

Device Modeling Report

COMPONENTS:
DIODE/GENERAL PURPOSE RECTIFIER/ STANDARD
PART NUMBER: UF5401
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REMARK: TC=25C

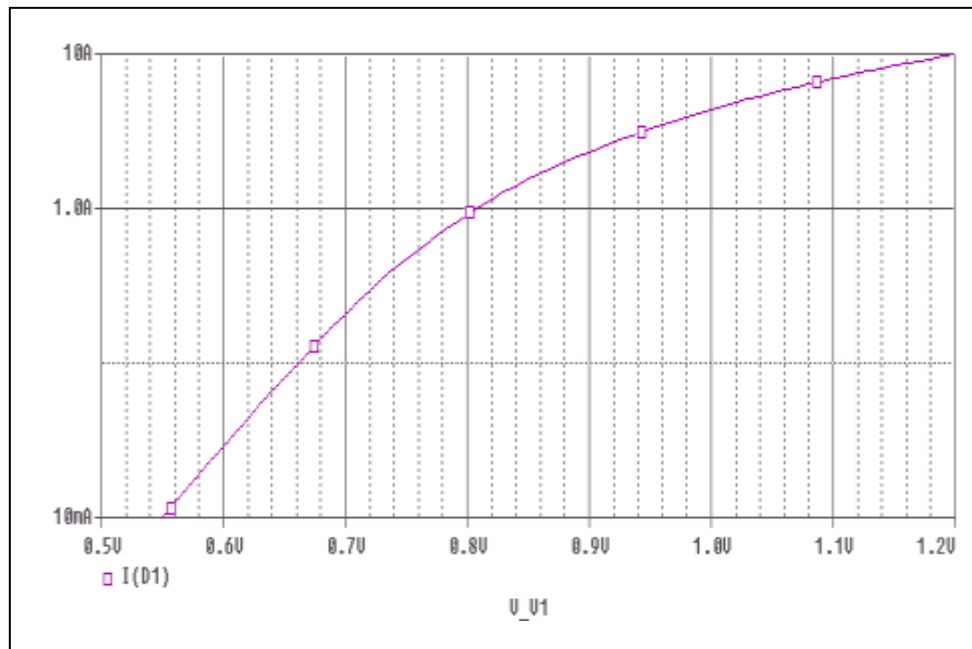


Bee Technologies Inc.

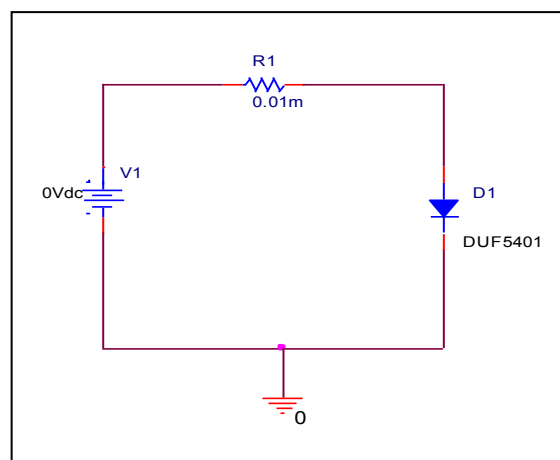
Pspice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

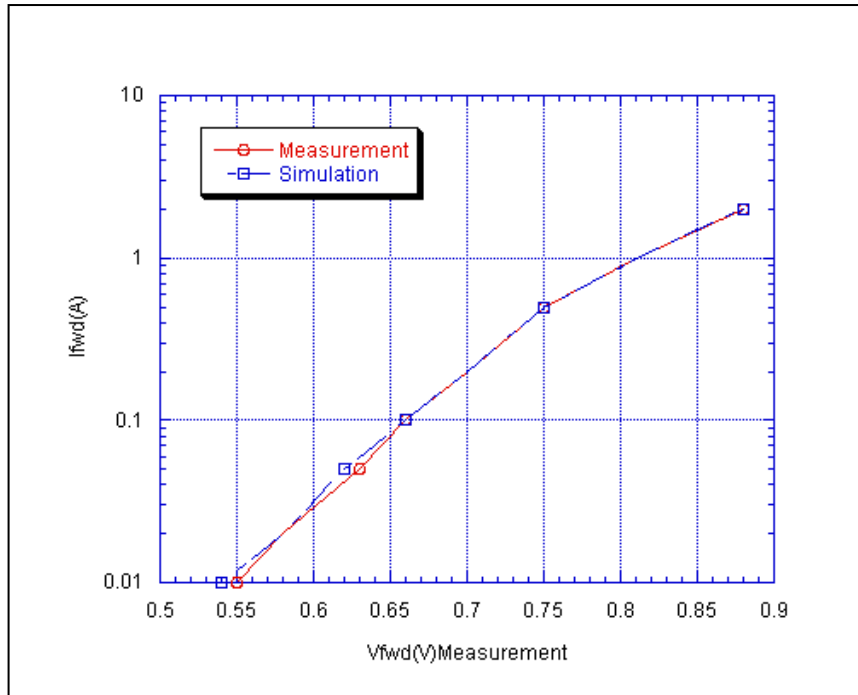


Evaluation circuit



Comparison graph

Circuit Simulation Result

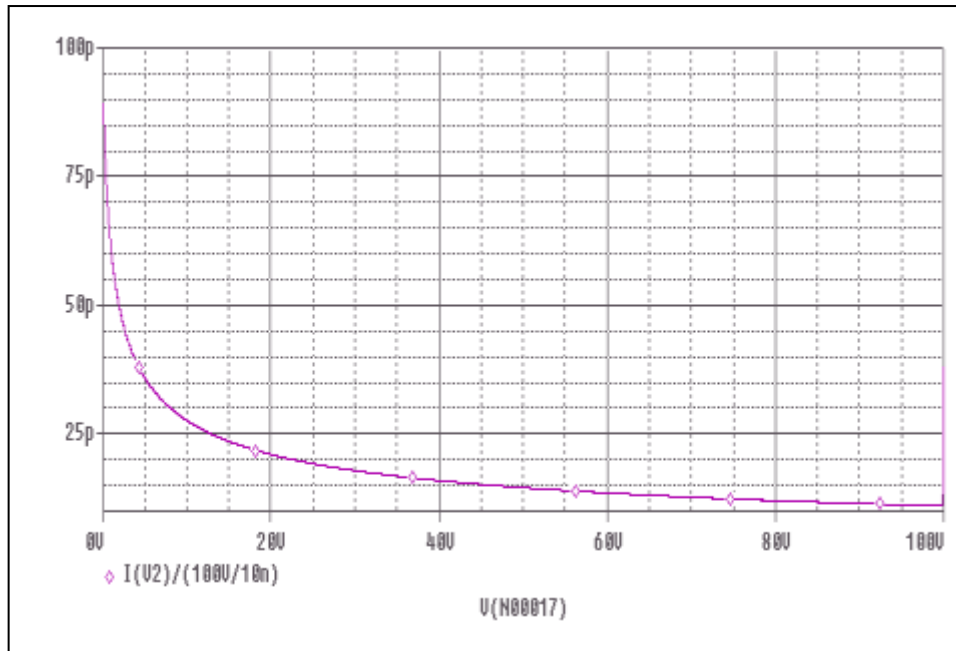


Simulation Result

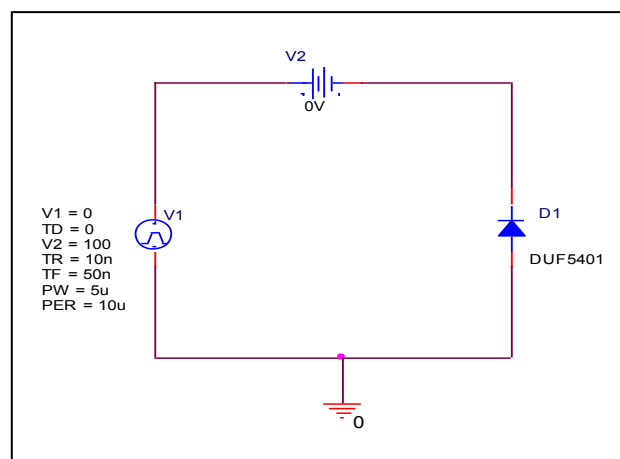
Ifwd (A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.550	0.550	0.00
0.02	0.580	0.582	-0.34
0.05	0.630	0.627	0.48
0.1	0.660	0.661	-0.15
0.2	0.700	0.700	0.00
0.5	0.750	0.758	-1.07
1	0.810	0.817	-0.86
2	0.880	0.900	-2.27

Junction Capacitance Characteristic

Circuit Simulation Result

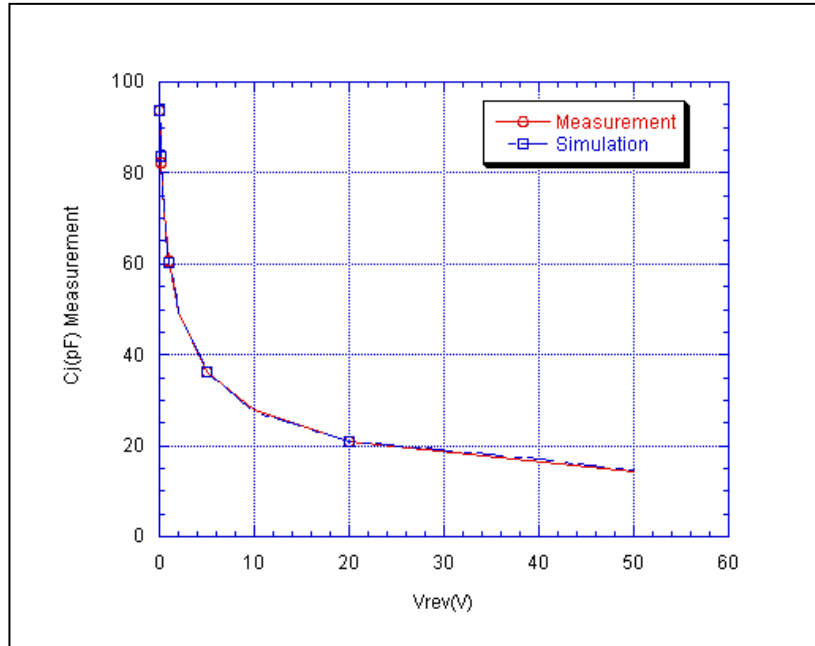


Evaluation circuit



Comparison graph

Circuit Simulation Result

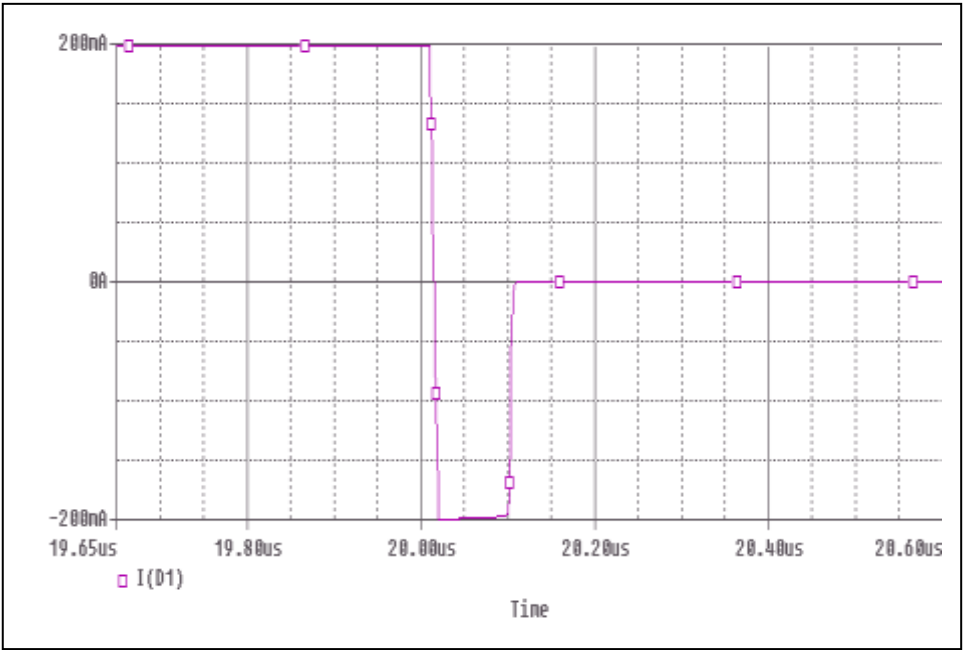


Simulation Result

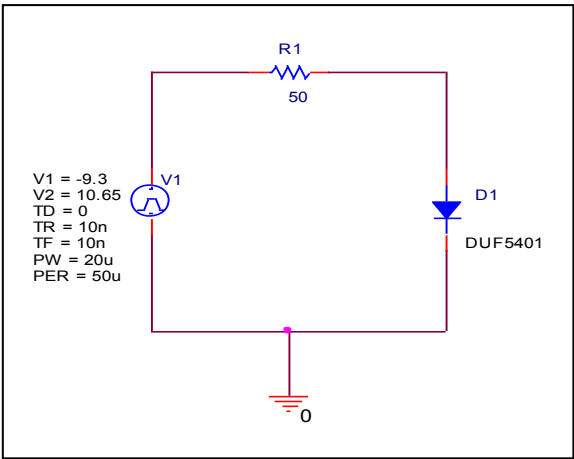
Vrev (V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	93.801	93.801	0.00
0.1	87.129	88.824	-1.95
0.2	82.123	83.726	-1.95
0.5	70.955	71.961	-1.42
1	60.715	60.196	0.85
2	49.564	49.608	-0.09
5	36.221	36.100	0.33
10	27.721	27.605	0.42
20	20.884	20.980	-0.46
50	14.215	14.572	-2.51

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation circuit

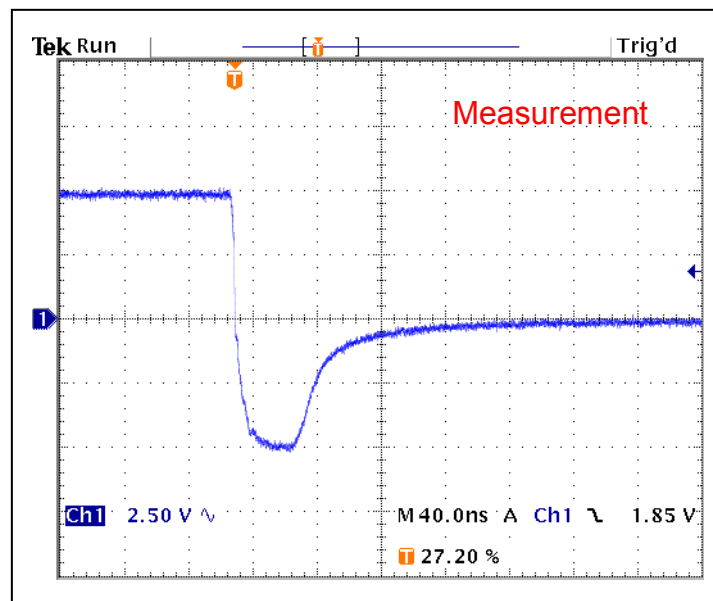


Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trr	89.6	ns	89.6	ns	0.00

Reverse Recovery Characteristic

Reference



$tr_j = 36.8(\text{ns})$

$tr_b = 52.8(\text{ns})$

Conditions: $I_{\text{fwd}} = I_{\text{rev}} = 0.2(\text{A})$, $R_I = 50$

