Device Modeling Report

COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: STPSC606
MANUFACTURER: STMicroelectronics
REMARK: Professional Model

Bee Technologies Inc.

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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

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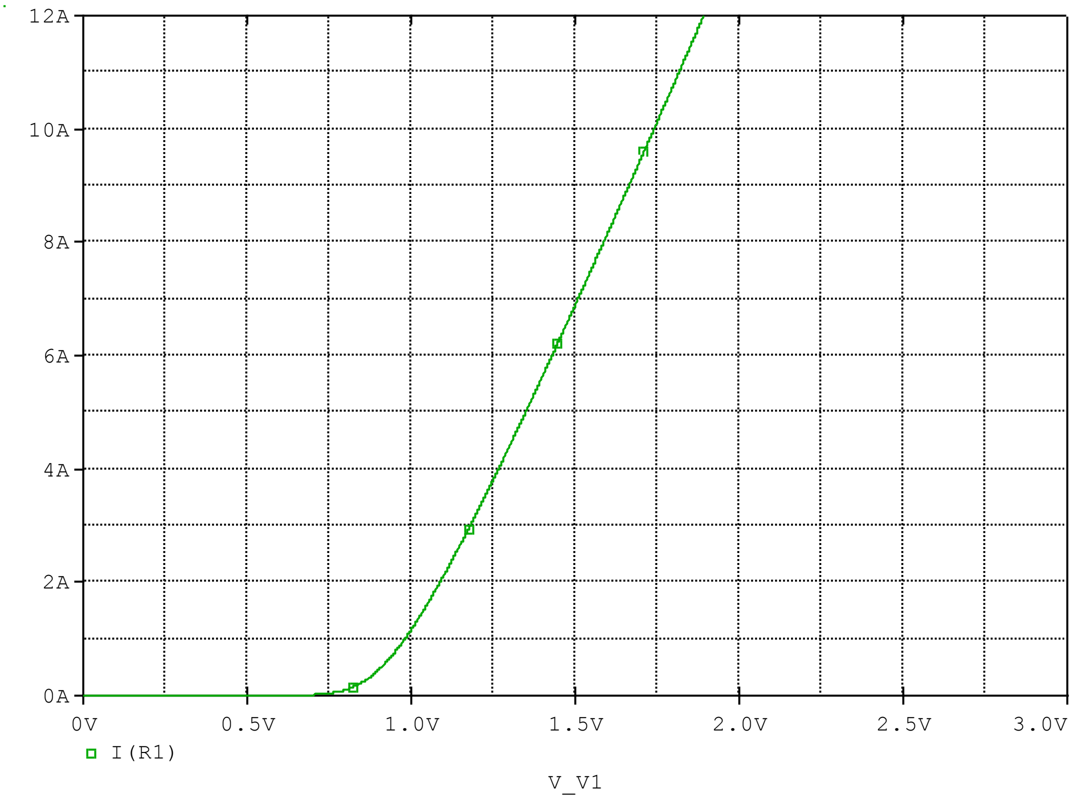
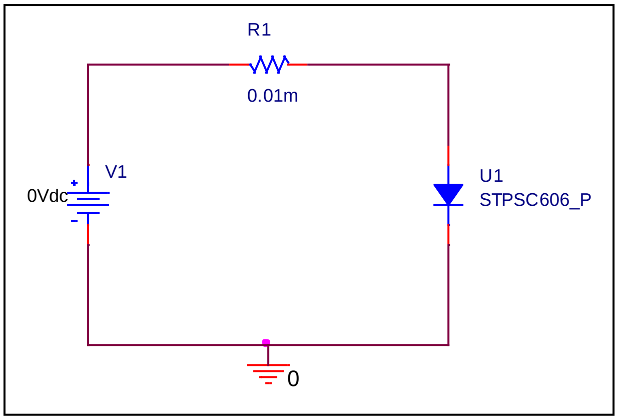
Forward Current Characteristic

Circuit Simulation Result



Evaluation Circuit



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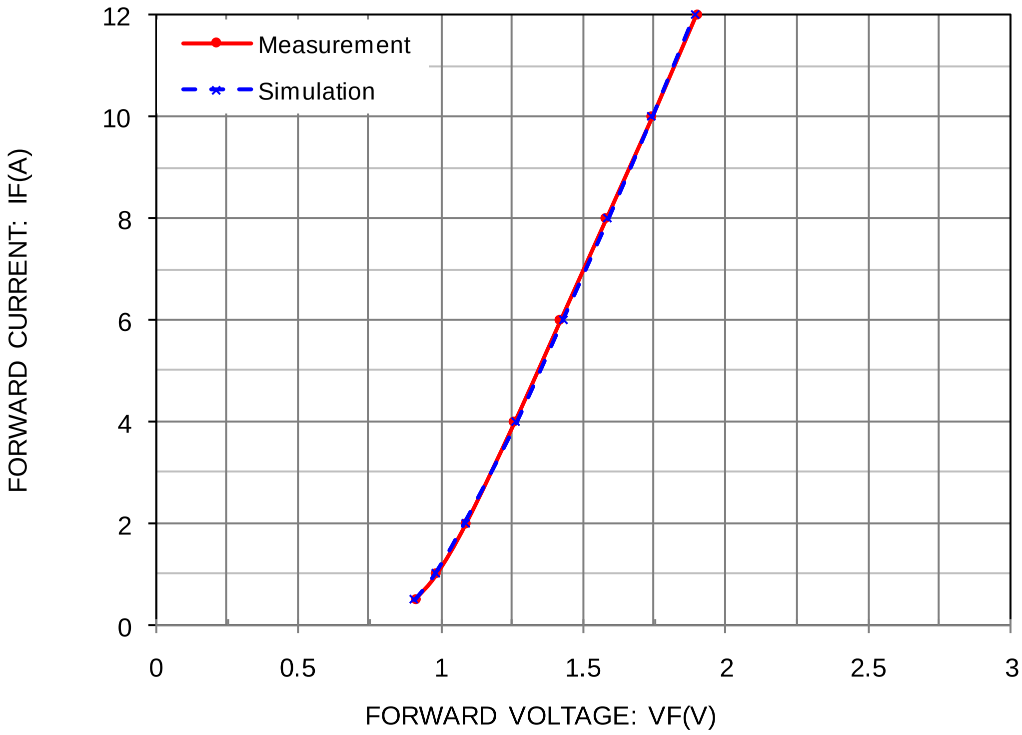
Comparison Graph

Circuit Simulation Result



Simulation Result

I_F(A)	V_F(V)		Error (%)
	Measurement	Simulation	
0.5	0.9100	0.9091	-0.10
1	0.9850	0.9805	-0.46
2	1.0900	1.0876	-0.22
4	1.2600	1.2658	0.46
6	1.4200	1.4291	0.64
8	1.5800	1.5863	0.40
10	1.7400	1.7402	0.01
12	1.9000	1.8920	-0.42

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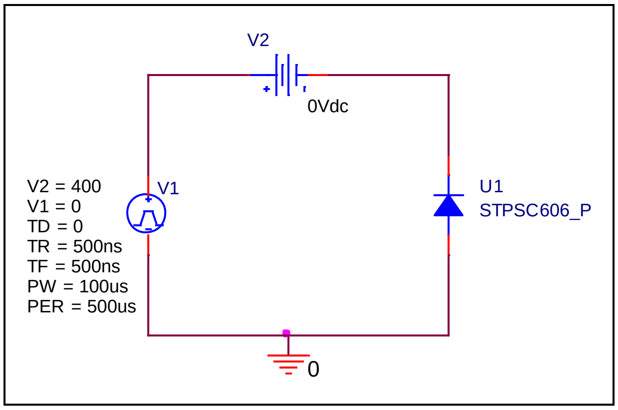
Junction Capacitance Characteristic

Circuit Simulation Result

Evaluation Circuit



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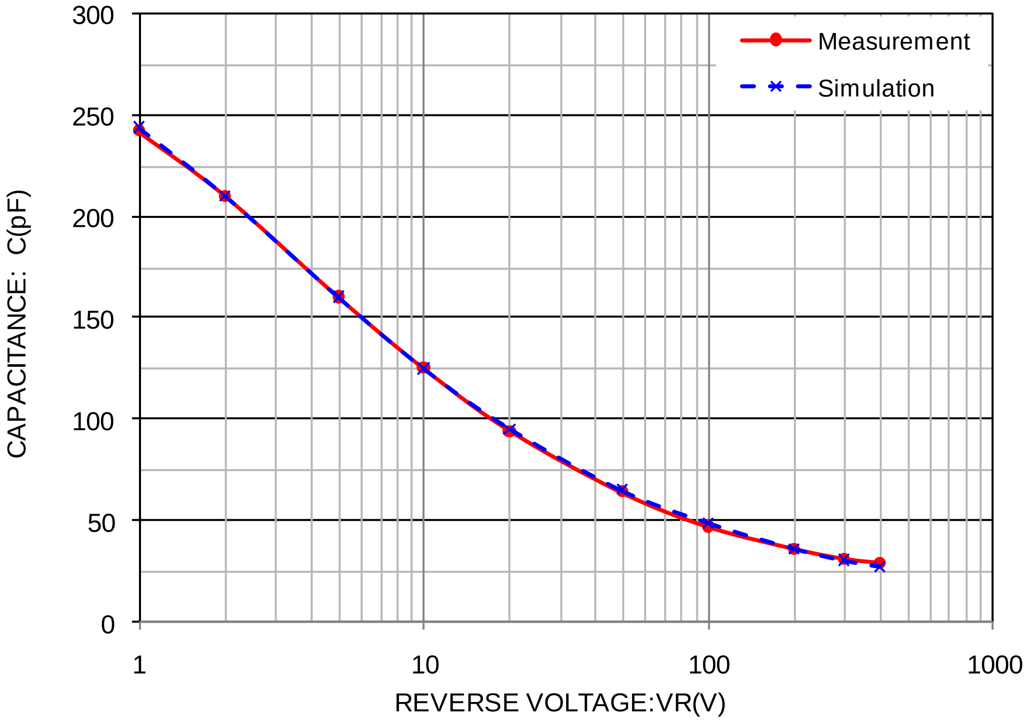
Comparison Graph

Circuit Simulation Result



Simulation Result

V_R(V)	C (pF)		Error (%)
	Measurement	Simulation	
1	242.000	243.858	0.77
2	210.000	210.014	0.01
5	160.000	160.009	0.01
10	125.000	124.609	-0.31
20	94.000	94.929	0.99
50	64.000	64.942	1.47
100	47.000	48.408	3.00
200	36.000	35.976	-0.07
300	31.000	30.217	-2.53

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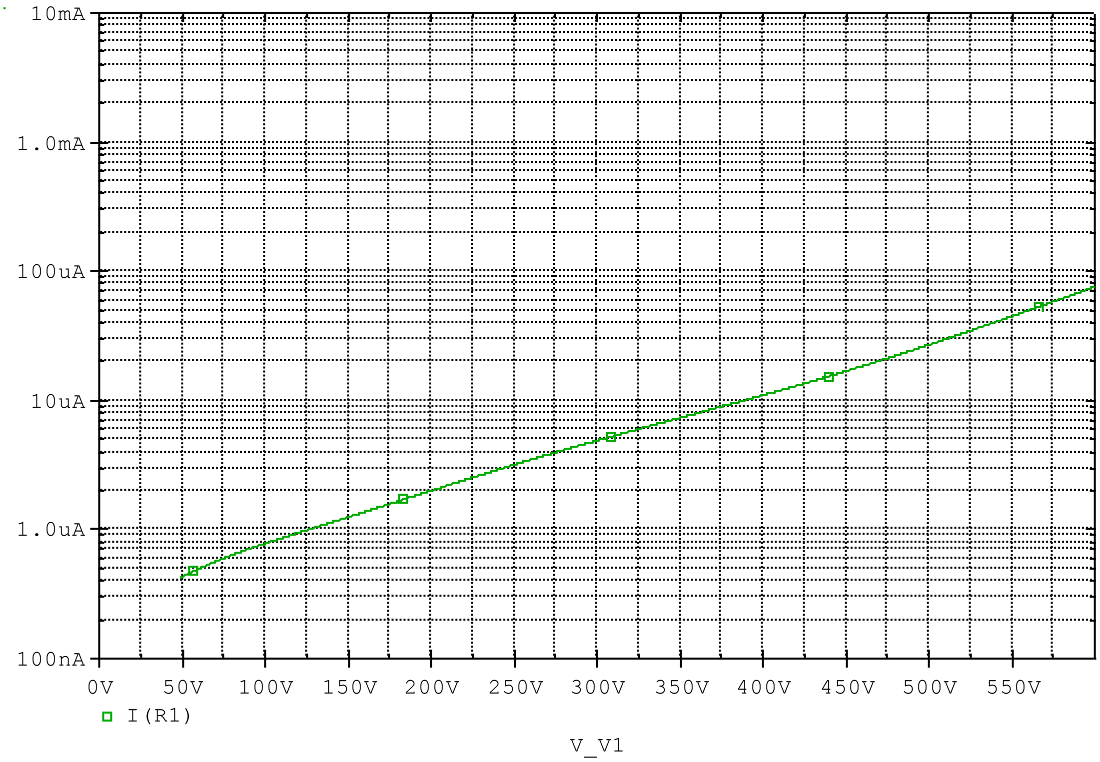
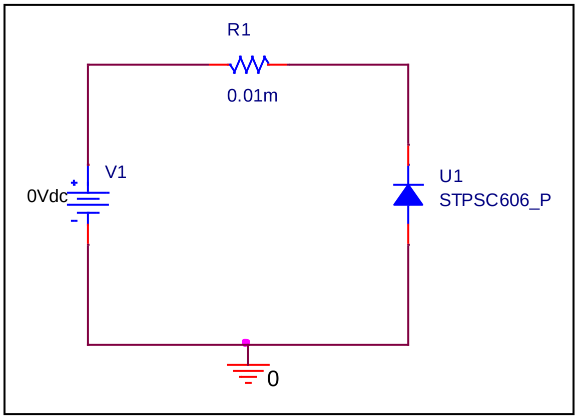
Reverse Characteristic

Circuit Simulation Result



Evaluation Circuit



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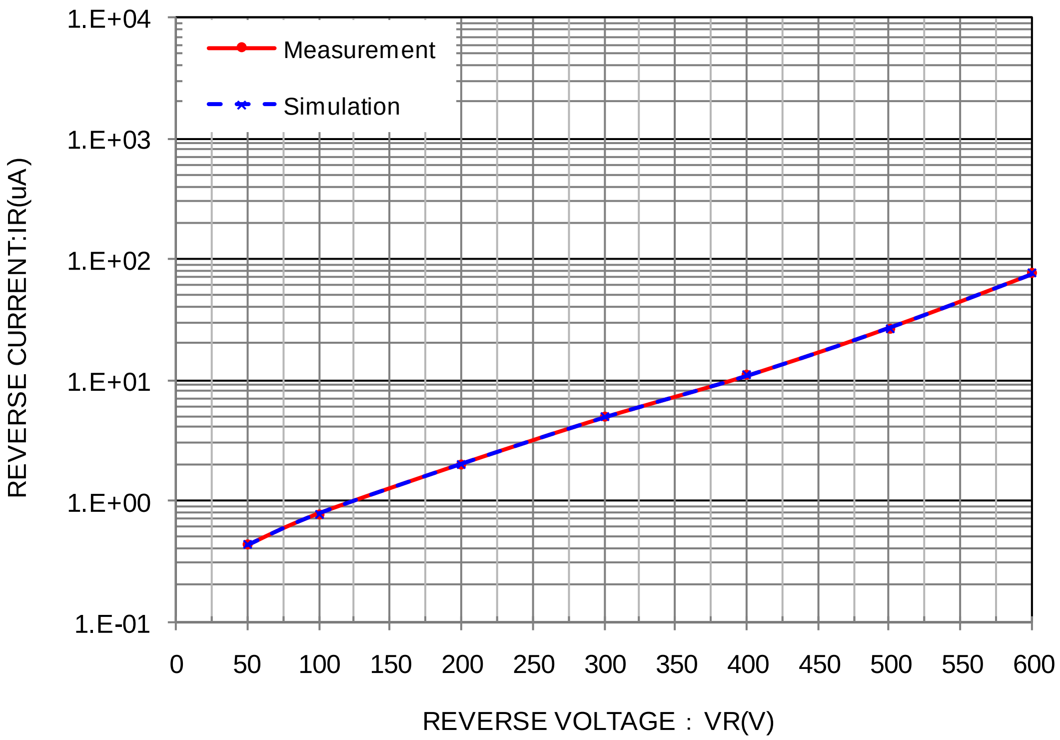
Comparison Graph

Circuit Simulation Result



Simulation Result

V_R(V)	I_R(uA)		Error (%)
	Measurement	Simulation	
50	0.430	0.430	-0.03
100	0.780	0.780	0.02
200	2.000	1.998	-0.10
300	4.900	4.900	0.00
400	11.000	10.999	-0.01
500	27.000	27.006	0.02
600	76.000	76.011	0.01

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