

Device Modeling Report

COMPONENTS:
DIODE/GENERAL PURPOSE RECTIFIER /STANDARD
PART NUMBER: FML-G14S
MANUFACTURER: SANKEN
REMARK: TC=25C

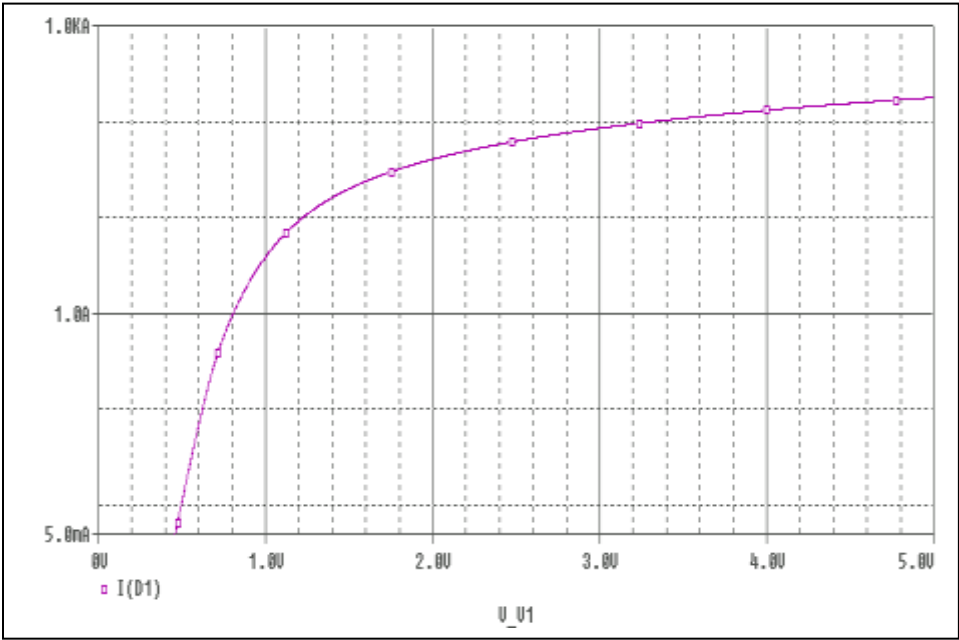


Bee Technologies Inc.

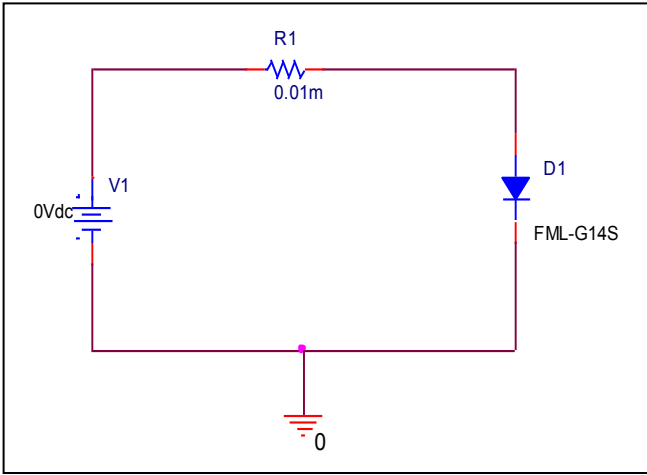
Pspice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

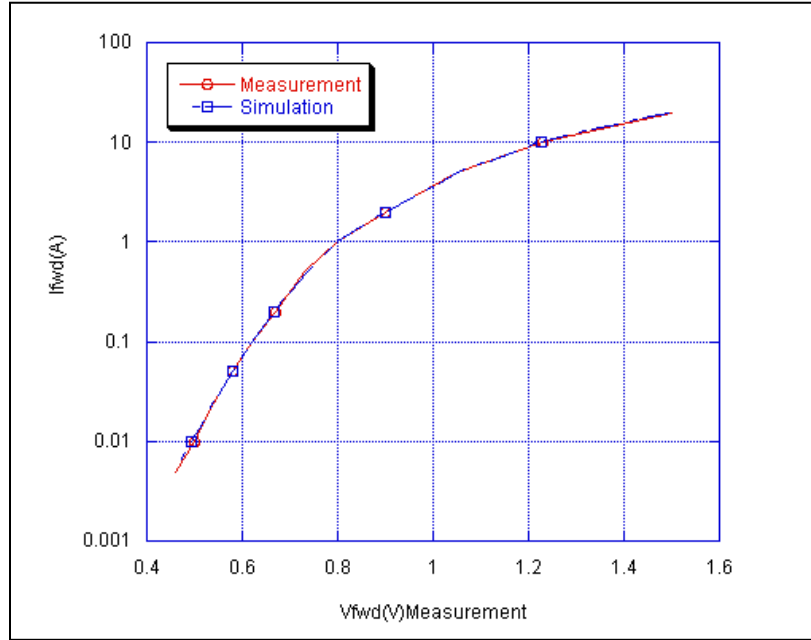


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

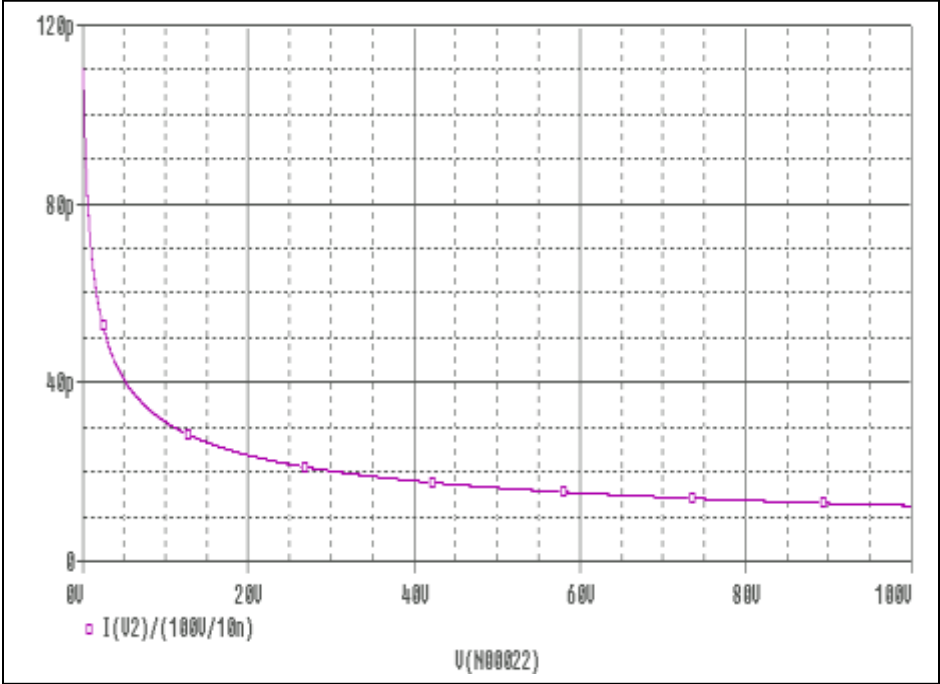


Simulation Result

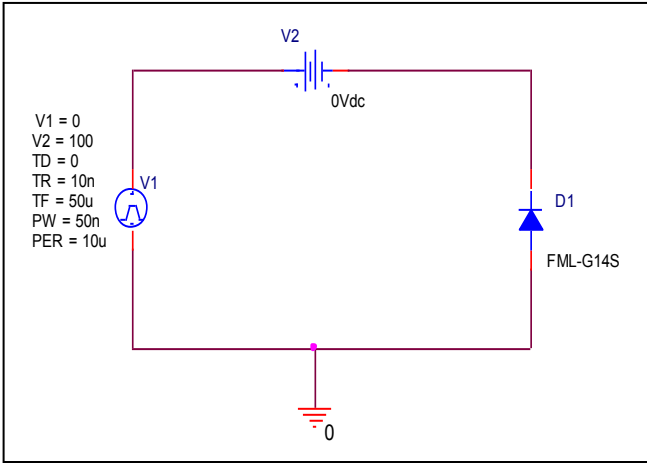
Ifwd(A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.005	0.460	0.459	0.22
0.01	0.500	0.495	1.00
0.02	0.530	0.530	0.00
0.05	0.580	0.581	-0.17
0.1	0.620	0.620	0.00
0.2	0.670	0.666	0.60
0.5	0.730	0.736	-0.82
1	0.800	0.800	0.00
2	0.900	0.900	0.00
5	1.050	1.050	0.00
10	1.230	1.226	0.33
20	1.500	1.500	0.00

Junction Capacitance Characteristic

Circuit Simulation Result

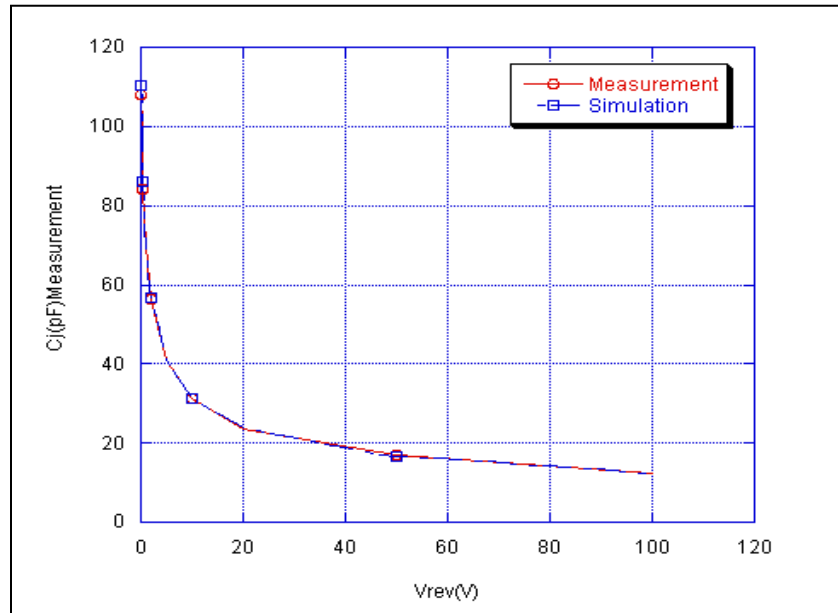


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

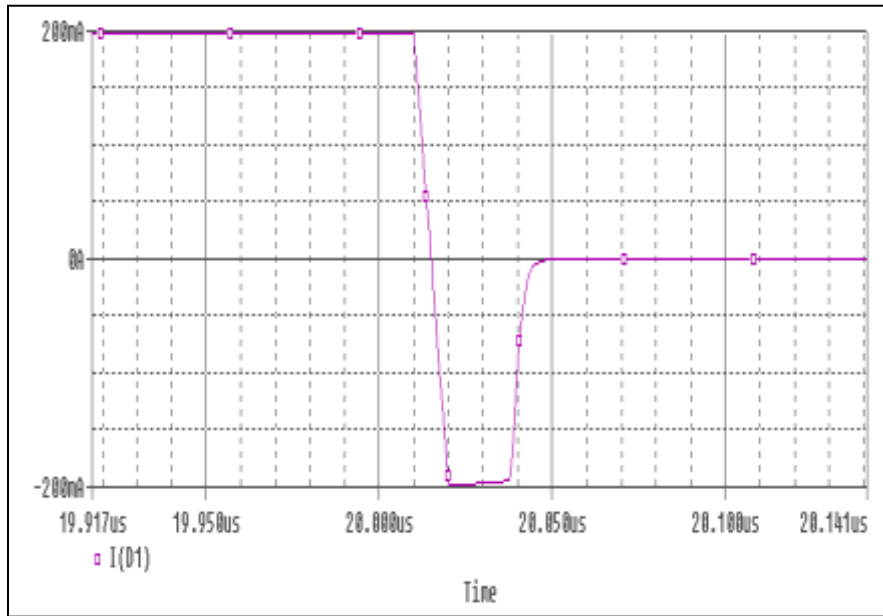


Simulation Result

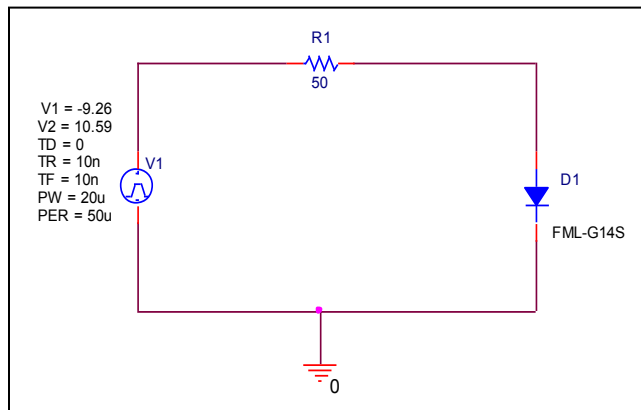
Vrev(V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
0	118.310	118.310	0.00
0.1	107.870	110.510	-2.45
0.2	100.250	103.163	-2.91
0.5	83.970	86.020	-2.44
1	70.110	69.260	1.21
2	56.280	56.669	-0.69
5	40.730	40.773	-0.11
10	31.220	31.192	0.09
20	23.630	23.786	-0.66
50	16.860	16.455	2.40
100	12.180	12.542	-2.97

Reverse Recovery Characteristic

Circuit Simulation Result



Evaluation Circuit

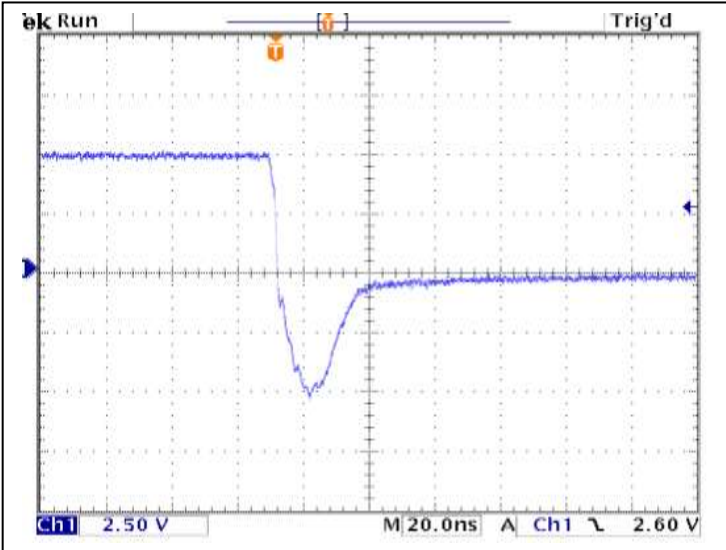


Compare Measurement vs. Simulation

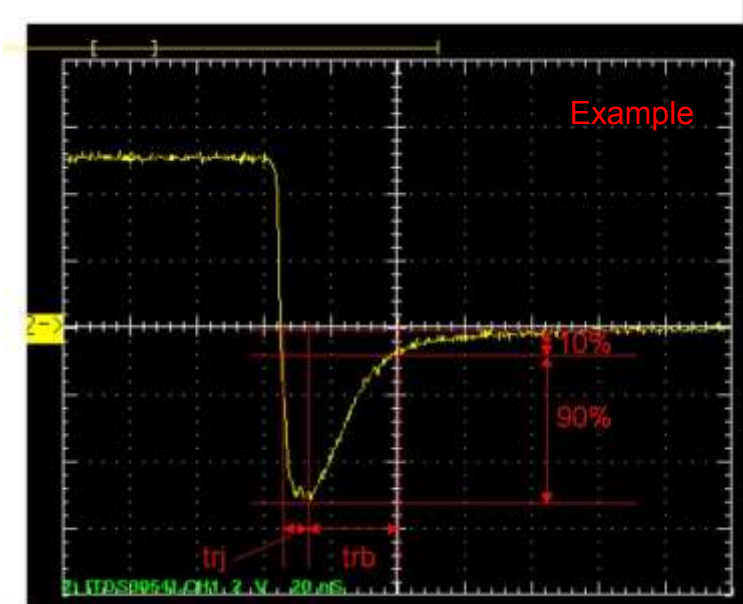
	Measurement		Simulation		%Error
trr	27.60	ns	27.60	ns	0.00

Reverse Recovery Characteristic

Reference



Trj=9.60(ns)
Trb=18.0(ns)
Conditions: Ifwd=Irev=0.2(A), RI=50



Relation between trj and trb