Device Modeling Report

COMPONENTS:THYRISTOR
PART NUMBER:03P4J
MANUFACTURER: NEC

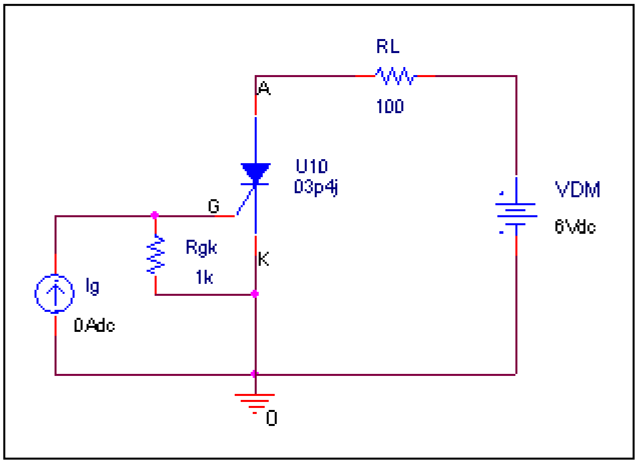
Bee Technologies Inc.

DIODE MODEL

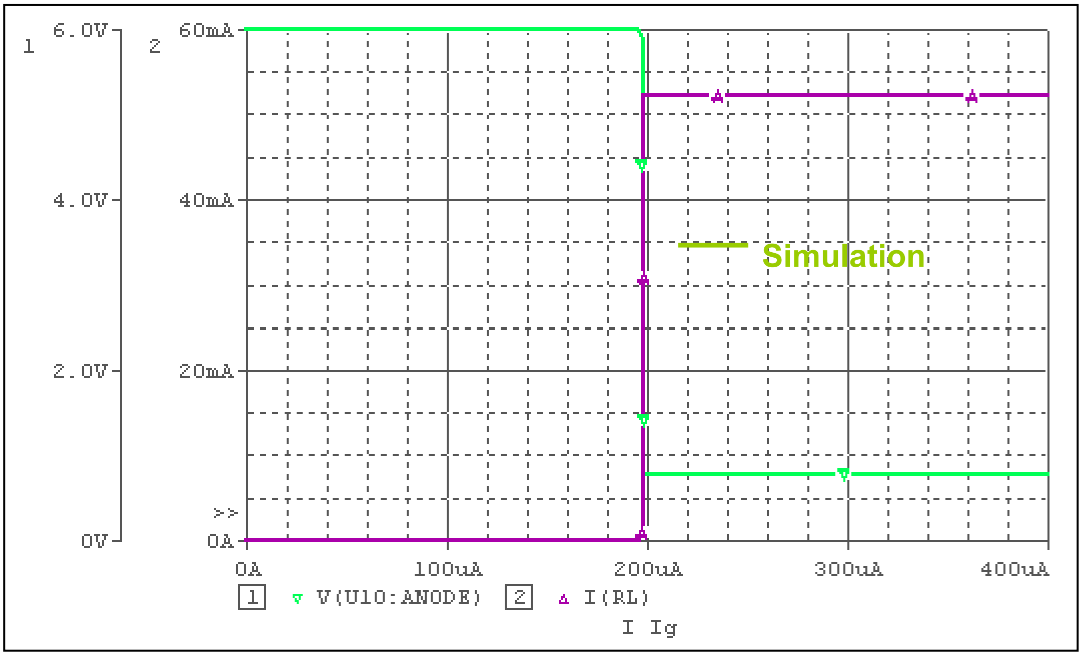
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

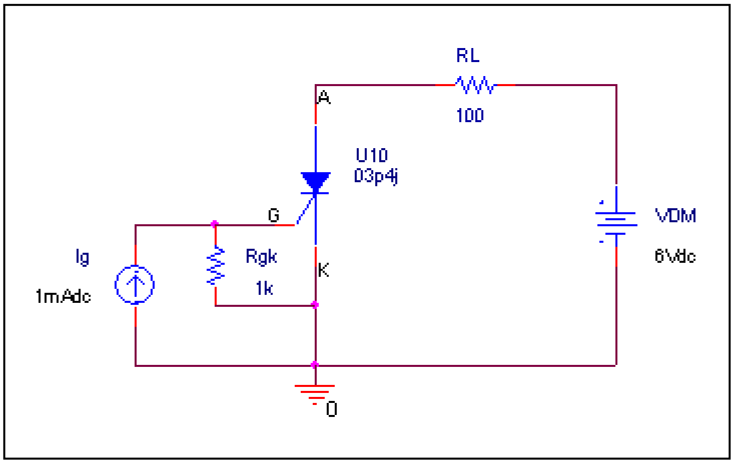


Comparison Table

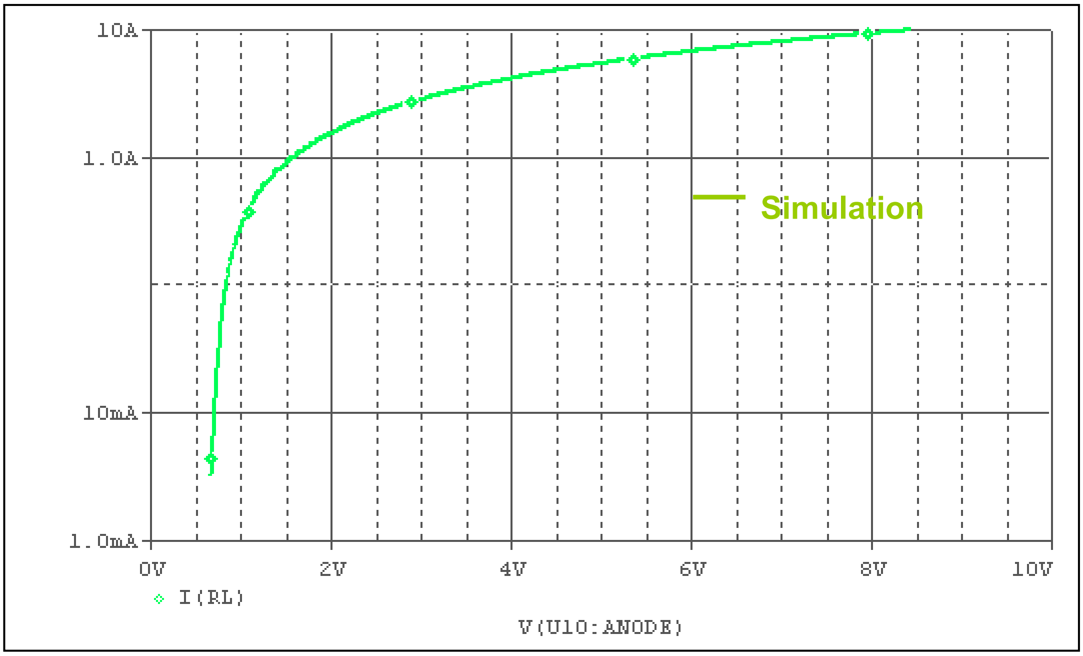
	Measurement	Simulation	% Error
IG_T (uA)	200(max.)	196.667	1.6665
V_{GT} (V)	0.8(max)	0.782516	2.1855

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

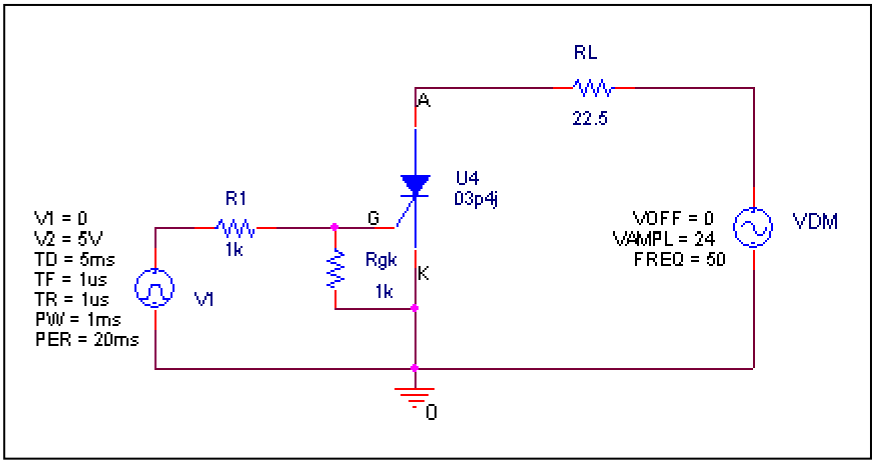


Comparison Table

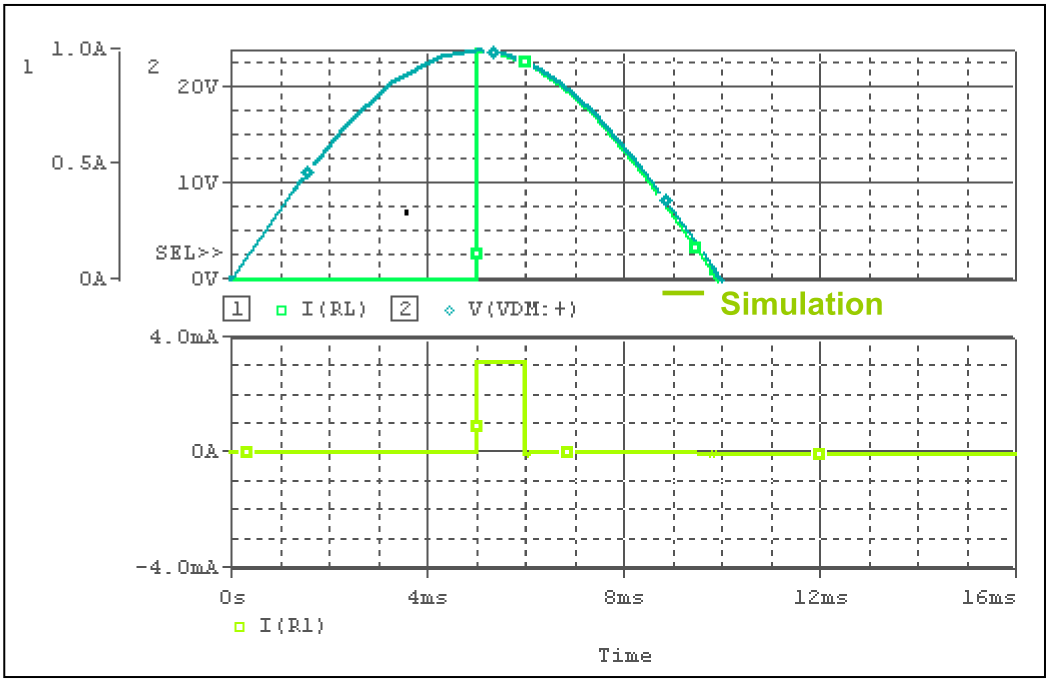
At ITM=1A	Measurement	Simulation	% Error
VTM(V)	1.6(max)	1.5859	0.8813

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

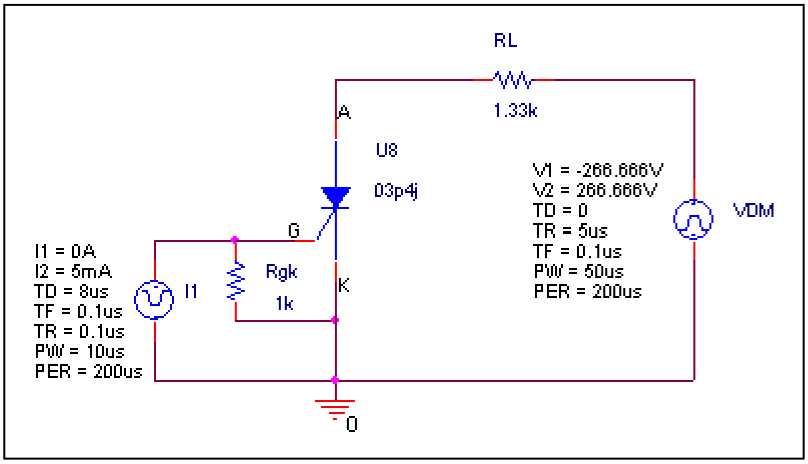


Comparison Table

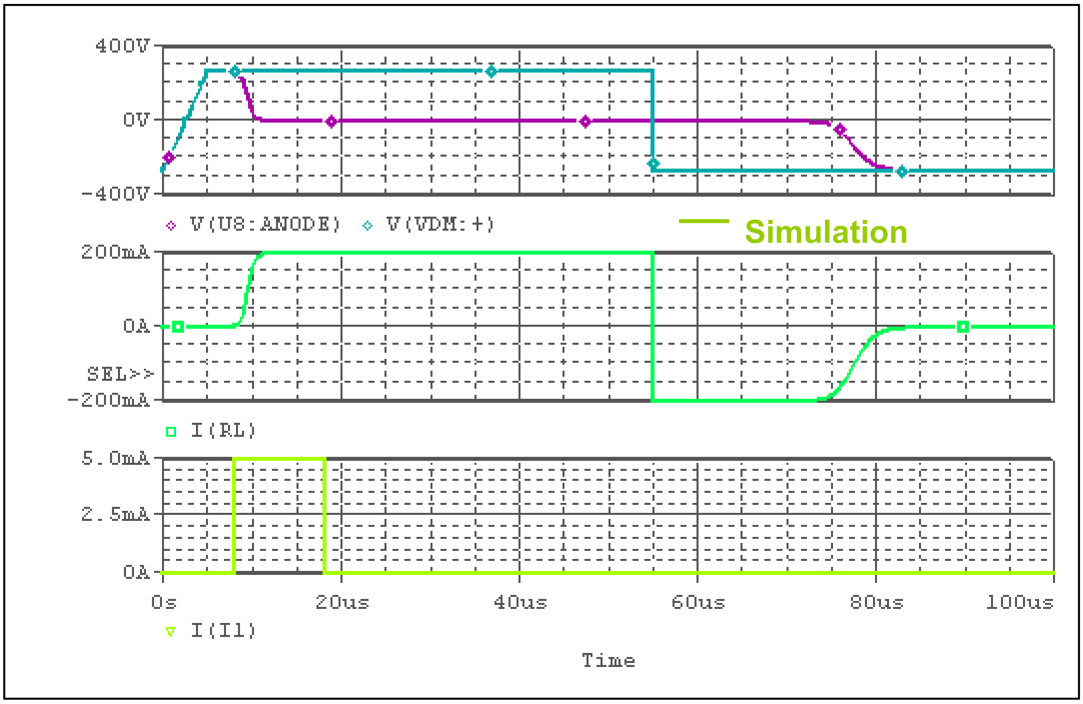
V_{DM}=24V	Measurement	Simulation	% Error
IH(mA)	5(max)	2.5722	0

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Toff(us)	**25**	**25.014**	**-0.0560**