Device Modeling Report

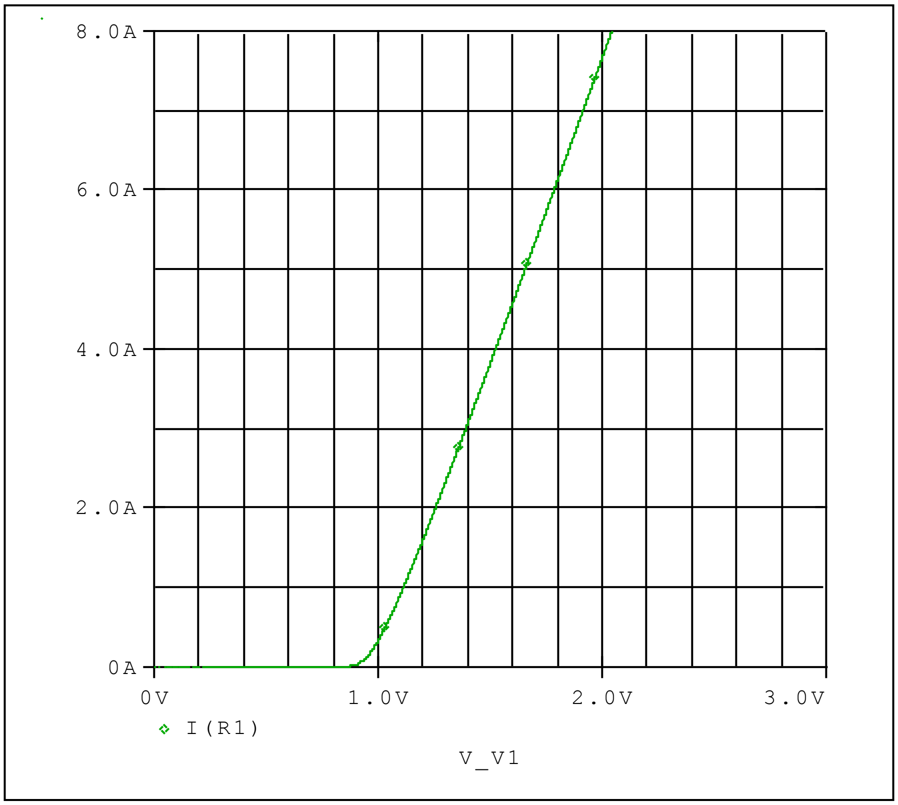
COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: CSD04060A
MANUFACTURER: Cree,Inc.
REMARK: Professional Model

Bee Technologies Inc.

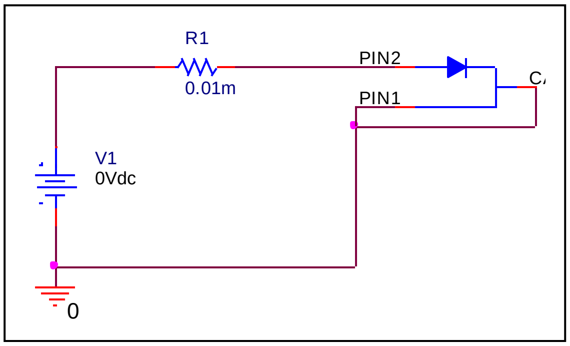
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

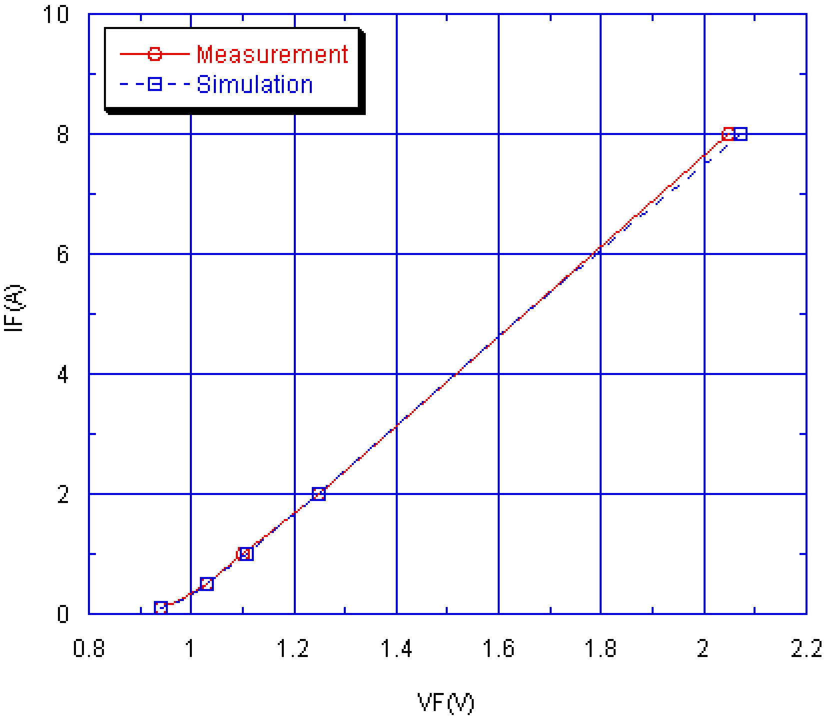


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

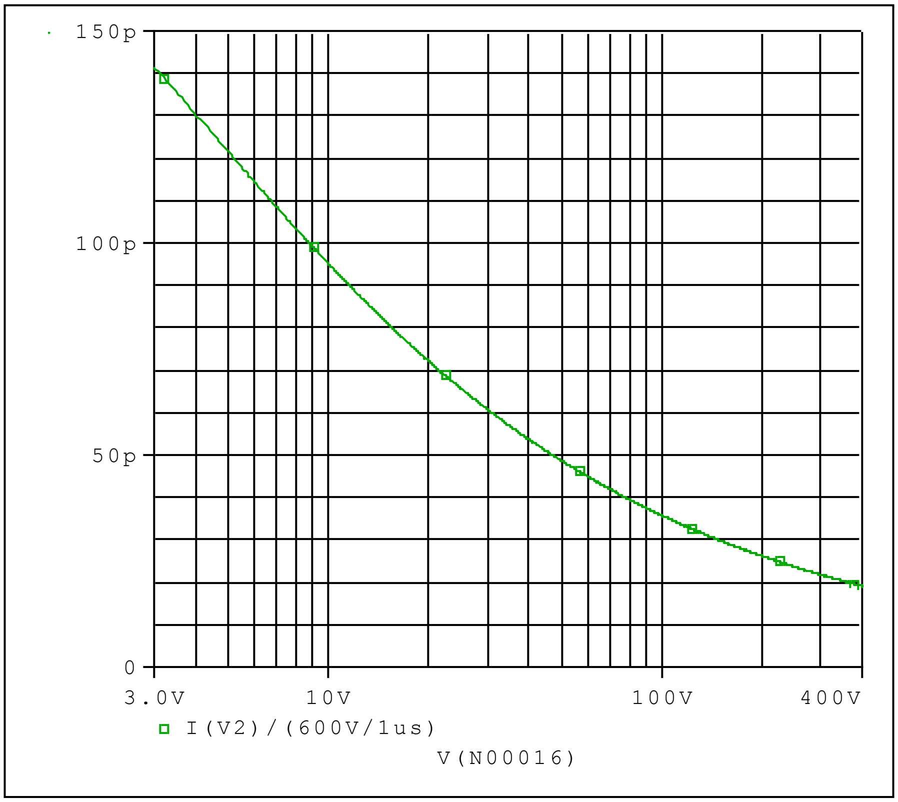


Simulation Result

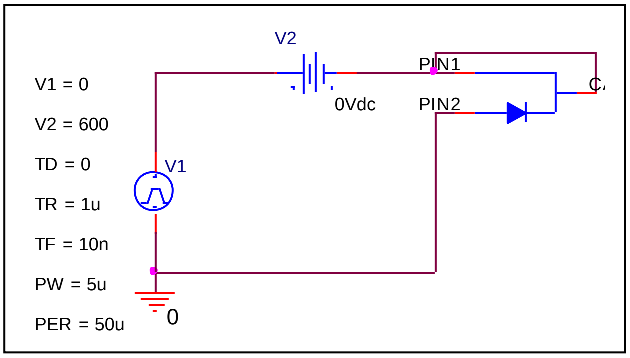
I_F(A)	V_F(V)		Error(%)
	Measurement	Simulation	
0.1	0.940	0.940	0.000
0.2	0.970	0.975	0.513
0.5	1.030	1.030	0.000
1	1.100	1.110	0.901
2	1.250	1.250	0.000
5	1.650	1.650	0.000
8	2.050	2.070	0.966

Junction Capacitance Characteristic

Circuit Simulation Result

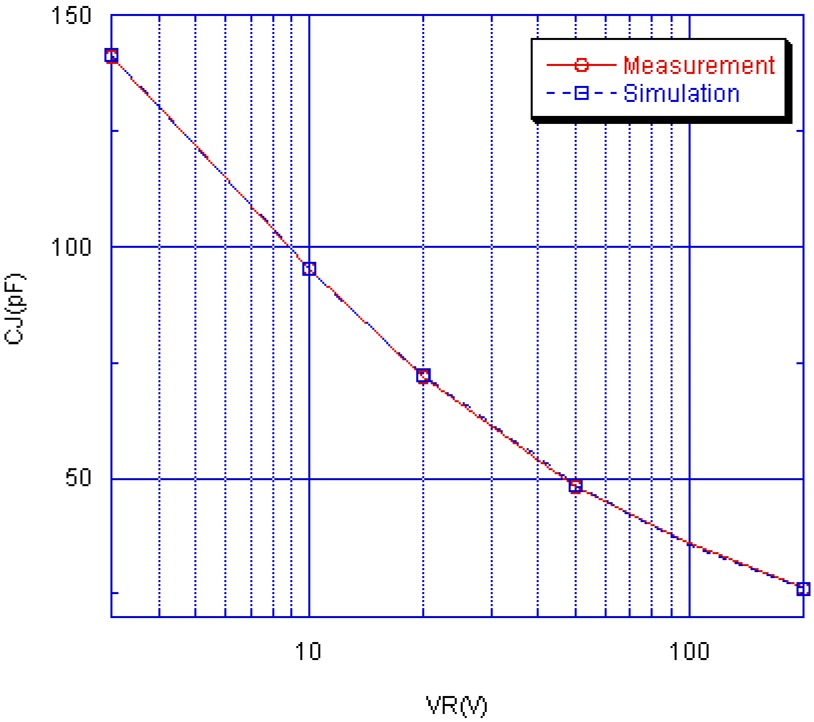


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

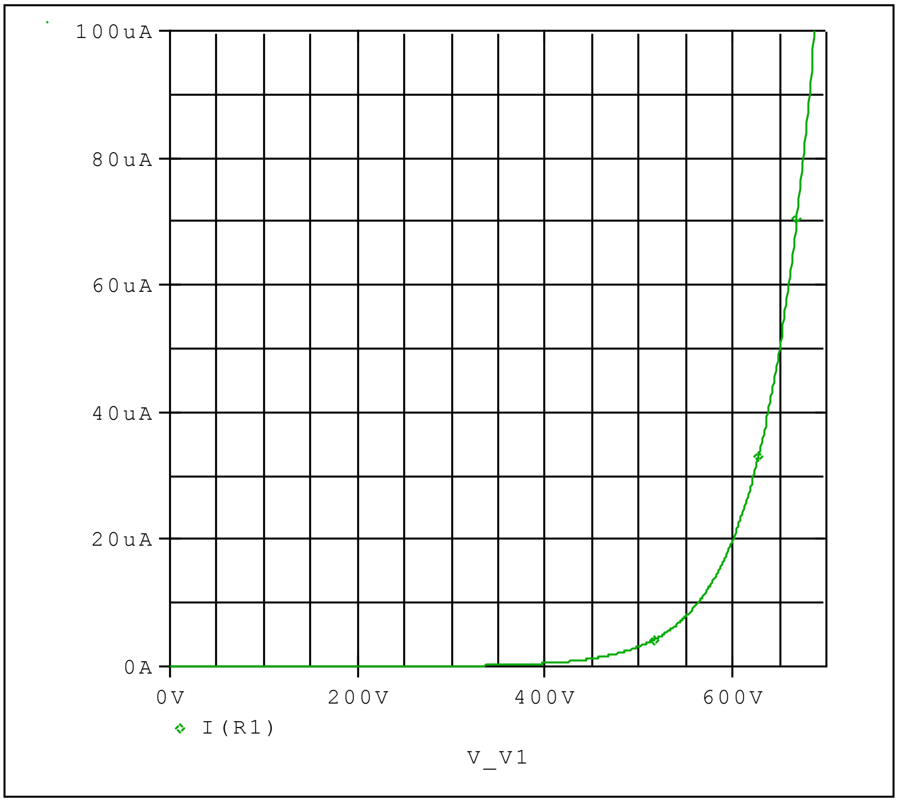


Simulation Result

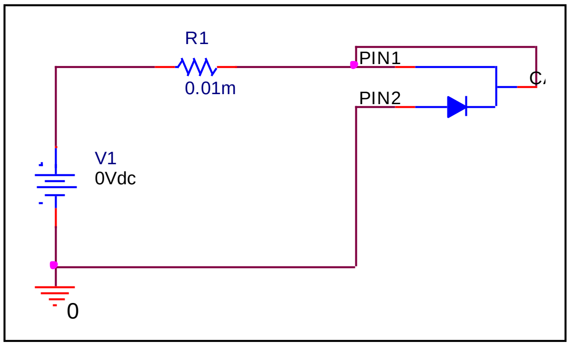
V_R(V)	C_J(pF)		Error(%)
	Measurement	Simulation	
3	141.000	141.400	0.283
5	122.000	121.700	-0.247
10	95.000	95.200	0.210
20	72.000	72.130	0.180
50	48.000	48.500	1.031
100	36.000	35.700	-0.840
200	26.000	26.000	0.000

Reverse Characteristic

Circuit Simulation Result

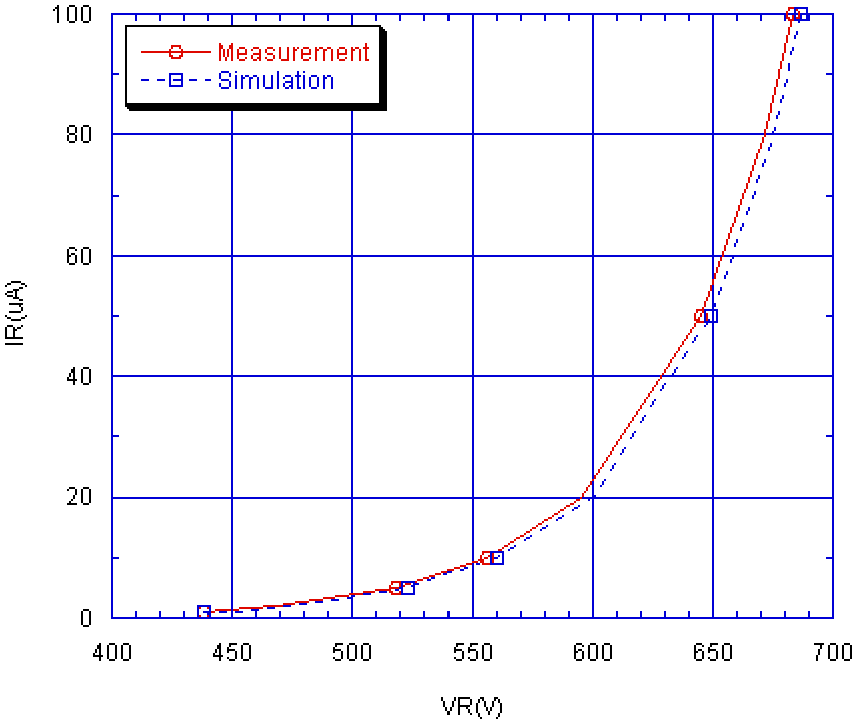


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

I_R(uA)	V_R(V)		Error(%)
	Measurement	Simulation	
1.000	438.000	438.200	0.046
2.000	468.000	472.000	0.855
5.000	518.000	523.000	0.965
10.000	556.000	560.000	0.719
20.000	595.000	600.000	0.840
50.000	645.000	649.000	0.620
80.000	672.000	675.000	0.446
100.000	683.000	687.000	0.586