

# Device Modeling Report

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PART NUMBER: 03P4MF  
MANUFACTURER: NEC



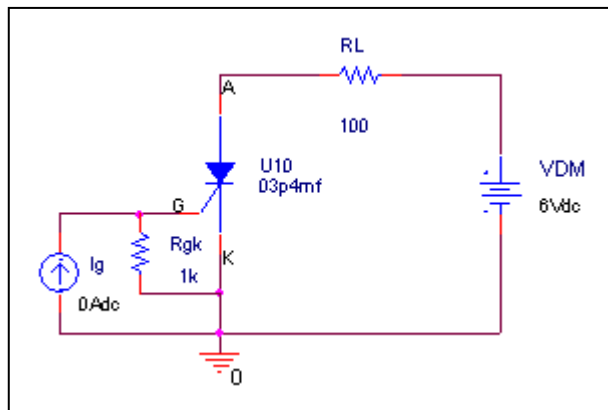
**Bee Technologies Inc.**

## DIODE MODEL

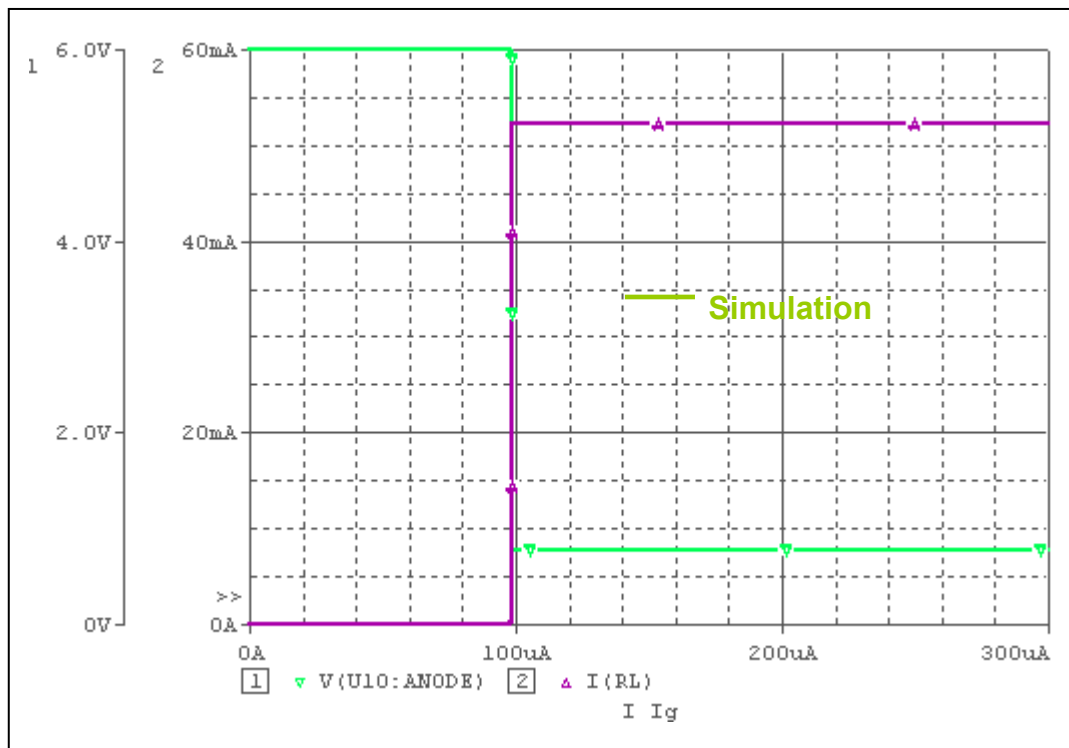
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

# IG-VT Characteristic

## Evaluation Circuit



## Simulation result

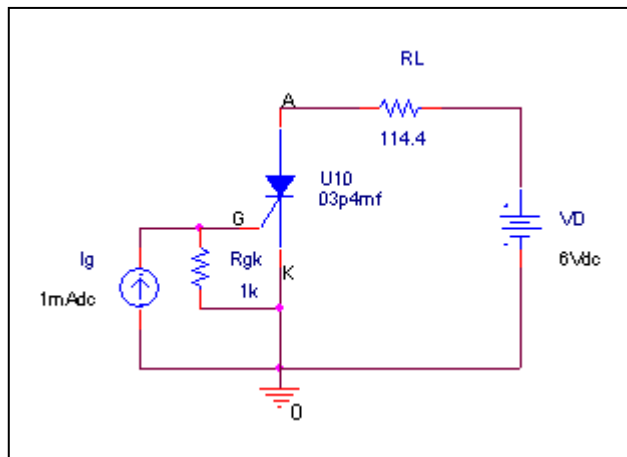


## Comparison Table

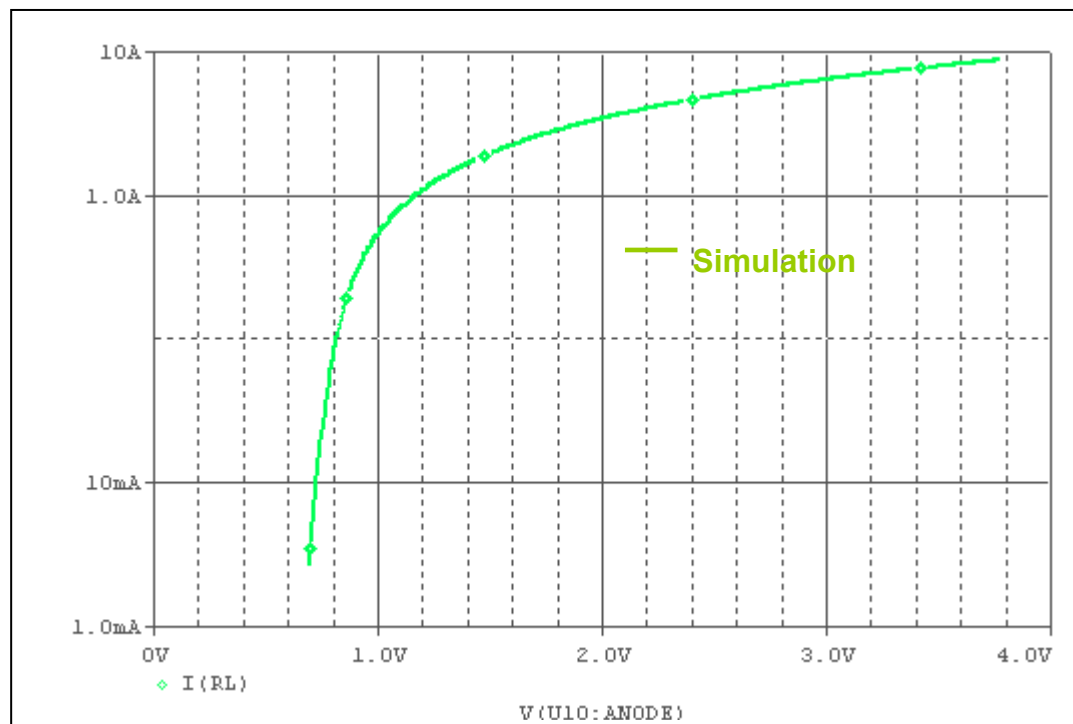
	Measurement	Simulation	% Error
$I_{GT}$ (uA)	100(max)	98.363	1.6370
$V_{GT}$ (V)	0.8(max)	0.780101	2.4874

# ITM-VTM Characteristic

## Evaluation Circuit



## Simulation result

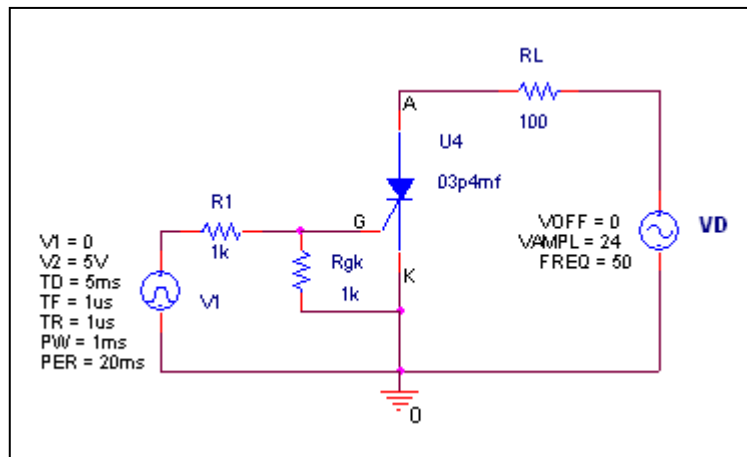


## Comparison Table

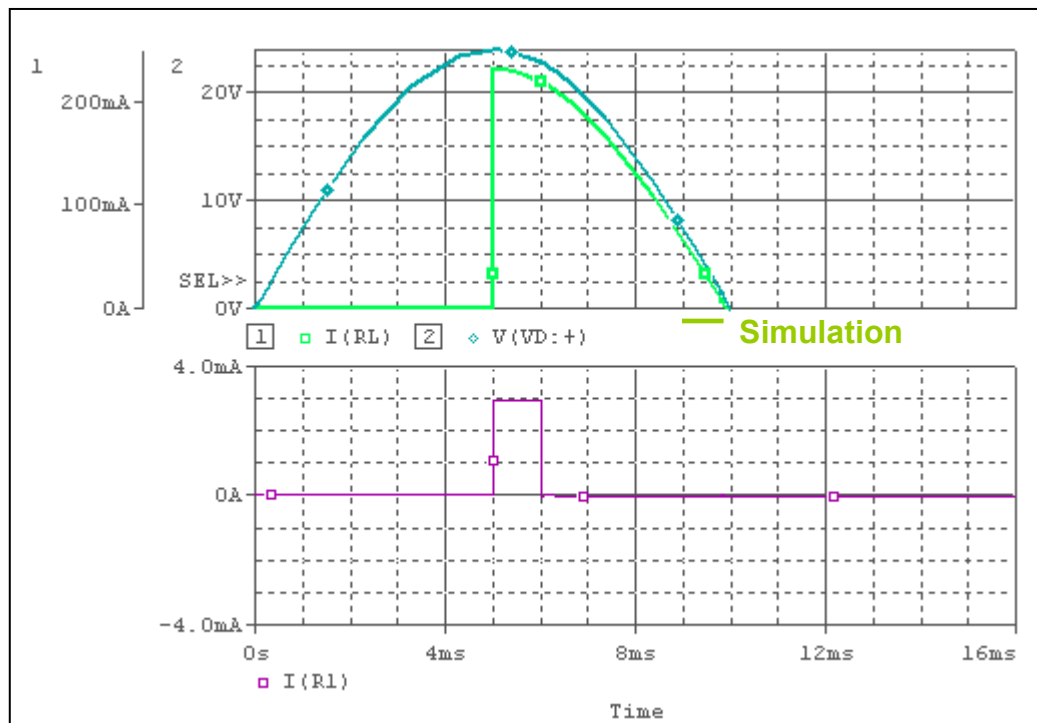
At ITM=4A	Measurement	Simulation	% Error
VTM(V)	2.2(max)	2.1992	0.0364

## Holding Characteristic (IH)

### Evaluation Circuit



### Simulation result

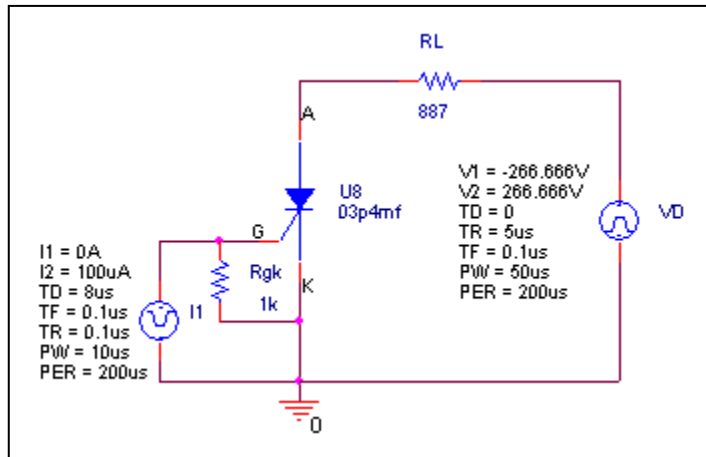


### Comparison Table

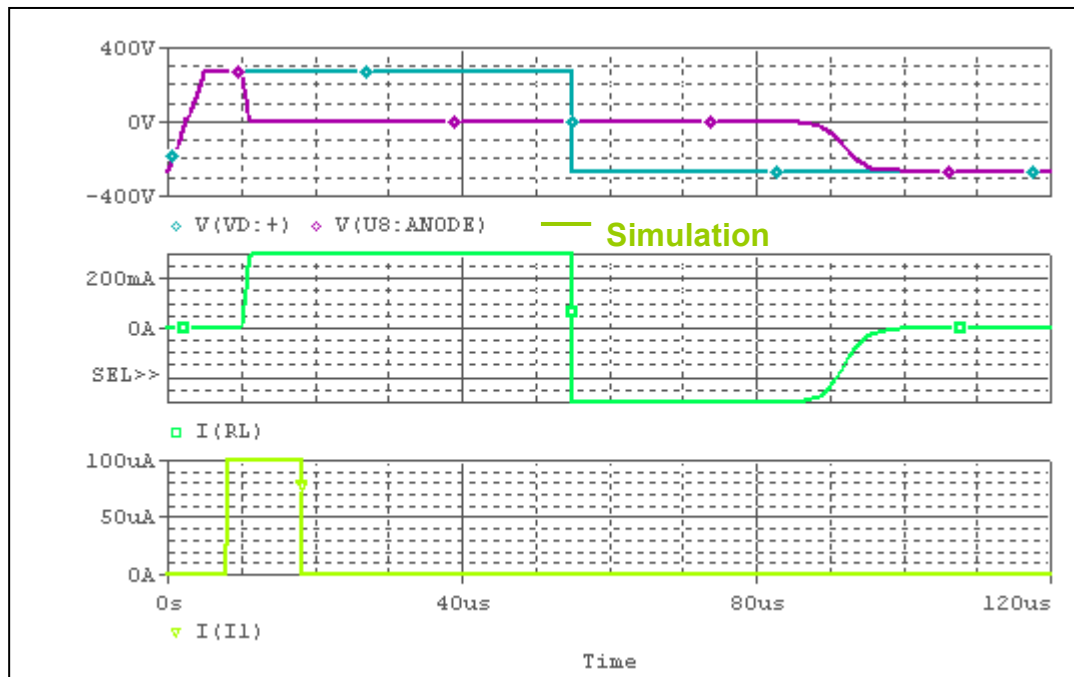
VD=24V	Measurement	Simulation	% Error
IH(mA)	3	3.1118	-3.7267

# Switching Time Characteristic

## Evaluation Circuit



## Simulation result



## Comparison Table

	Measurement	Simulation	%Error
<b>Ton(us)</b>	<b>3</b>	<b>2.9650</b>	<b>1.1667</b>
<b>Toff(us)</b>	<b>40</b>	<b>39.900</b>	<b>0.2500</b>