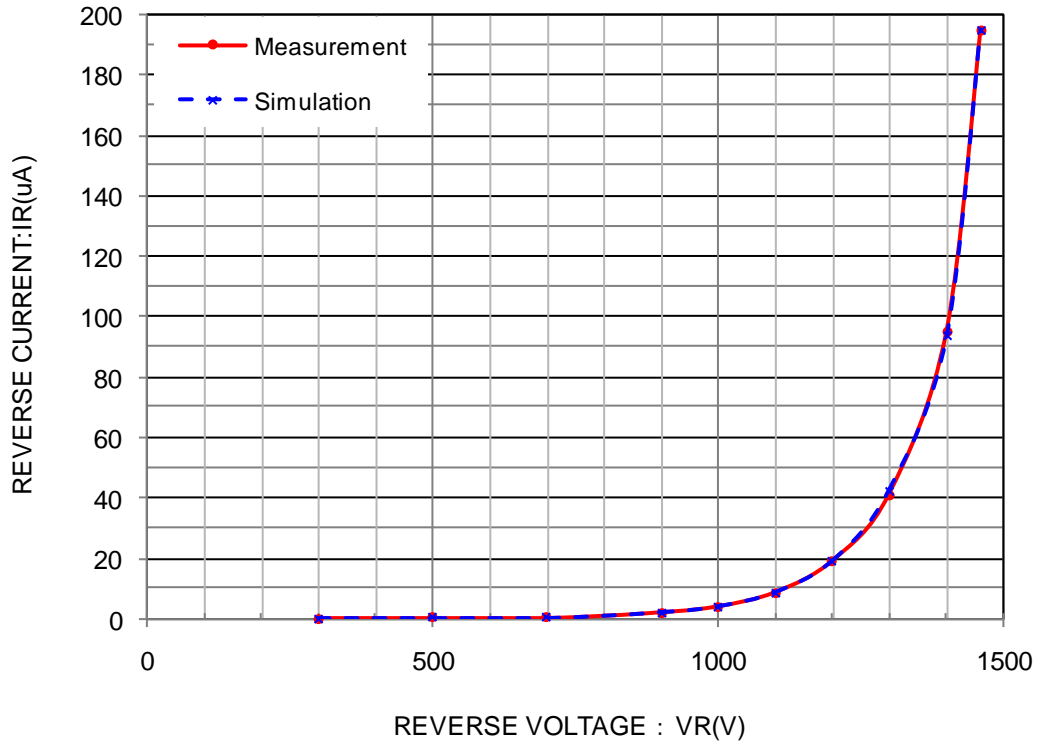


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R (V)	I_R (uA)		Error (%)
	Measurement	Simulation	
300	0.0110	0.0114	3.35
500	0.0750	0.0739	-1.47
700	0.3500	0.3524	0.69
900	1.7500	1.7394	-0.61
1000	3.9000	3.8767	-0.60
1100	8.5000	8.5947	1.11
1200	19.0000	19.0540	0.28
1300	41.0000	42.2010	2.93
1400	95.0000	93.5420	-1.53