Device Modeling Report

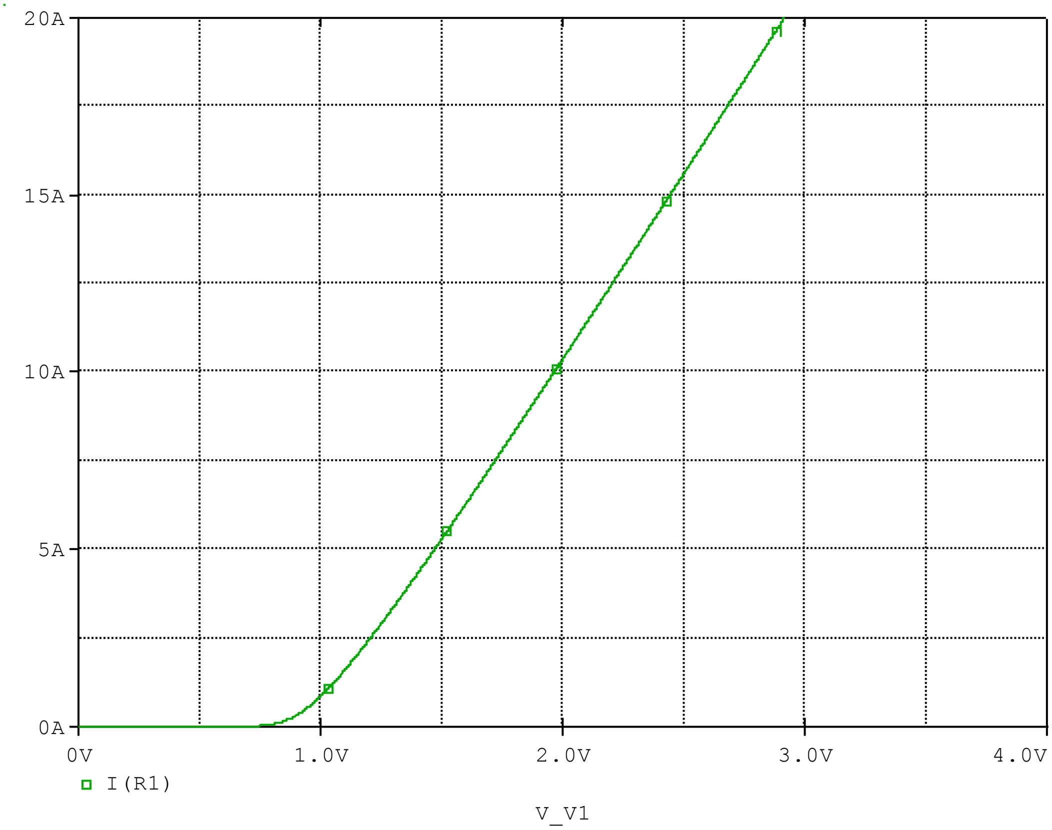
COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: IDV05S60C
MANUFACTURER: Infineon
REMARK: Professional Model

Bee Technologies Inc.

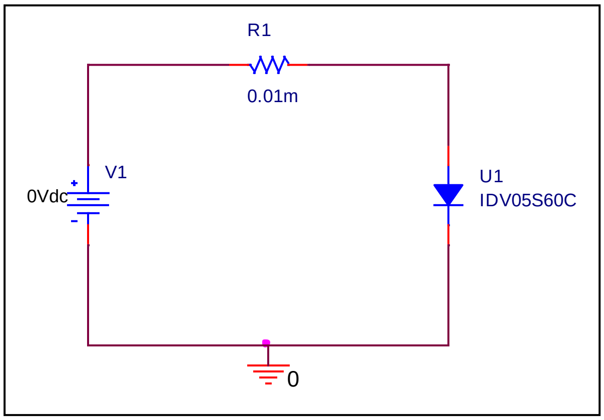
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

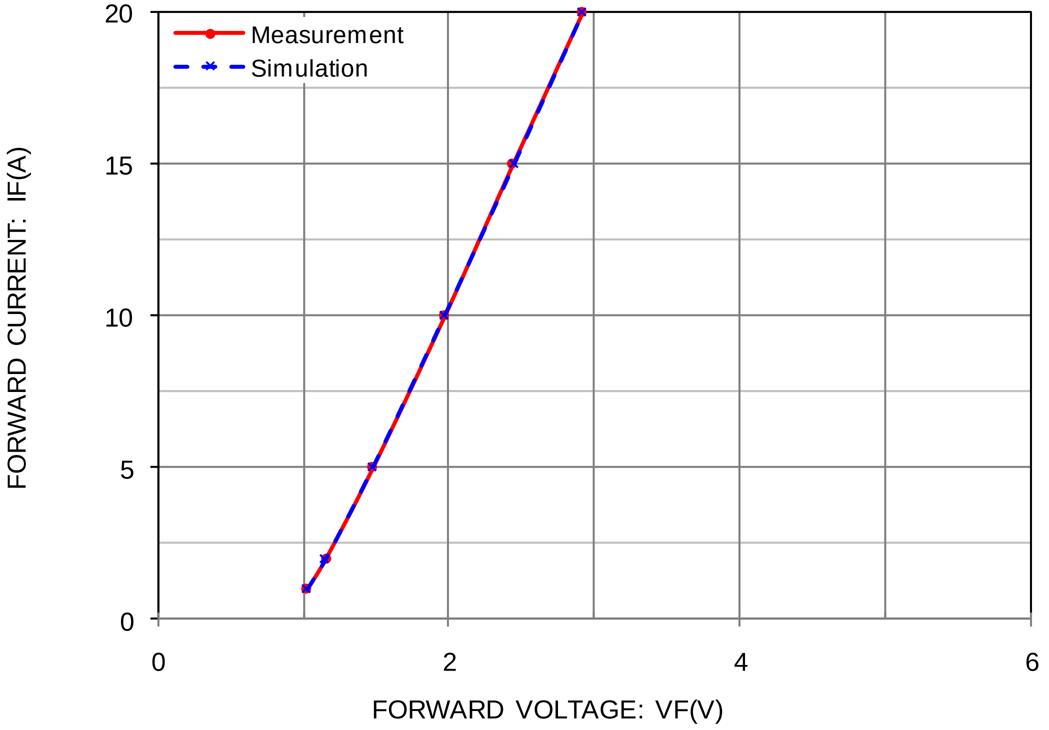


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

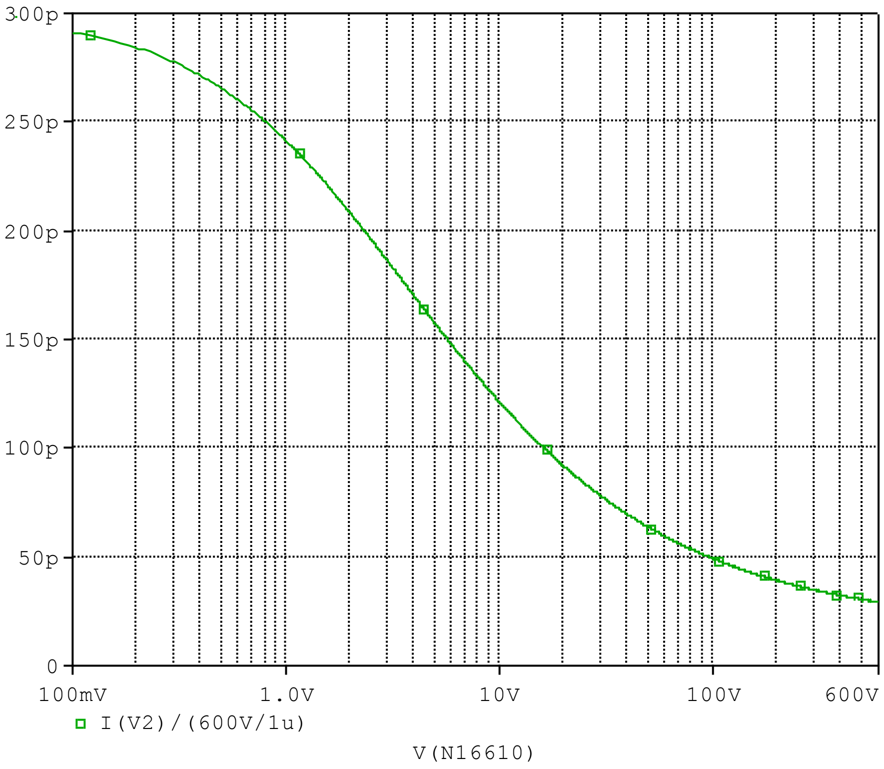


Simulation Result

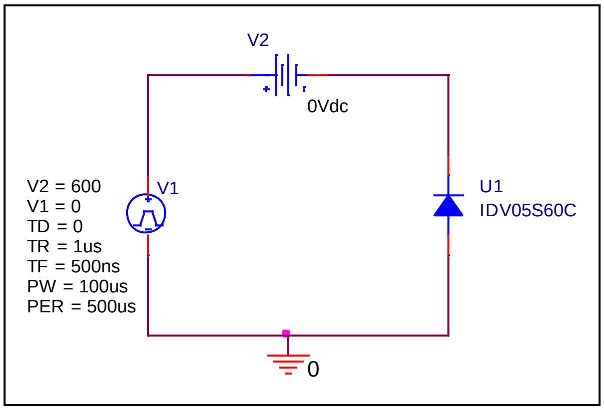
I_F(A)	V_F(V)		Error (%)
	Measurement	Simulation	
1	1.022	1.021	-0.15
2	1.150	1.148	-0.18
5	1.475	1.470	-0.33
10	1.970	1.964	-0.31
15	2.440	2.443	0.11
20	2.920	2.916	-0.15

Junction Capacitance Characteristic

Circuit Simulation Result

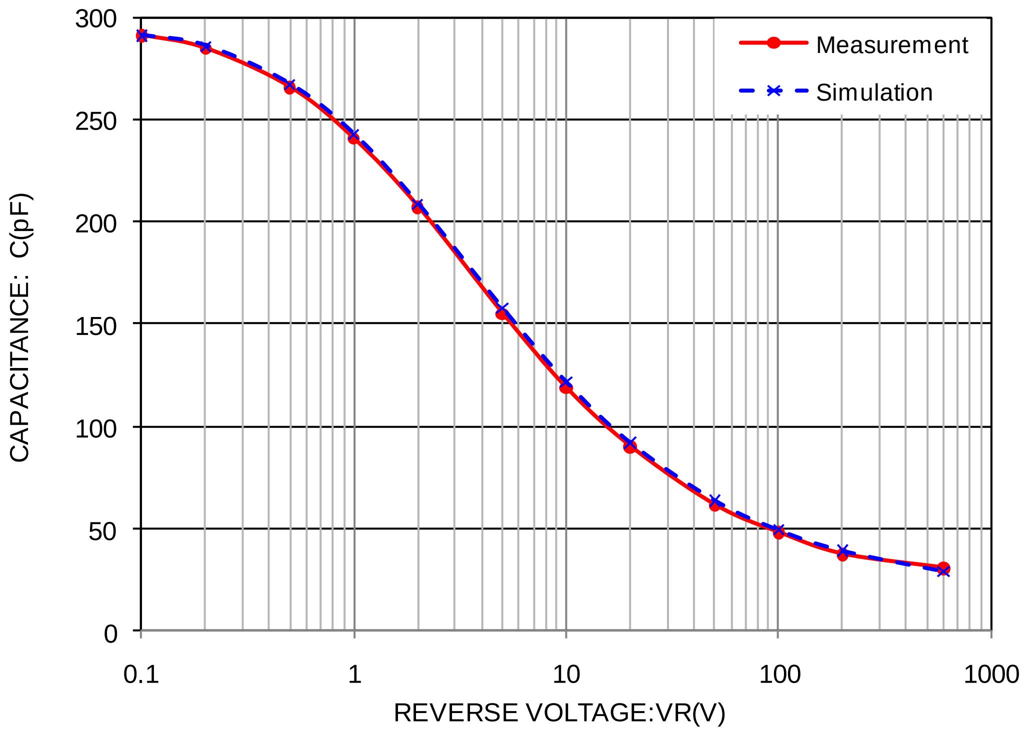


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

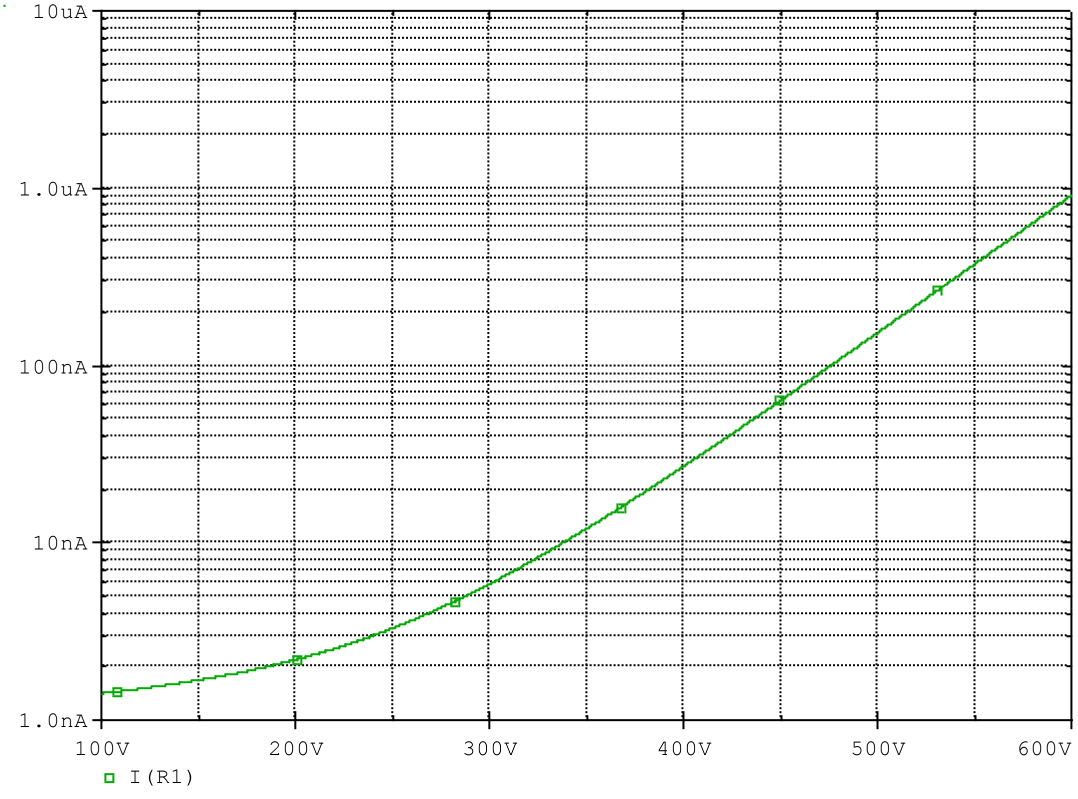


Simulation Result

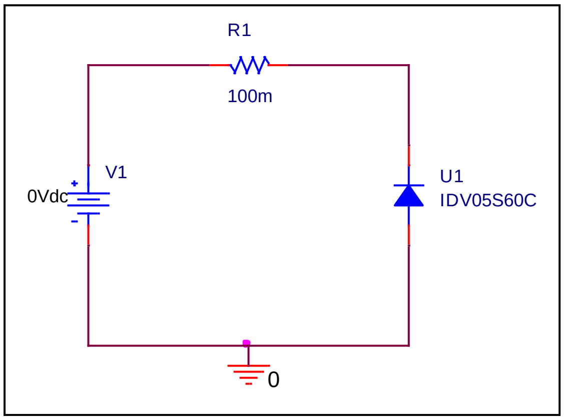
V_R(V)	C (pF)		Error (%)
	Measurement	Simulation	
0.1	291.000	290.871	-0.04
0.2	284.500	285.778	0.45
0.5	265.500	266.998	0.56
1	240.330	242.553	0.92
2	207.123	208.691	0.76
5	155.000	157.665	1.72
10	118.532	121.463	2.47
20	90.000	91.911	2.12
50	61.440	63.781	3.81
100	47.988	49.345	2.83
200	37.470	39.252	4.76
600	30.680	29.243	-4.68

Reverse Characteristic

Circuit Simulation Result

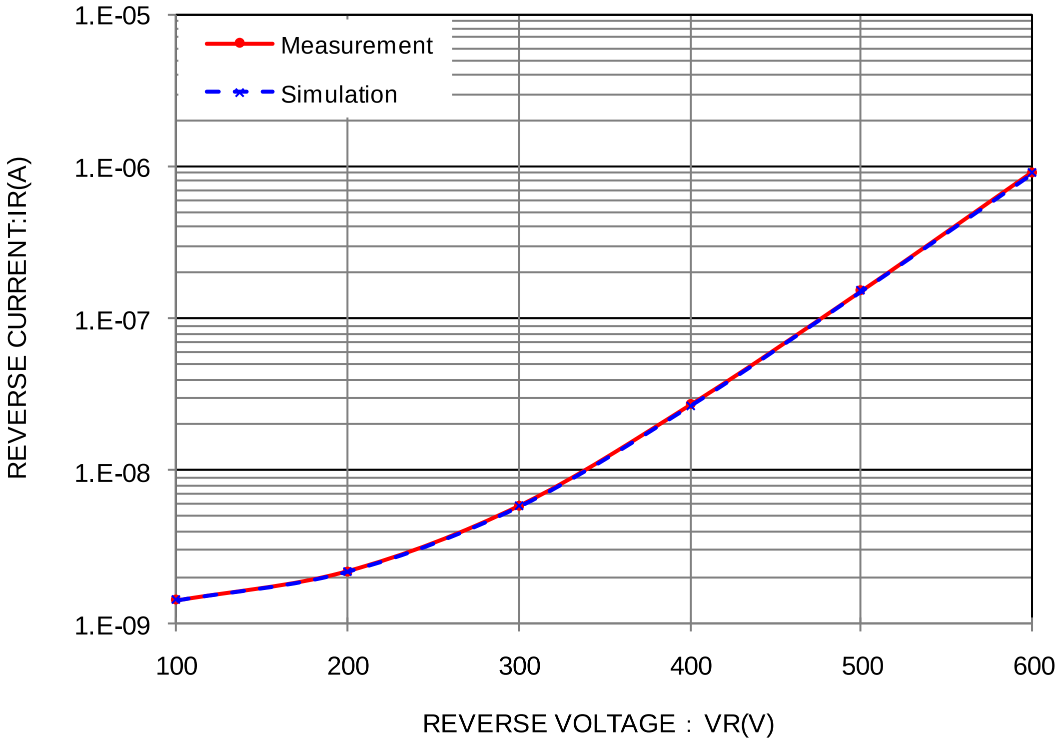


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R(V)	I_R(A)		Error (%)
	Measurement	Simulation	
100	1.410E-09	1.415E-09	0.33
200	2.200E-09	2.190E-09	-0.46
300	5.900E-09	5.855E-09	-0.76
400	2.710E-08	2.693E-08	-0.65
500	1.515E-07	1.528E-07	0.85
600	9.180E-07	9.096E-07	-0.91