Device Modeling Report

COMPONENTS:THYRISTOR
PART NUMBER:BT151U-650C
MANUFACTURER: PHILIPS SEMICONDUCTOR

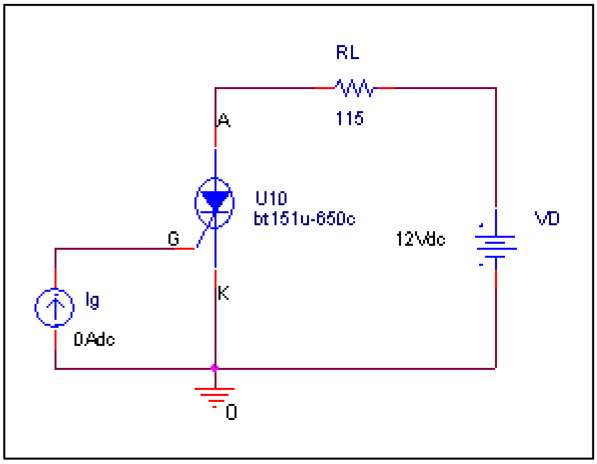
Bee Technologies Inc.

DIODE MODEL

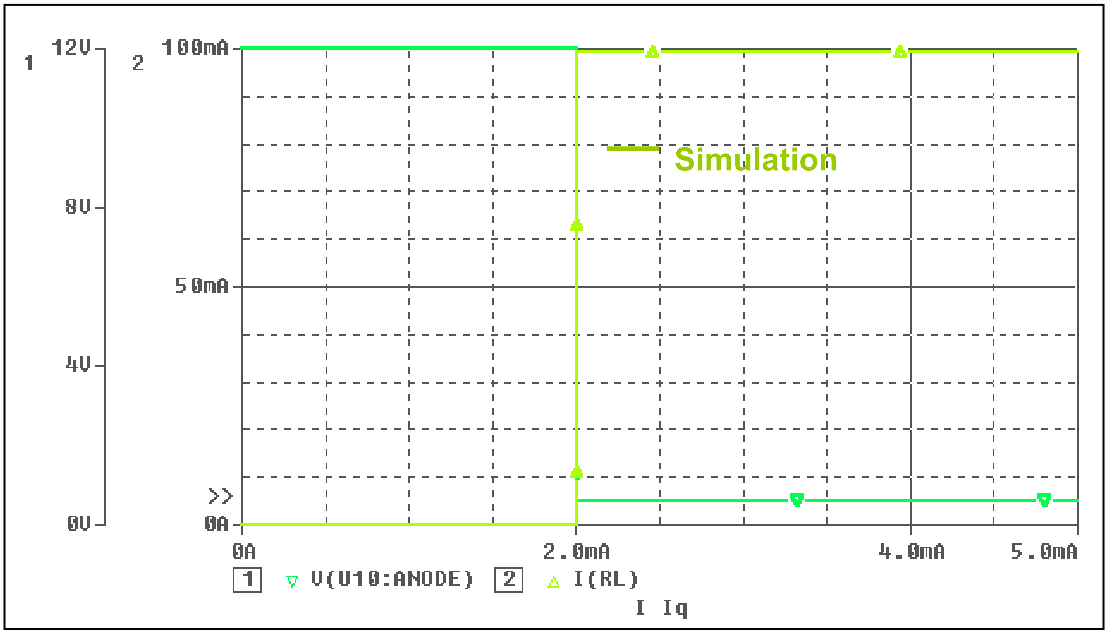
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

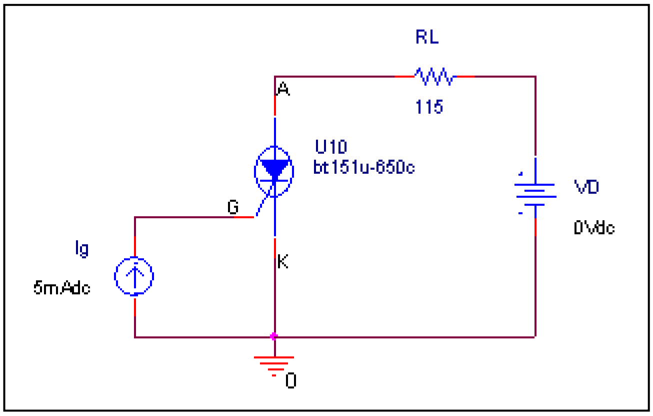


Comparison Table

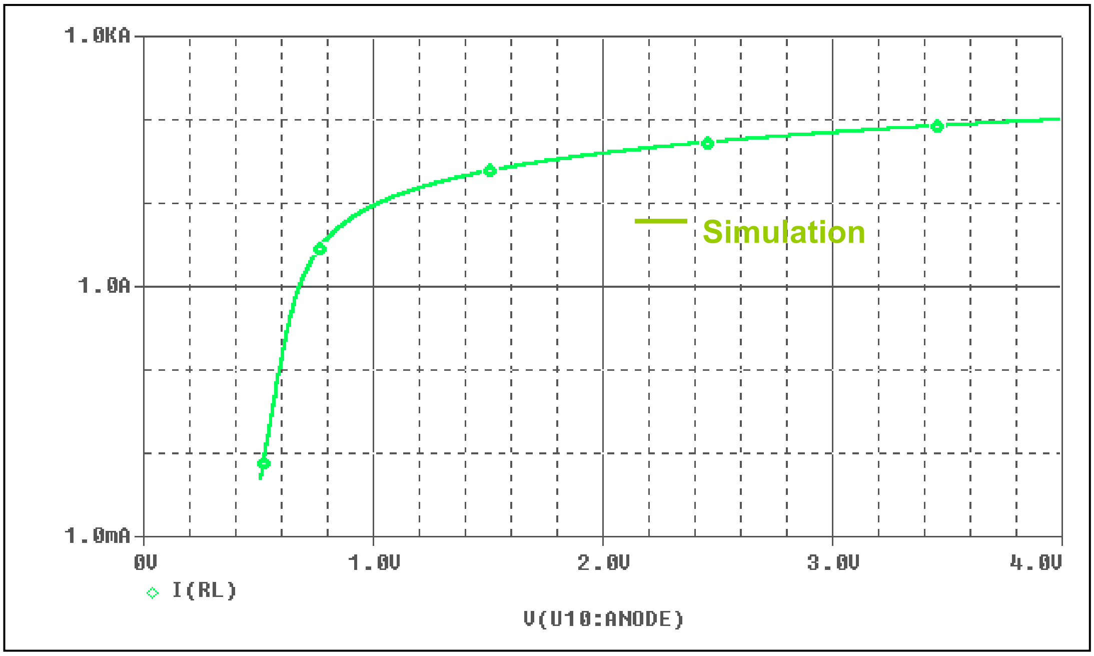
	Measurement	Simulation	% Error
IG_T (mA)	2	2	0
V_{GT} (V)	0.6	0.592672	-1.22133

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

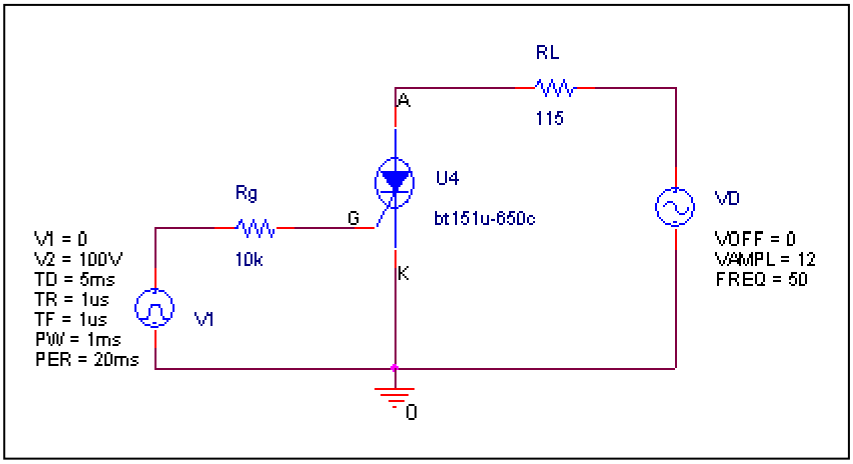


Comparison Table

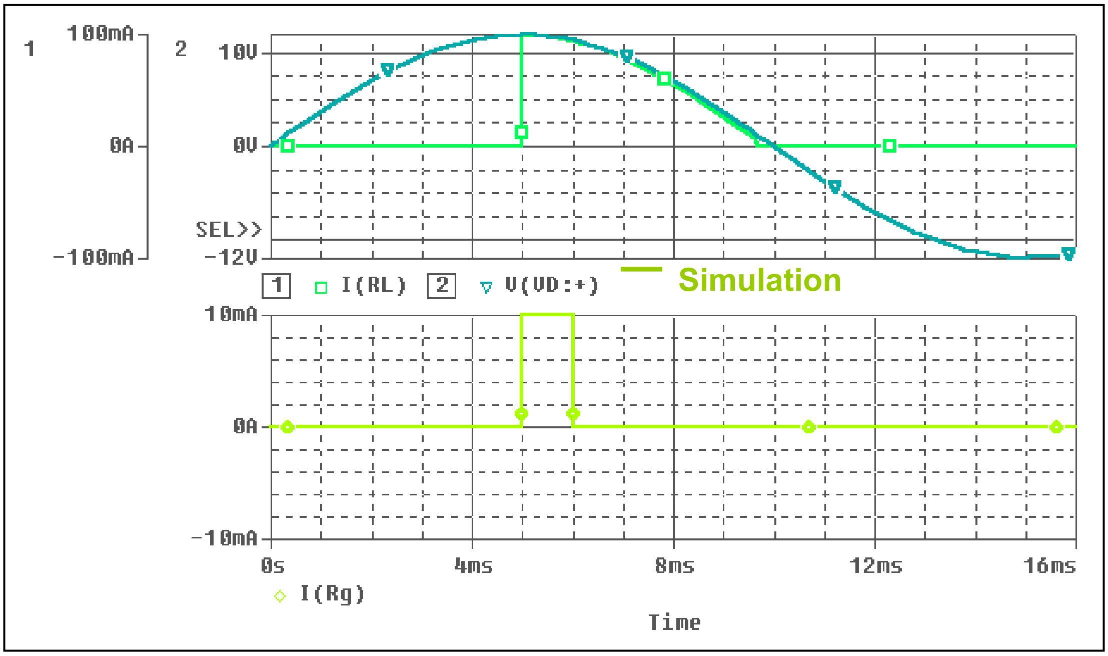
At ITM=23A	Measurement	Simulation	% Error
VTM(V)	1.44	1.4714	2.18056

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

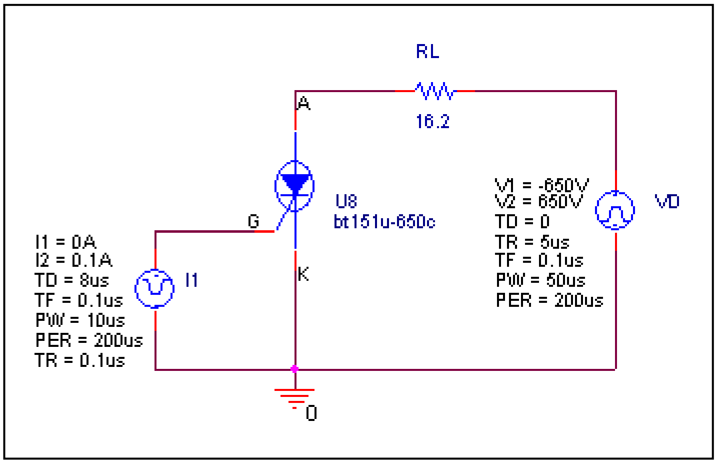


Comparison Table

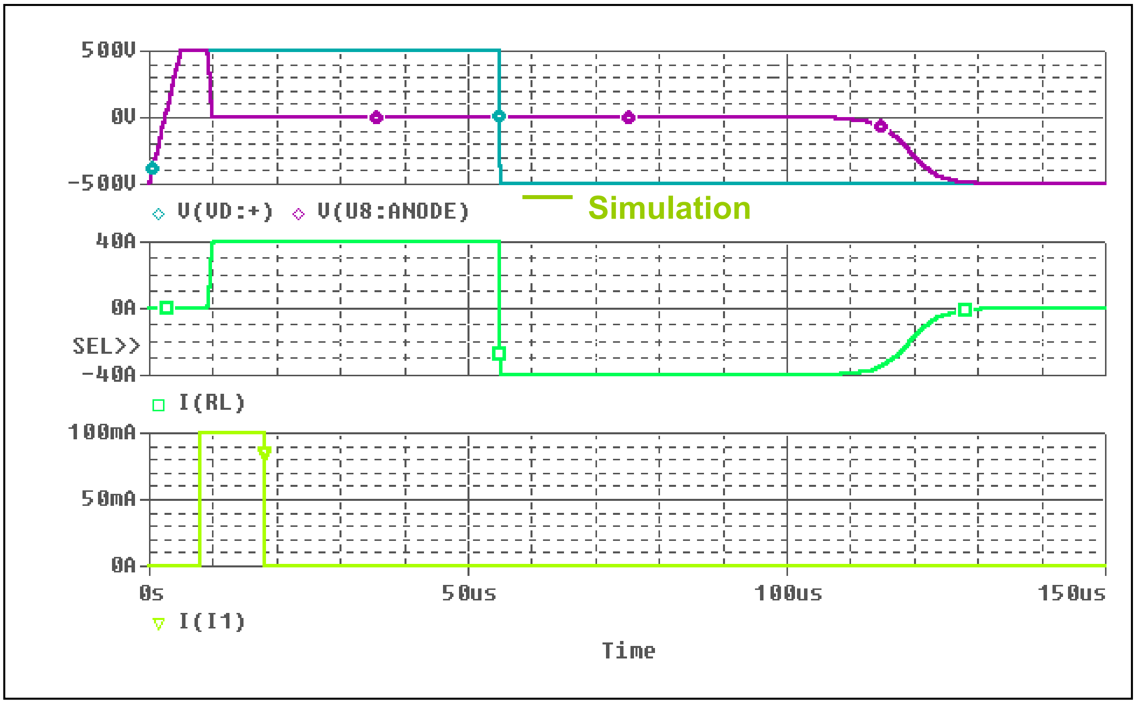
VD=12V	Measurement	Simulation	% Error
IH(mA)	7	7.2097	2.9957

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Ton(us)	2	2.0344	1.7200
Toff(us)	70	71.589	2.2700