Device Modeling Report

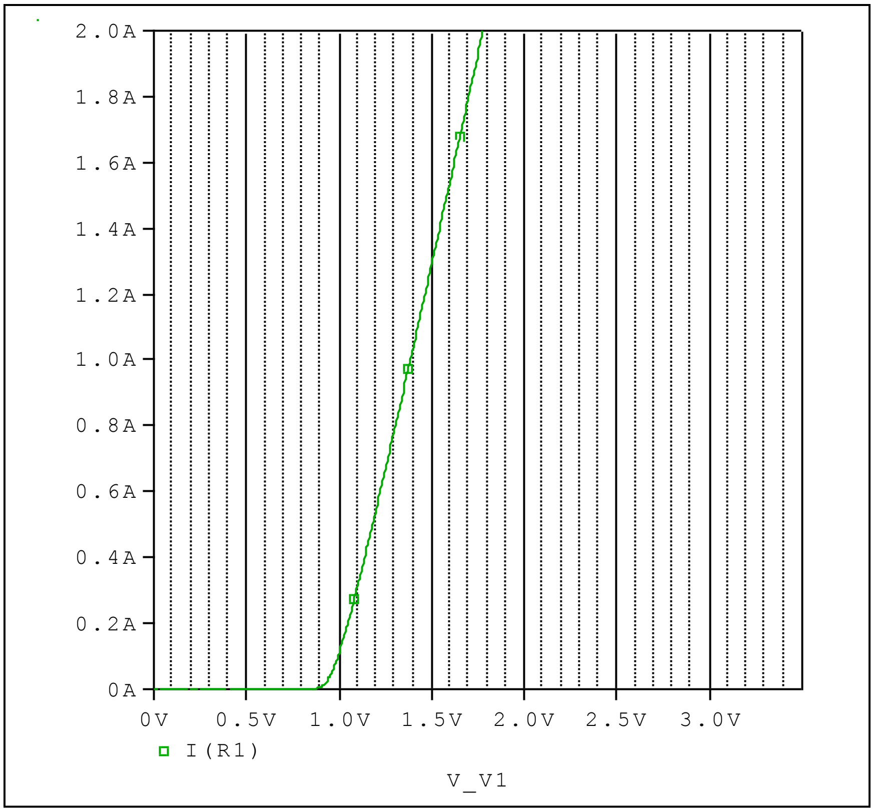
COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: CSD01060E
MANUFACTURER: Cree, Inc.
REMARK: Professional Model

Bee Technologies Inc.

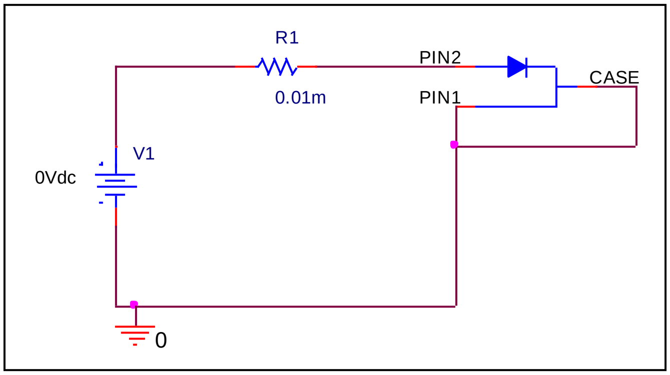
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

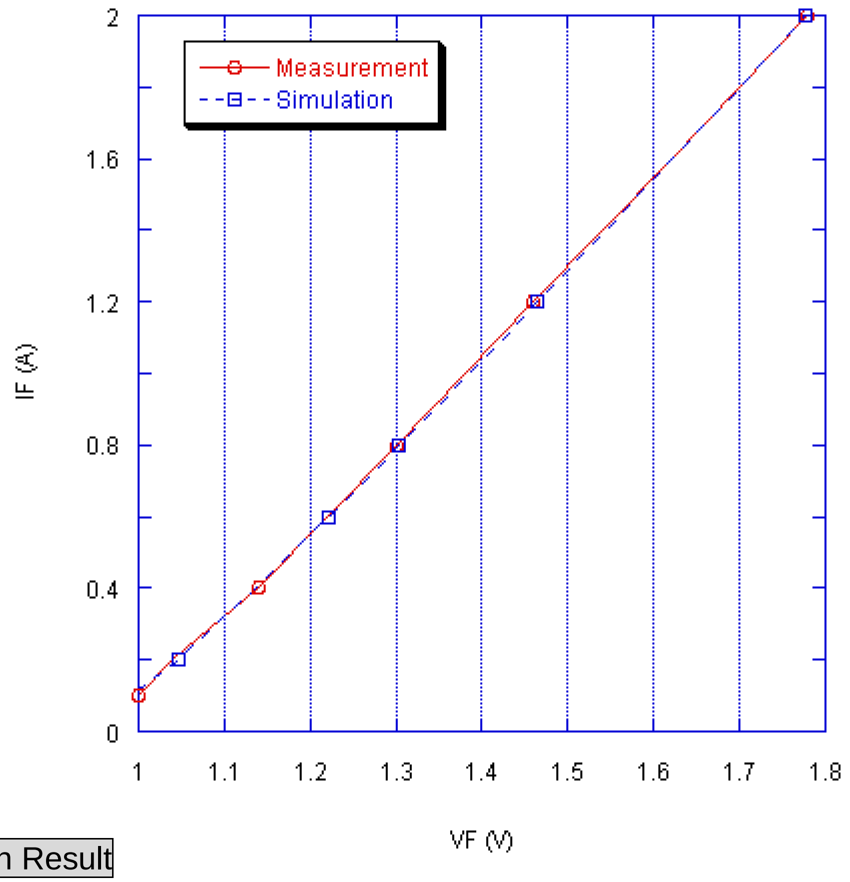


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

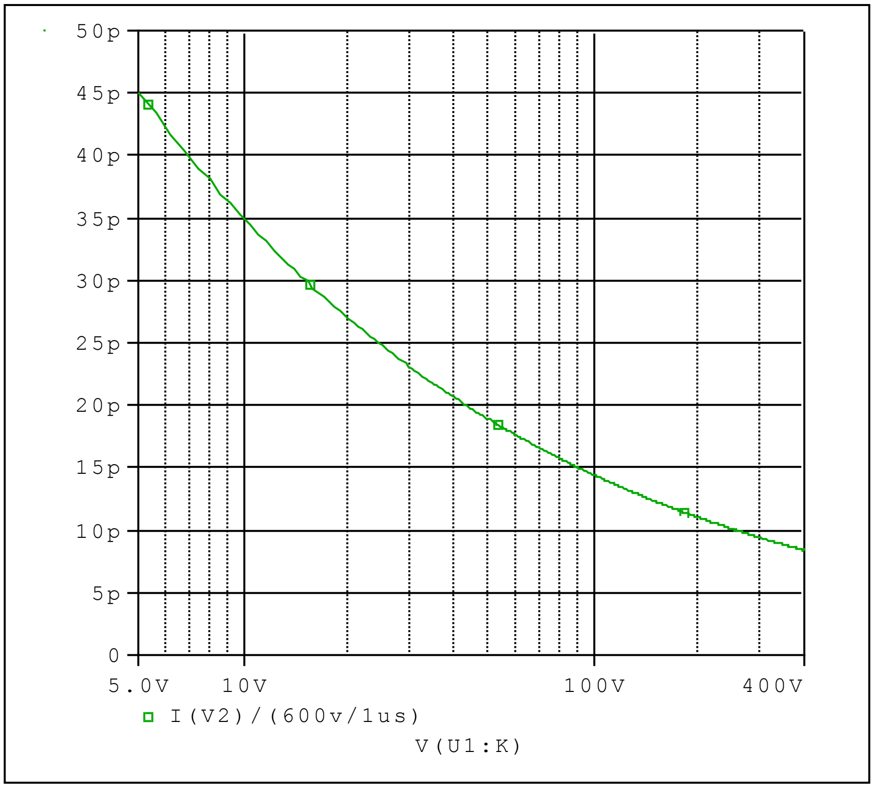


Simulation Result

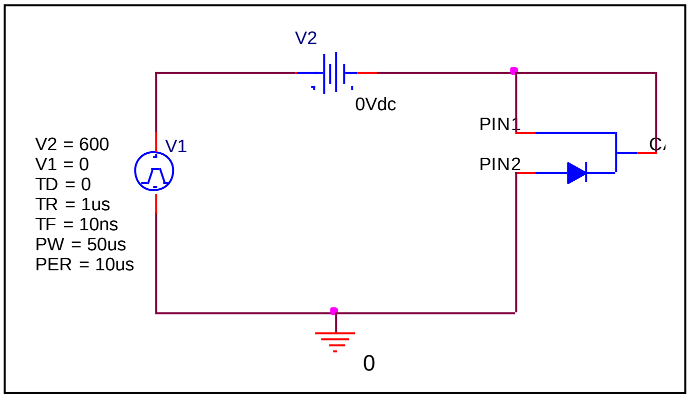
I_F(A)	V_F(V)		Error(%)
	Measurement	Simulation	
0.1	1.000	0.994	-0.604
0.2	1.040	1.047	0.669
0.4	1.140	1.138	-0.176
0.6	1.220	1.222	0.164
0.8	1.300	1.304	0.307
1	1.380	1.384	0.289
1.2	1.460	1.464	0.273
1.6	1.620	1.621	0.062
2	1.780	1.777	-0.169

Junction Capacitance Characteristic

Circuit Simulation Result

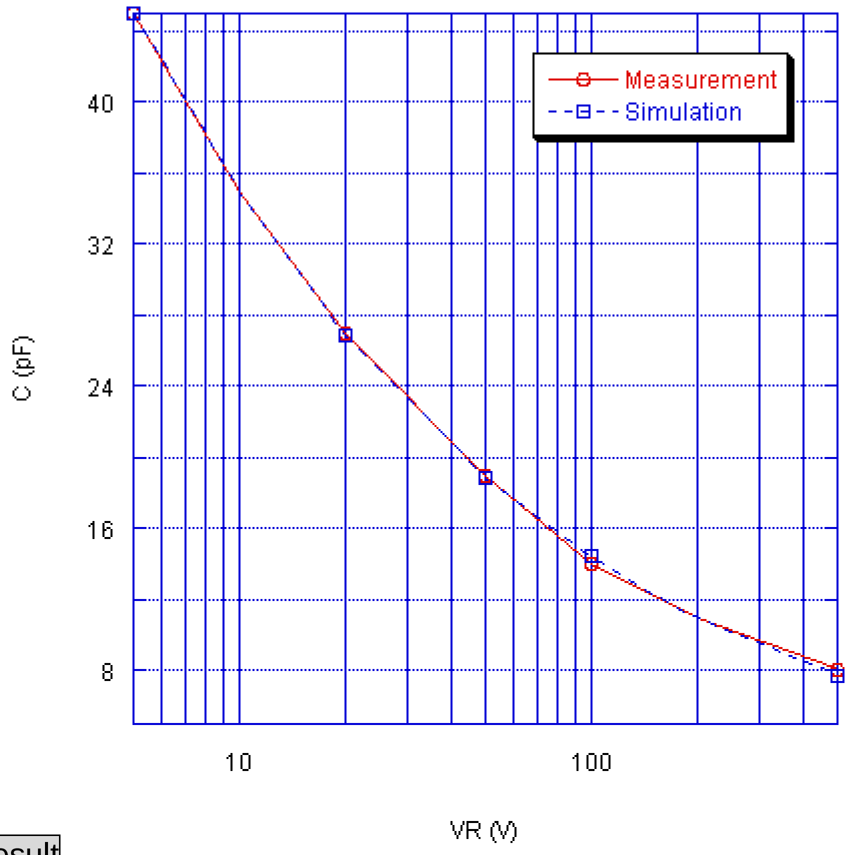


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

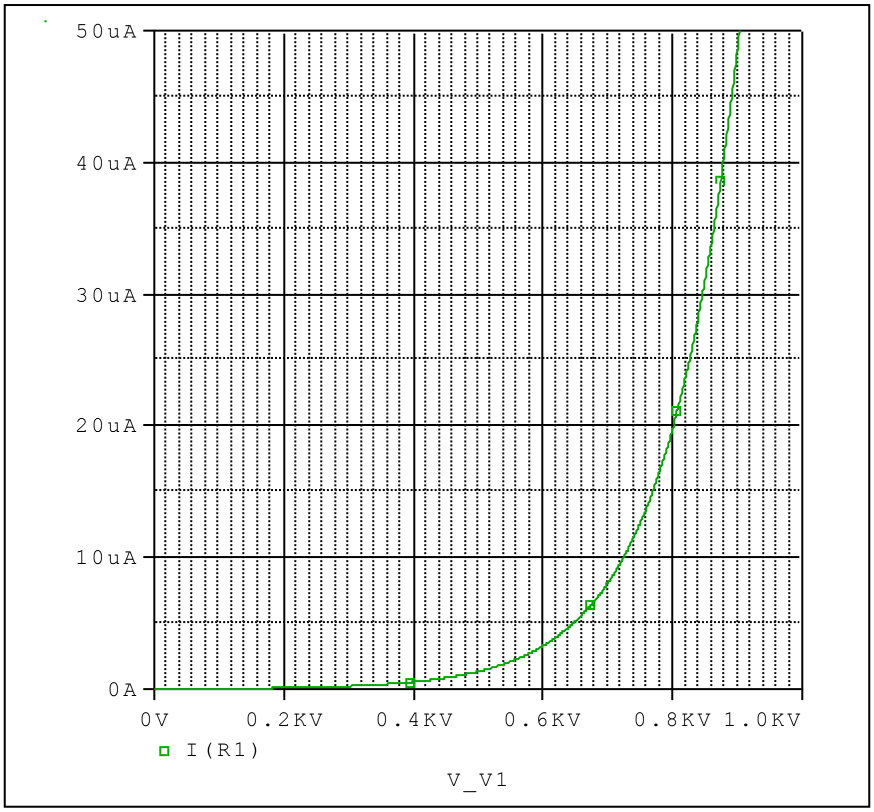


Simulation Result

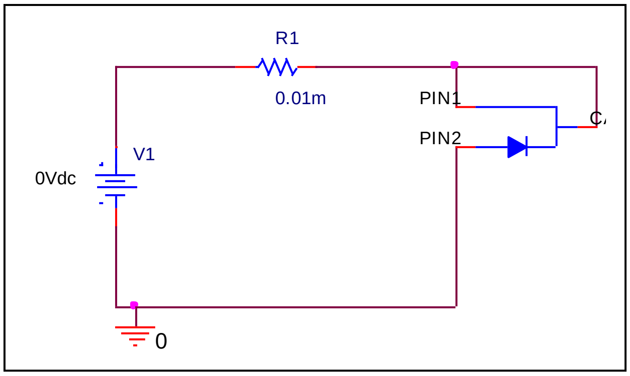
V_R(V)	Cj (pF)		Error(%)
	Measurement	Simulation	
5	45.000	44.965	-0.078
10	35.000	34.983	-0.049
20	27.000	26.917	-0.308
50	19.000	18.910	-0.476
100	14.000	14.423	2.933
200	11.000	10.994	-0.055
500	8.000	7.692	-4.004

Reverse Characteristic

Circuit Simulation Result

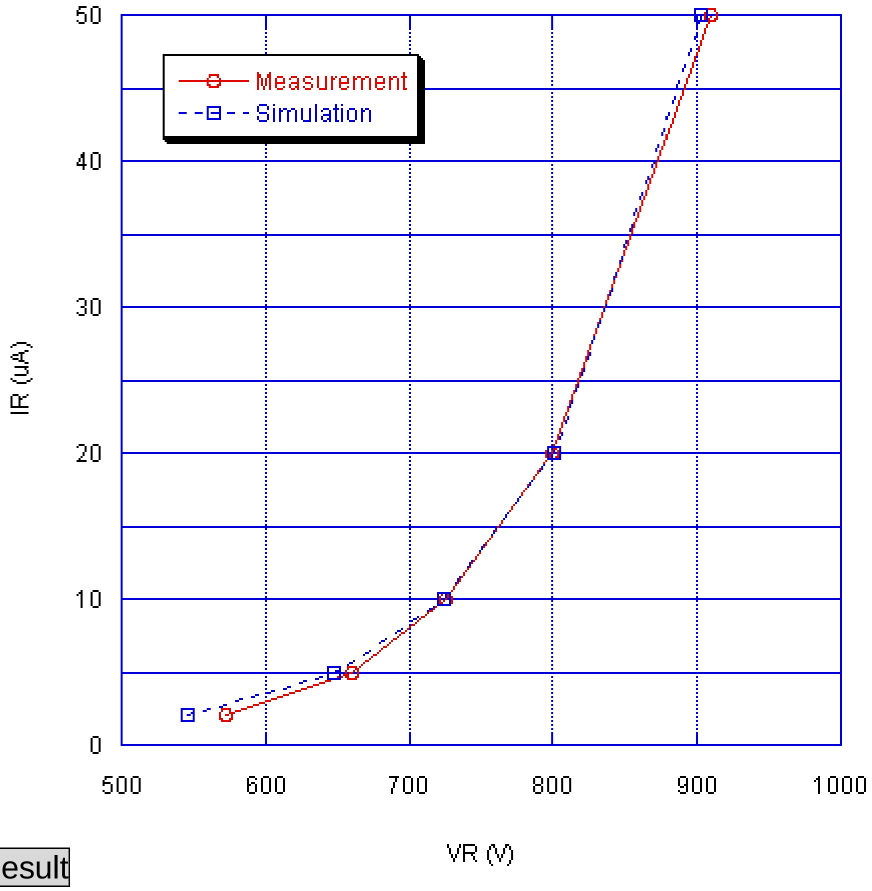


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

I_R(uA)	V_R(V)		Error(%)
	Measurement	Simulation	
2	573.000	545.307	-5.078
5	660.000	646.951	-2.017
10	725.000	724.015	-0.136
20	800.000	801.201	0.150
50	910.000	903.053	-0.769