Device Modeling Report

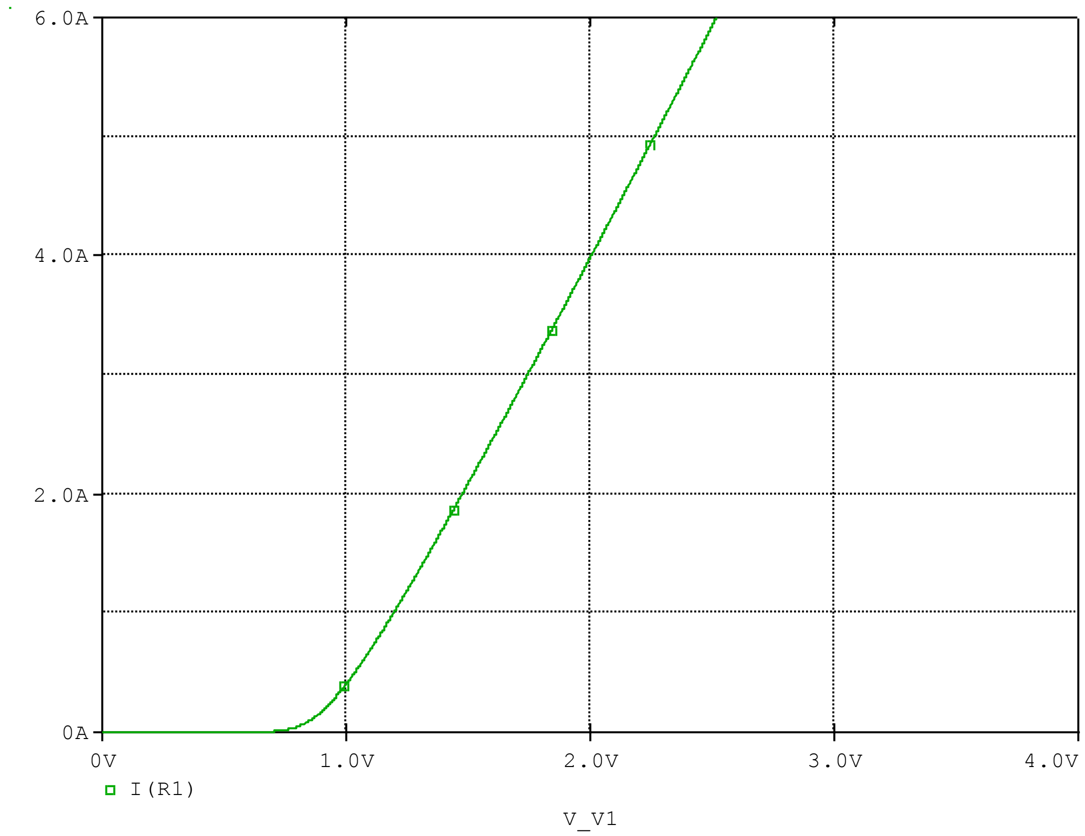
COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: IDV03S60C
MANUFACTURER: Infineon
REMARK: Professional Model

Bee Technologies Inc.

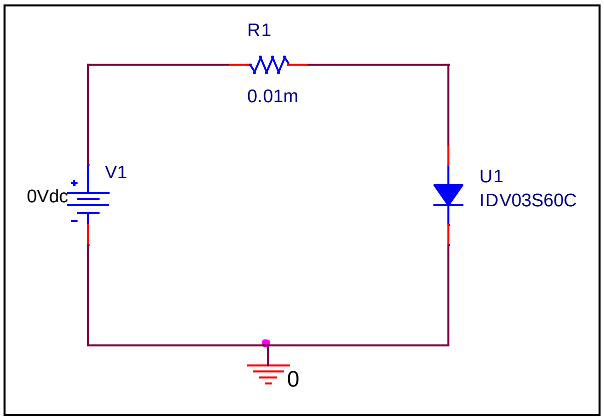
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

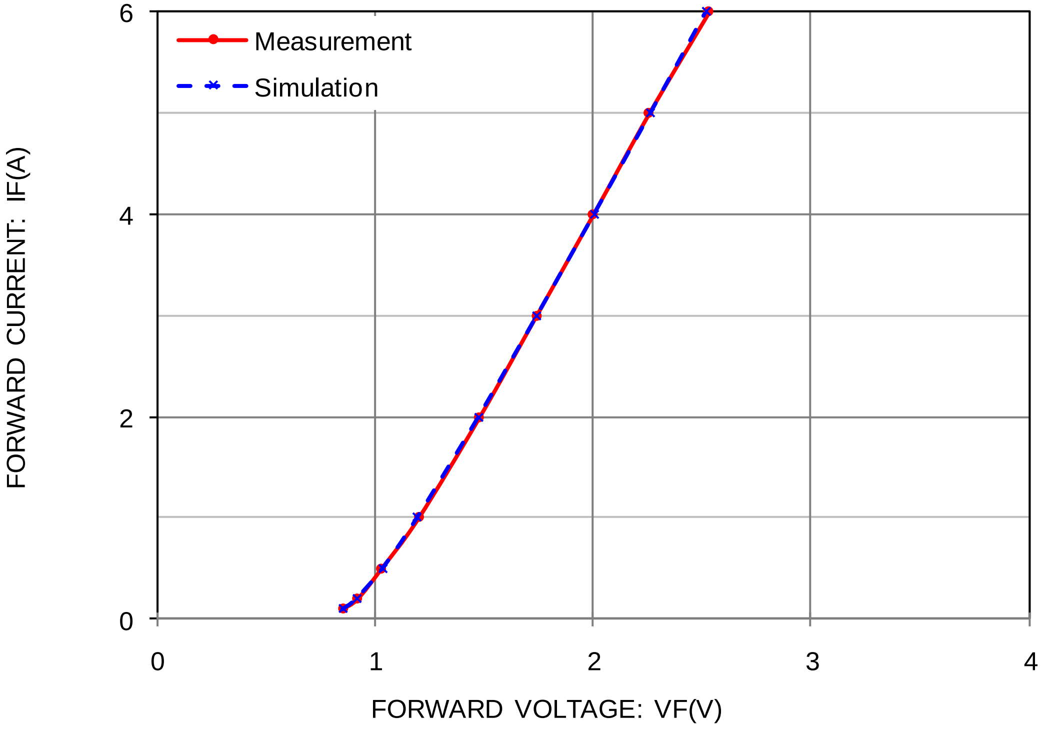


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

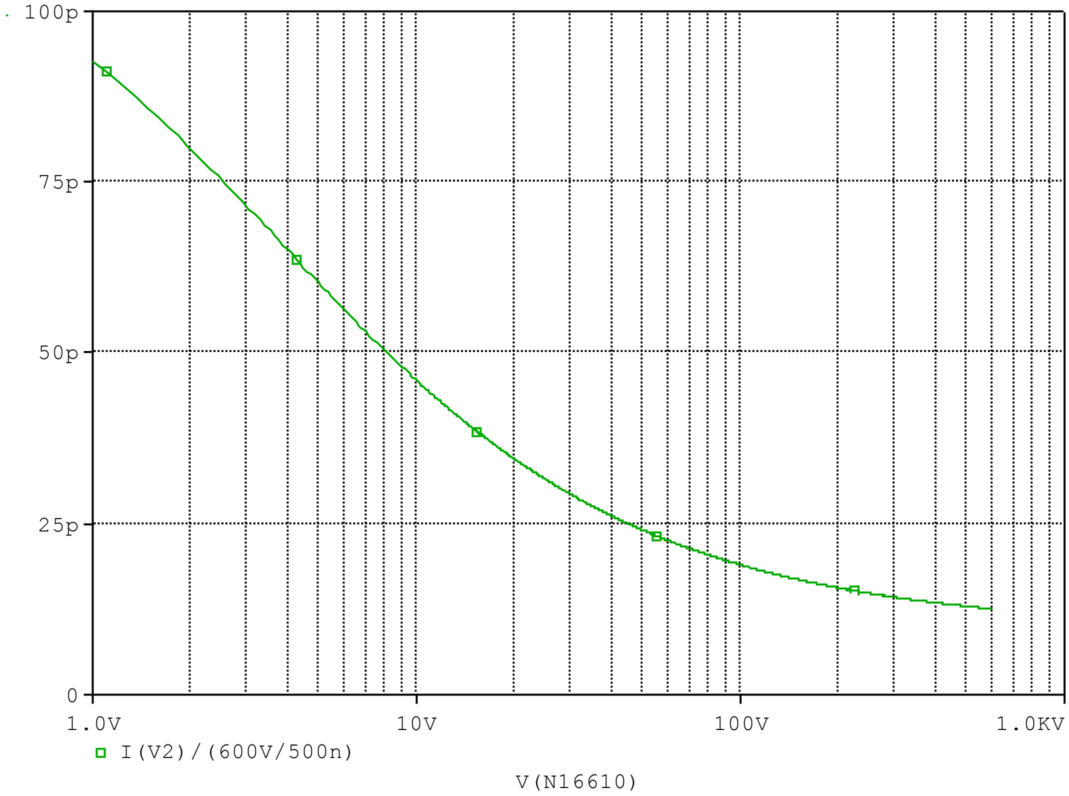


Simulation Result

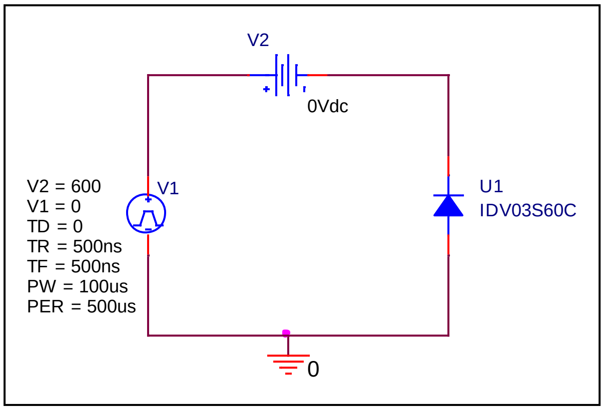
I_F(A)	V_F(V)		Error (%)
	Measurement	Simulation	
0.1	0.850	0.853	0.30
0.2	0.920	0.913	-0.76
0.5	1.030	1.034	0.42
1	1.200	1.193	-0.55
2	1.480	1.476	-0.30
3	1.740	1.743	0.17
4	2.000	2.004	0.22
5	2.256	2.263	0.31
6	2.530	2.517	-0.53

Junction Capacitance Characteristic

Circuit Simulation Result

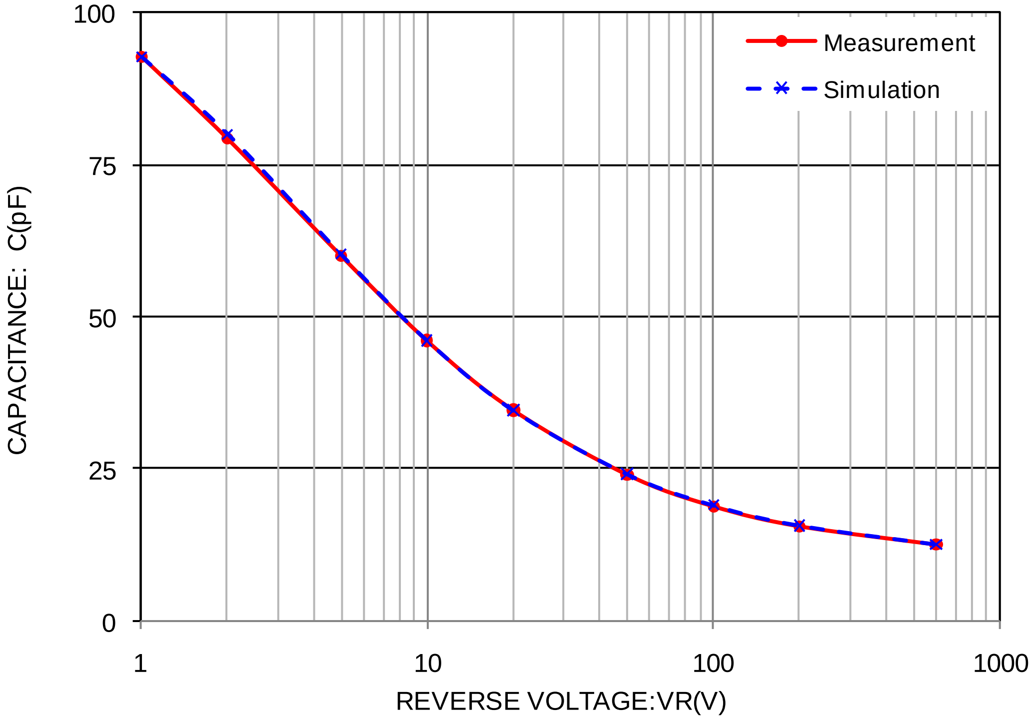


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

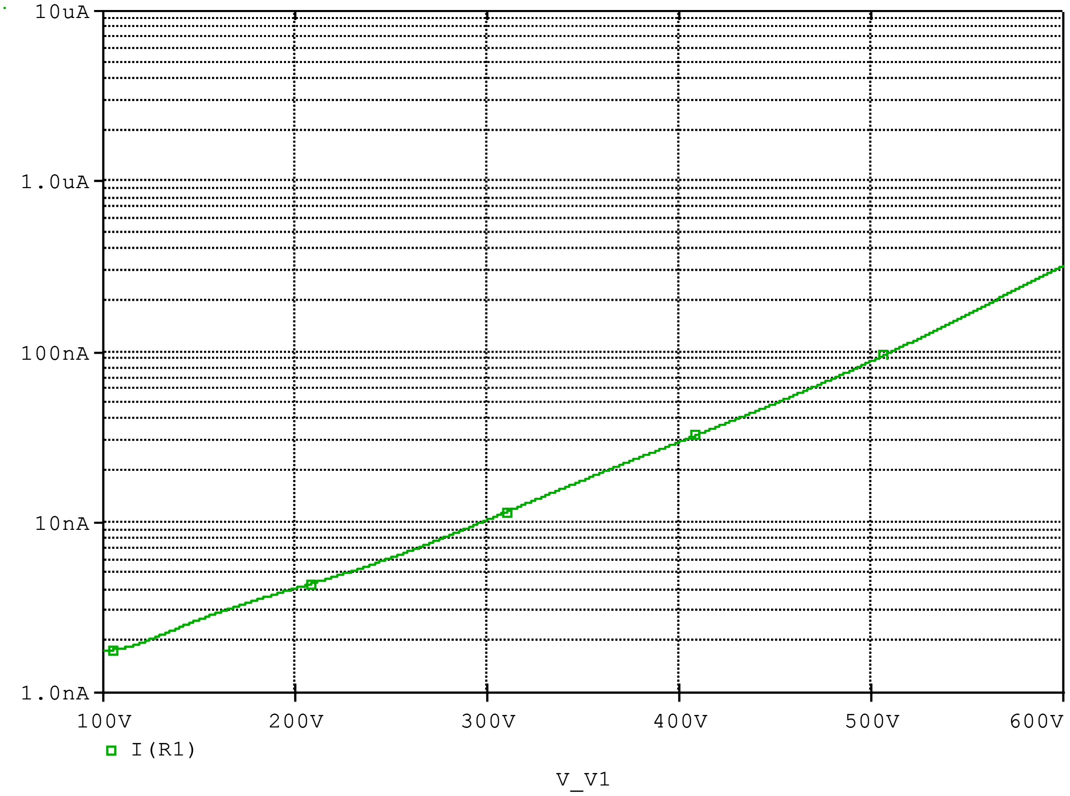


Simulation Result

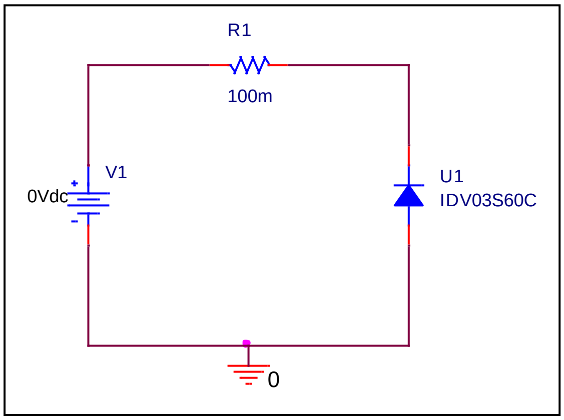
V_R(V)	C (pF)		Error (%)
	Measurement	Simulation	
1	92.800	92.665	-0.15
2	79.300	79.996	0.88
5	60.000	60.193	0.32
10	46.000	46.012	0.03
20	34.600	34.555	-0.13
50	24.000	24.094	0.39
100	18.800	18.987	0.99
200	15.500	15.650	0.97
600	12.500	12.569	0.55

Reverse Characteristic

Circuit Simulation Result

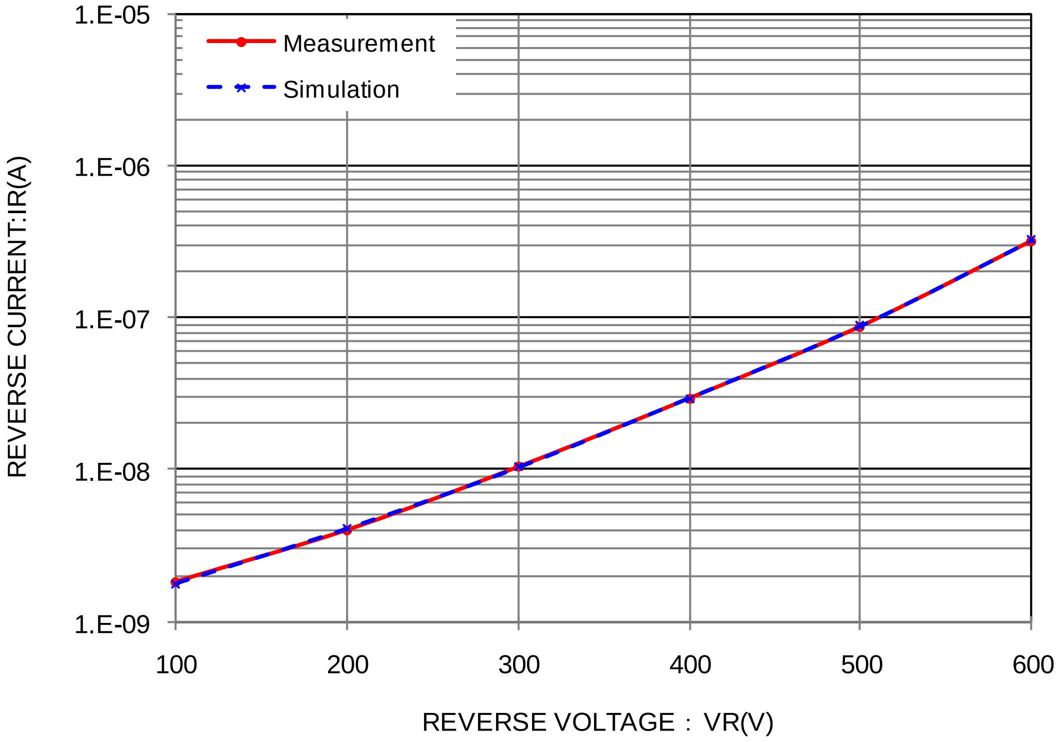


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R(V)	I_R(A)		Error (%)
	Measurement	Simulation	
100	1.83E-09	1.78E-09	-2.72
200	4.00E-09	4.09E-09	2.24
300	1.04E-08	1.03E-08	-0.83
400	2.94E-08	2.96E-08	0.65
500	8.75E-08	8.80E-08	0.56
600	3.20E-07	3.22E-07	0.50