Device Modeling Report

COMPONENTS:THYRISTOR
PART NUMBER:MCR72-3
MANUFACTURER: MOTOROLA SEMICONDUCTOR

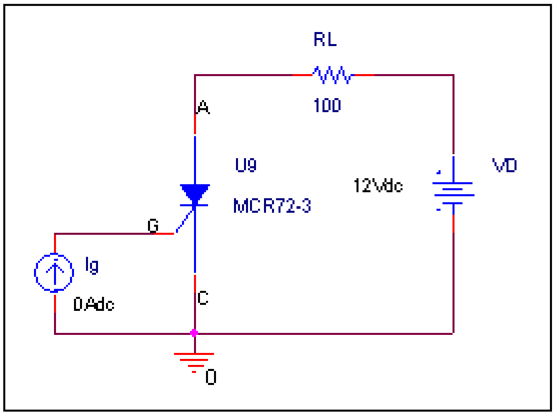
Bee Technologies Inc.

DIODE MODEL

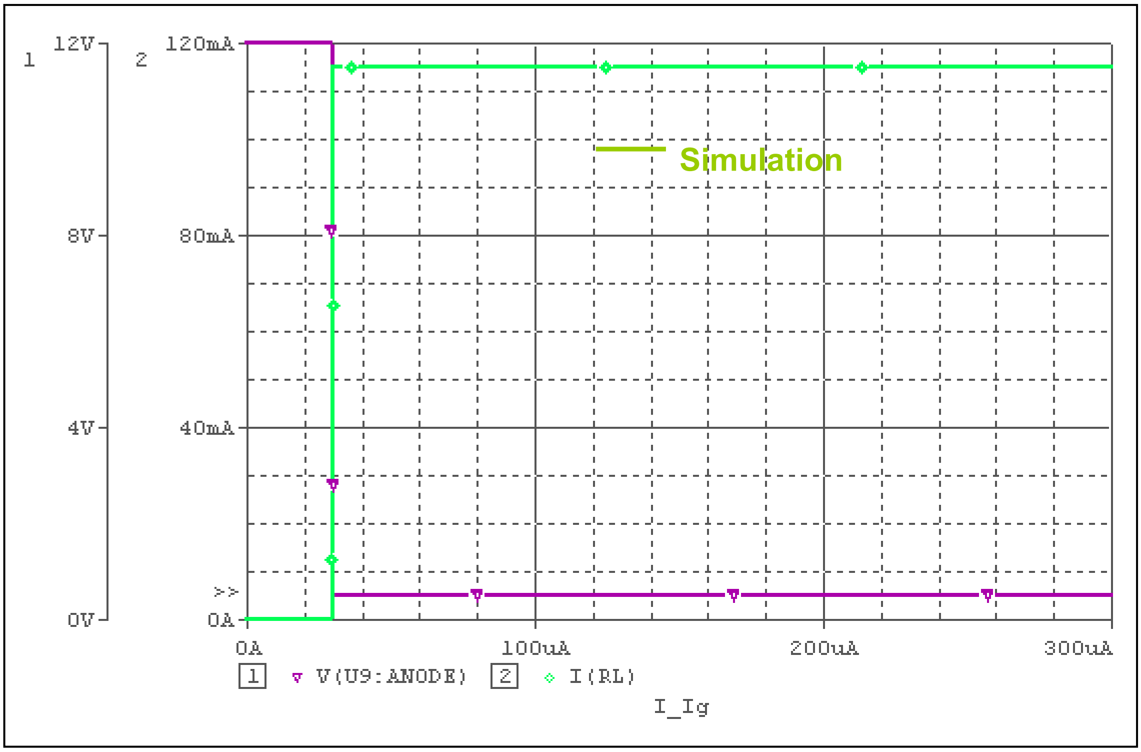
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

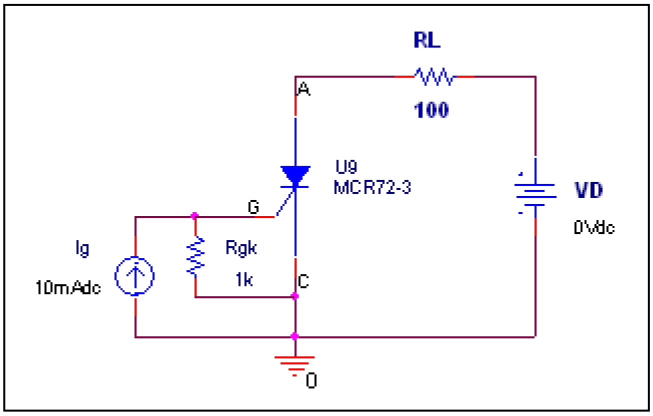


Comparison Table

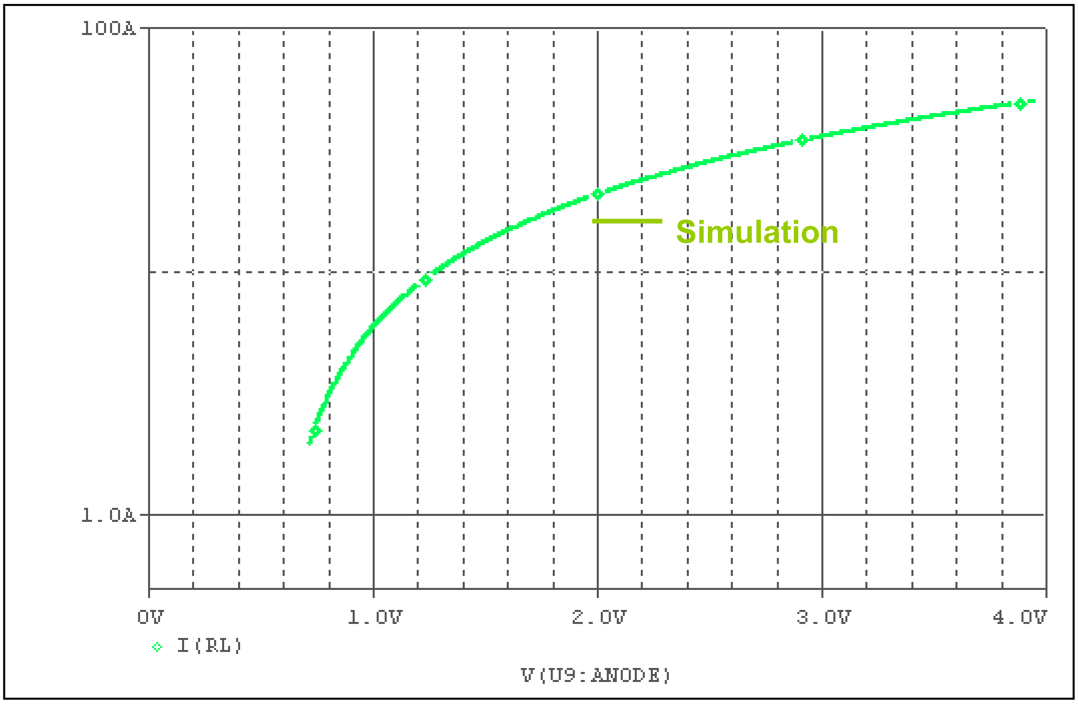
	Measurement	Simulation	% Error
I_{GT} (uA)	30	29.167	-2.77667
V_{GT} (V)	0.5	0.520791	4.15820

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

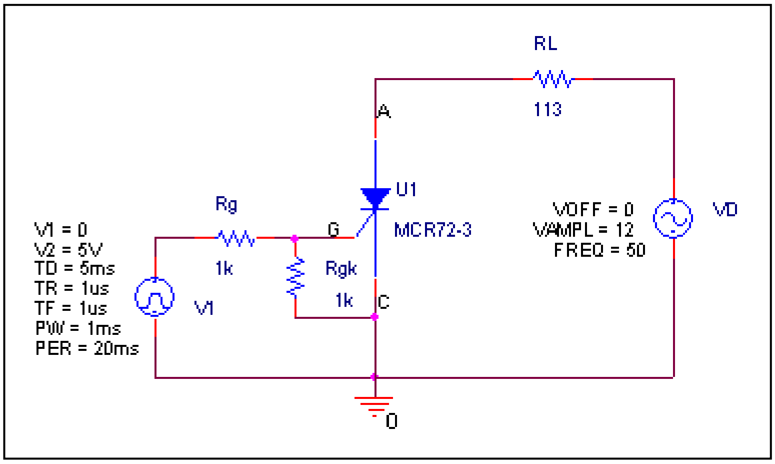


Comparison Table

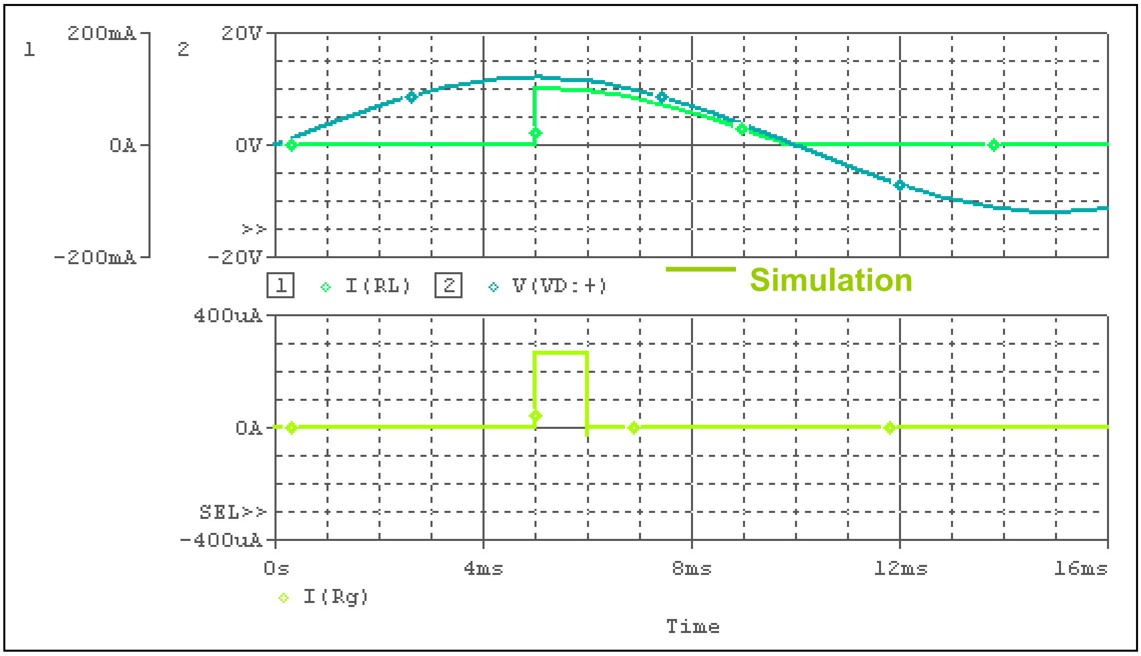
At ITM=16A	Measurement	Simulation	% Error
VTM(V)	1.7	1.6953	0.2765

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

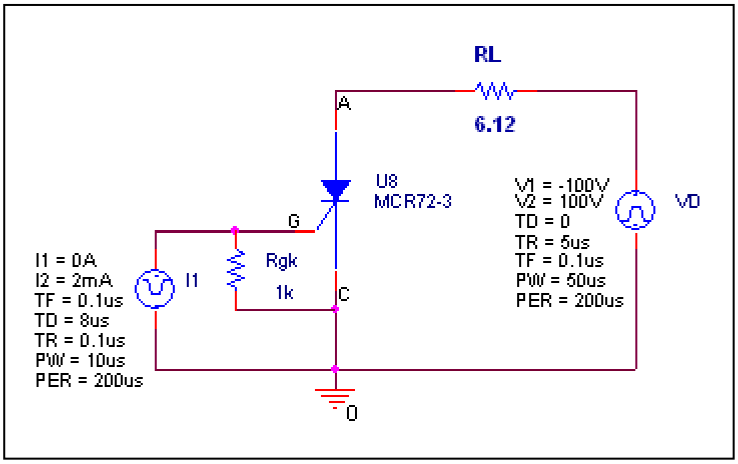


Comparison Table

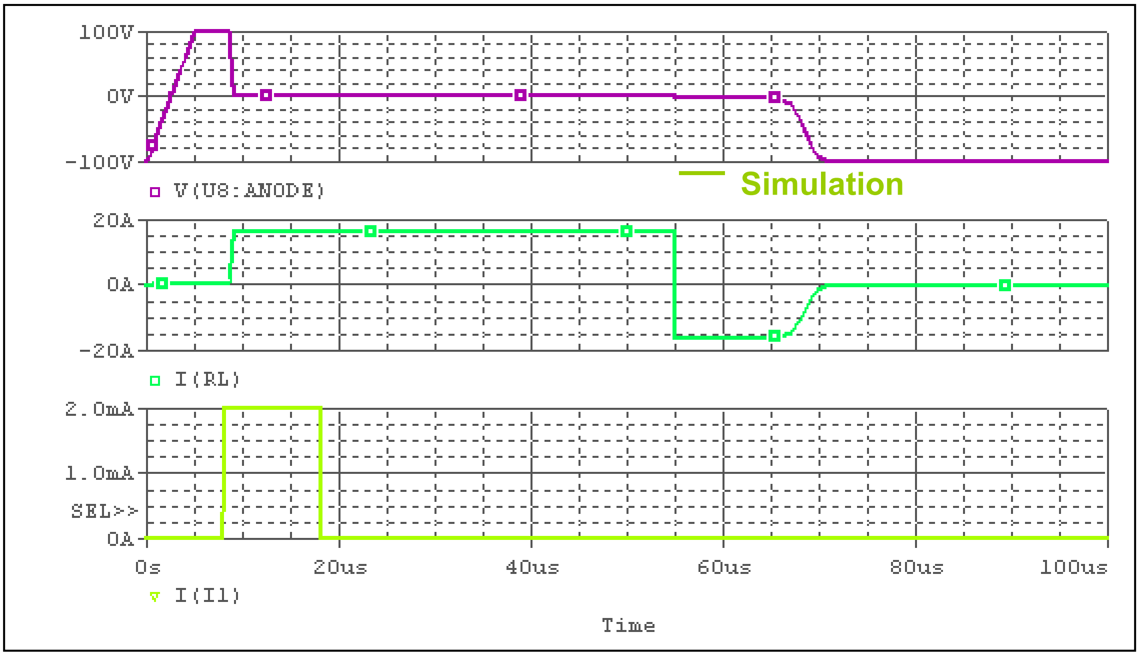
VD=12V	Measurement	Simulation	% Error
IH(mA)	6	5.7830	-3.61667

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	% Error
Ton(us)	1	1.0197	1.97000