

Device Modeling Report

COMPONENTS: THYRISTOR
PART NUMBER: MCR106-6
MANUFACTURER: PHILIPS SEMICONDUCTOR



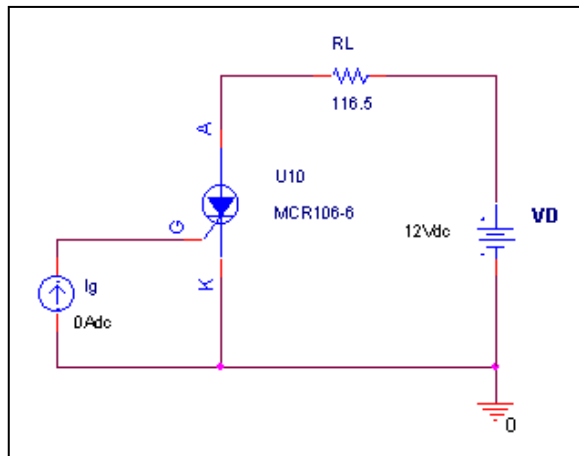
Bee Technologies Inc.

DIODE MODEL

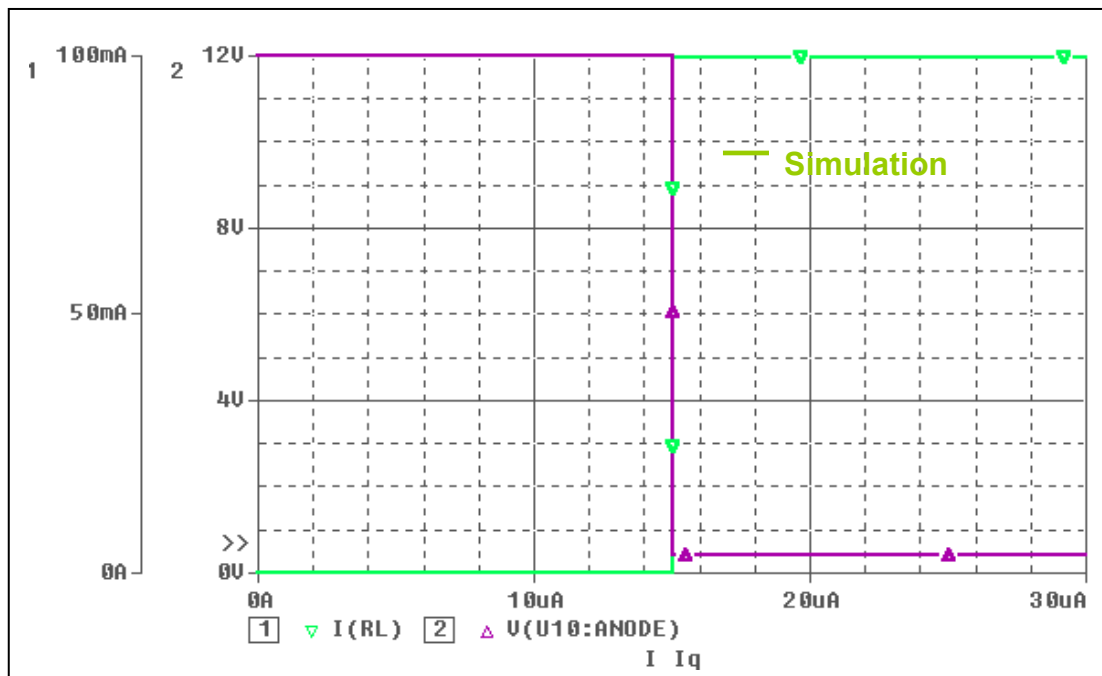
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

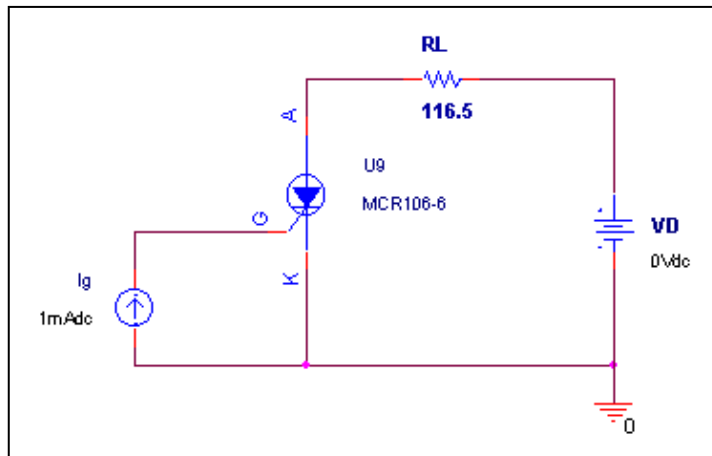


Comparison Table

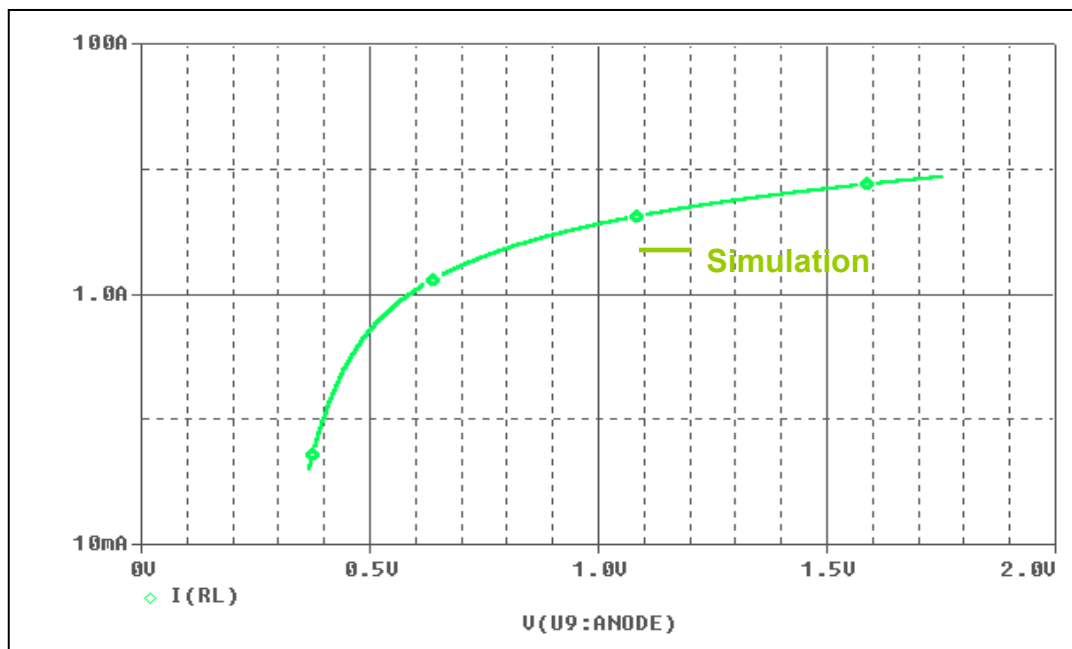
	Measurement	Simulation	% Error
I_{GT} (uA)	15	14.935	-0.43333
V_{GT} (V)	0.4	0.3999	-0.02500

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

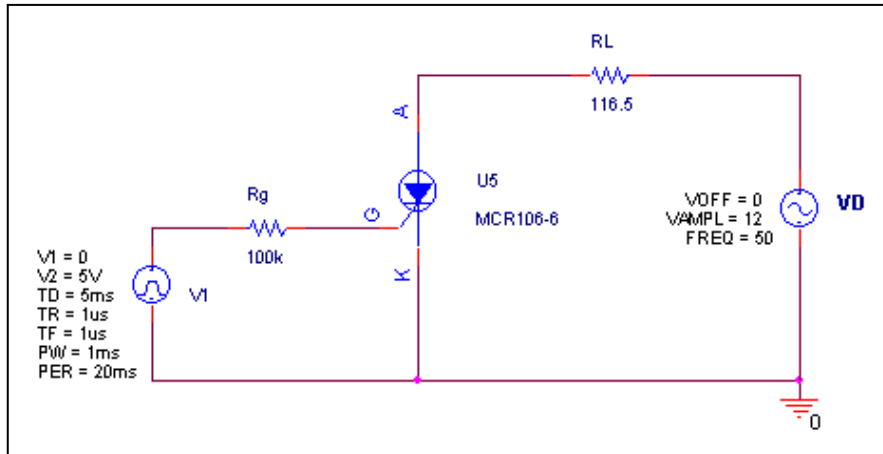


Comparison Table

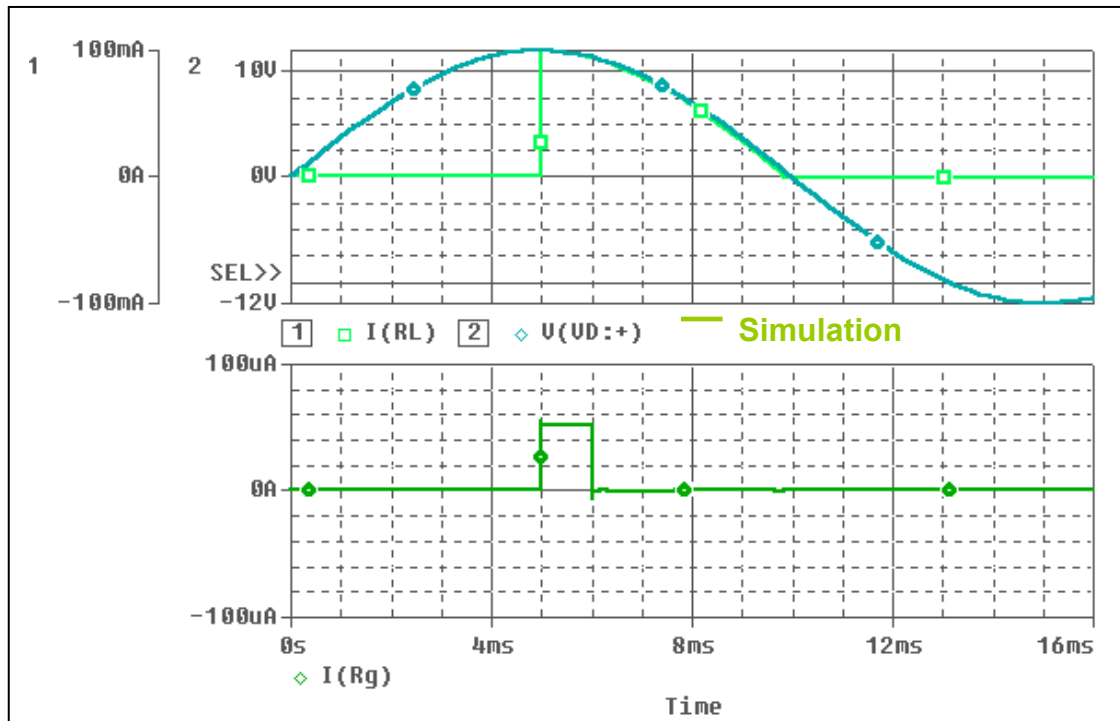
At ITM=5A	Measurement	Simulation	% Error
VTM(V)	1.23	1.2164	-1.10569

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

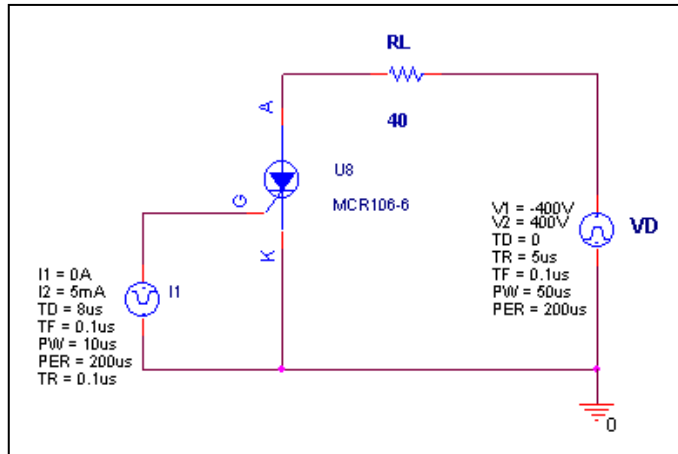


Comparison Table

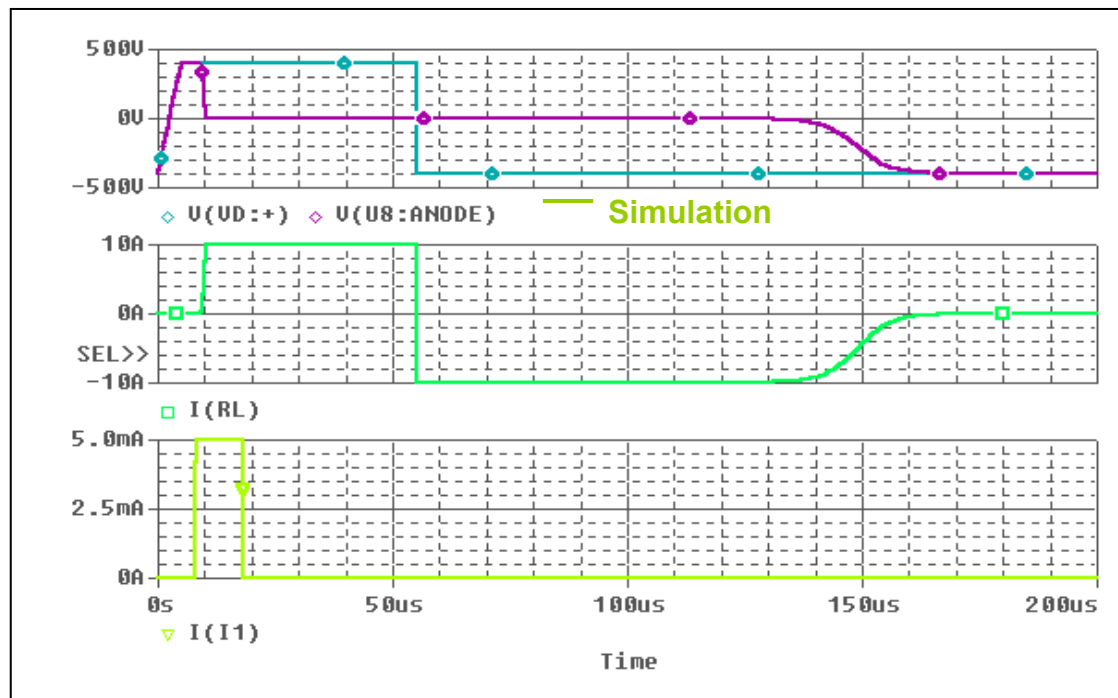
VD=12V	Measurement	Simulation	% Error
IH(mA)	6(max)	5.8379	-2.70167

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Ton(us)	2	2.0720	3.6000
Toff(us)	100	101.810	1.8100