

Device Modeling Report

COMPONENTS: THYRISTOR
PART NUMBER: BT145-500R
MANUFACTURER: PHILIPS SEMICONDUCTOR



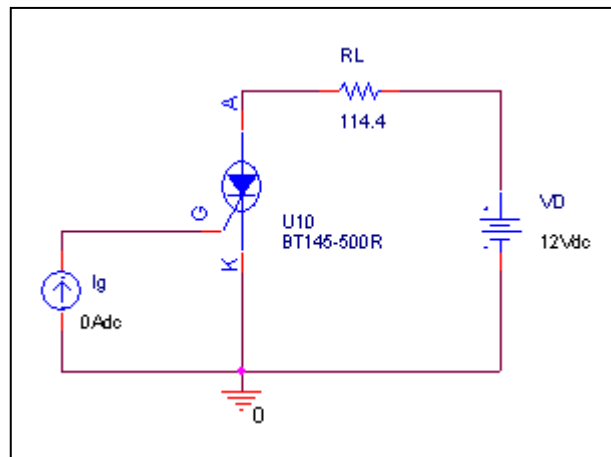
Bee Technologies Inc.

DIODE MODEL

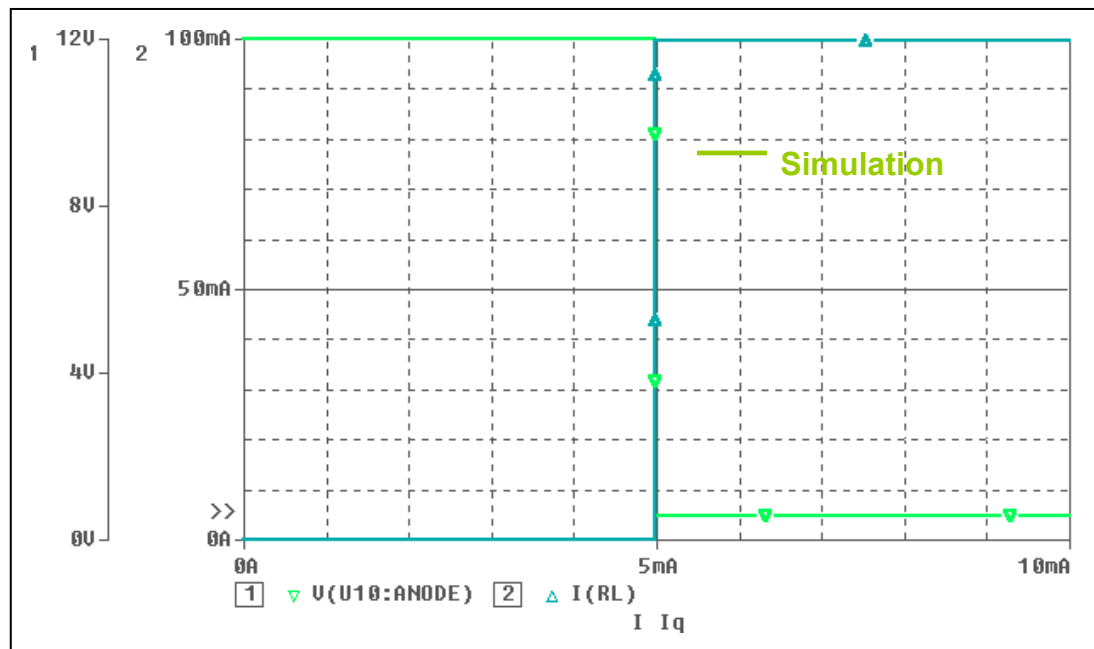
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

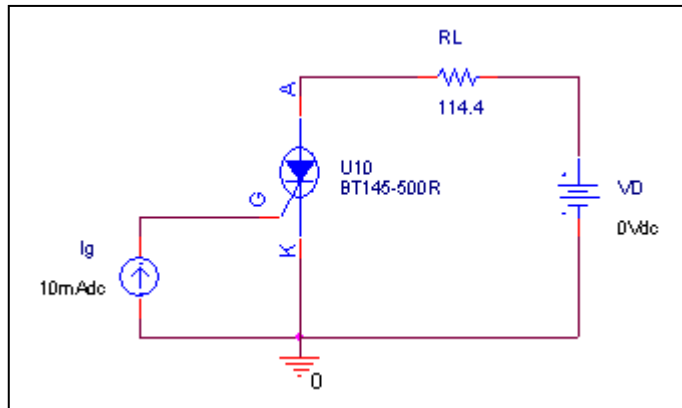


Comparison Table

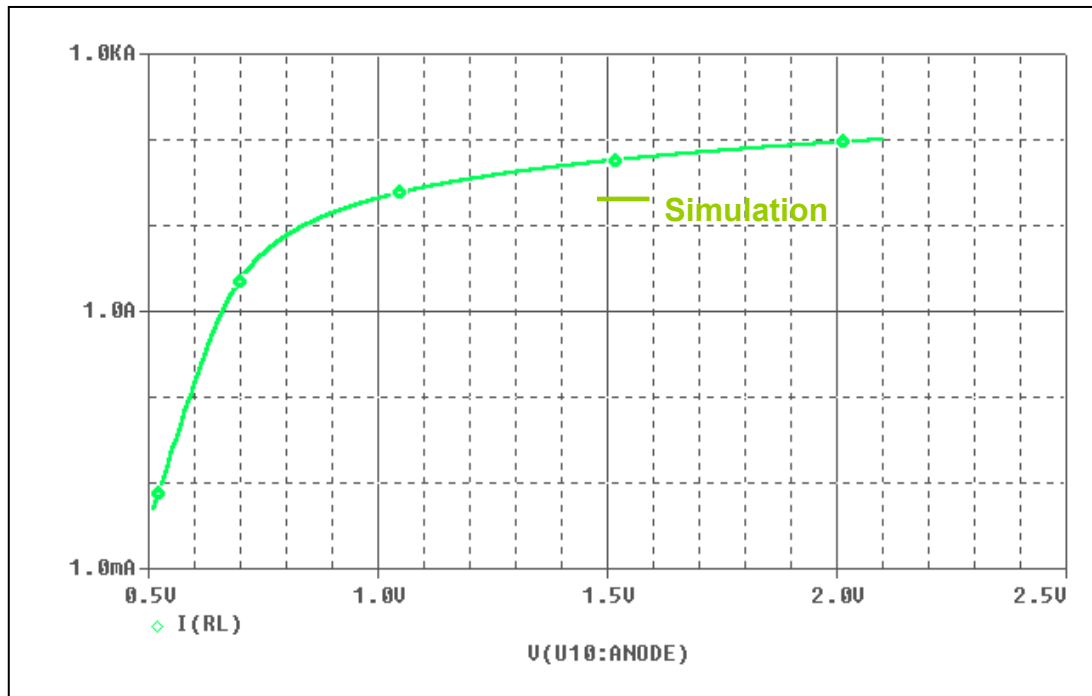
	Measurement	Simulation	% Error
I_{GT} (mA)	5	4.9734	-0.53200
V_{GT} (V)	0.6	0.590949	-1.50850

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

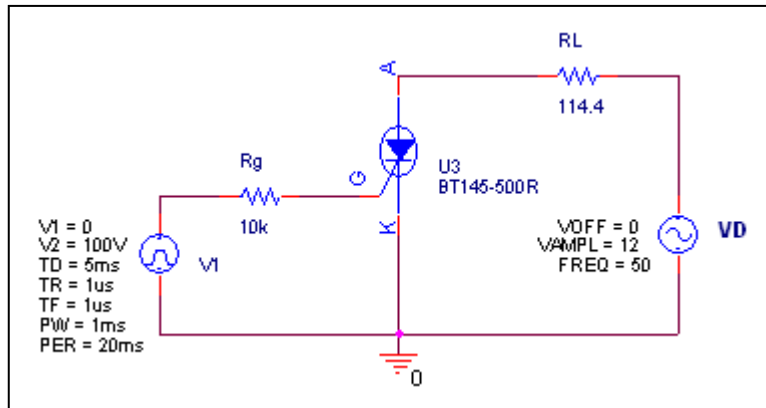


Comparison Table

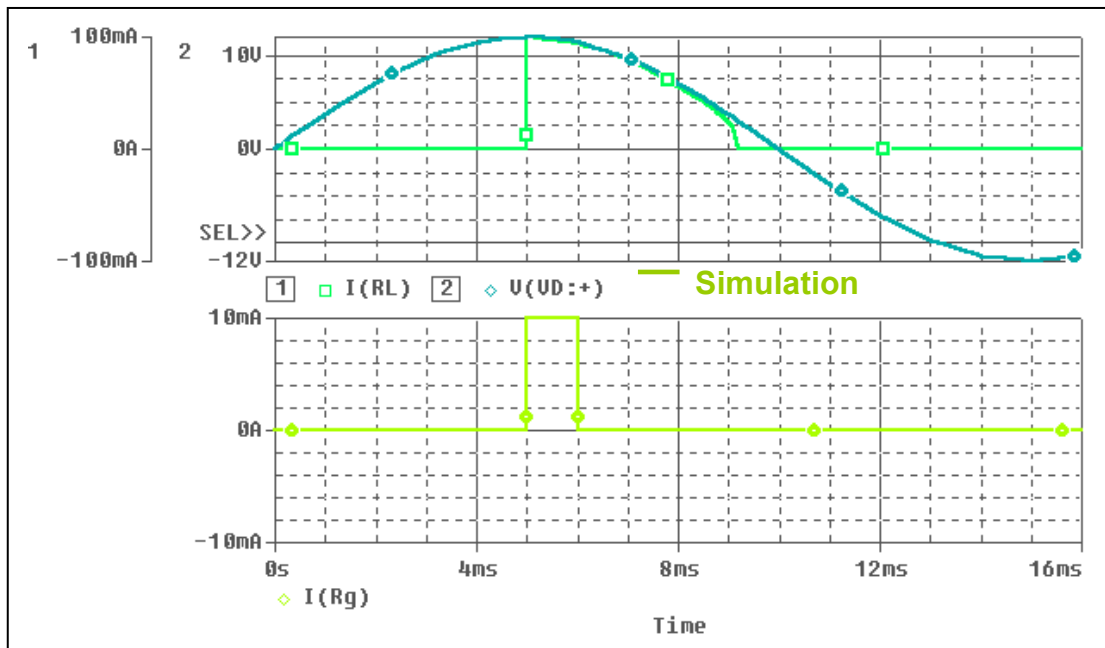
At ITM=30A	Measurement	Simulation	% Error
VTM(V)	1.1	1.1375	3.40909

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

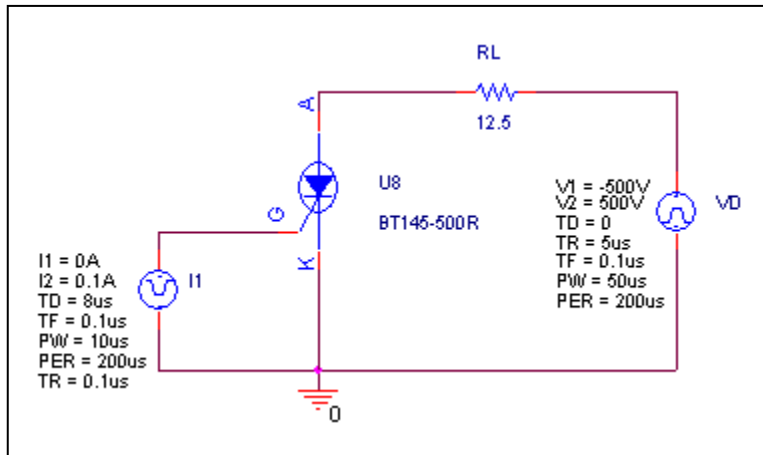


Comparison Table

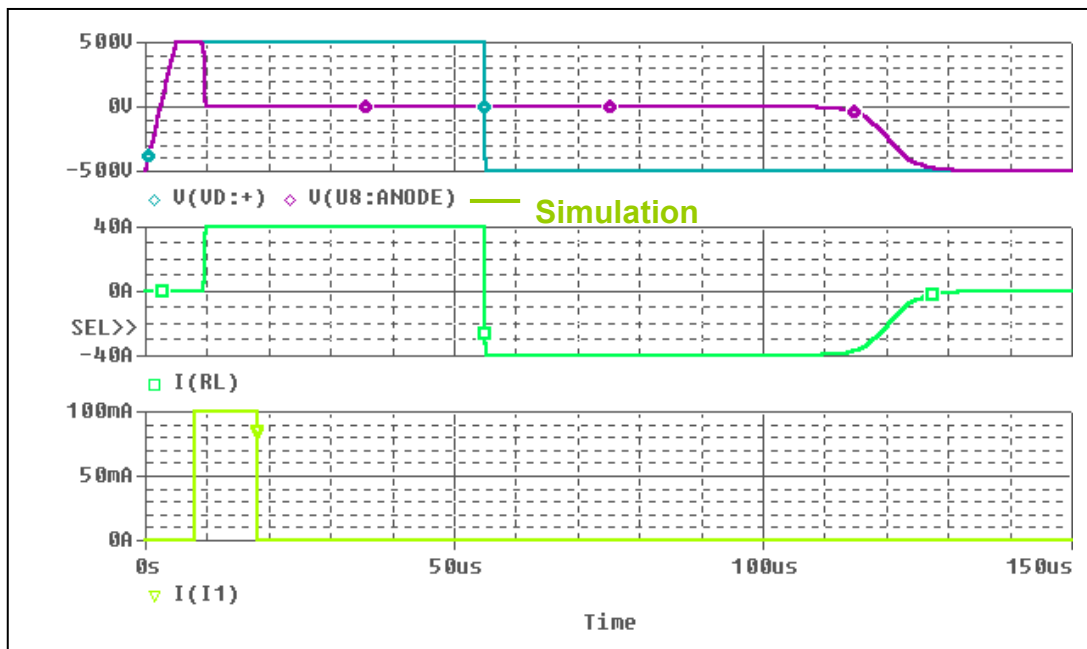
VD=12V	Measurement	Simulation	% Error
IH(mA)	20	19.428	-2.86000

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Ton(us)	2	1.9958	-0.21000
Toff(us)	70	70.436	0.62286