Device Modeling Report

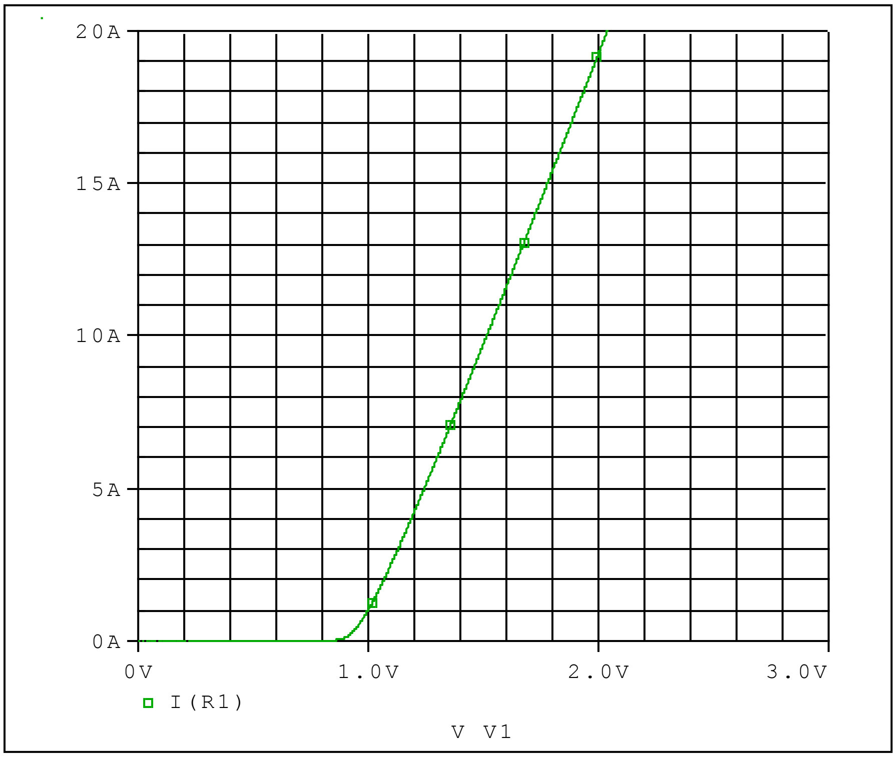
COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: CSD20060D
MANUFACTURER: Cree, Inc.
REMARK: Professional Model

Bee Technologies Inc.

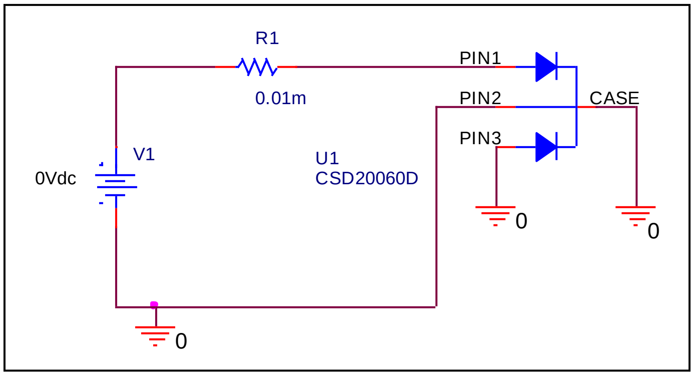
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

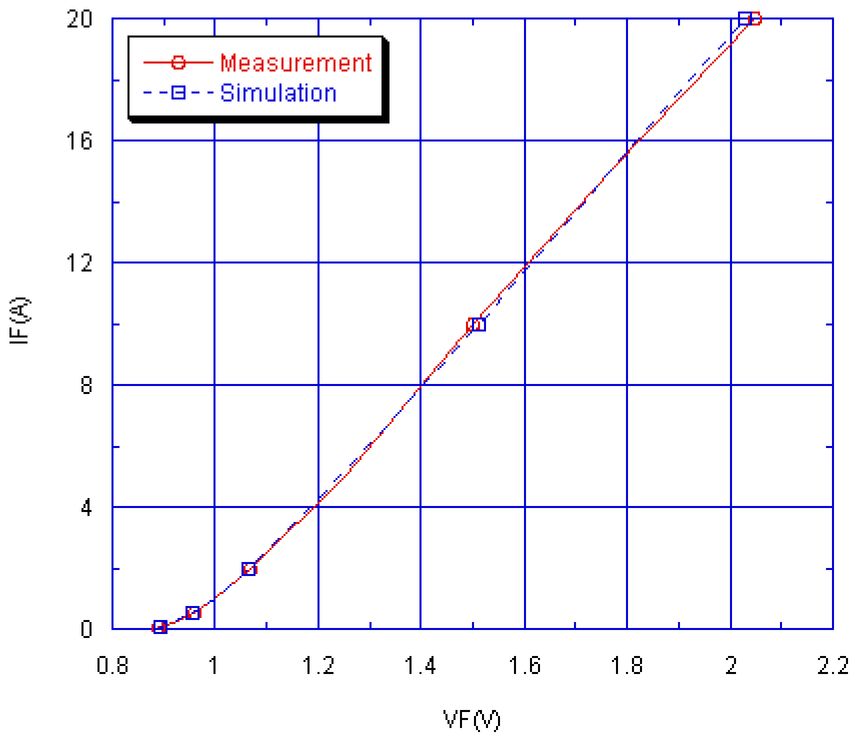


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

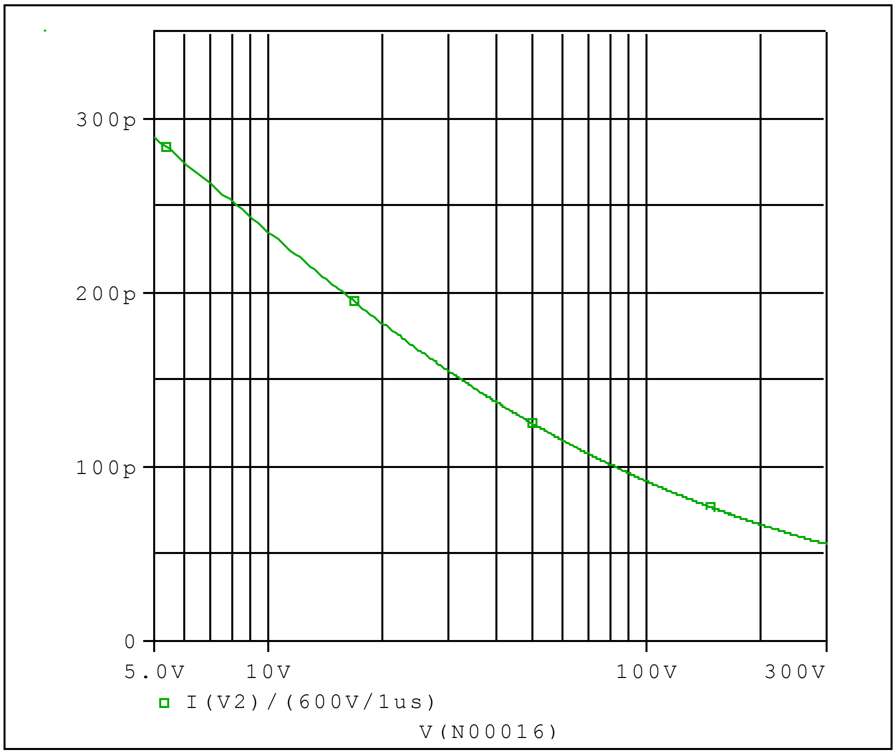


Simulation Result

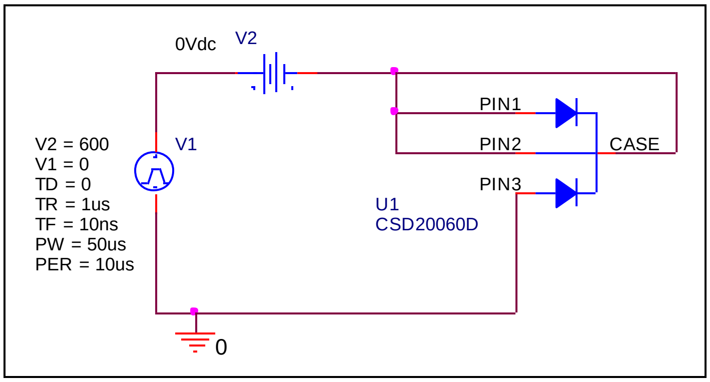
I_F(A)	V_F(V)		Error(%)
	Measurement	Simulation	
0.1	0.890	0.893	0.336
0.2	0.915	0.916	0.109
0.5	0.960	0.955	-0.524
1	1.000	1.000	0.000
2	1.070	1.066	-0.375
5	1.250	1.240	-0.806
10	1.500	1.510	0.662
20	2.050	2.030	-0.985

Junction Capacitance Characteristic

Circuit Simulation Result

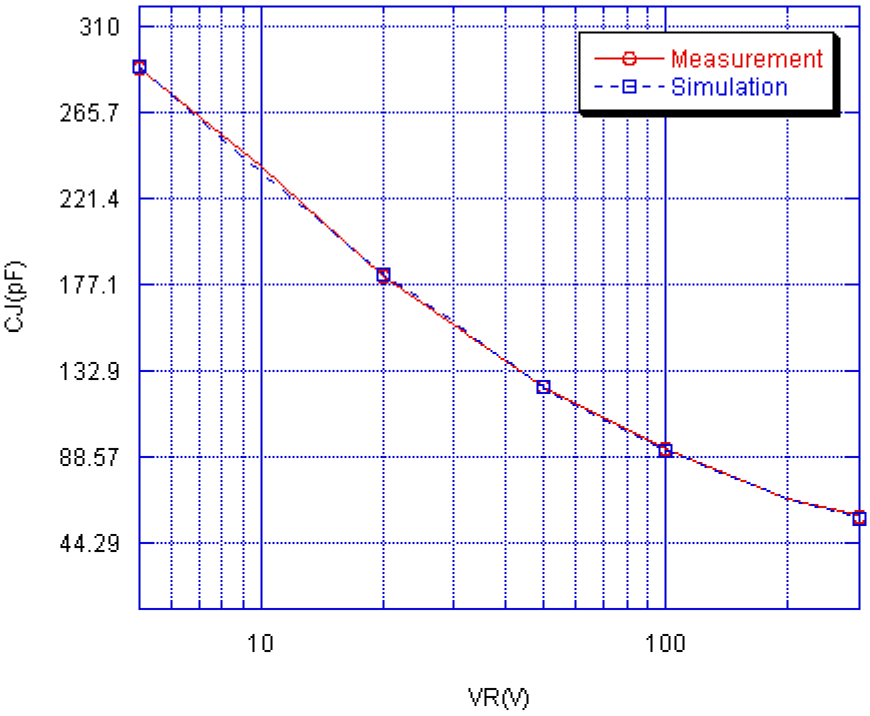


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

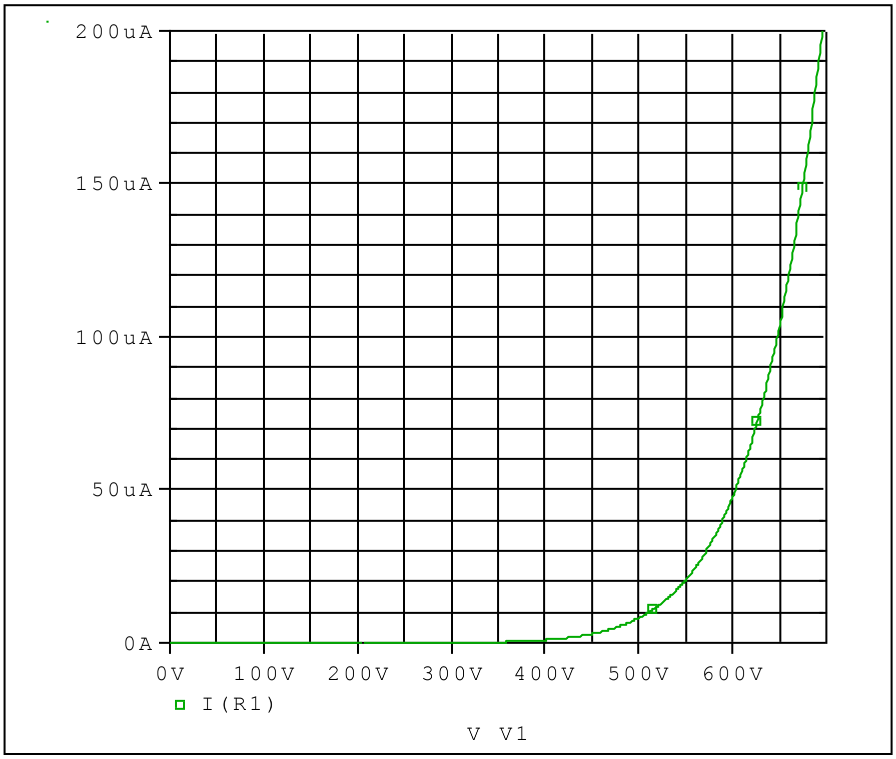


Simulation Result

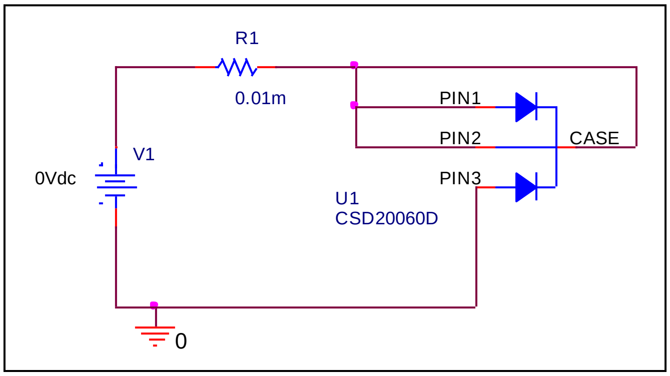
V_R(V)	Cj (pF)		Error(%)
	Measurement	Simulation	
5	288.000	289.000	0.346
10	238.000	235.000	-1.277
20	181.000	182.000	0.549
50	124.000	123.888	-0.090
100	92.000	91.500	-0.546
200	67.000	67.000	0.000
300	57.000	56.000	-1.786

Reverse Characteristic

Circuit Simulation Result

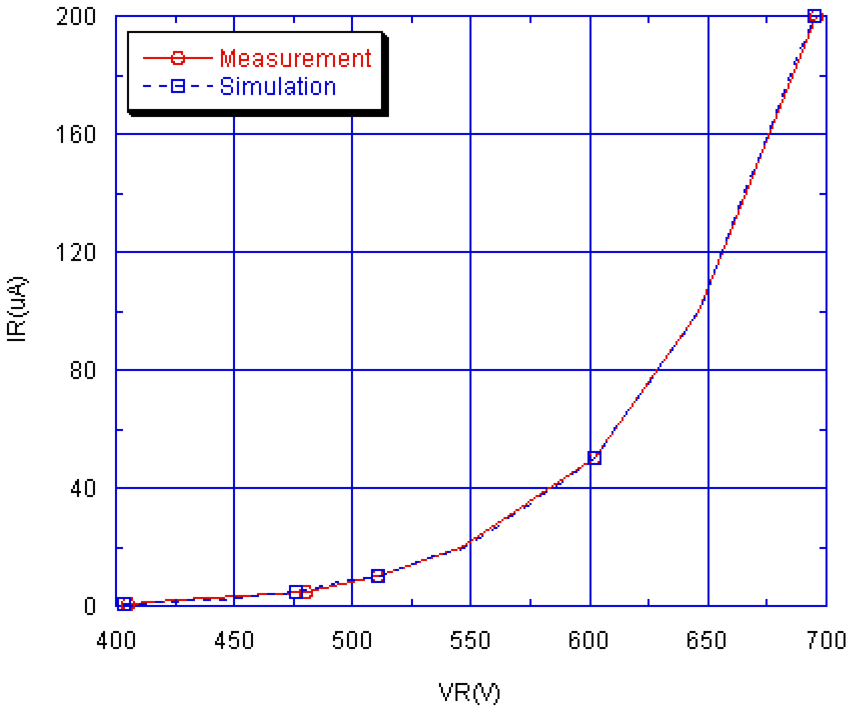


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

I_R(uA)	V_R(V)		Error(%)
	Measurement	Simulation	
1	405.000	403.000	-0.496
2	426.000	430.000	0.930
5	480.000	476.000	-0.840
10	511.000	510.000	-0.196
20	545.000	547.000	0.366
50	602.000	601.584	-0.069
100	646.000	645.844	-0.024
200	696.000	695.000	-0.144