Device Modeling Report

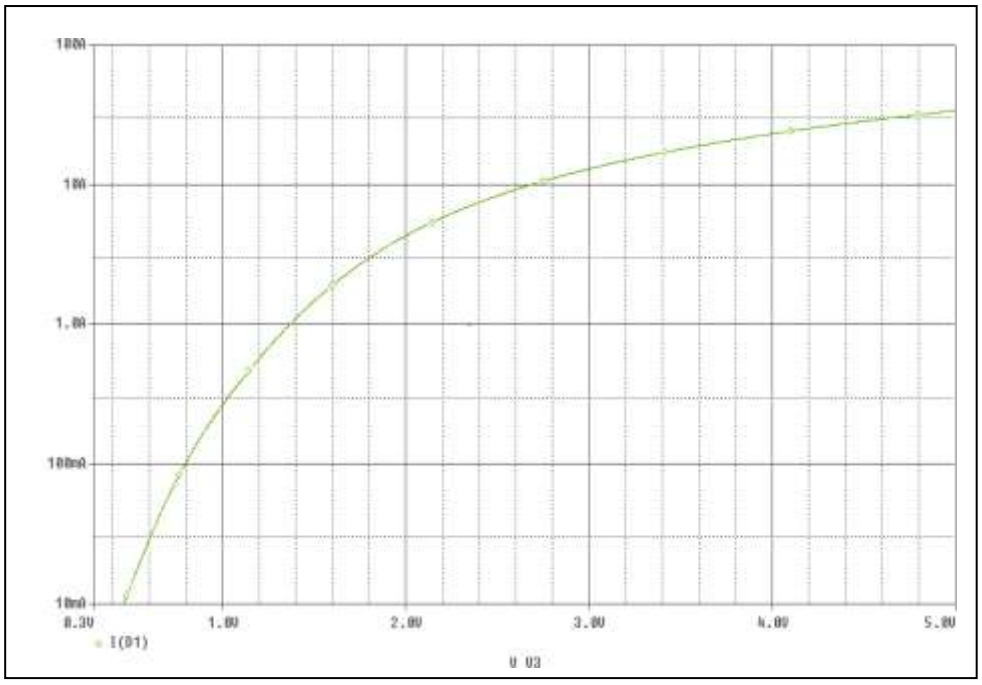
COMPONENTS:
DIODE/GENERAL PURPOSE RECTIFIER/ STANDARD
PART NUMBER: YG963S6R
MANUFACTURER: Fuji Electric

Bee Technologies Inc.

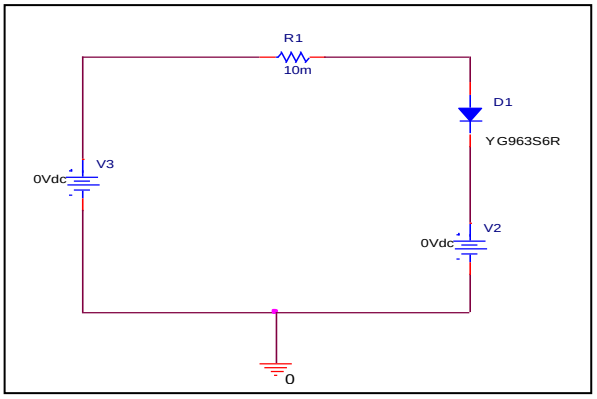
Pspice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Forward Current Characteristic

Circuit Simulation Result

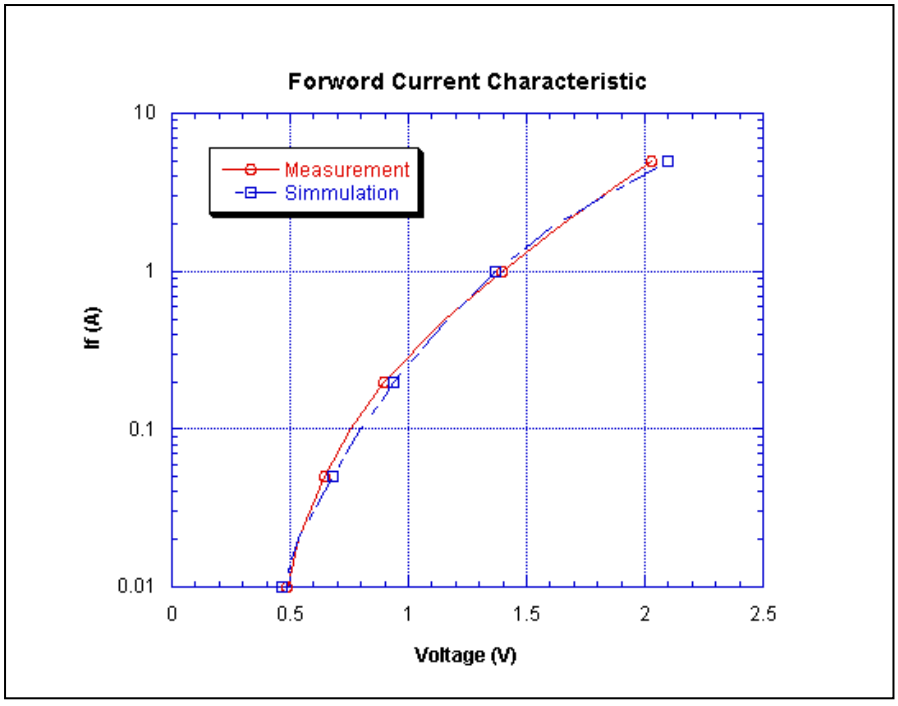


Evaluation circuit



Forward Current Characteristic

Circuit Simulation Result

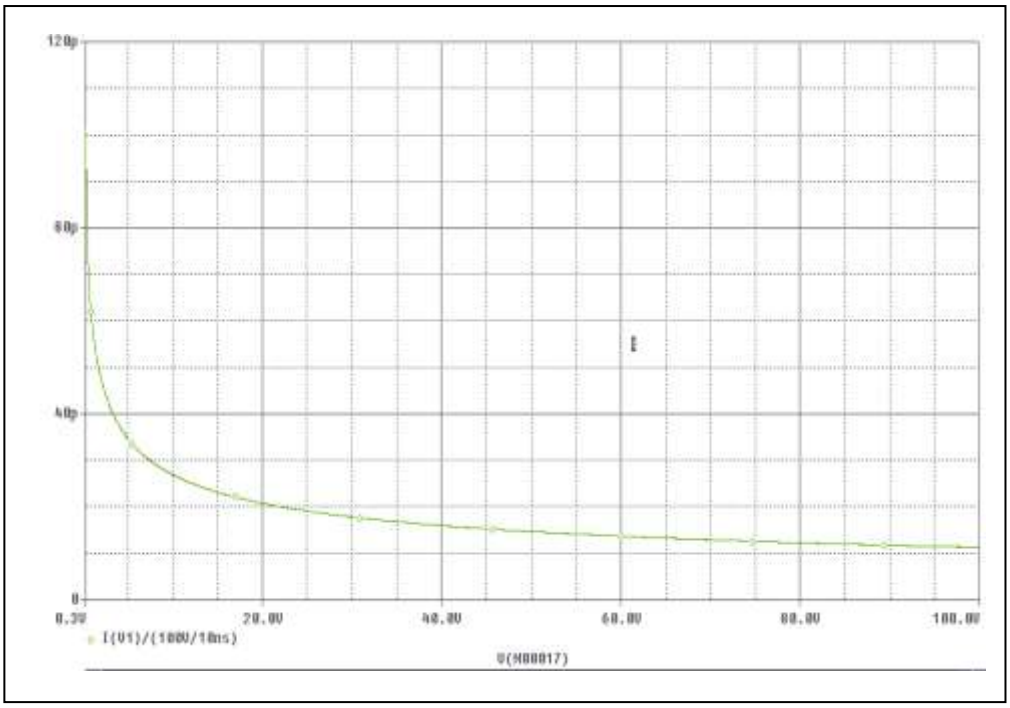


Simulation Result

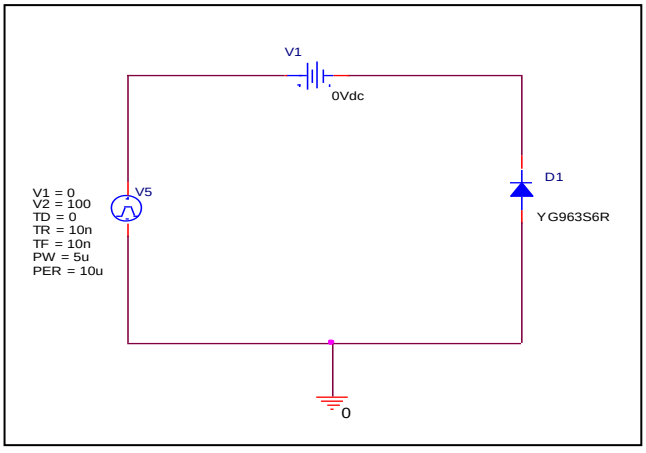
Ifwd (A)	Vfwd(V) Measurement	Vfwd(V) Simulation	%Error
0.01	0.485	0.465	4.124
0.02	0.535	0.533	0.374
0.05	0.645	0.684	-6.047
0.1	0.755	0.796	-5.430
0.2	0.895	0.936	-4.581
0.5	1.155	1.165	-0.883
1	1.395	1.369	1.900
2	1.650	1.621	1.776
5	2.025	2.0946	-3.437

Junction Capacitance Characteristic

Circuit Simulation Result

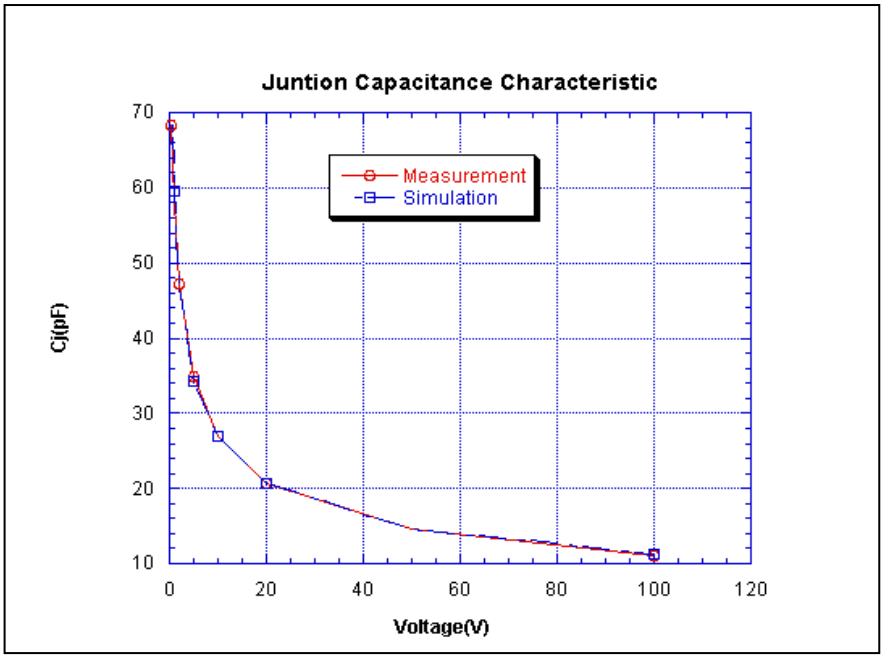


Evaluation circuit



Junction Capacitance Characteristic

Circuit Simulation Result

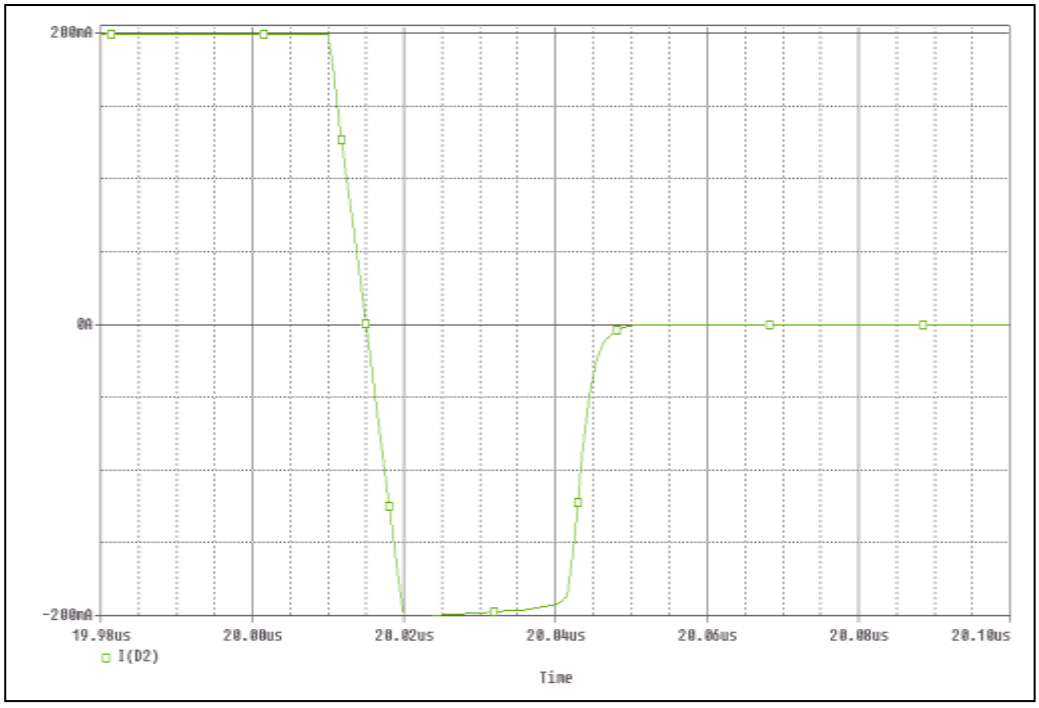


Simulation Result

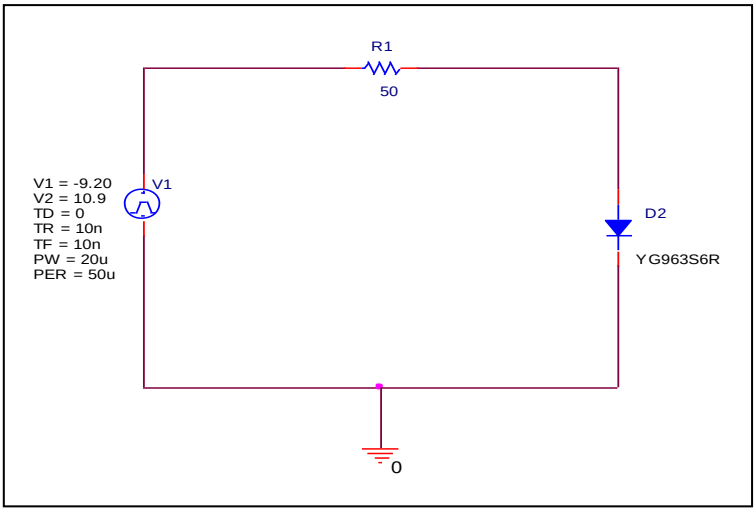
Vrev (V)	Cj(pF) Measurement	Cj(pF) Simulation	%Error
1	58.067	59.599	-2.638
2	47.267	46.928	0.718
5	34.802	34.346	1.309
10	26.985	26.970	0.057
20	20.749	20.753	-0.018
50	14.559	14.680	-0.834
100	11.096	11.275	-1.611

Reverse Recovery Characteristic

Evaluation circuit



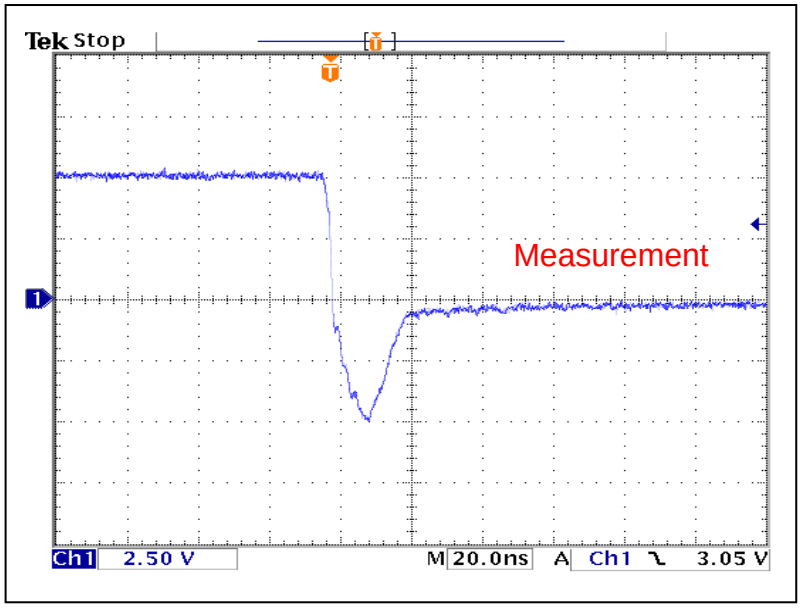
Circuit simulation result



Compare Measurement vs. Simulation

	Measurement		Simulation		%Error
trr	22.000	ns	21.955	ns	0.205

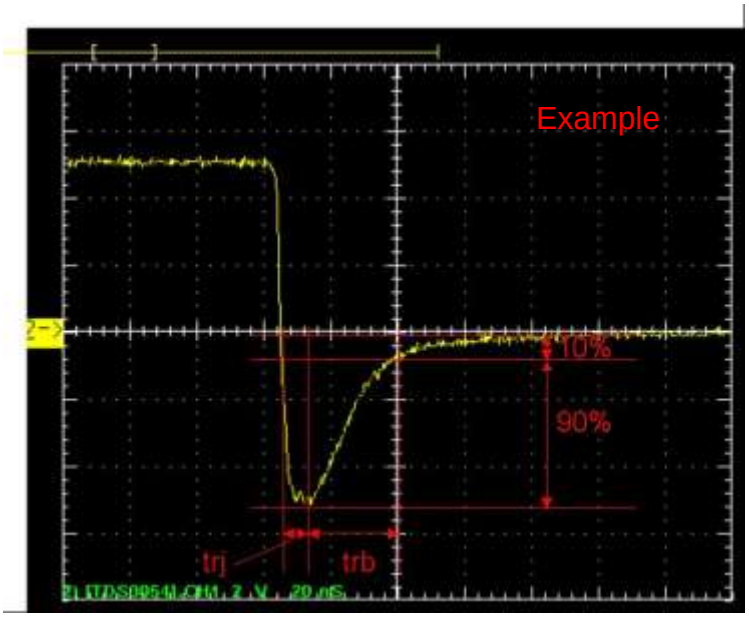
Reverse Recovery Characteristic Reference



trj=9.6(ns)

trb=12.4(us)

Conditions:Ifwd=Irev=0.2(A),Rl=50



Relation between trj and trb