

Device Modeling Report

COMPONENTS: THYRISTOR
PART NUMBER: 2S2M
MANUFACTURER: NEC



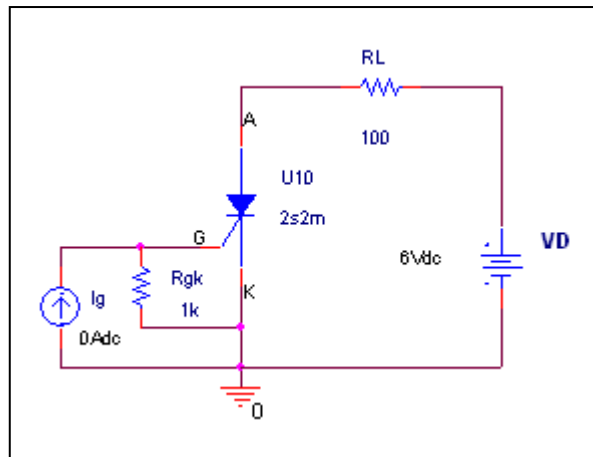
Bee Technologies Inc.

DIODE MODEL

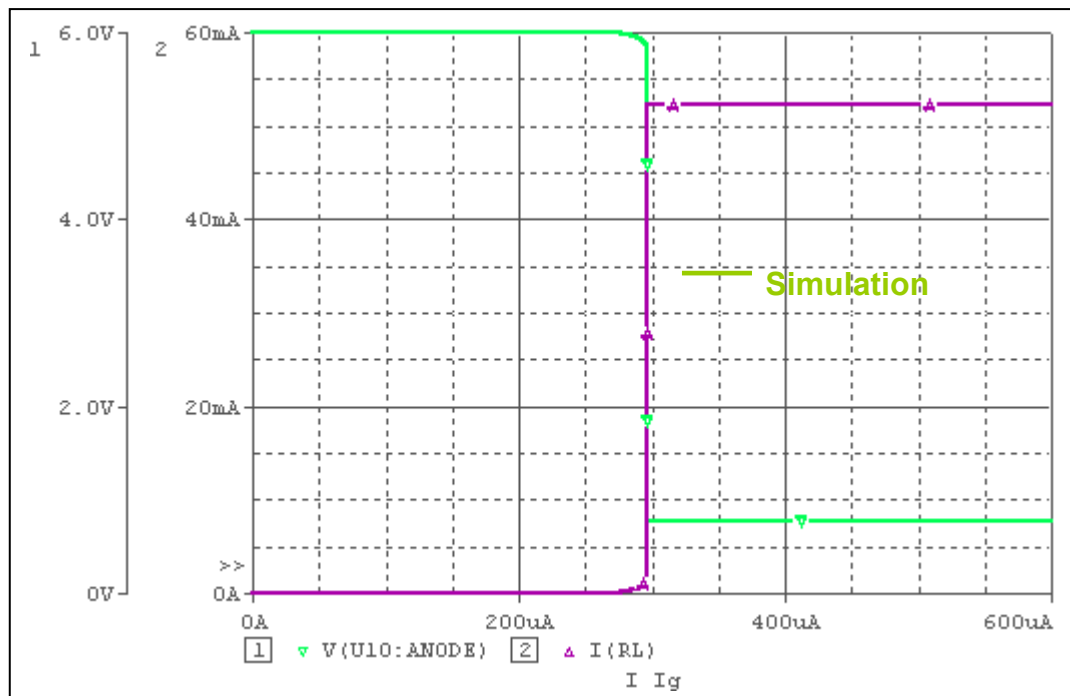
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

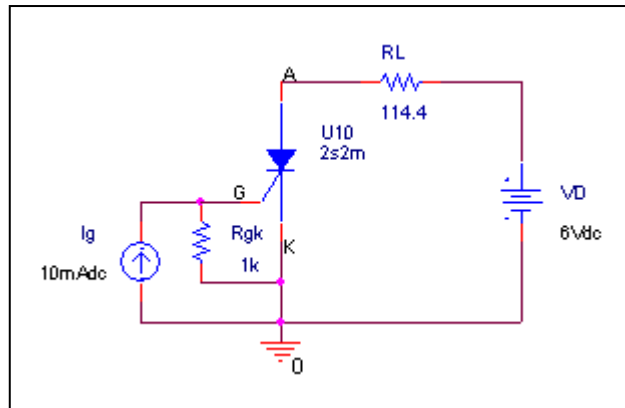


Comparison Table

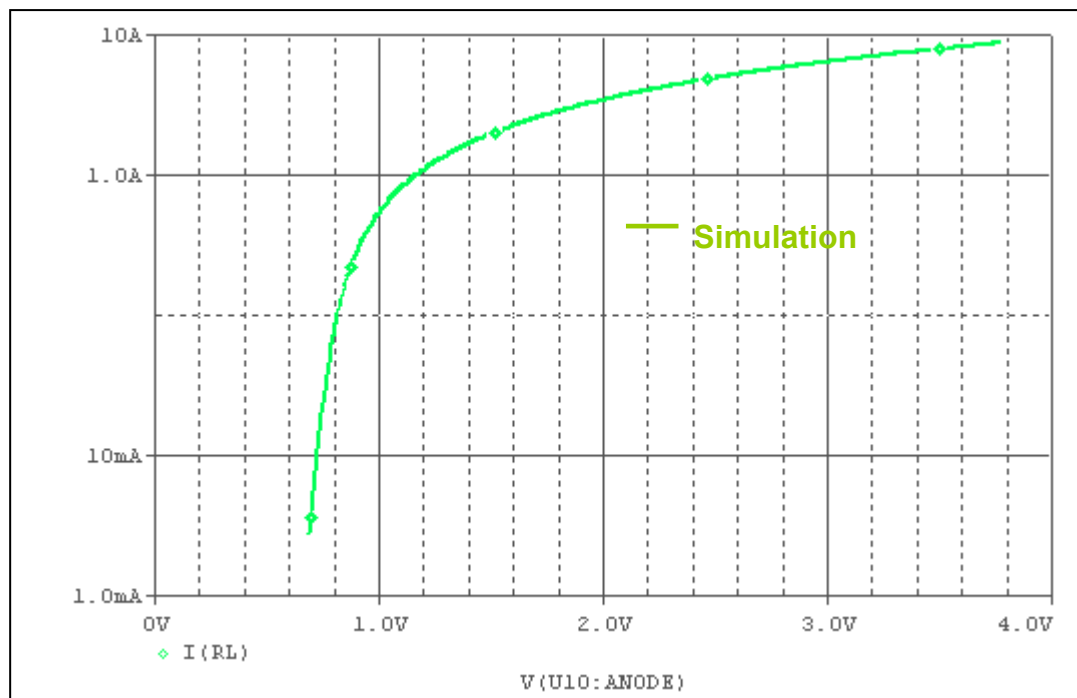
	Measurement	Simulation	% Error
I_{GT} (uA)	300(max)	295.800	-1.4000
V_{GT} (V)	0.8(max)	0.780101	-2.4874

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

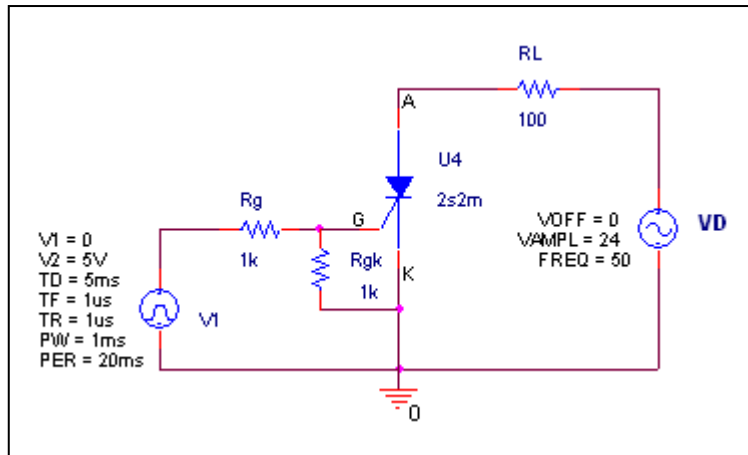


Comparison Table

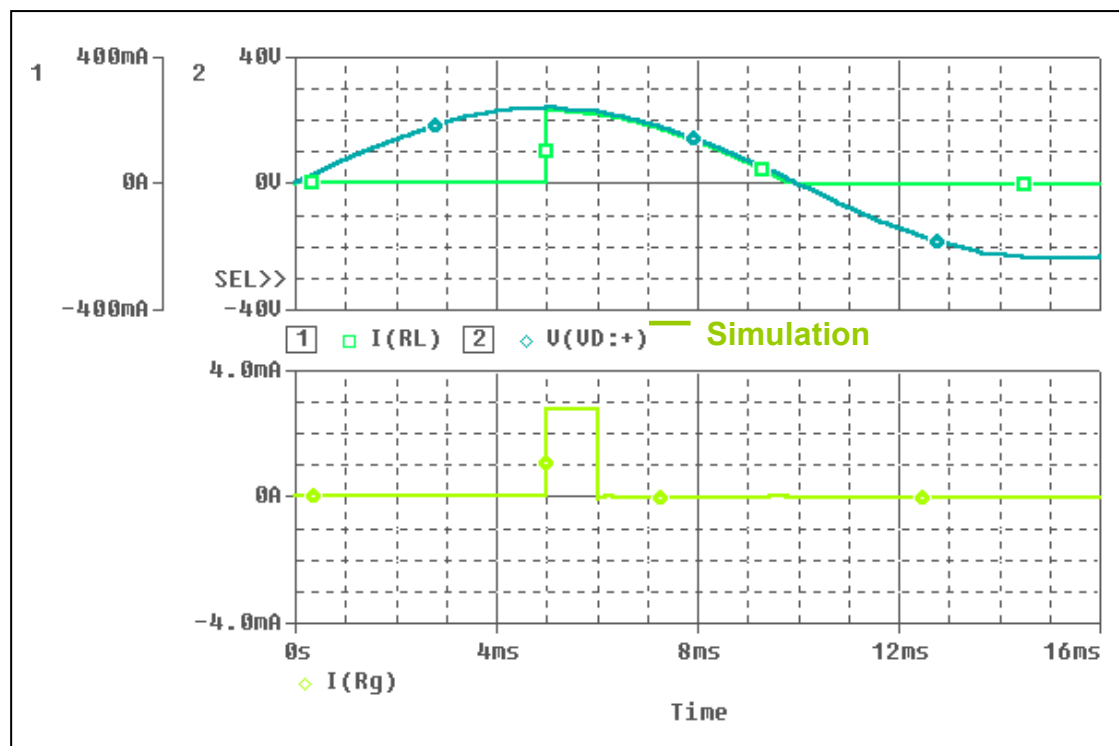
At ITM=4A	Measurement	Simulation	% Error
VTM(V)	2.2(max)	2.1953	-0.2136

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

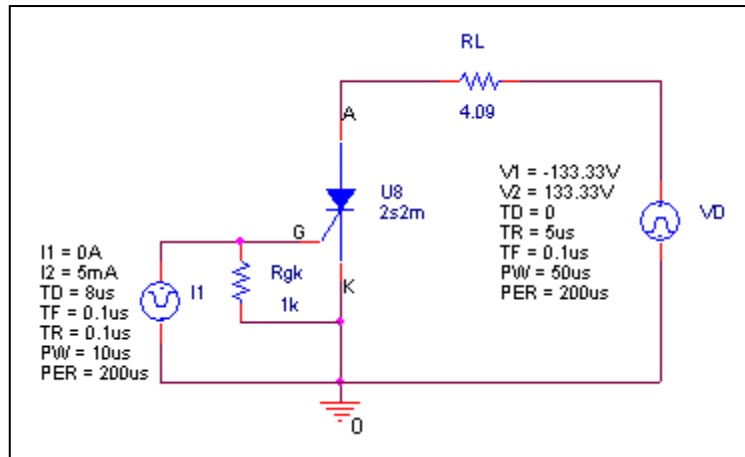


Comparison Table

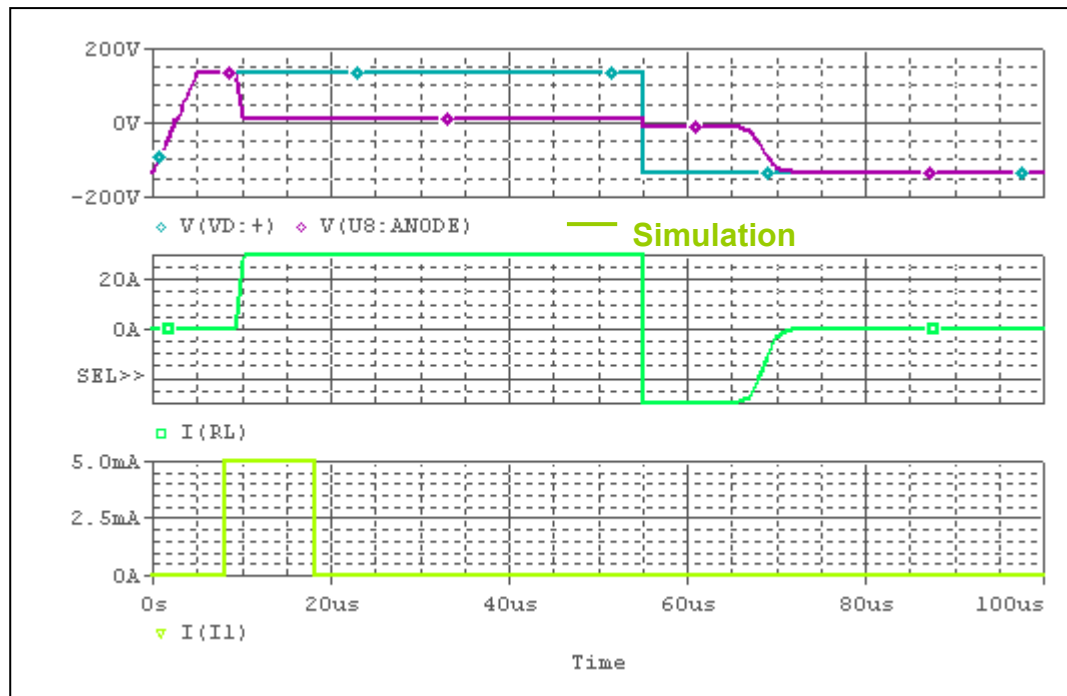
VD=6V	Measurement	Simulation	% Error
IH(mA)	10(max)	9.757	-2.4300

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Ton(us)	2	2.0192	0.9600
Toff(us)	15	15.012	0.0800