Device Modeling Report

COMPONENTS:THYRISTOR
PART NUMBER:BT300S-500R
MANUFACTURER: PHILIPS SEMICONDUCTOR

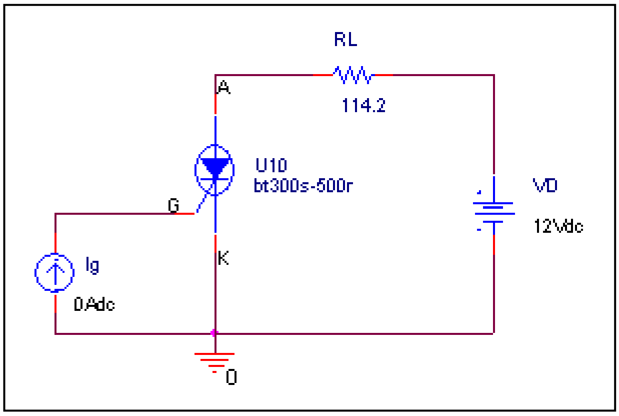
Bee Technologies Inc.

DIODE MODEL

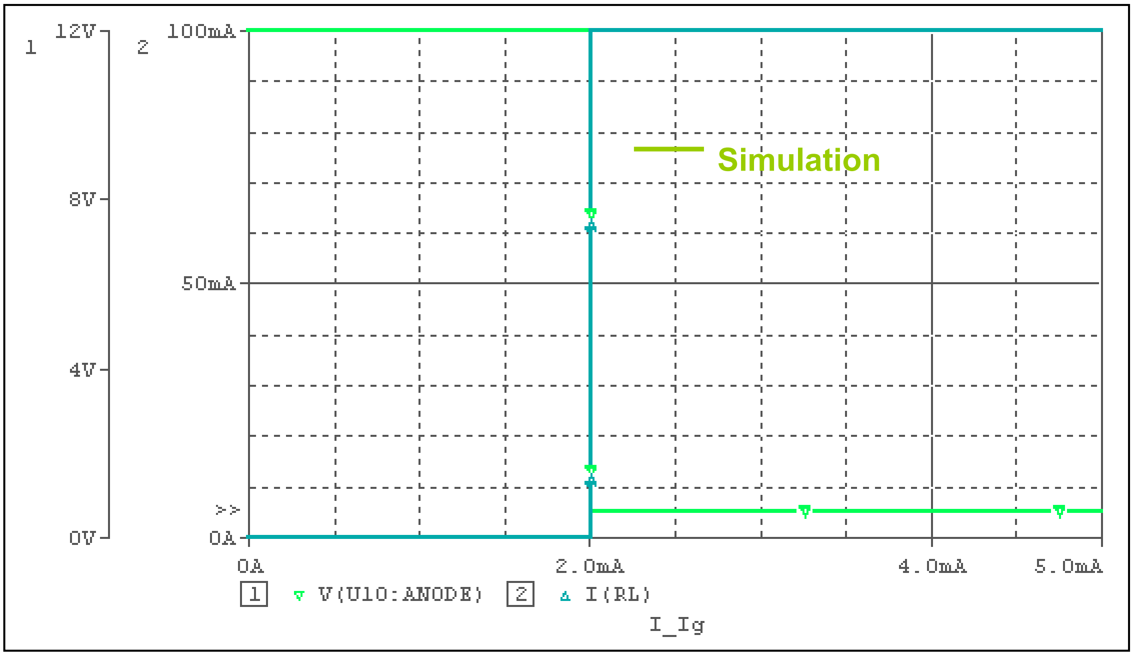
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

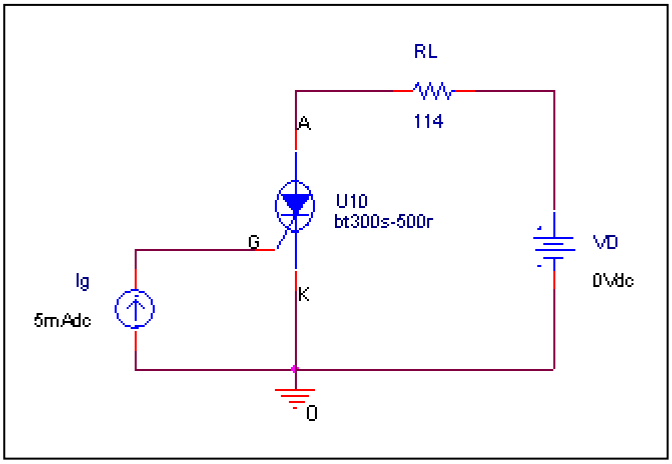


Comparison Table

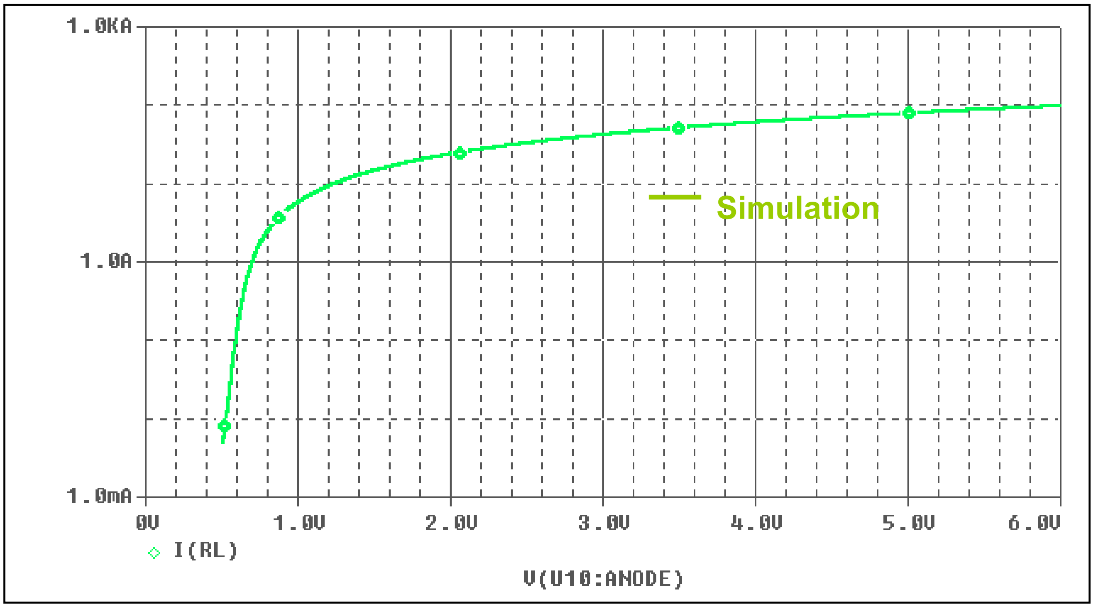
	Measurement	Simulation	% Error
IG_T (mA)	**2**	**2**	**0**
V_{GT} (V)	**0.6**	**0.595065**	**-0.82250**

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

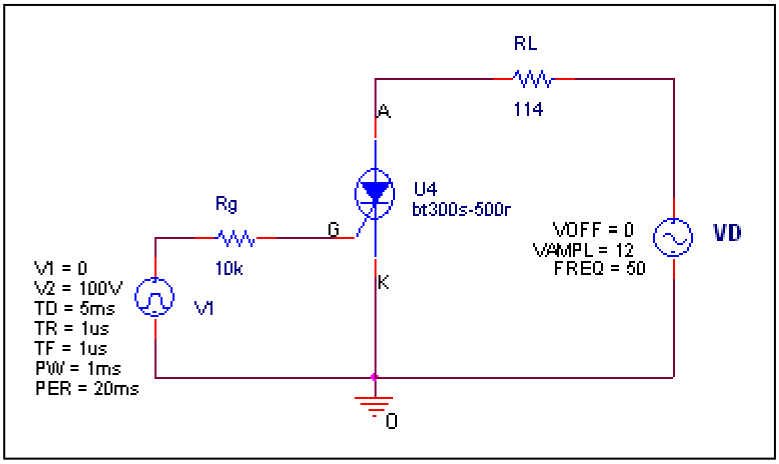


Comparison Table

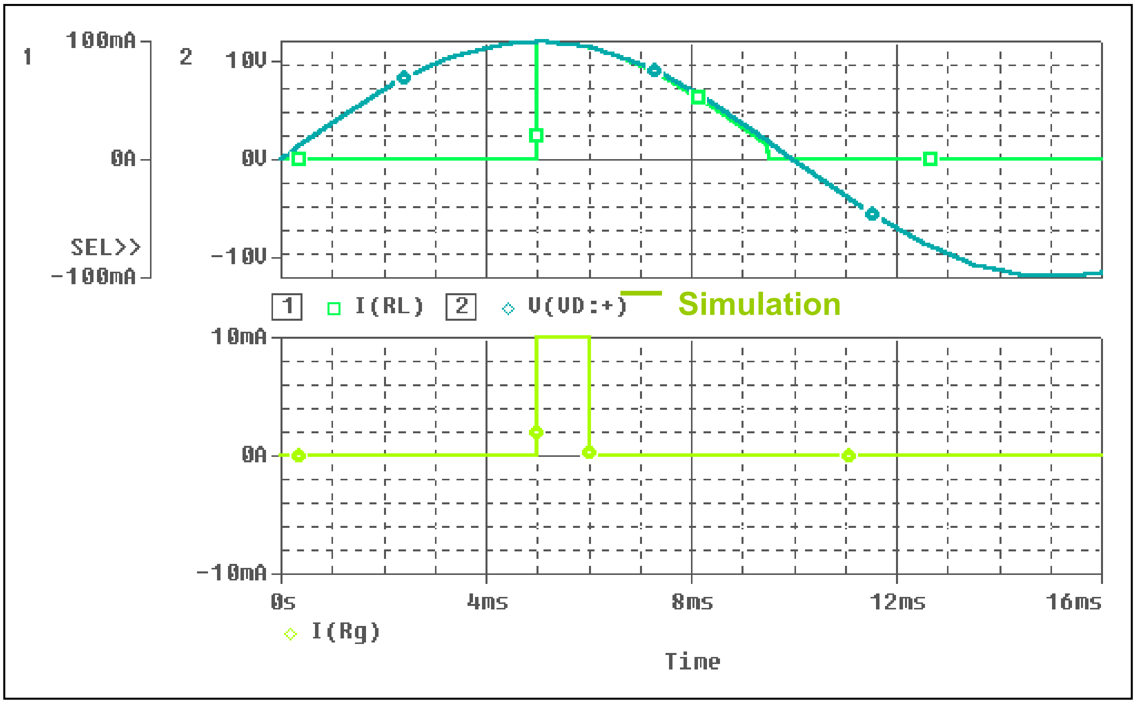
At ITM=12A	Measurement	Simulation	% Error
VTM(V)	1.35	1.3691	1.41481

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

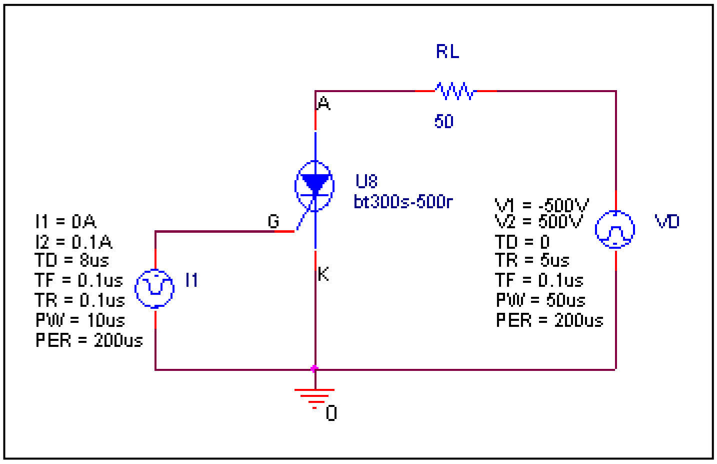


Comparison Table

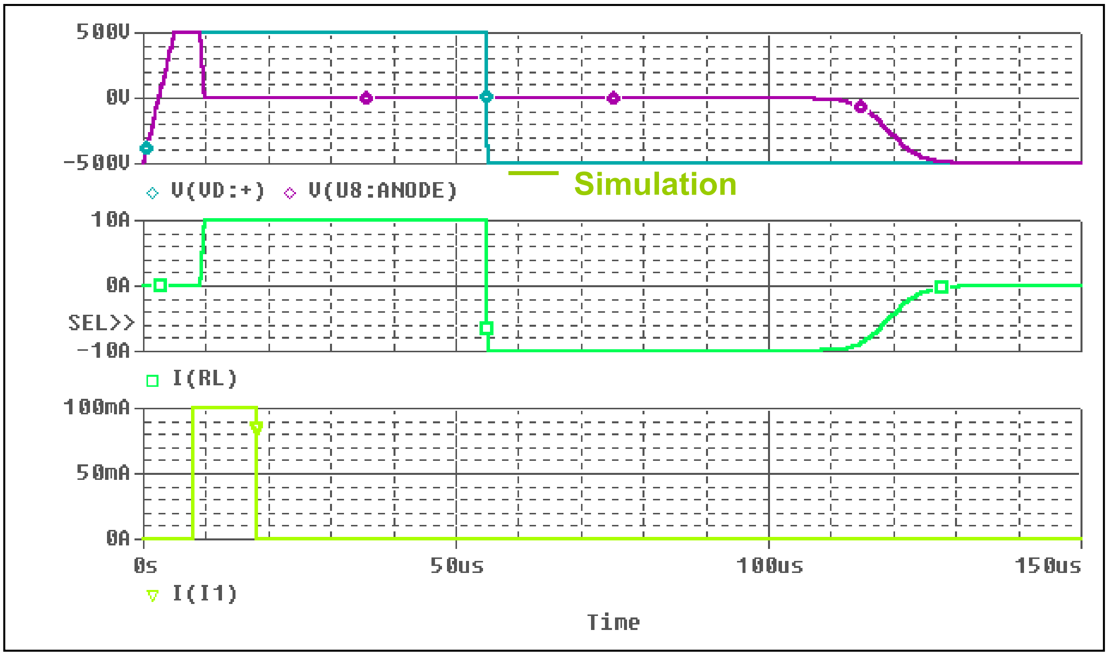
VD=12V	Measurement	Simulation	% Error
IH(mA)	10	10.194	1.94000

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Ton(us)	**2**	**2.0157**	**0.78500**
Toff(us)	**70**	**69.543**	**-0.65286**