Device Modeling Report

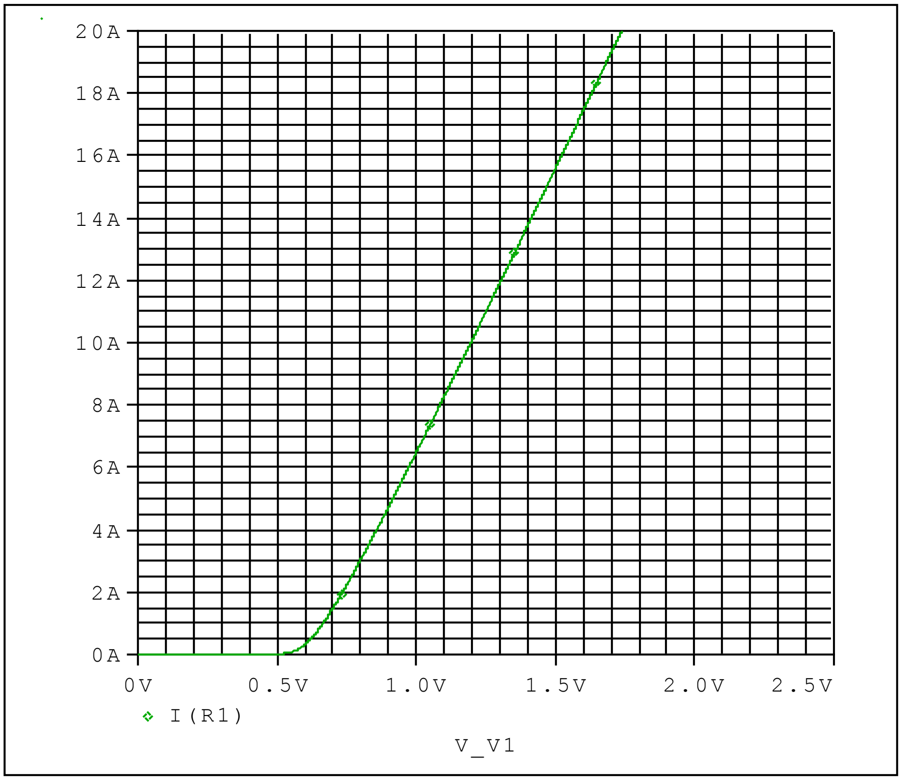
COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: CSD10030A
MANUFACTURER: Cree, Inc.
REMARK: Professional Model

Bee Technologies Inc.

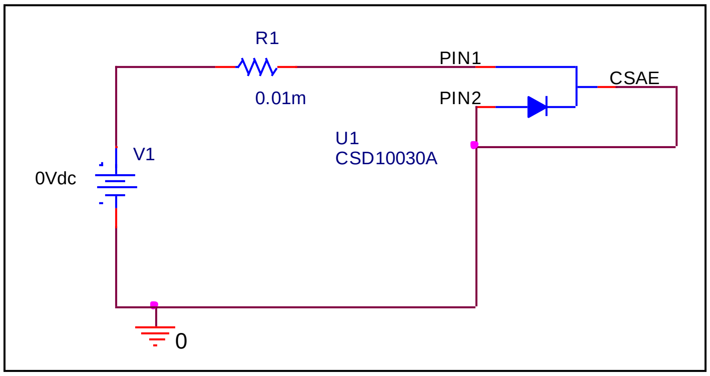
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

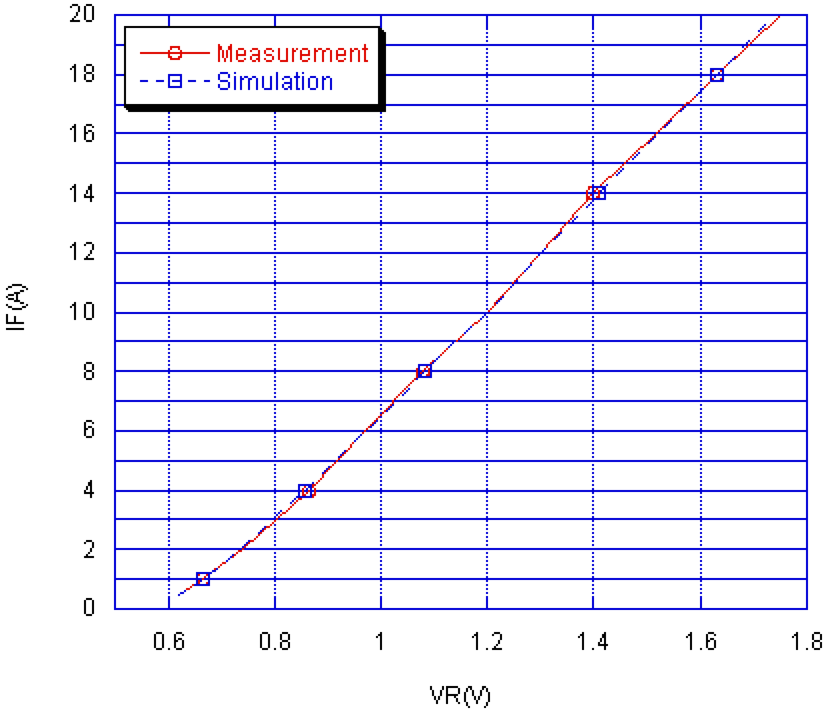


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

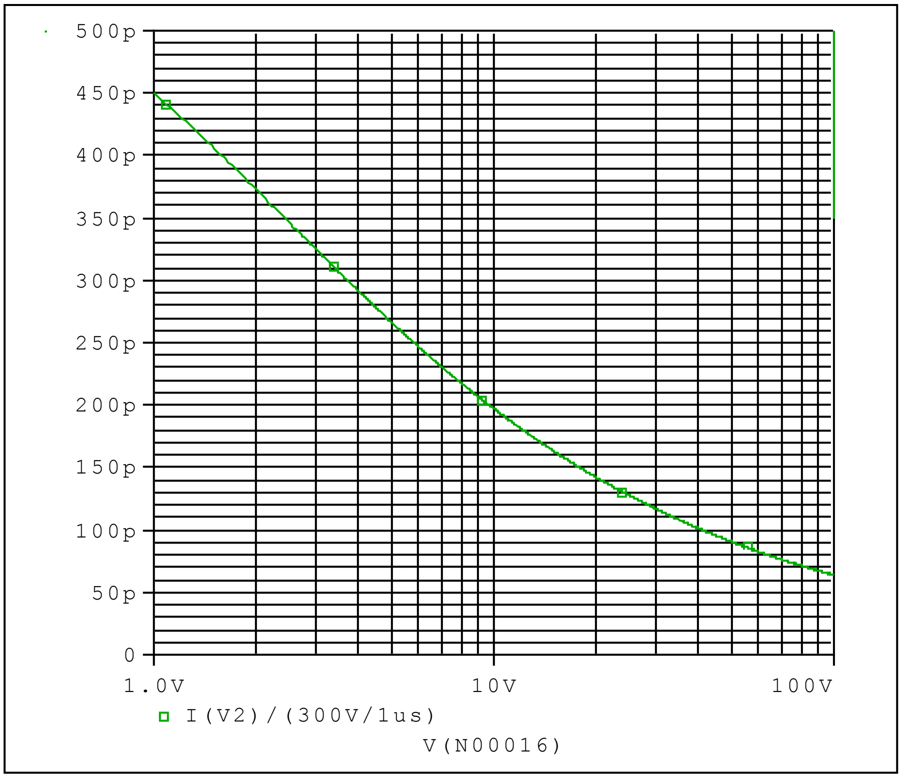


Simulation Result

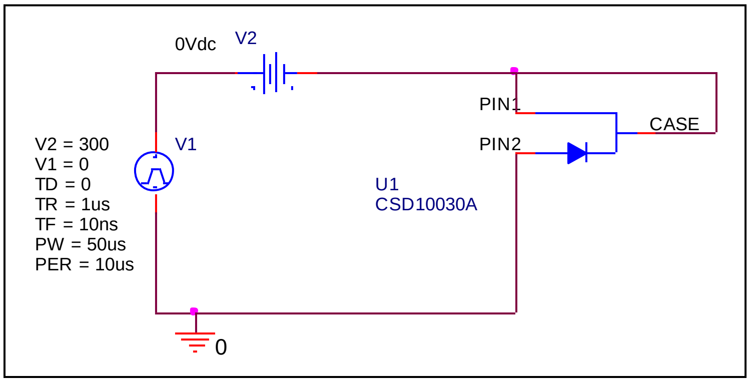
I_F(A)	V_F(V)		Error(%)
	Measurement	Simulation	
1	0.665	0.666	0.150
2	0.740	0.738	-0.271
4	0.865	0.858	-0.816
8	1.080	1.082	0.185
10	1.200	1.199	-0.083
12	1.300	1.300	0.000
16	1.520	1.521	0.066
18	1.630	1.631	0.061
20	1.750	1.738	-0.690

Junction Capacitance Characteristic

Circuit Simulation Result

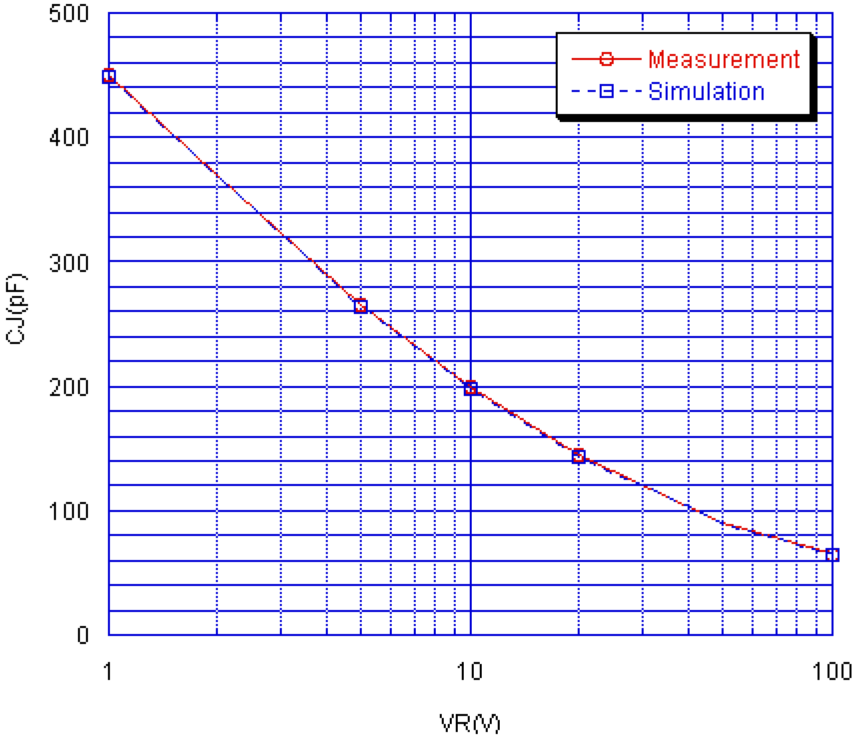


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

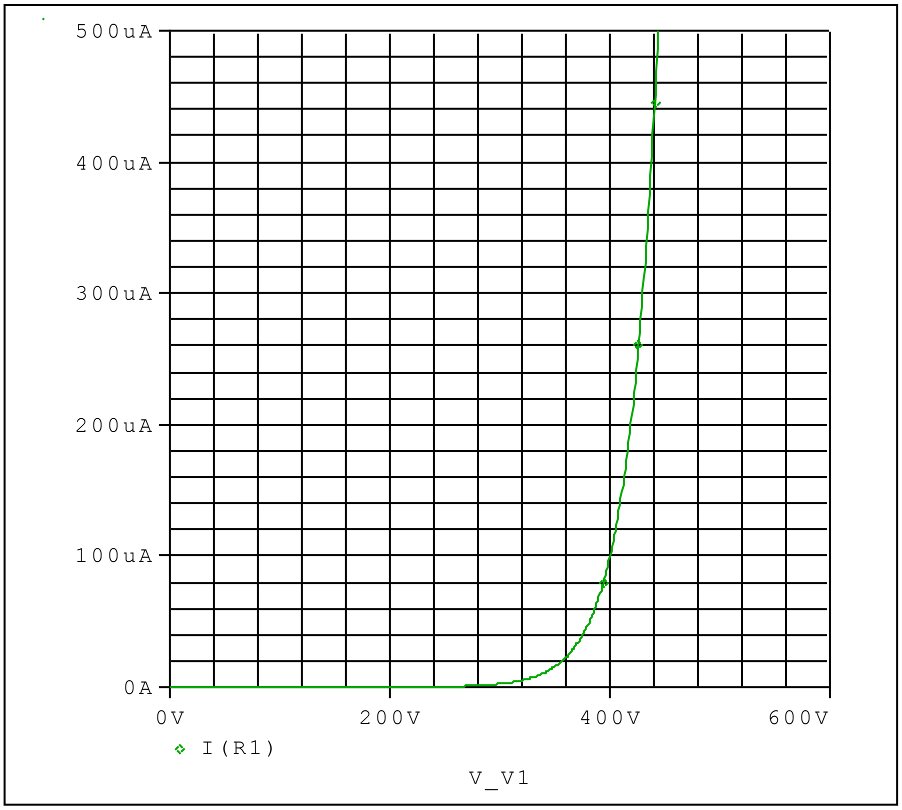


Simulation Result

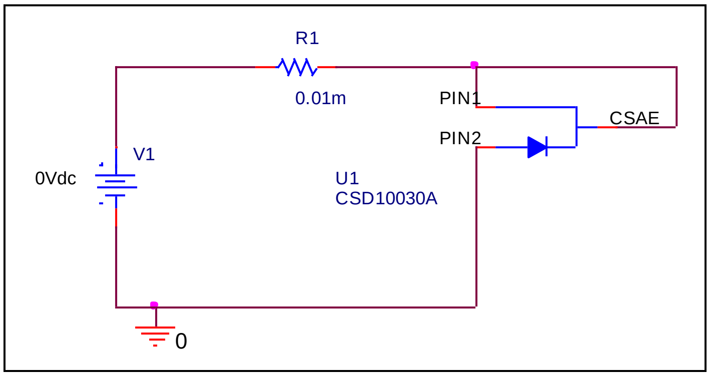
V_R(V)	Cj (pF)		Error(%)
	Measurement	Simulation	
1	450.000	448.000	-0.446
2	370.000	369.100	-0.244
5	265.000	263.200	-0.684
10	200.000	197.200	-1.420
20	145.000	143.000	-1.399
50	90.200	90.500	0.331
100	65.000	64.000	-1.563

Reverse Characteristic

Circuit Simulation Result

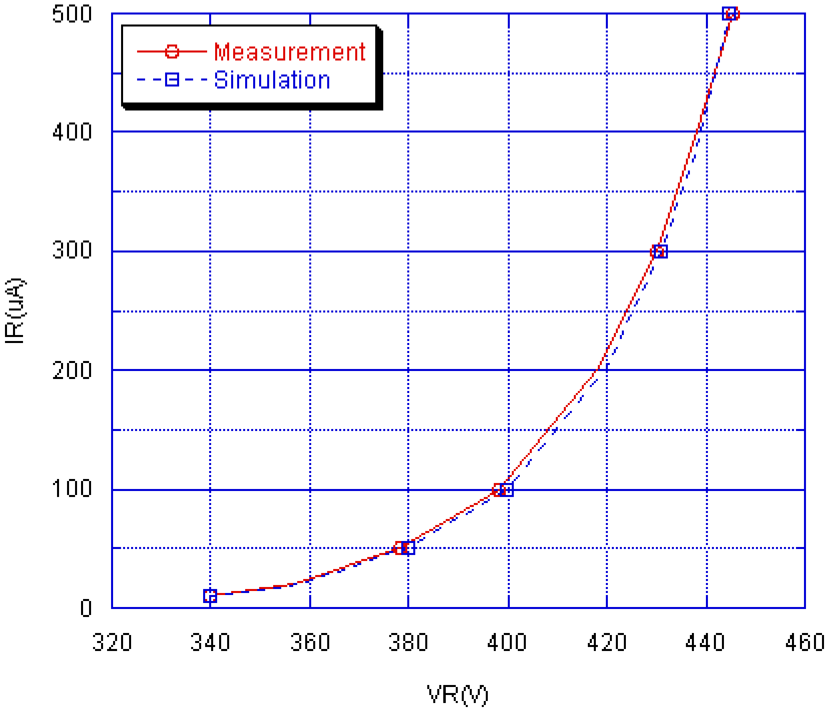


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

I_R(uA)	V_R(V)		Error(%)
	Measurement	Simulation	
10	340.000	339.800	-0.059
20	357.000	358.500	0.418
50	378.300	380.000	0.447
100	398.000	399.800	0.450
200	418.000	419.500	0.358
300	430.000	431.000	0.232
400	438.000	438.800	0.182
500	445.300	444.800	-0.112