

Device Modeling Report

COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: CPW3-1700S025
MANUFACTURER: CREE
REMARK: Professional Model

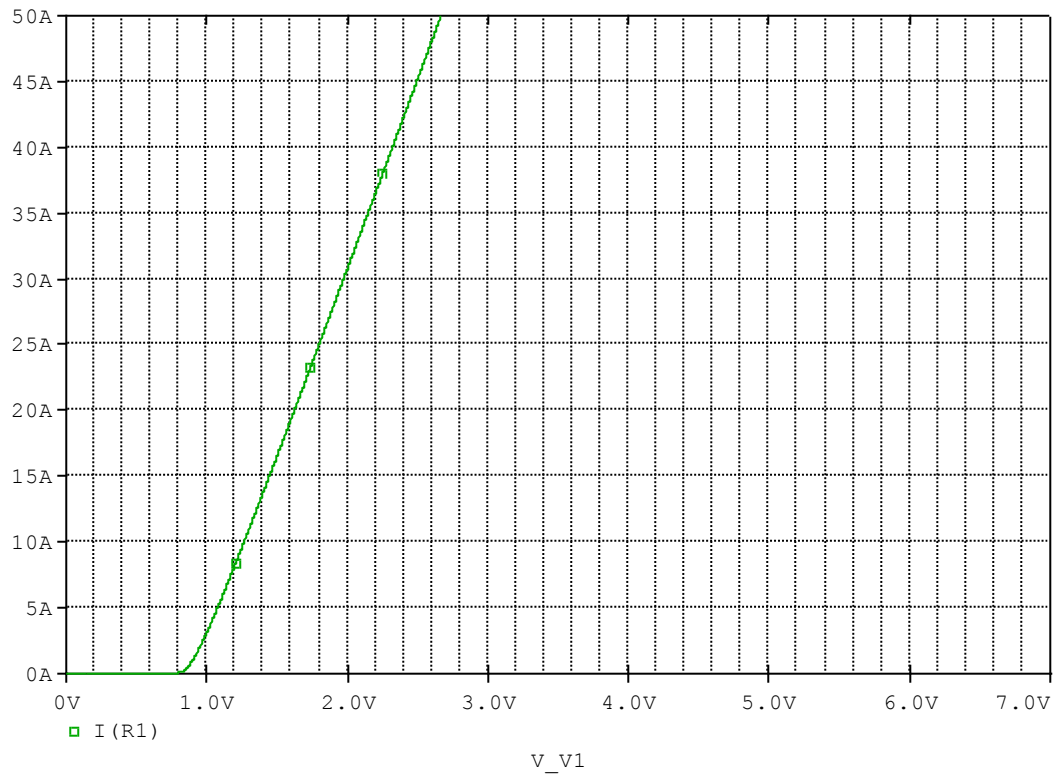


Bee Technologies Inc.

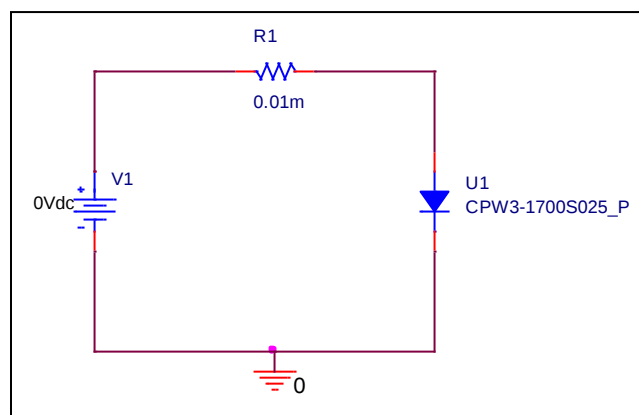
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

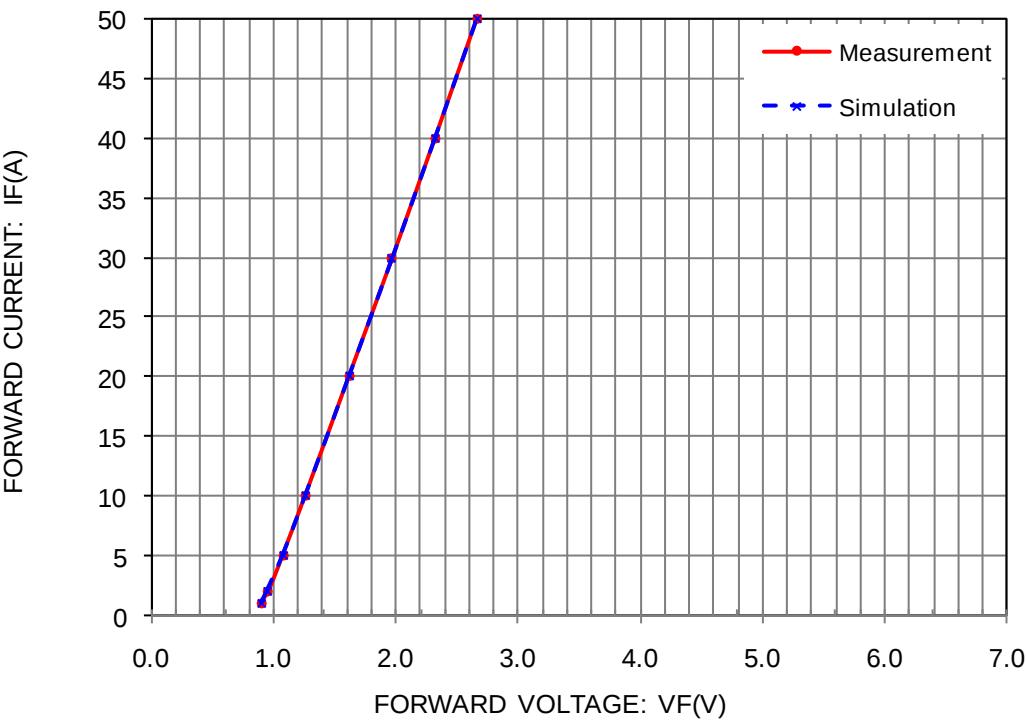


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

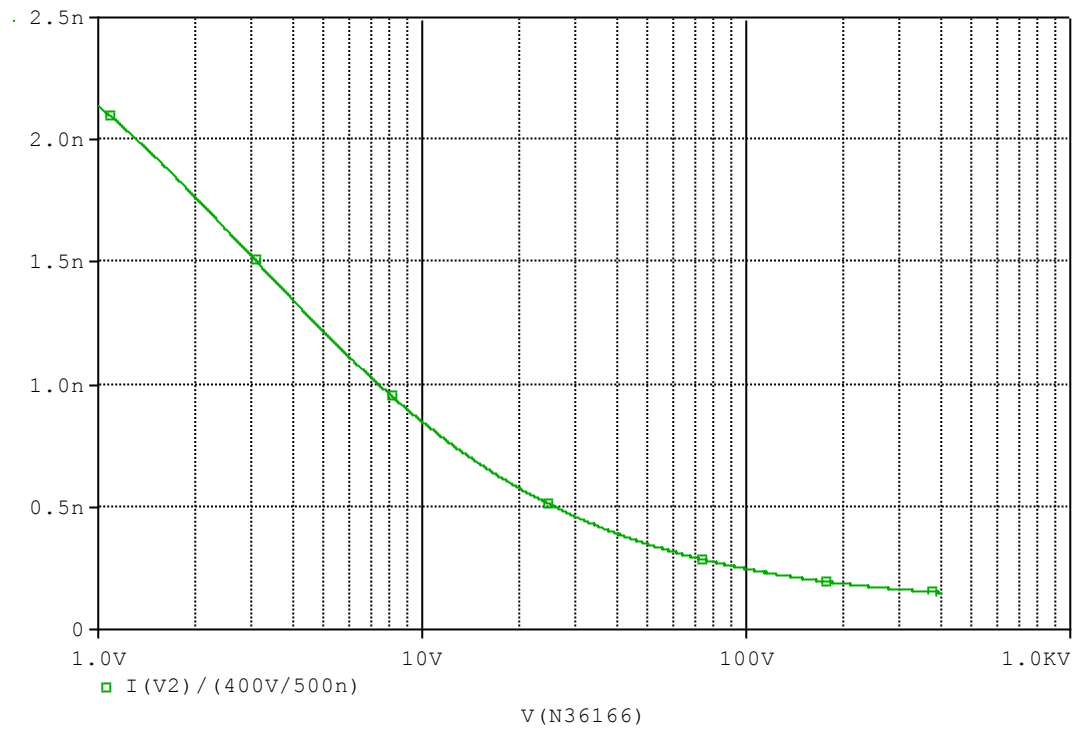


Simulation Result

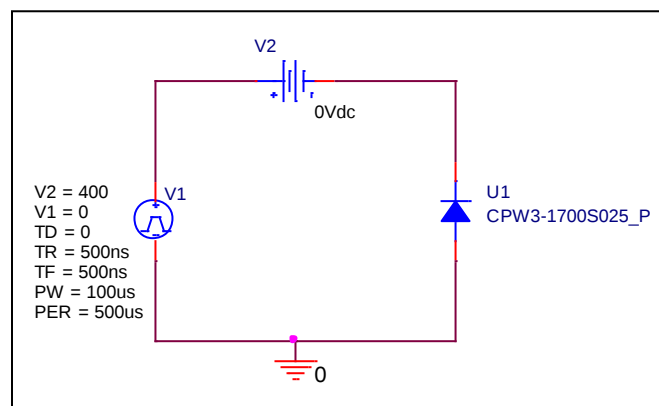
I_F (A)	V_F (V)		Error (%)
	Measurement	Simulation	
1.0	0.9000	0.8987	-0.14
2.0	0.9550	0.9506	-0.46
5.0	1.0800	1.0764	-0.33
10.0	1.2600	1.2643	0.34
20.0	1.6200	1.6223	0.14
30.0	1.9700	1.9728	0.14
40.0	2.3200	2.3203	0.01
50.0	2.6700	2.6661	-0.15

Junction Capacitance Characteristic

Circuit Simulation Result

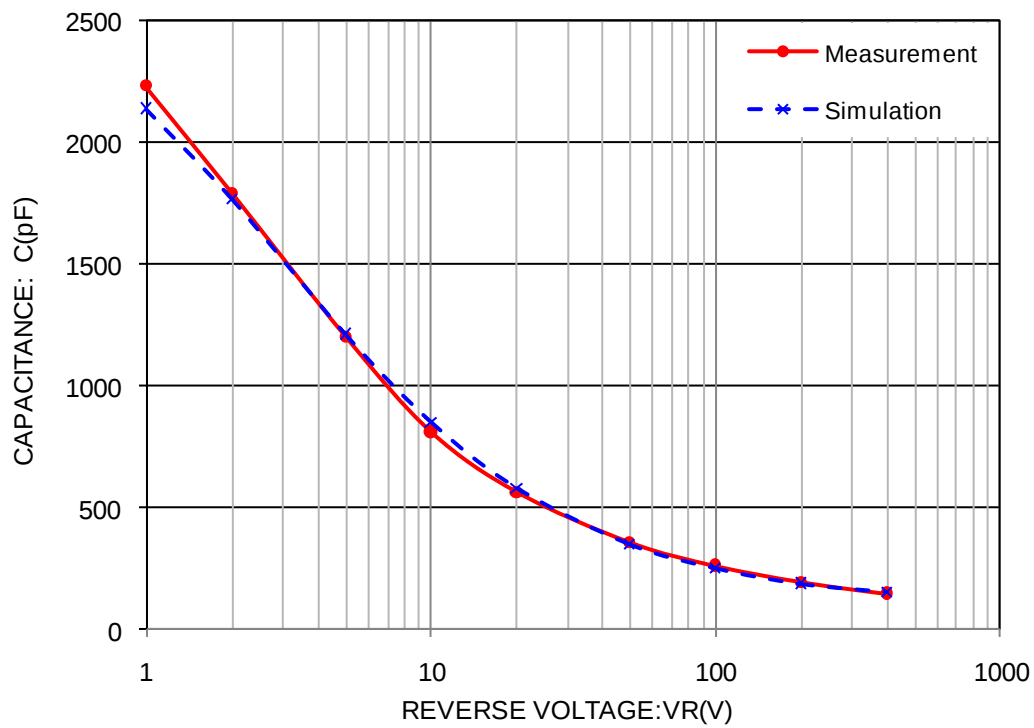


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

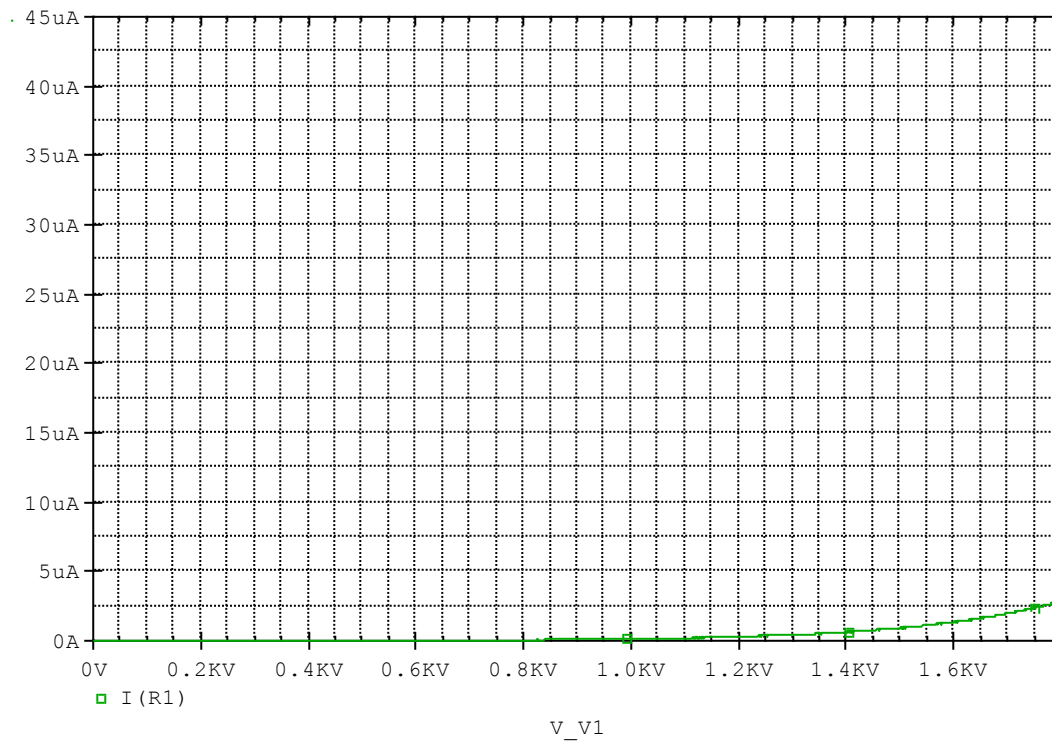


Simulation Result

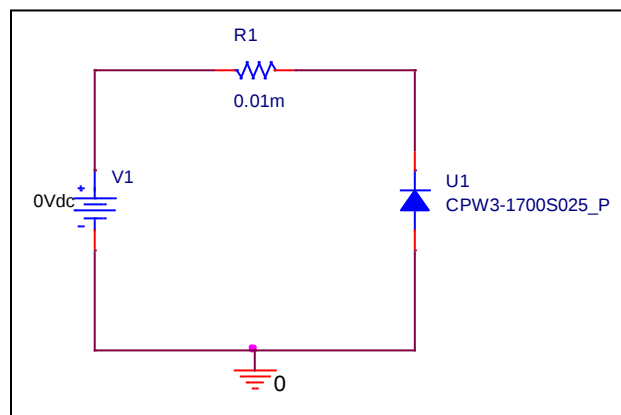
V _R (V)	C (pF)		Error (%)
	Measurement	Simulation	
1	2230.000	2137.800	-4.13
2	1790.000	1763.900	-1.46
5	1200.000	1212.300	1.03
10	810.000	848.205	4.72
20	560.000	575.060	2.69
50	355.000	347.003	-2.25
100	260.000	247.285	-4.89
200	190.000	186.539	-1.82
400	145.000	150.241	3.61

Reverse Characteristic

Circuit Simulation Result

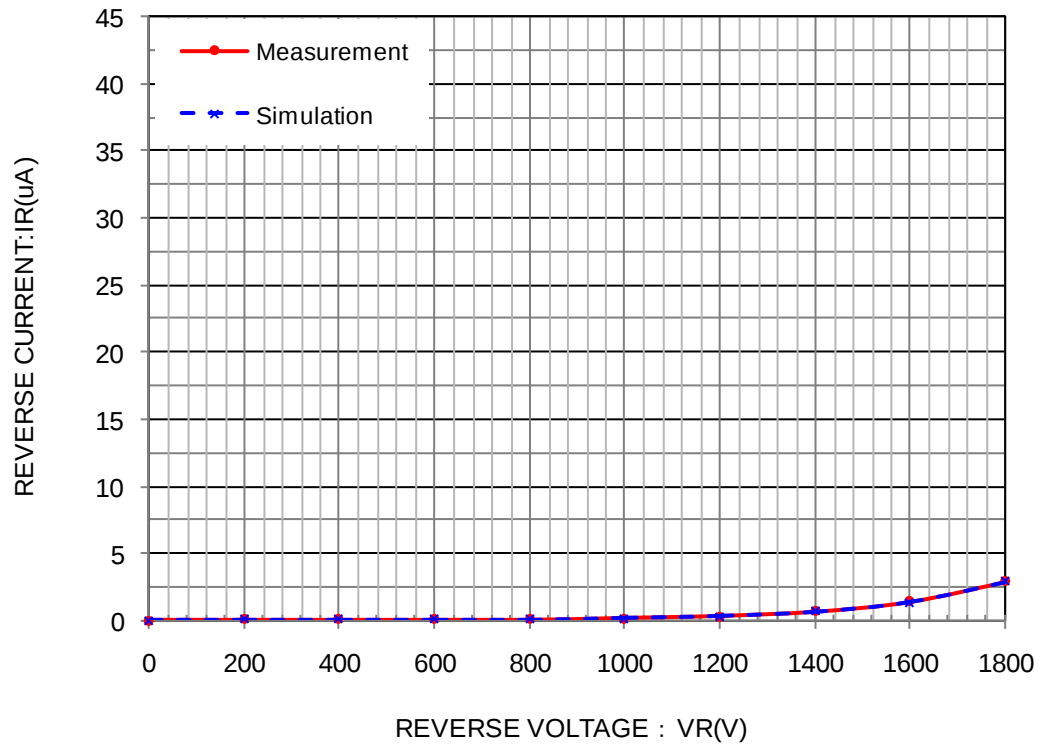


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R (V)	I_R (uA)		Error (%)
	Measurement	Simulation	
1	0.0030	0.0031	2.51
200	0.0085	0.0085	0.31
400	0.0170	0.0171	0.31
600	0.0340	0.0341	0.31
800	0.0570	0.0568	-0.28
1000	0.1500	0.1478	-1.47
1200	0.3000	0.2956	-1.47
1400	0.6500	0.6366	-2.05
1600	1.3500	1.3415	-0.63
1800	2.9000	2.8649	-1.21