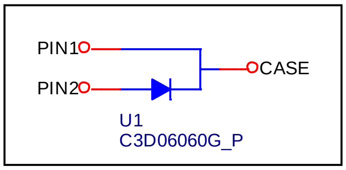
Device Modeling Report

COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: C3D06060G
MANUFACTURER: CREE
REMARK: Professional Model

Bee Technologies Inc.

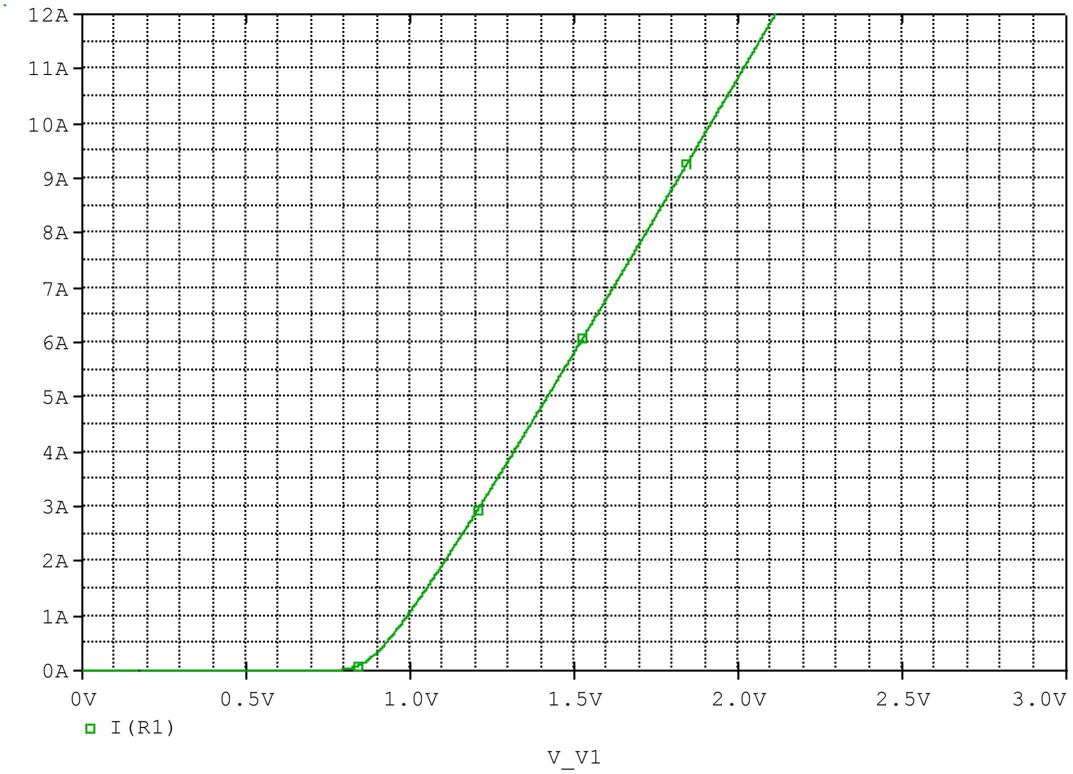
Circuit Configuration



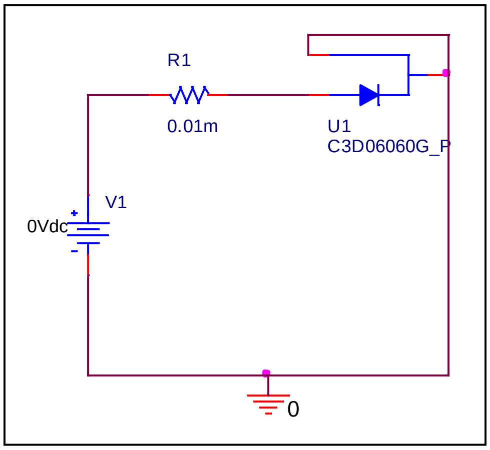
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

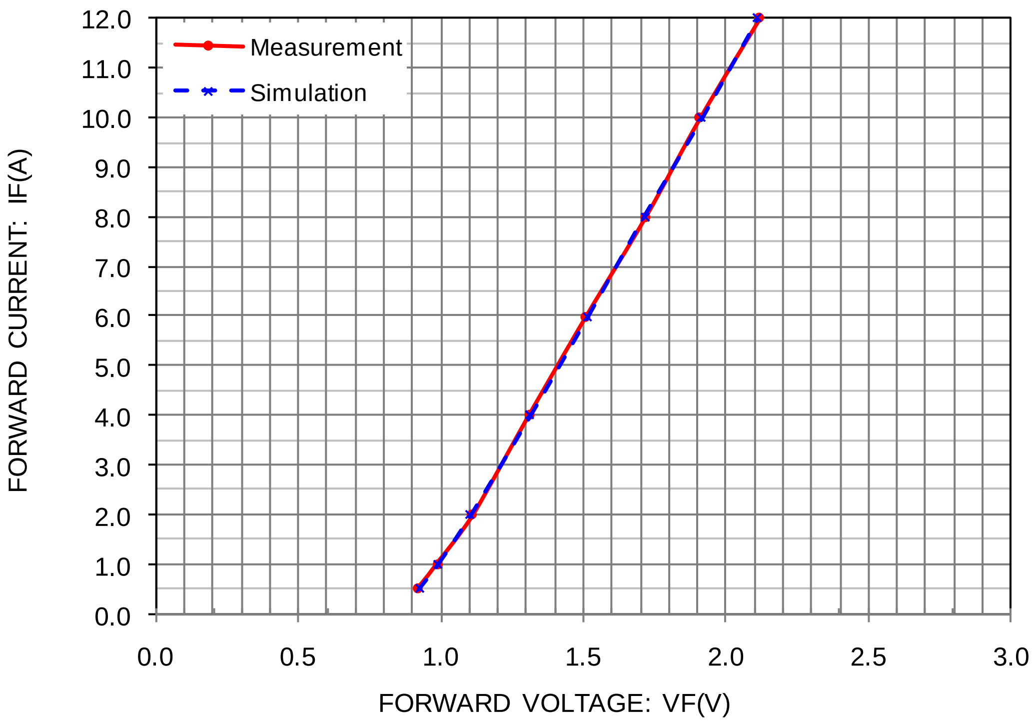


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

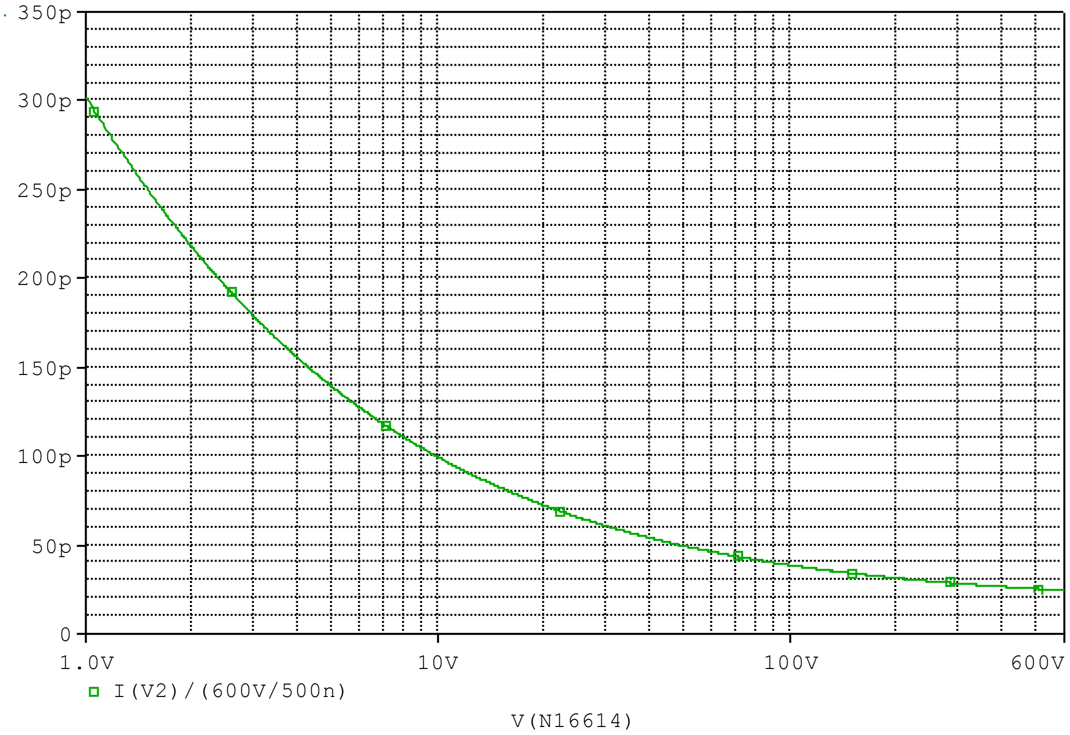


Simulation Result

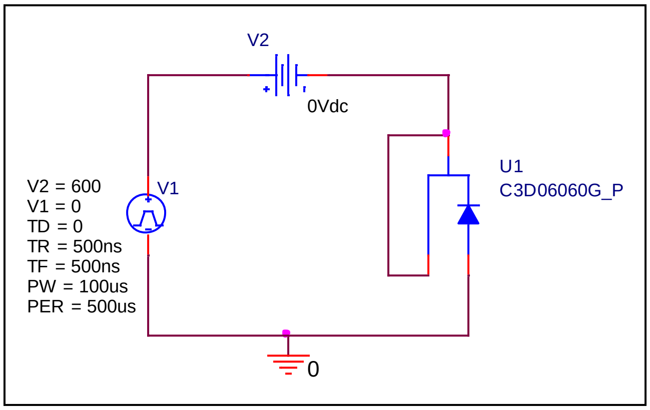
I_F(A)	V_F(V)		Error (%)
	Measurement	Simulation	
0.5	0.9200	0.9246	0.50
1.0	0.9900	0.9907	0.07
2.0	1.1100	1.1048	-0.47
4.0	1.3100	1.3151	0.39
6.0	1.5100	1.5180	0.53
8.0	1.7200	1.7179	-0.12
10.0	1.9100	1.9161	0.32
12.0	2.1200	2.1132	-0.32

Junction Capacitance Characteristic

Circuit Simulation Result

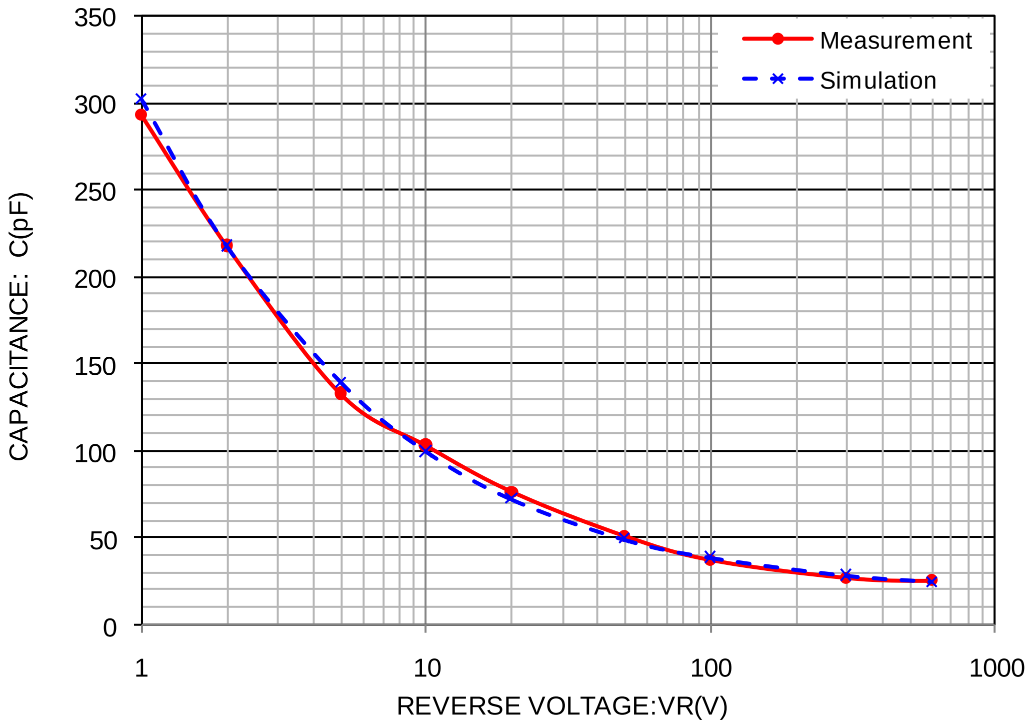


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

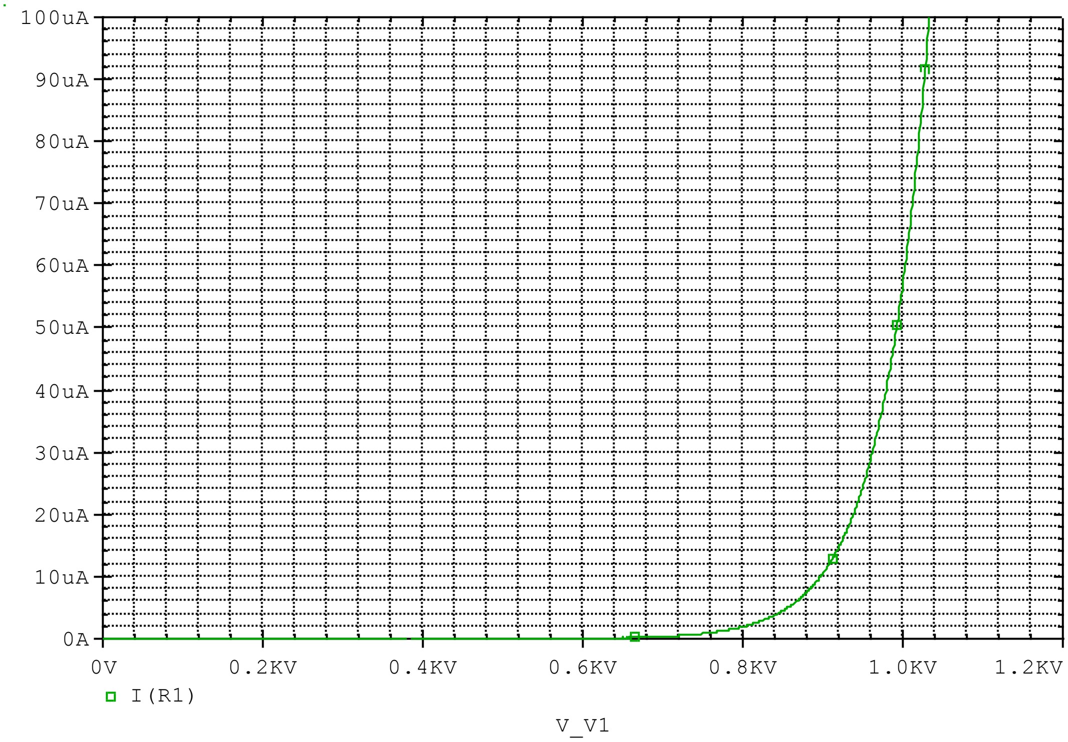


Simulation Result

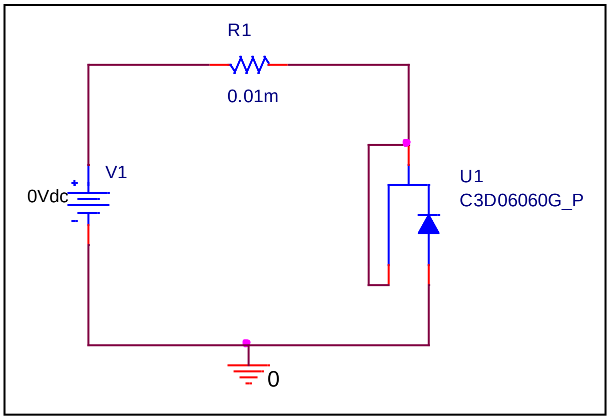
V_R(V)	C (pF)		Error (%)
	Measurement	Simulation	
1	293.000	302.118	3.11
2	218.000	217.674	-0.15
5	133.000	139.020	4.53
10	103.000	99.435	-3.46
20	76.000	72.333	-4.83
50	51.000	49.412	-3.11
100	37.000	38.619	4.38
300	27.000	28.339	4.96
600	25.500	24.537	-3.78

Reverse Characteristic

Circuit Simulation Result

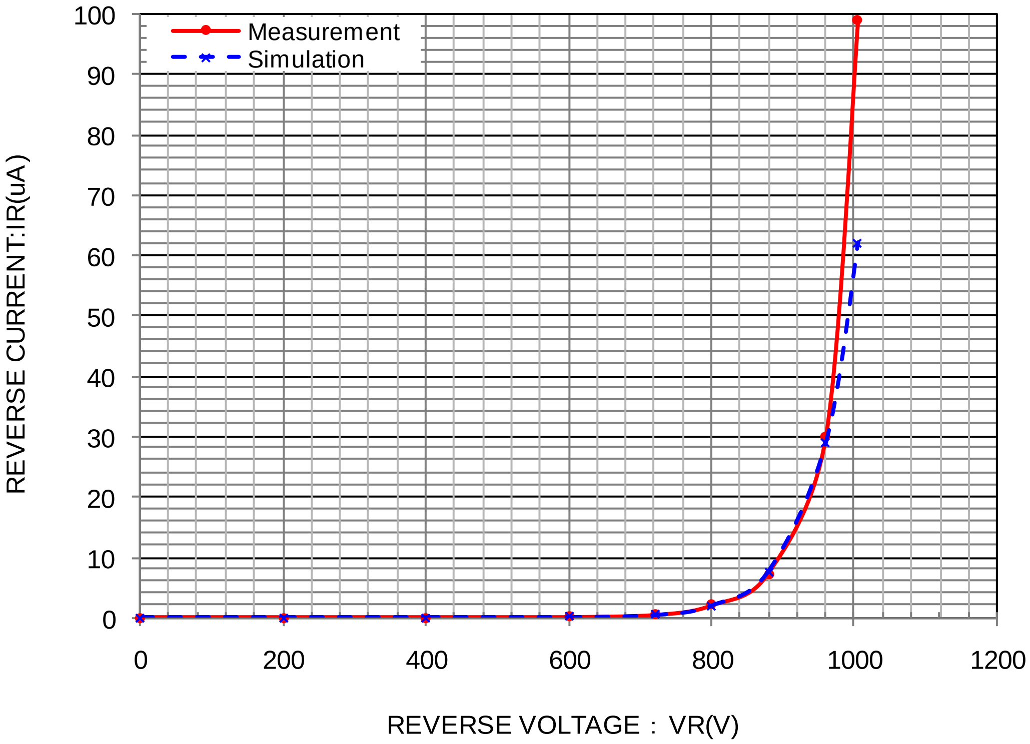


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R(V)	I_R(uA)		Error (%)
	Measurement	Simulation	
200	0.0028	0.0028	1.51
400	0.0055	0.0057	3.35
600	0.0700	0.0682	-2.55
720	0.5000	0.5002	0.04
800	2.0000	1.9327	-3.37
880	7.2000	7.4920	4.06
960	30.0000	29.0240	-3.25