Device Modeling Report

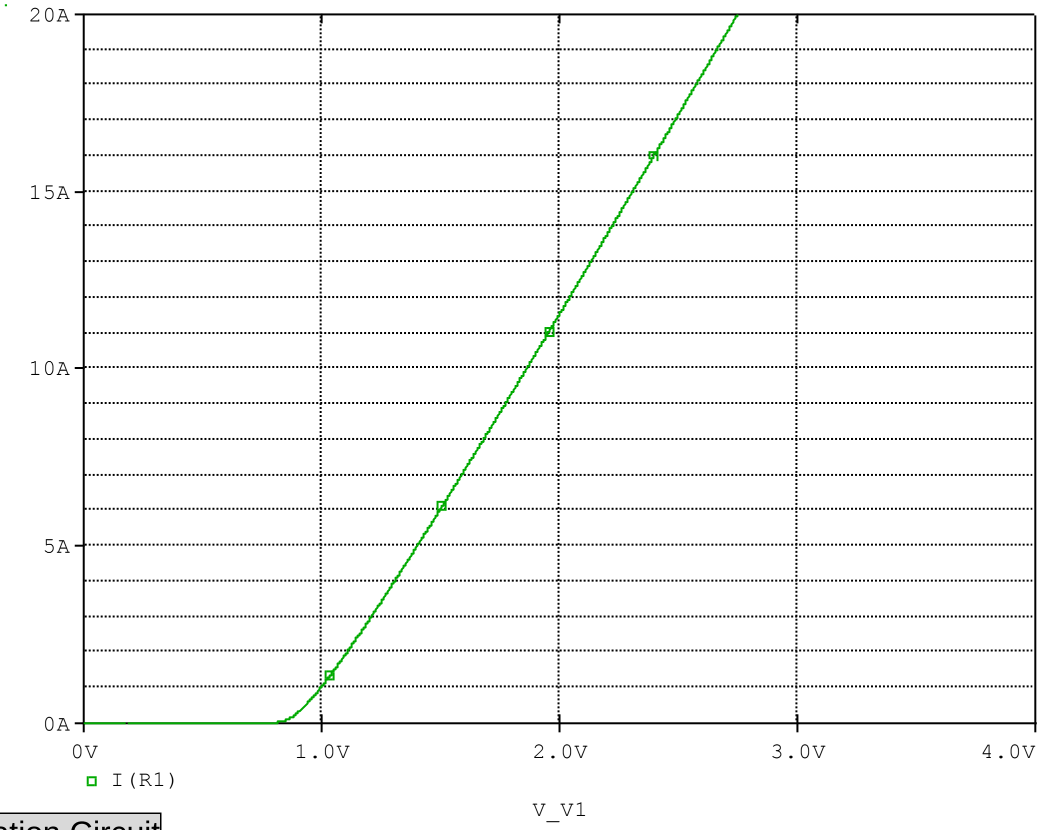
COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: IDH10SG60C
MANUFACTURER: Infineon
REMARK: Professional Model

Bee Technologies Inc.

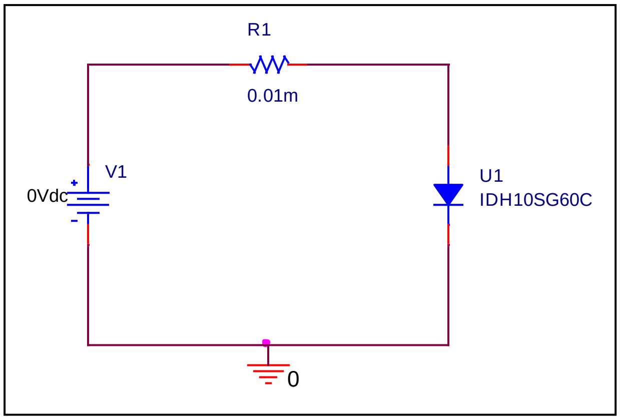
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

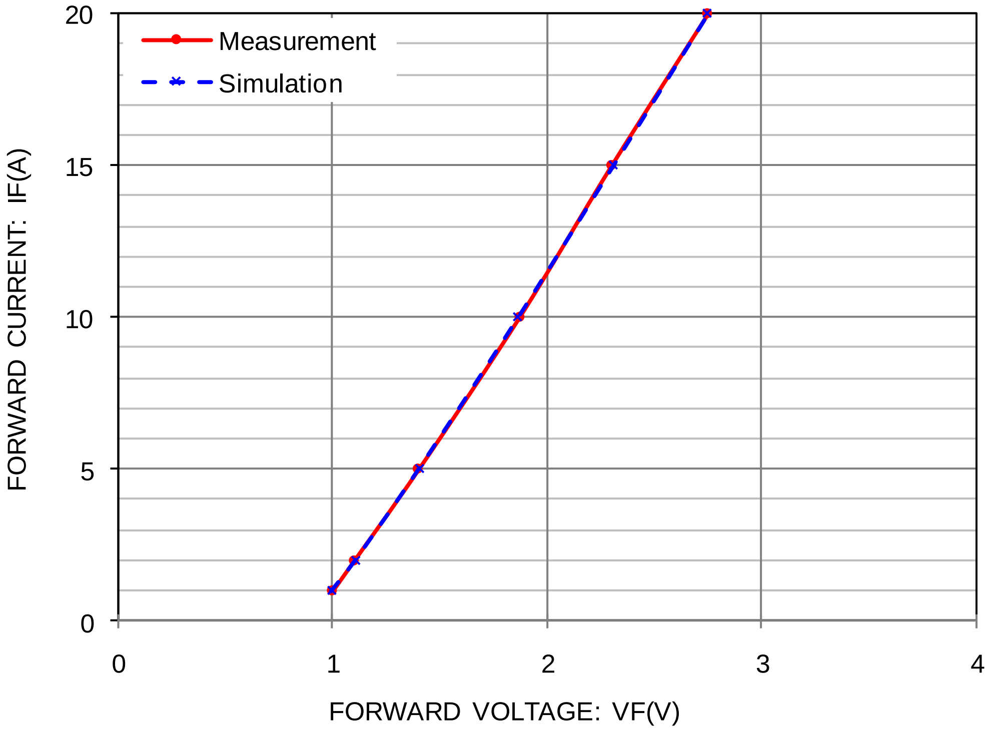


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

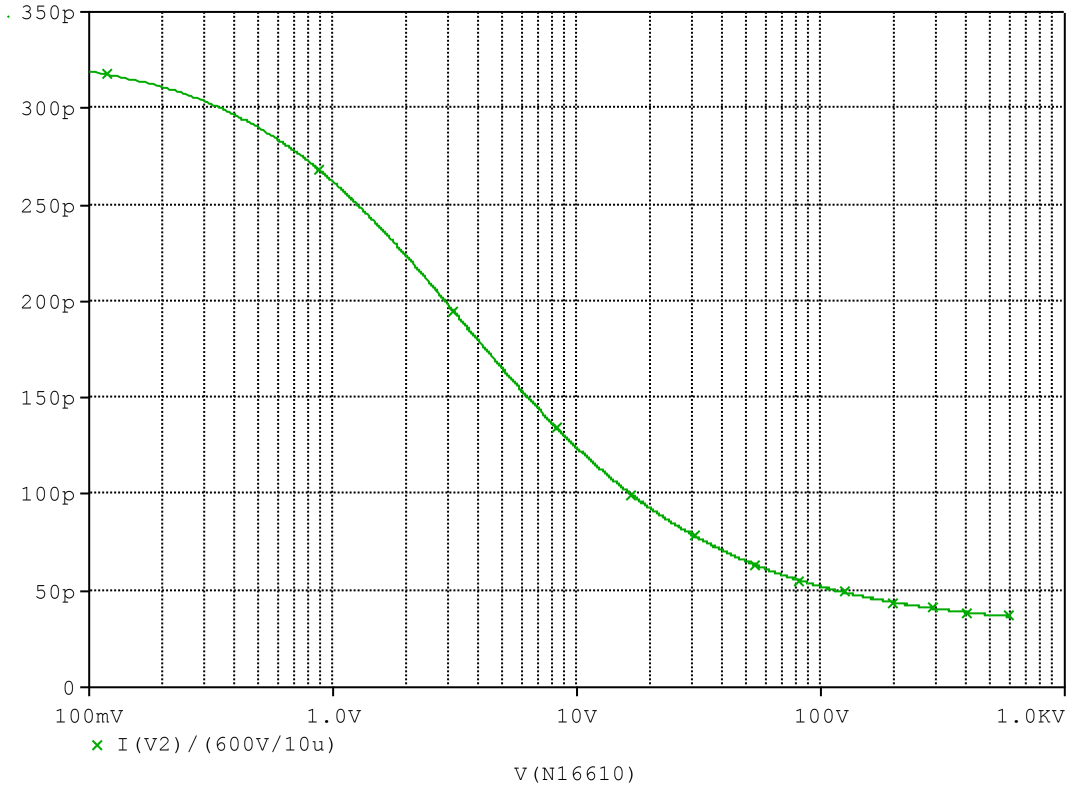


Simulation Result

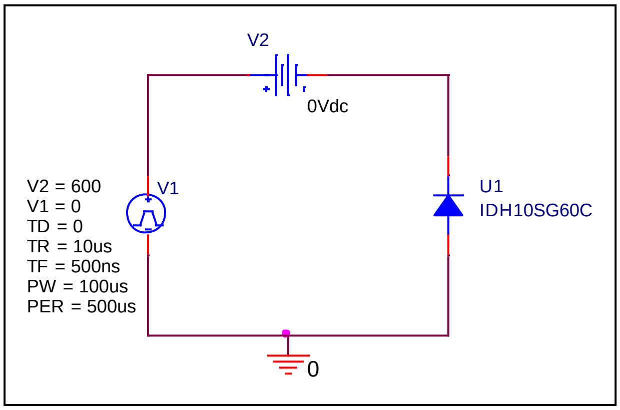
I_F(A)	V_F(V)		Error (%)
	Measurement	Simulation	
1	1.000	0.996	-0.40
2	1.100	1.106	0.55
5	1.400	1.401	0.09
10	1.870	1.864	-0.30
15	2.300	2.308	0.33
20	2.750	2.748	-0.06

Junction Capacitance Characteristic

Circuit Simulation Result

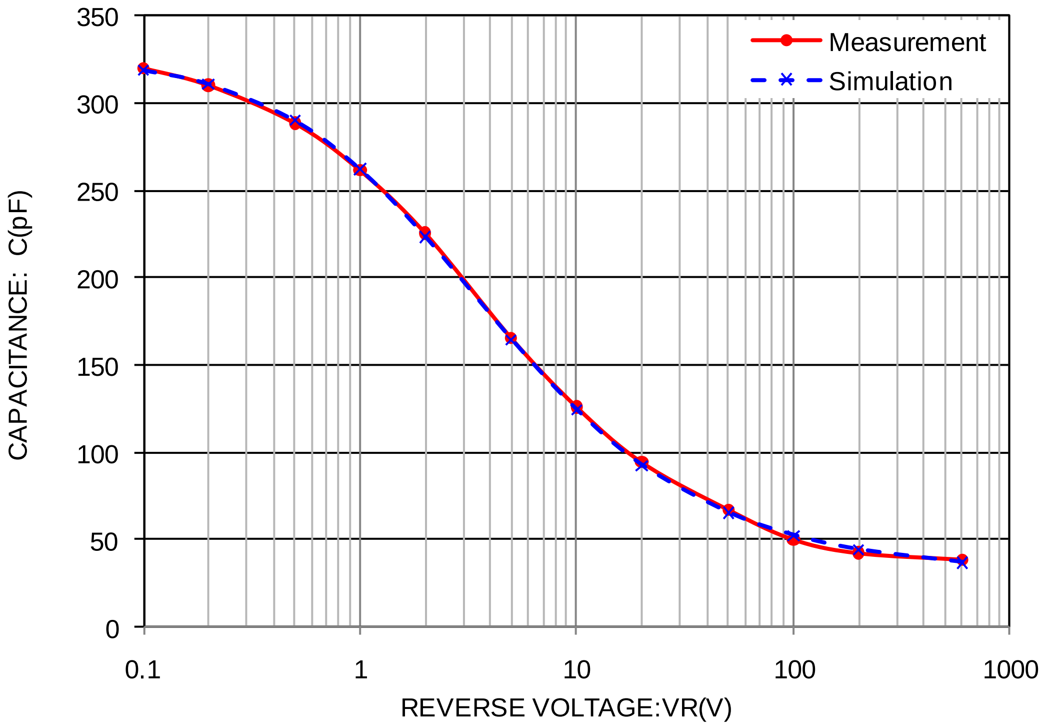


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

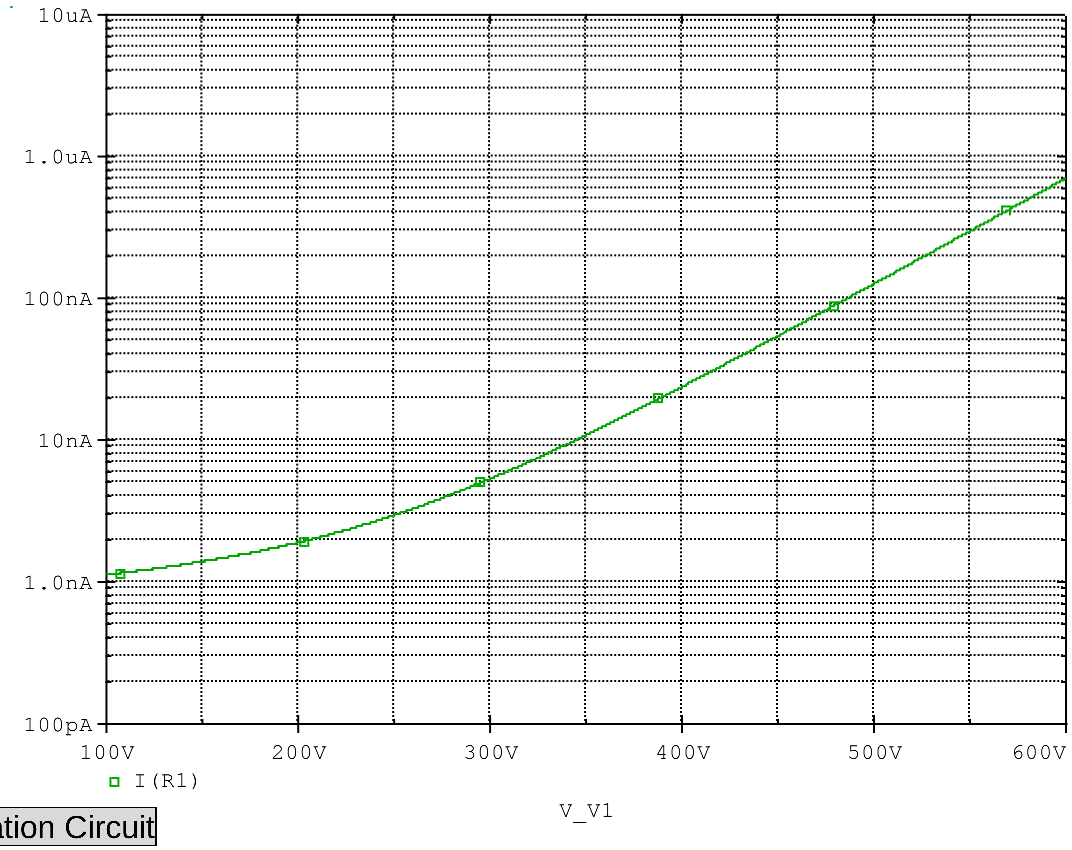


Simulation Result

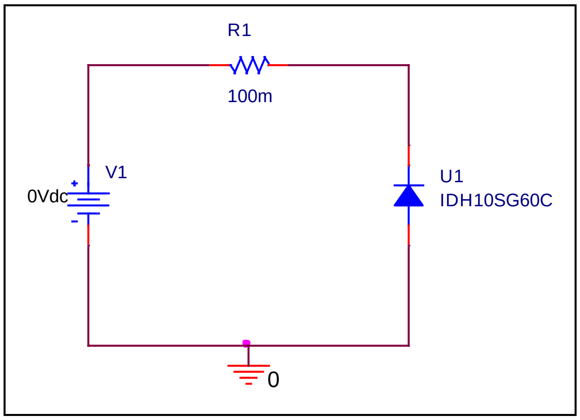
V_R(V)	C (pF)		Error (%)
	Measurement	Simulation	
0.1	320.158	318.935	-0.38
0.2	310.258	310.895	0.21
0.5	288.546	289.941	0.48
1	261.534	261.982	0.17
2	225.485	223.390	-0.93
5	165.222	164.522	-0.42
10	125.852	124.129	-1.37
20	94.152	92.390	-1.87
50	67.111	65.237	-2.79
100	50.026	52.215	4.38
200	42.245	43.948	4.03
600	38.552	36.644	-4.95

Reverse Characteristic

Circuit Simulation Result

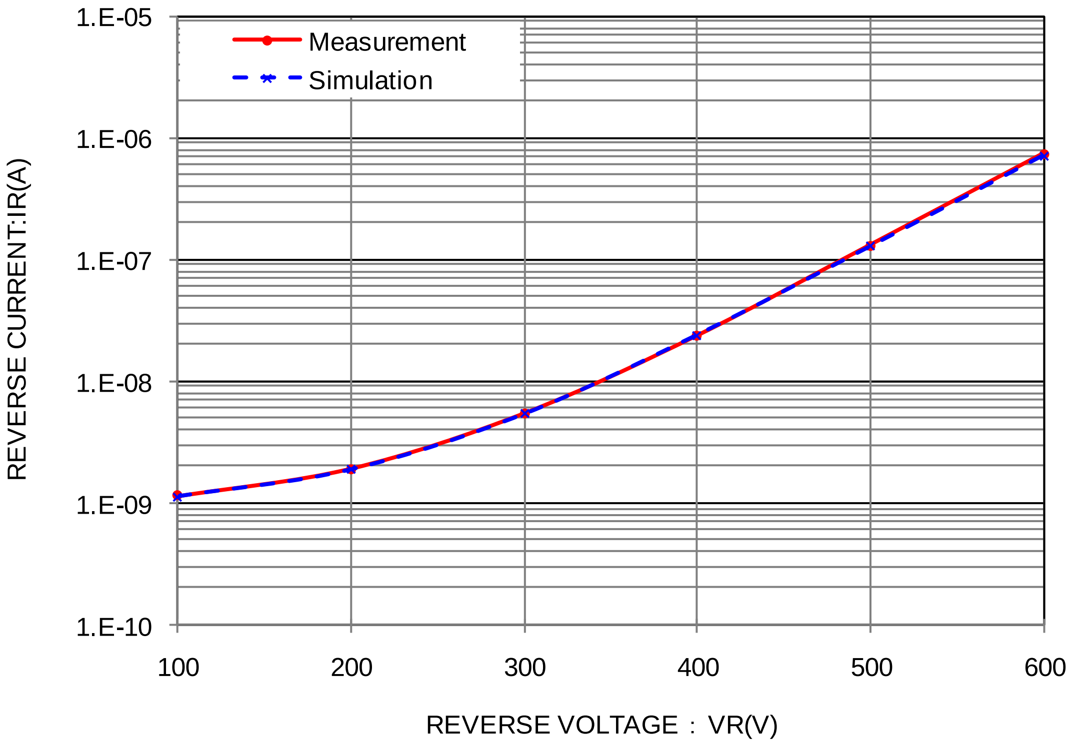


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R(V)	I_R(A)		Error (%)
	Measurement	Simulation	
100	1.13E-09	1.12E-09	-0.47
200	1.90E-09	1.87E-09	-1.50
300	5.40E-09	5.34E-09	-1.17
400	2.35E-08	2.38E-08	1.10
500	1.30E-07	1.27E-07	-2.67
600	7.30E-07	7.04E-07	-3.53