Device Modeling Report

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MANUFACTURER: NEC

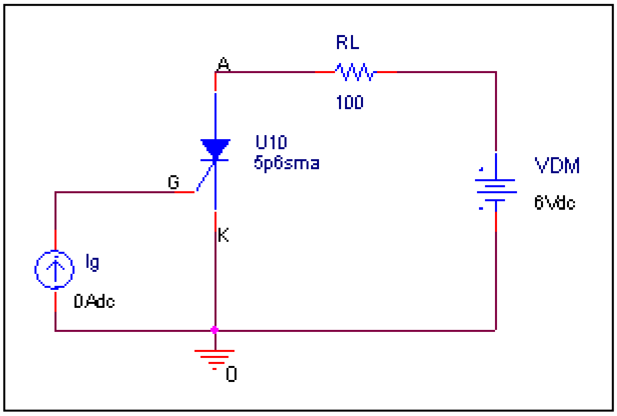
Bee Technologies Inc.

DIODE MODEL

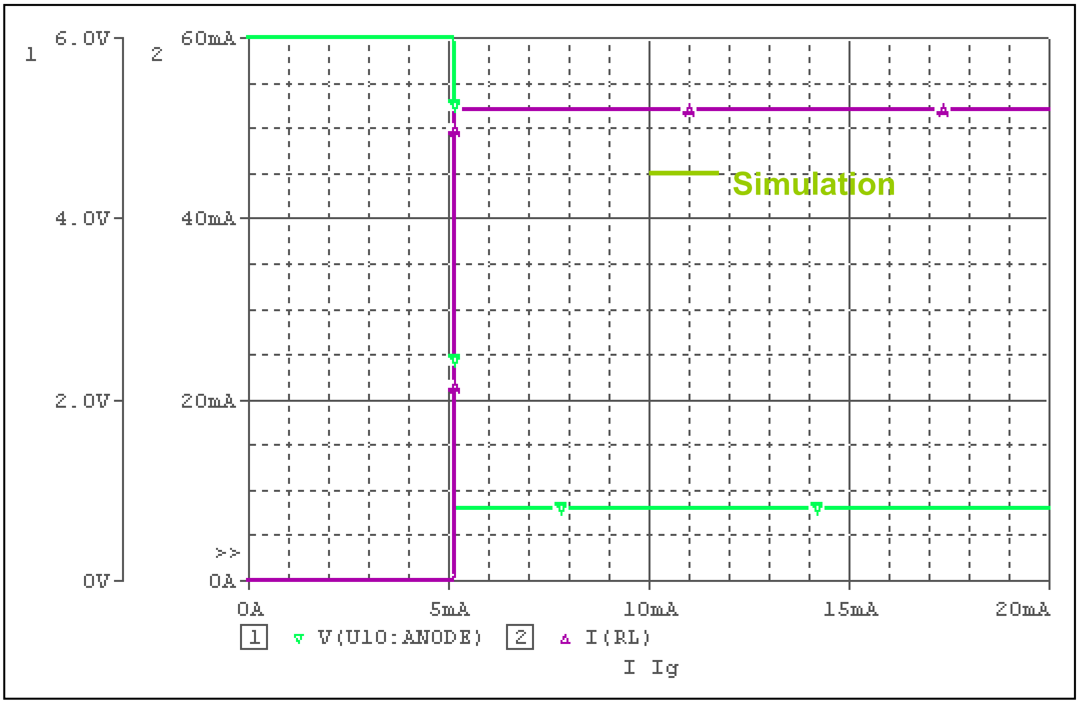
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



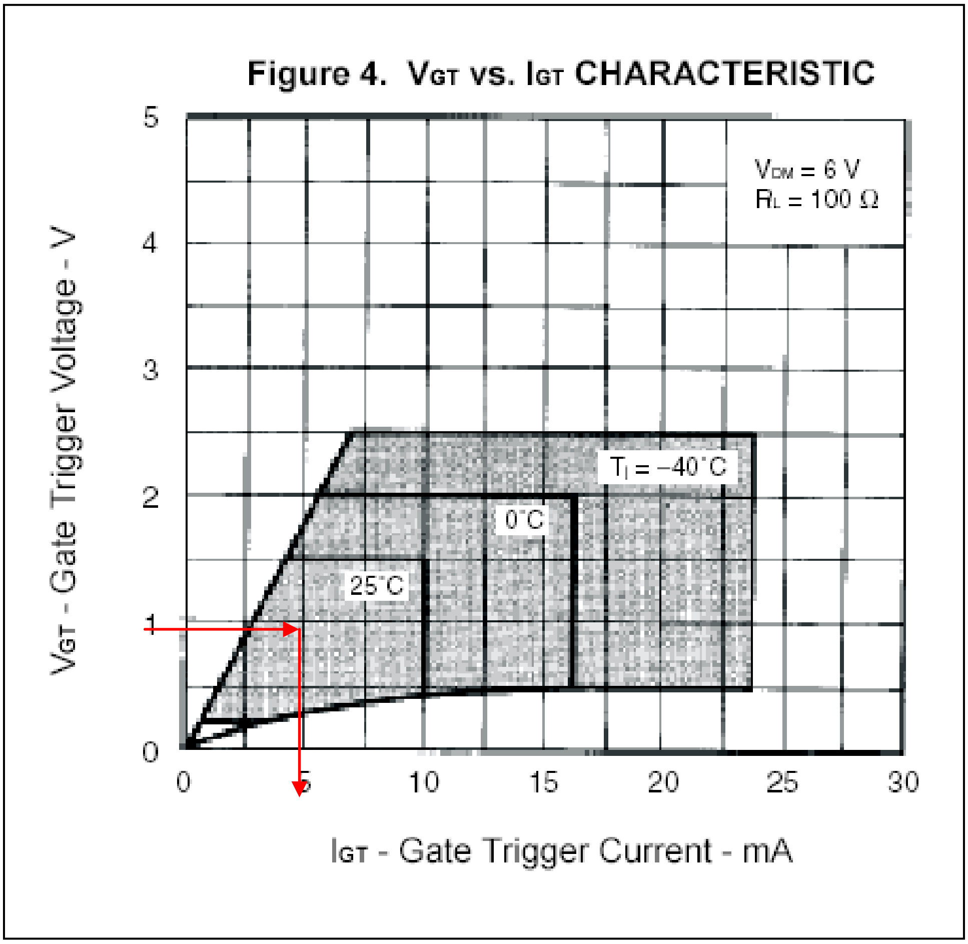
Simulation result



Comparison Table

	Measurement	Simulation	% Error
IG_T (mA)	**5**	**4.9524**	**0.9520**
V_{GT} (V)	**0.8**	**0.795031**	**0.6211**

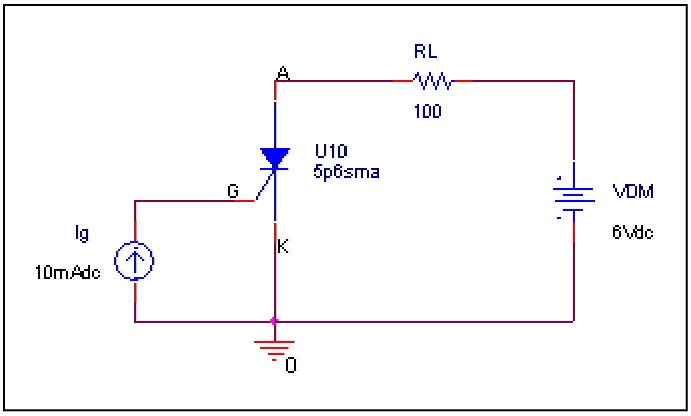
Reference



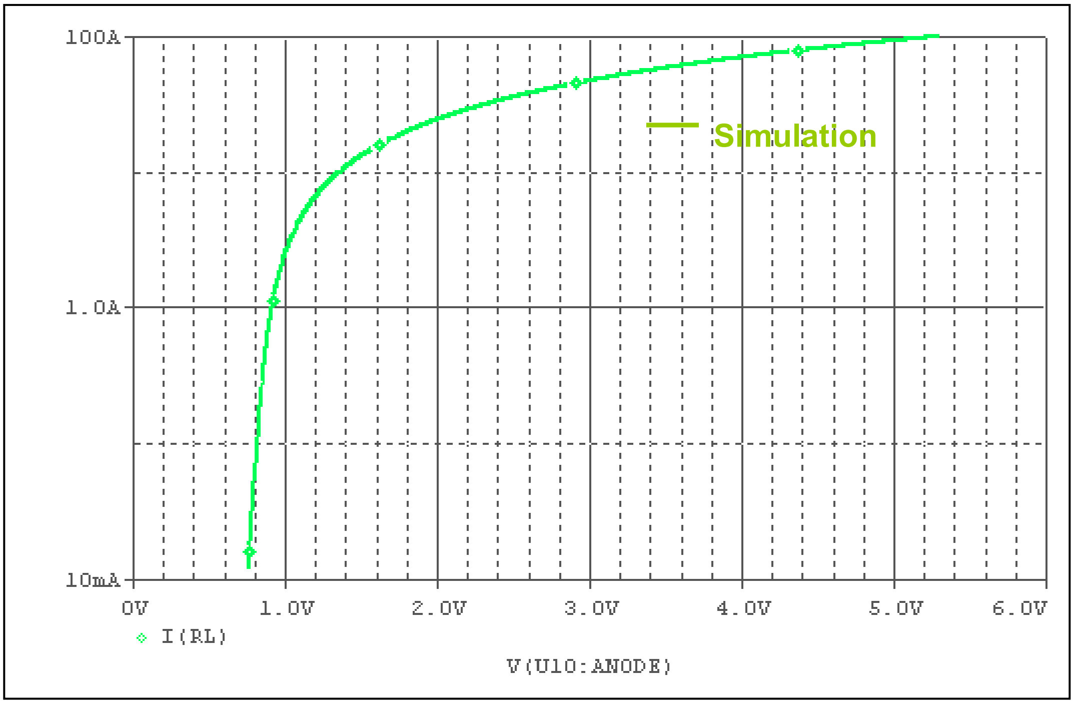
I_{GT} = 5 mA V_{GT} = 0.8V

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

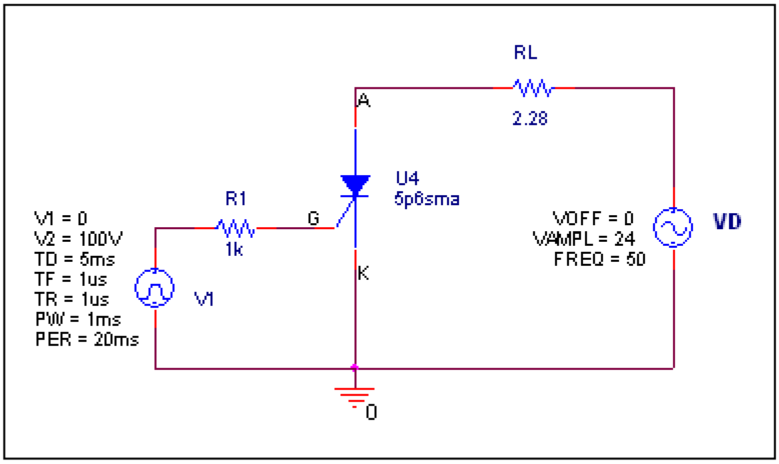


Comparison Table

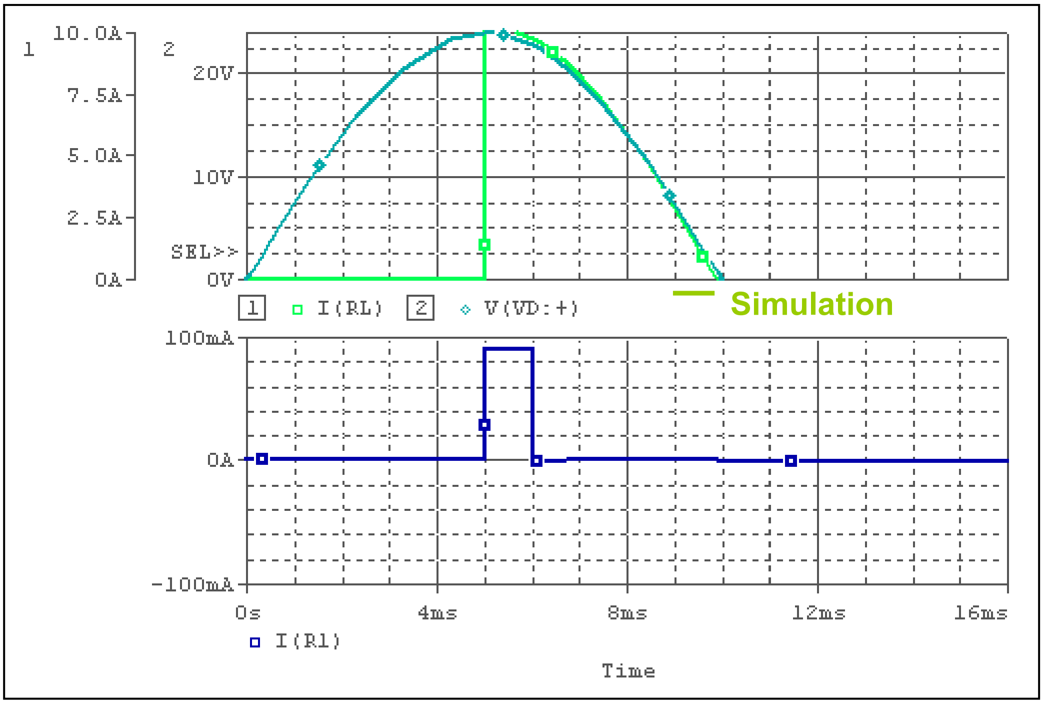
At ITM=10A	Measurement	Simulation	% Error
VTM(V)	1.4(max)	1.3596	2.8857

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

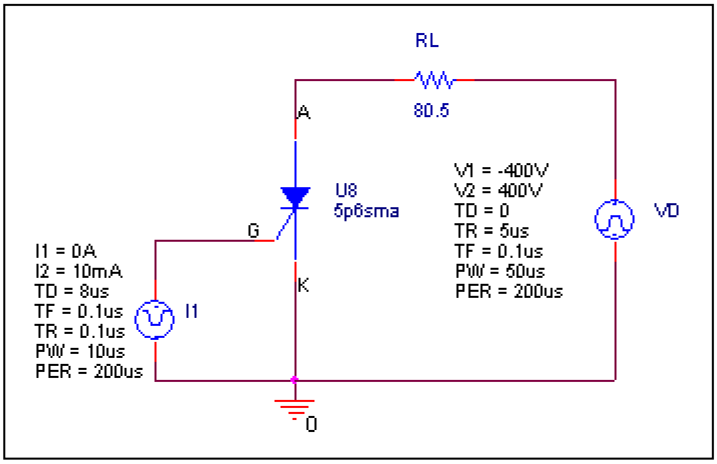


Comparison Table

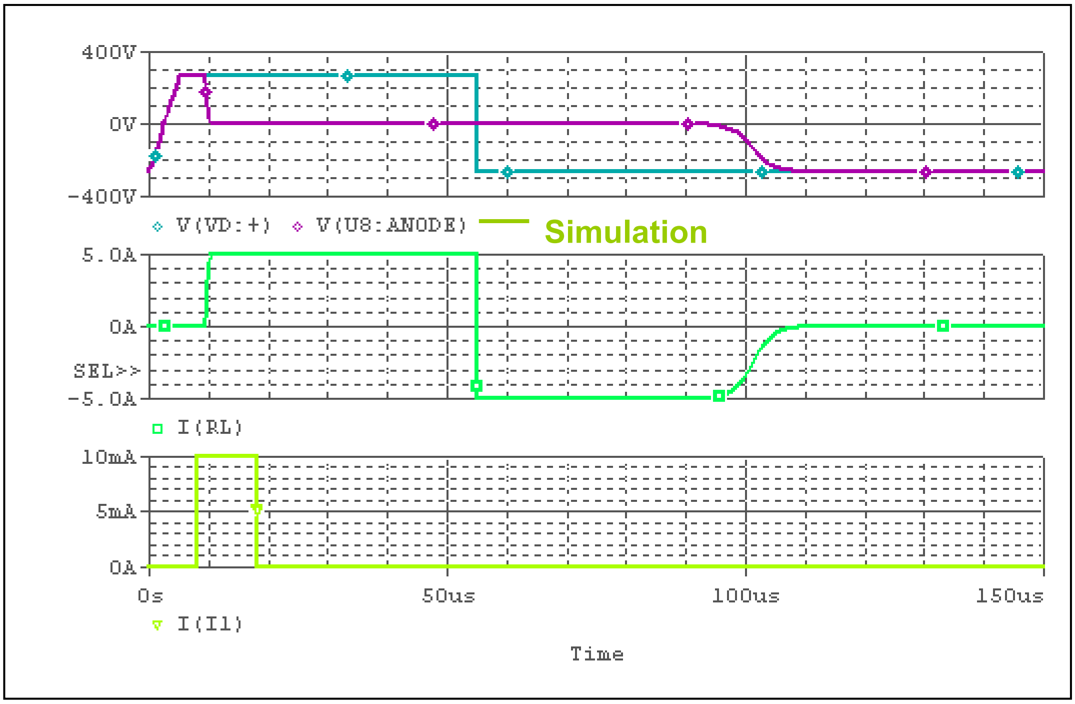
V_{DM}=24V,I_{TM}=10A	Measurement	Simulation	% Error
IH(mA)	6	5.9920	0.1333

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Toff(us)	50	50.034	-0.0680