

Device Modeling Report

COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: CSD04060B
MANUFACTURER: Cree, Inc.
REMARK: Professional Model

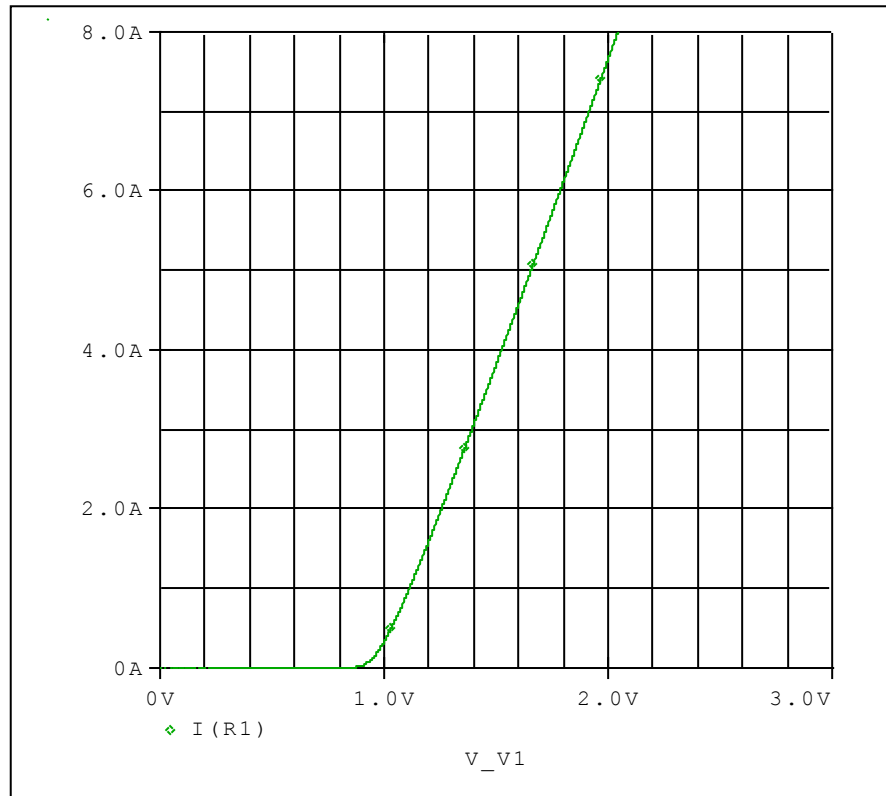


Bee Technologies Inc.

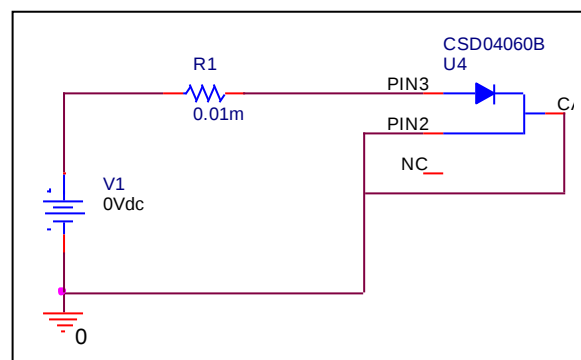
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

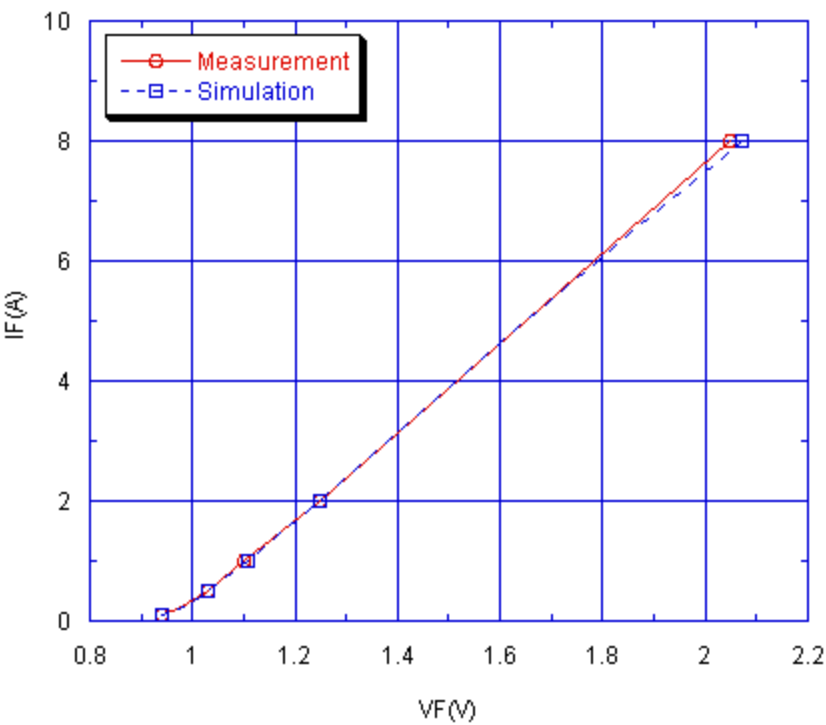


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

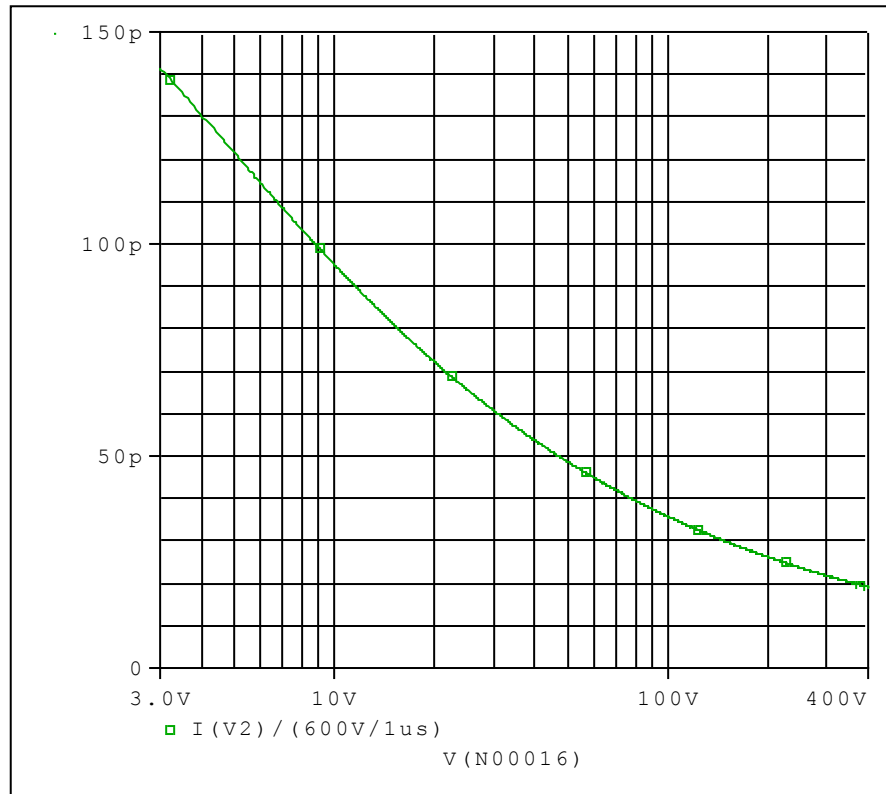


Simulation Result

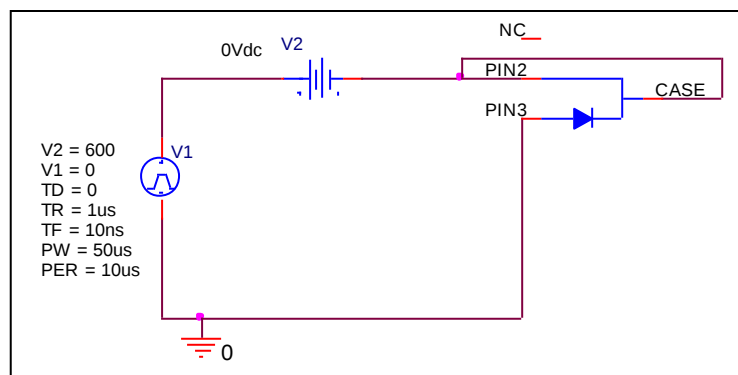
I_F (A)	V_F (V)		Error(%)
	Measurement	Simulation	
0.1	0.940	0.938	-0.213
0.2	0.970	0.975	0.513
0.5	1.030	1.028	-0.195
1	1.100	1.110	0.901
2	1.250	1.245	-0.402
5	1.650	1.648	-0.121
8	2.050	2.070	0.966

Junction Capacitance Characteristic

Circuit Simulation Result

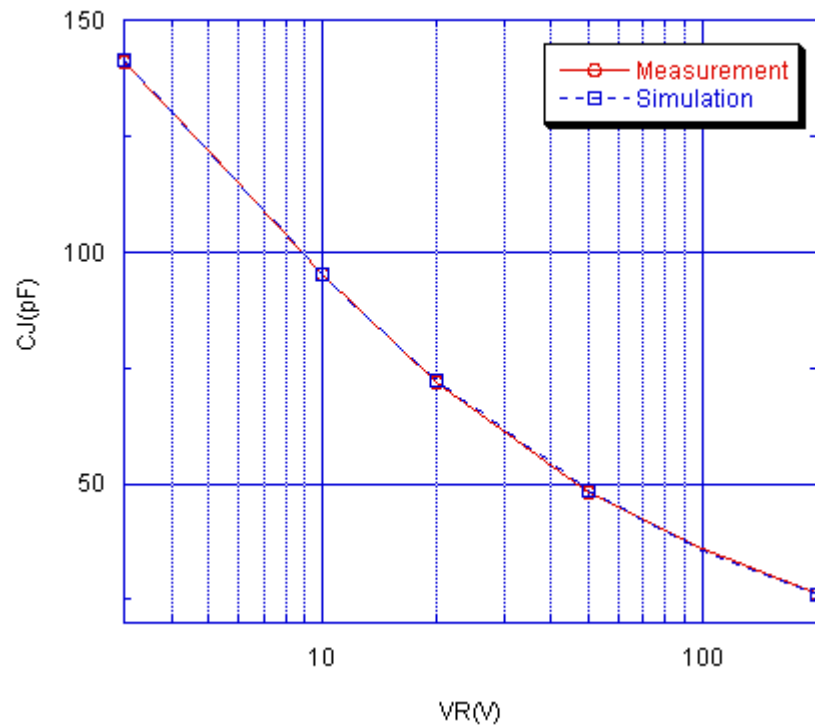


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

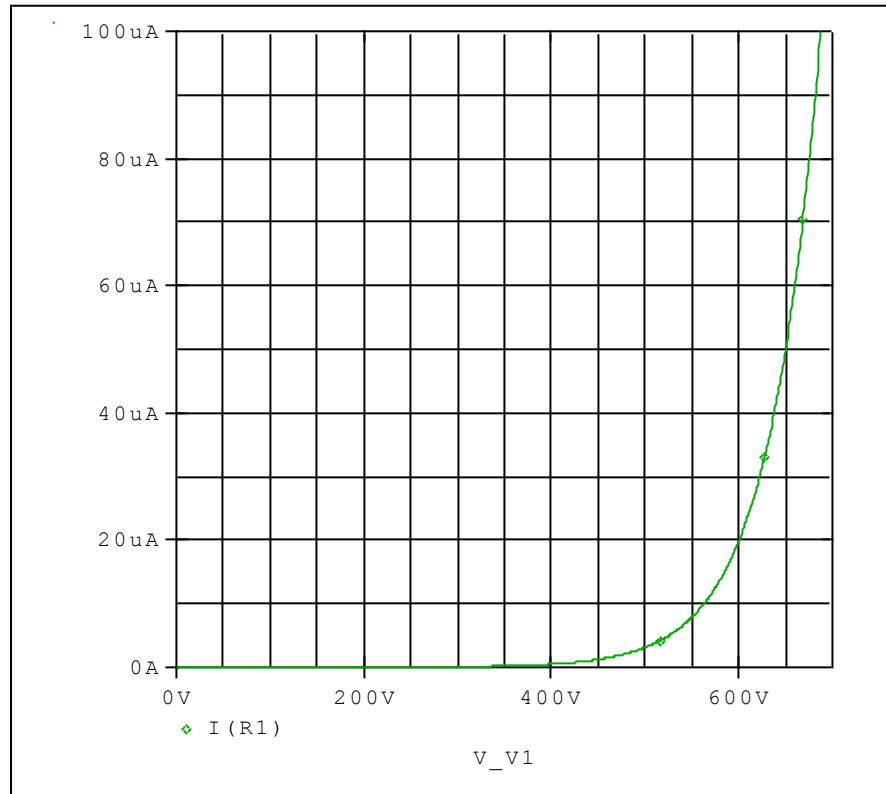


Simulation Result

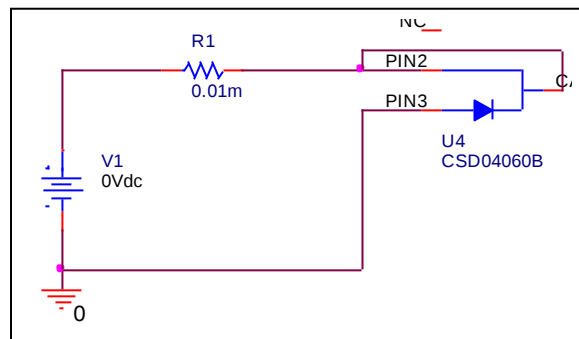
V_R (V)	Cj (pF)		Error(%)
	Measurement	Simulation	
3	141.000	141.400	0.283
5	122.000	121.700	-0.247
10	95.000	95.200	0.210
20	72.000	72.130	0.180
50	48.000	48.500	1.031
100	36.000	35.700	-0.840
200	26.000	25.980	-0.077

Reverse Characteristic

Circuit Simulation Result

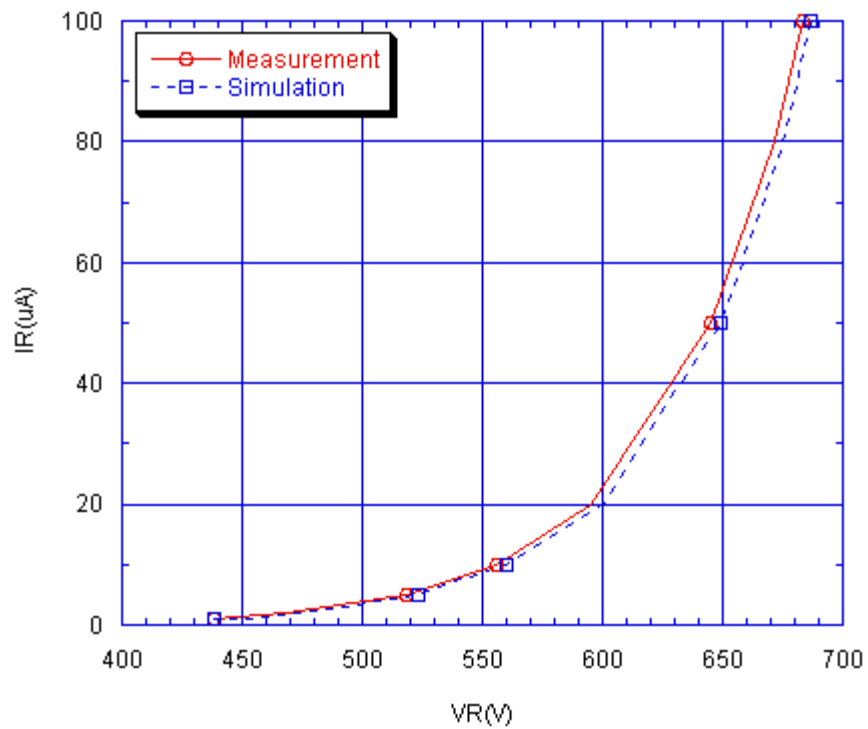


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

$I_R(\mu A)$	$V_R(V)$		Error(%)
	Measurement	Simulation	
1	438.000	438.200	0.046
2	468.000	472.000	0.847
5	518.000	523.000	0.956
10	556.000	560.000	0.714
20	595.000	600.000	0.833
50	645.000	649.000	0.616
80	672.000	675.000	0.444
100	683.000	687.000	0.582