Device Modeling Report

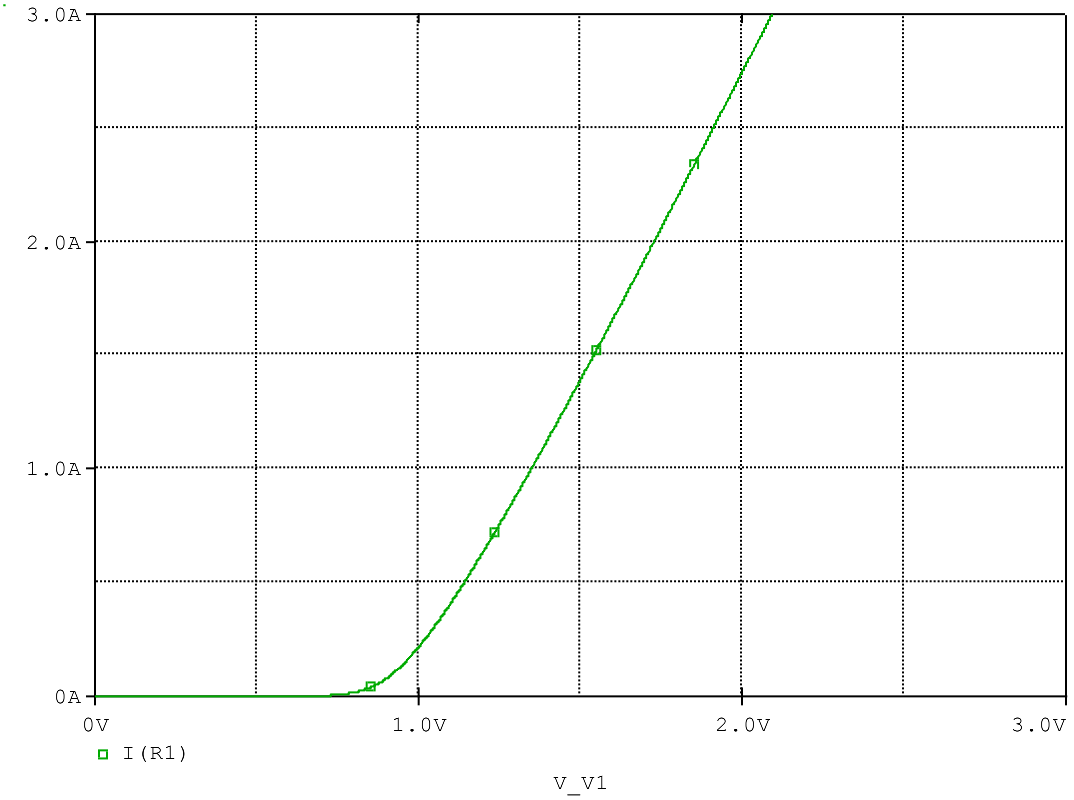
COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: IDV02S60C
MANUFACTURER: Infineon
REMARK: Professional Model

Bee Technologies Inc.

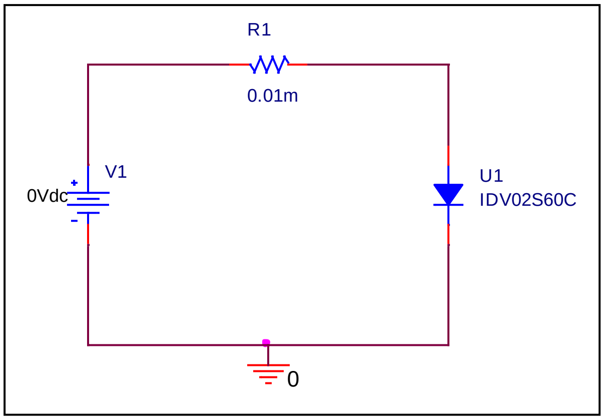
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

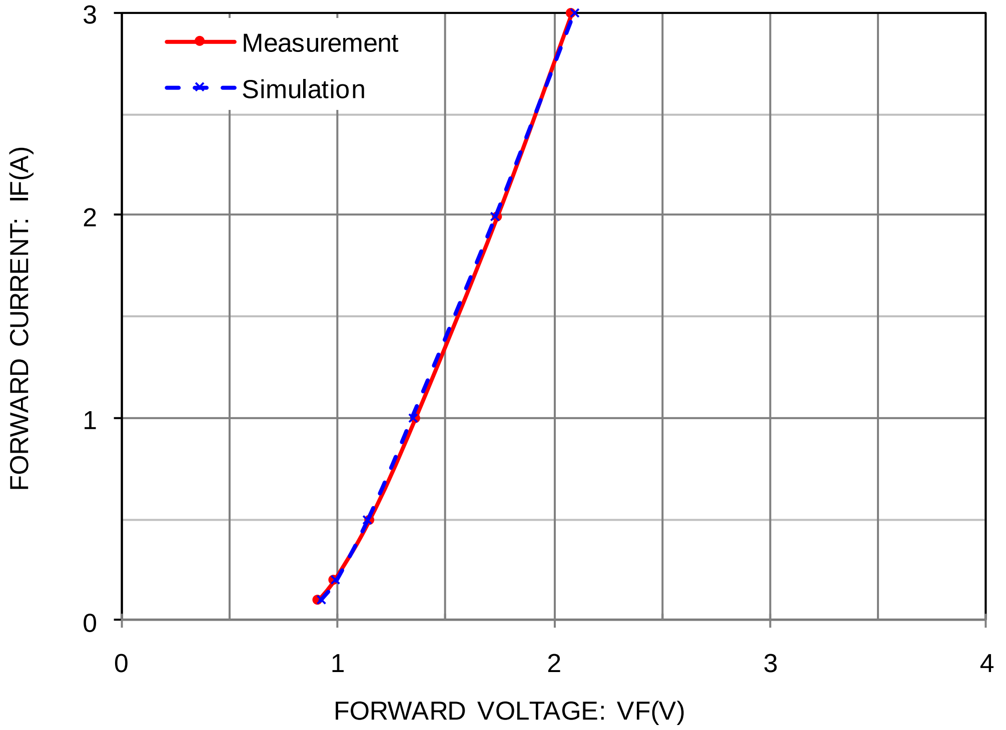


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



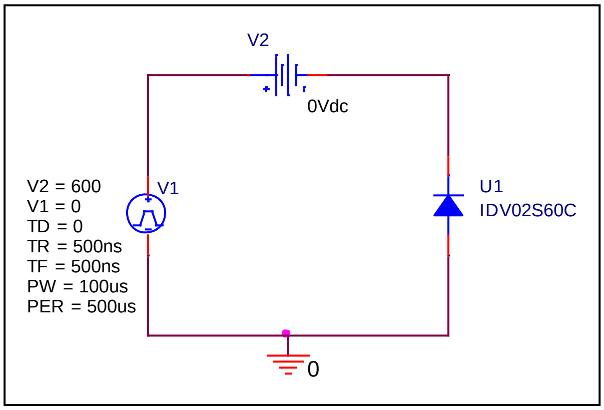
Simulation Result

I_F(A)	V_F(V)		Error (%)
	Measurement	Simulation	
0.1	0.910	0.920	1.11
0.2	0.980	0.990	1.05
0.5	1.150	1.141	-0.80
1	1.360	1.349	-0.85
2	1.740	1.728	-0.70
3	2.080	2.094	0.66

Junction Capacitance Characteristic

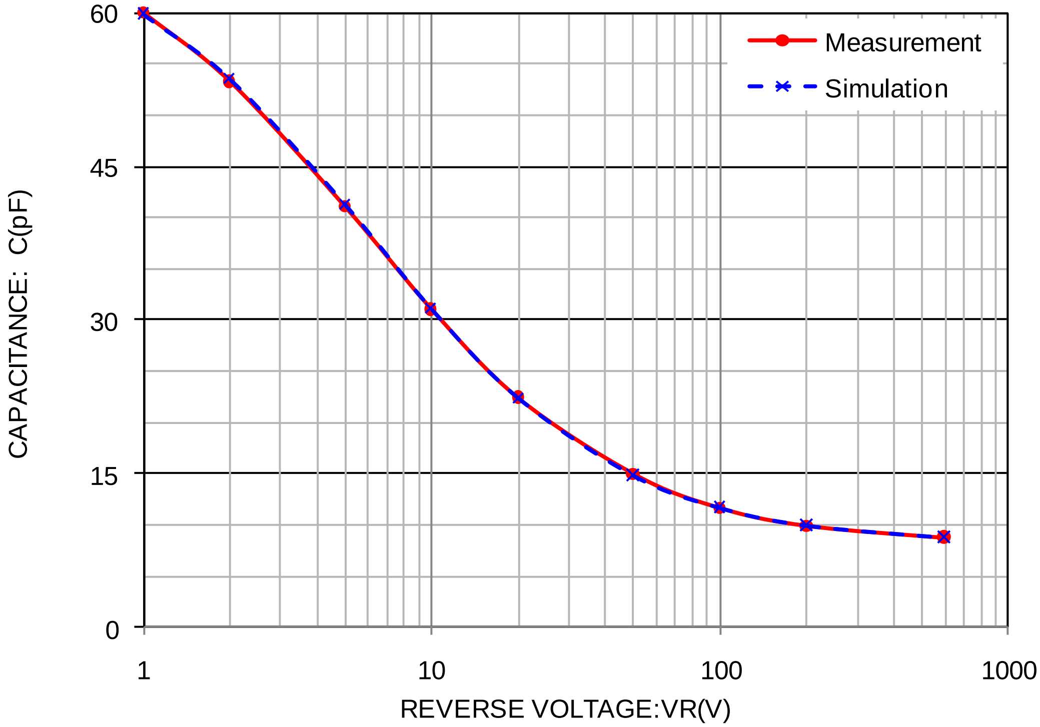
Circuit Simulation Result

Evaluation Circuit



Comparison Graph

Circuit Simulation Result

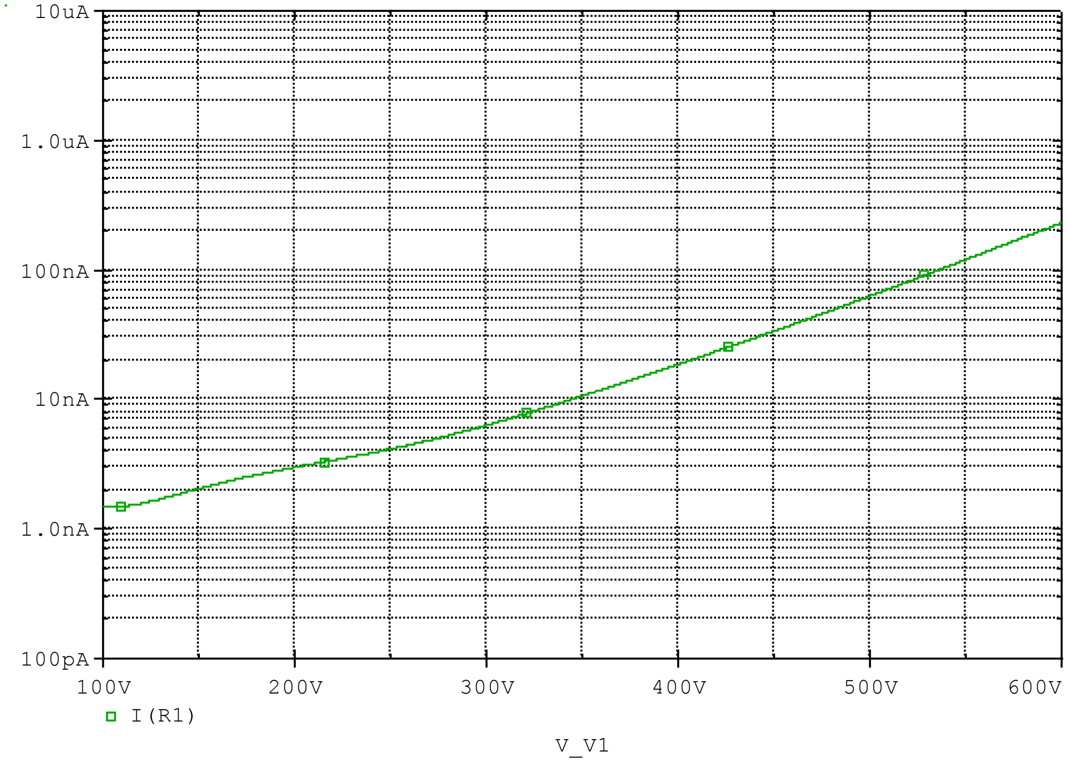


Simulation Result

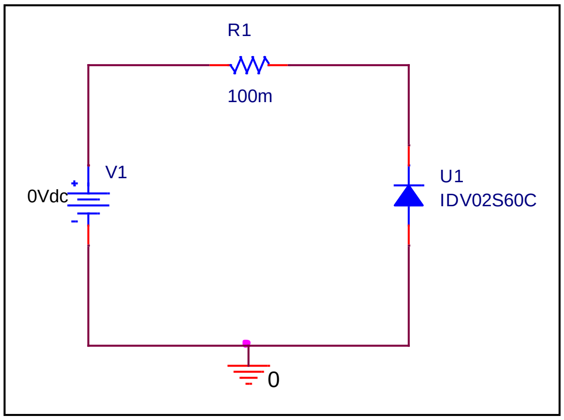
V_R(V)	C (pF)		Error (%)
	Measurement	Simulation	
1	59.980	59.833	-0.25
2	53.200	53.460	0.49
5	41.100	41.266	0.40
10	31.000	31.057	0.18
20	22.400	22.333	-0.30
50	14.900	14.812	-0.59
100	11.600	11.680	0.69
200	9.890	9.965	0.76
600	8.800	8.746	-0.61

Reverse Characteristic

Circuit Simulation Result

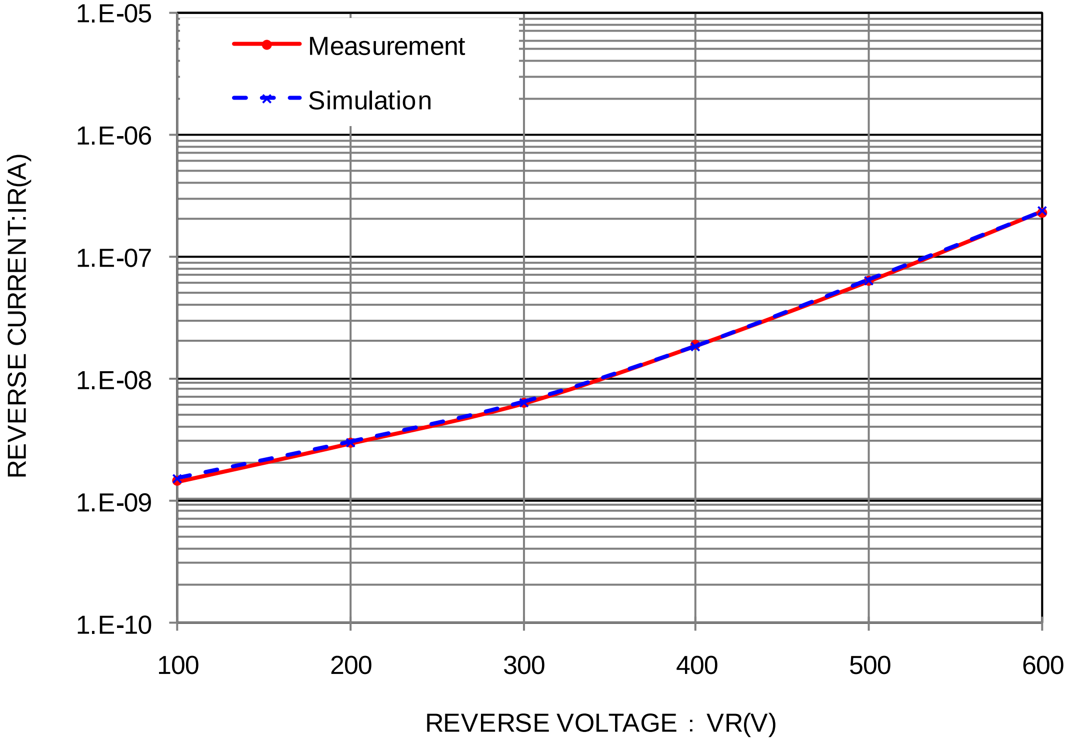


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R(V)	I_R(A)		Error (%)
	Measurement	Simulation	
100	1.44E-09	1.50E-09	4.40
200	2.90E-09	3.00E-09	3.29
300	6.20E-09	6.34E-09	2.20
400	1.85E-08	1.84E-08	-0.51
500	6.25E-08	6.28E-08	0.54
600	2.30E-07	2.31E-07	0.40