Device Modeling Report

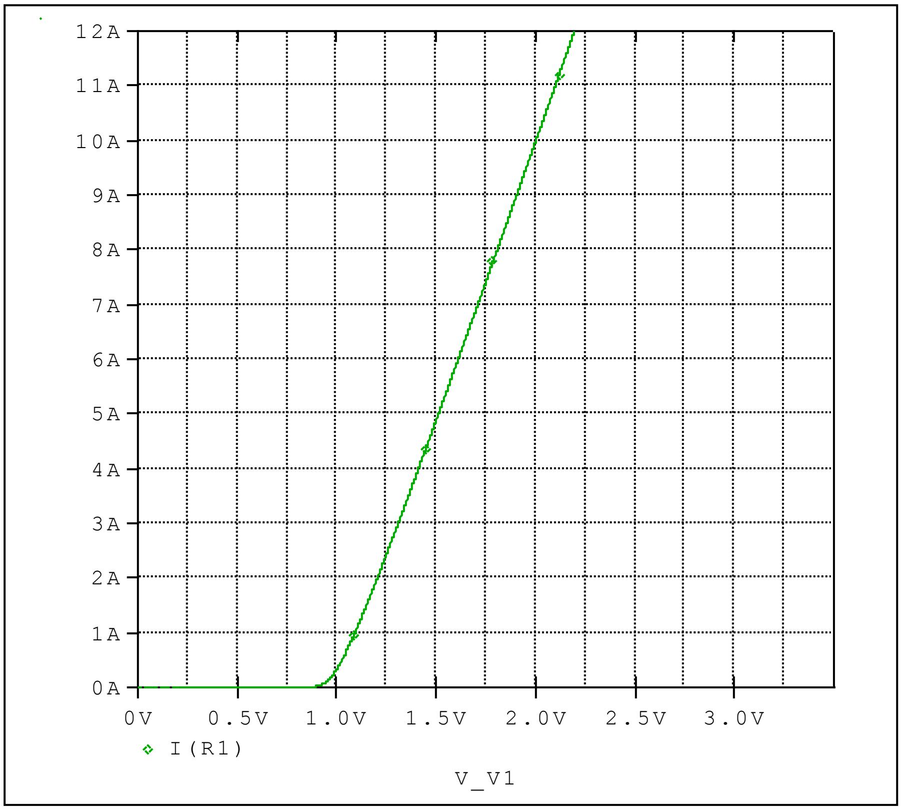
COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: CSD06060B
MANUFACTURER: Cree, Inc.
REMARK: Professional Model

Bee Technologies Inc.

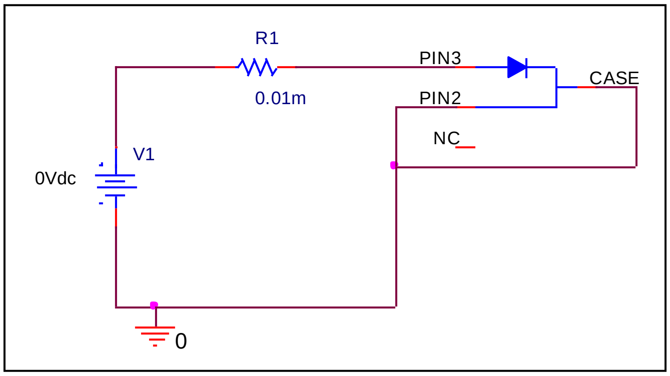
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

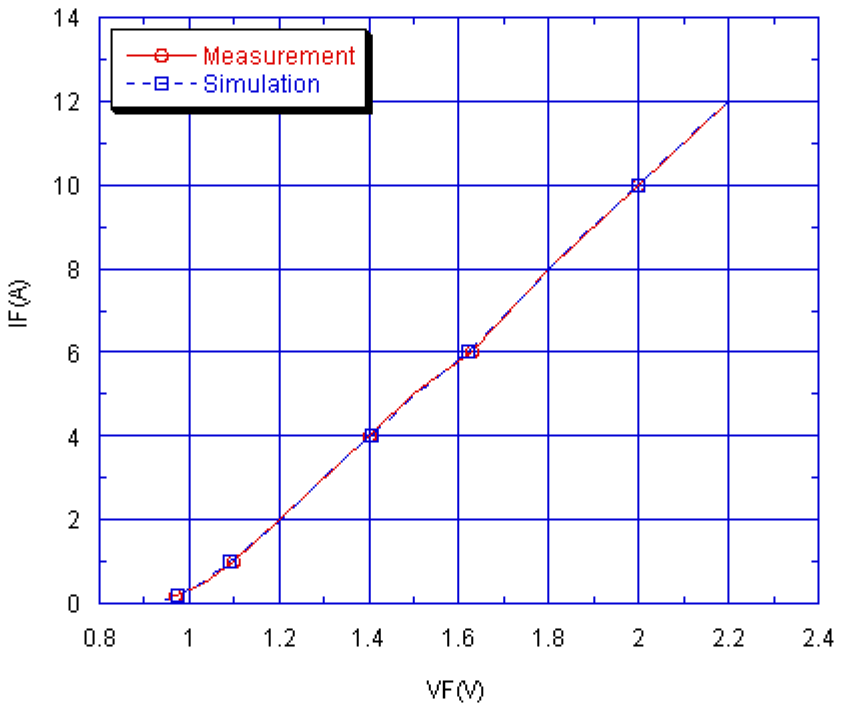


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

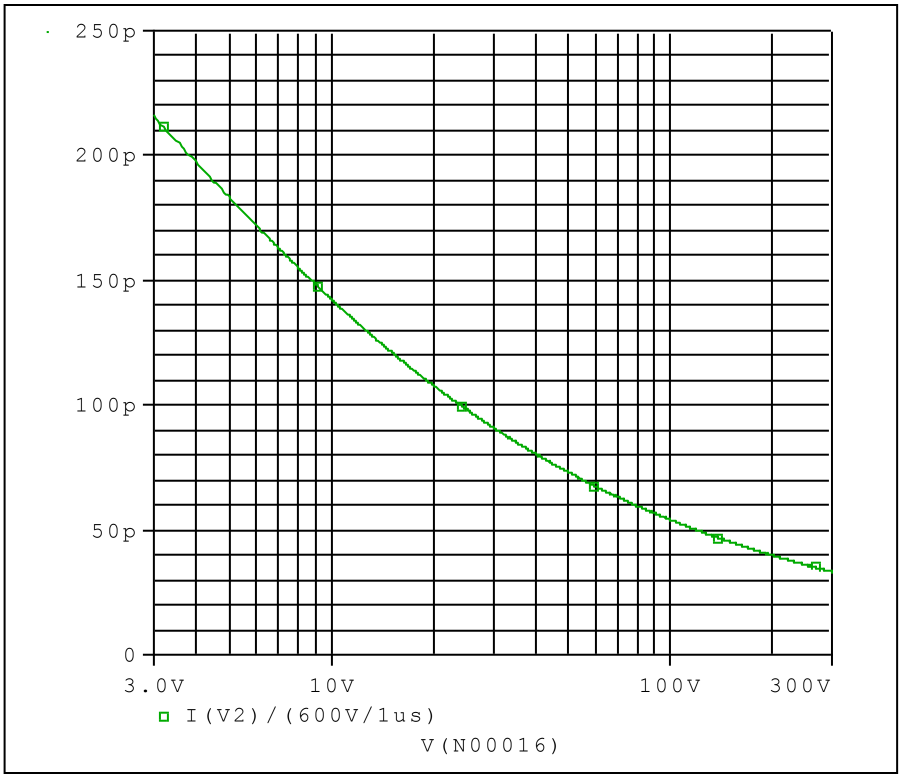


Simulation Result

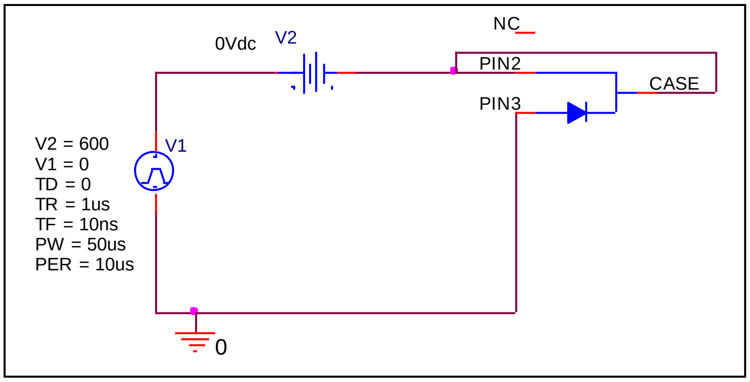
I_F(A)	V_F(V)		Error(%)
	Measurement	Simulation	
0.1	0.950	0.947	-0.317
0.2	0.970	0.974	0.411
0.5	1.030	1.026	-0.390
1	1.100	1.091	-0.825
2	1.200	1.204	0.332
4	1.400	1.408	0.568
5	1.500	1.511	0.728
6	1.630	1.620	-0.617
8	1.800	1.789	-0.615
10	2.000	1.988	-0.604
12	2.200	2.199	-0.045

Junction Capacitance Characteristic

Circuit Simulation Result

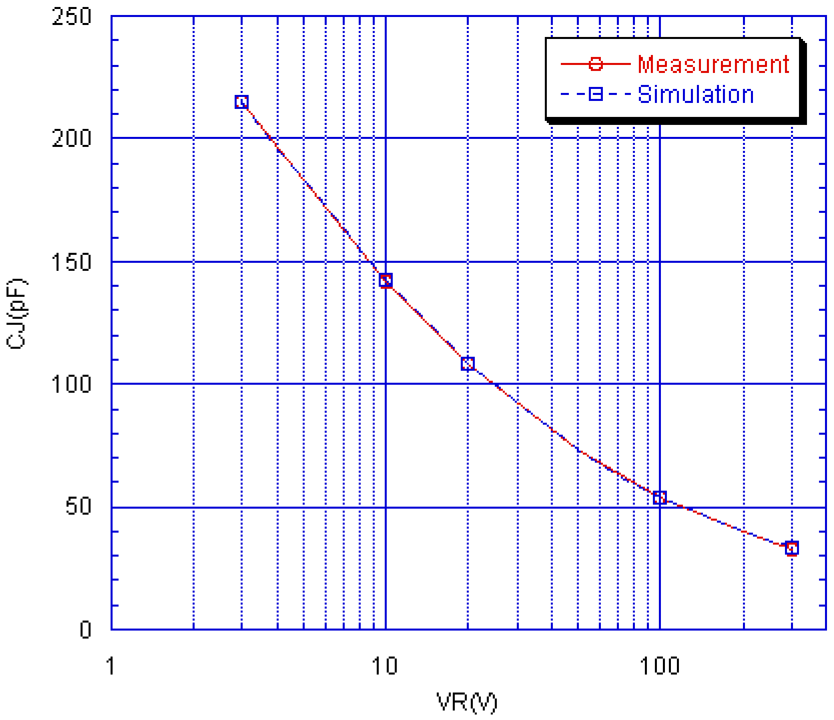


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

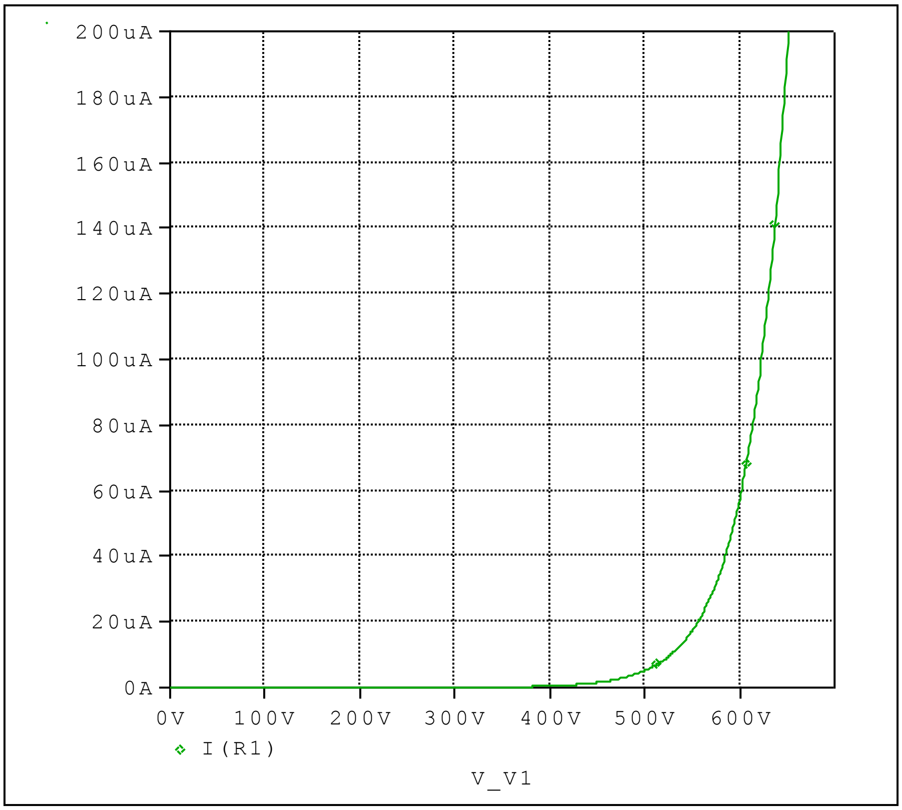


Simulation Result

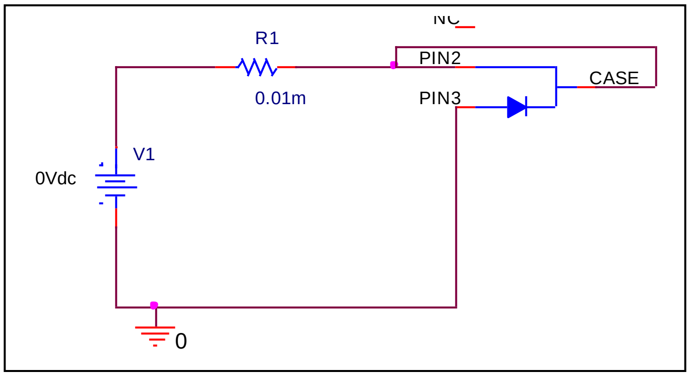
V_R(V)	C_J(pF)		Error(%)
	Measurement	Simulation	
5	183.000	183.500	0.272
10	142.000	142.400	0.281
20	108.500	108.000	-0.463
50	73.000	73.300	0.409
100	54.000	53.988	-0.022
200	40.000	39.900	-0.251
300	33.000	33.200	0.602

Reverse Characteristic

Circuit Simulation Result

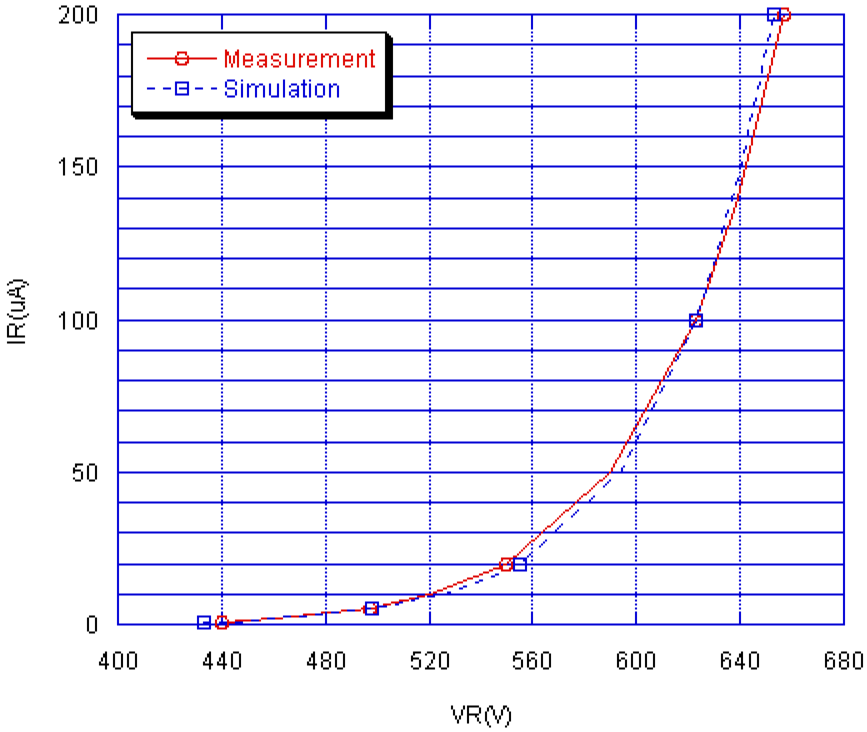


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

I_R(uA)	V_R(V)		Error(%)
	Measurement	Simulation	
1	440.000	433.000	-1.617
2	460.000	460.100	0.022
5	497.000	498.000	0.201
10	520.000	526.000	1.141
20	550.000	556.000	1.079
50	590.000	594.000	0.673
100	623.000	622.584	-0.067
140	639.000	637.000	-0.314
200	657.000	651.000	-0.922