

Device Modeling Report

COMPONENTS:THYRISTOR
PART NUMBER:MCR716
MANUFACTURER: ON SEMICONDUCTOR



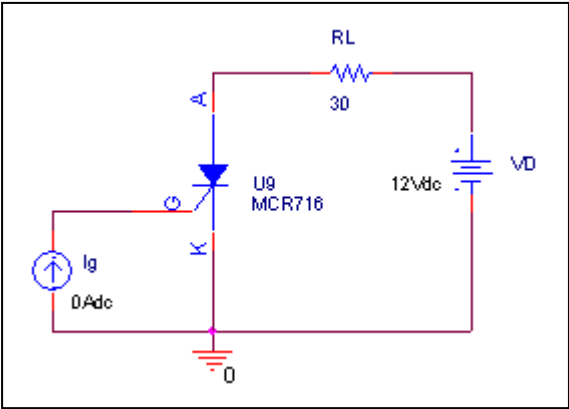
Bee Technologies Inc.

DIODE MODEL

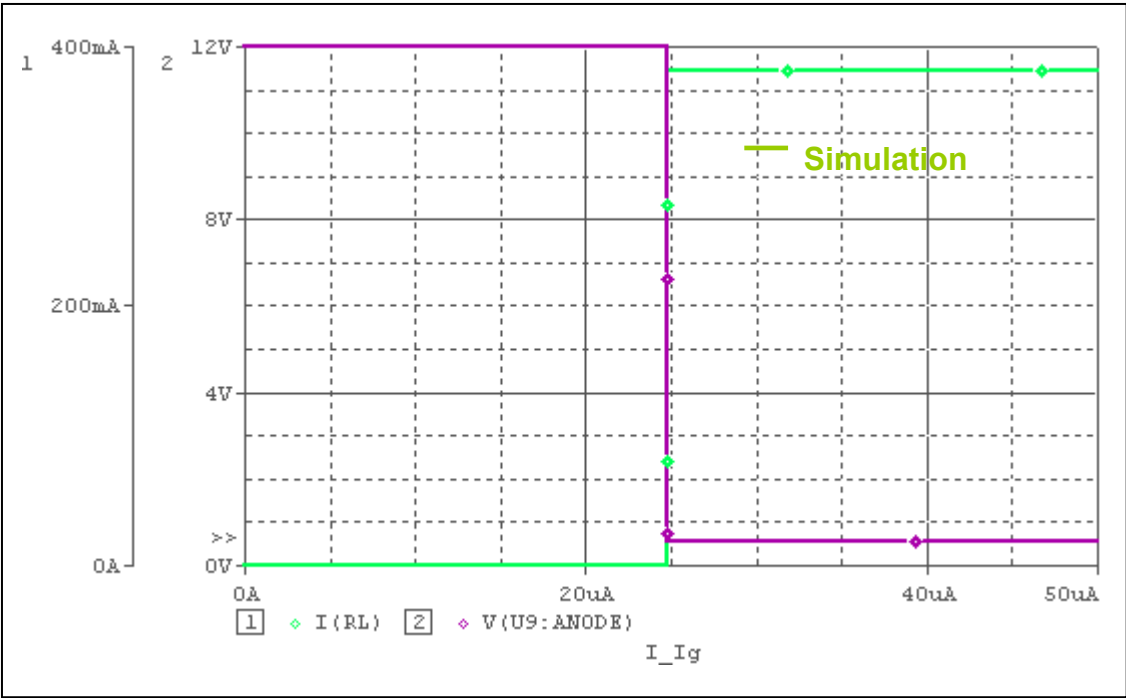
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

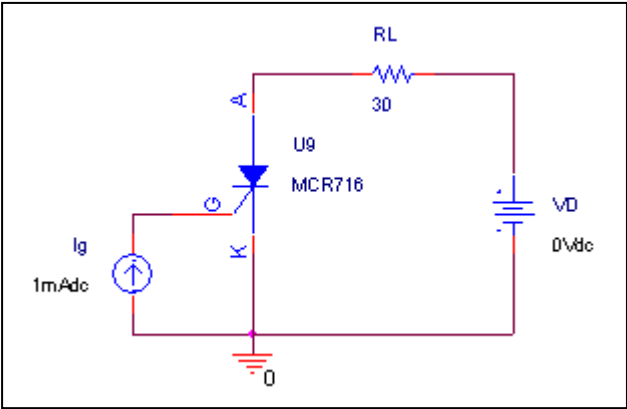


Comparison Table

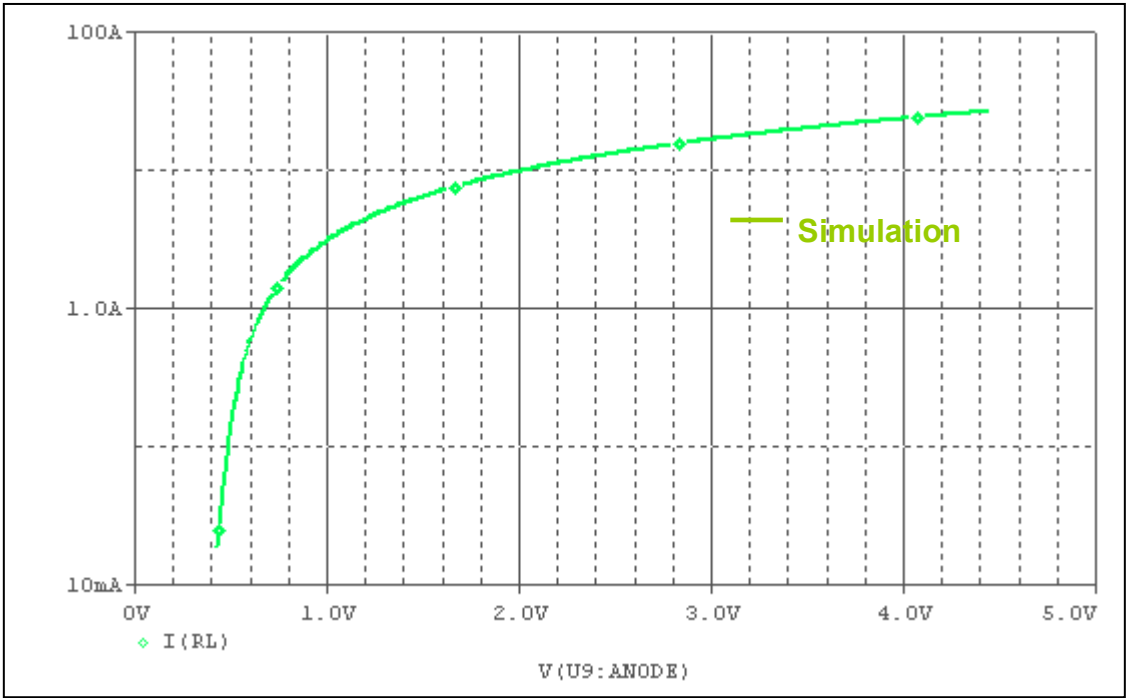
	Measurement	Simulation	% Error
I_{GT} (uA)	25	24.762	-0.95200
V_{GT} (V)	0.55	0.559226	1.67745

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

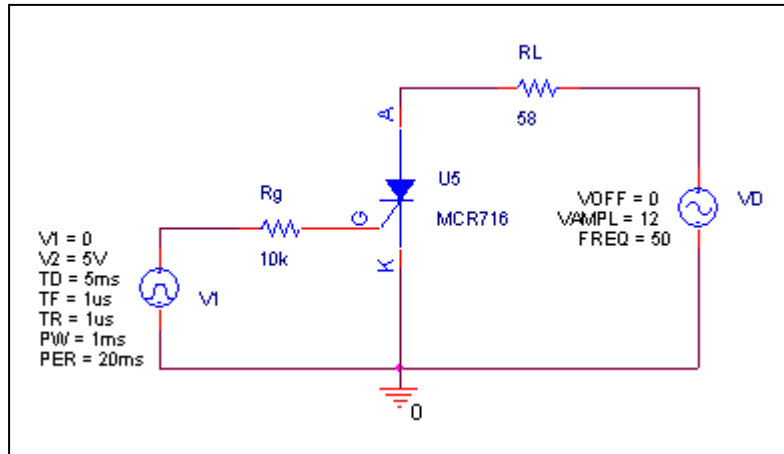


Comparison Table

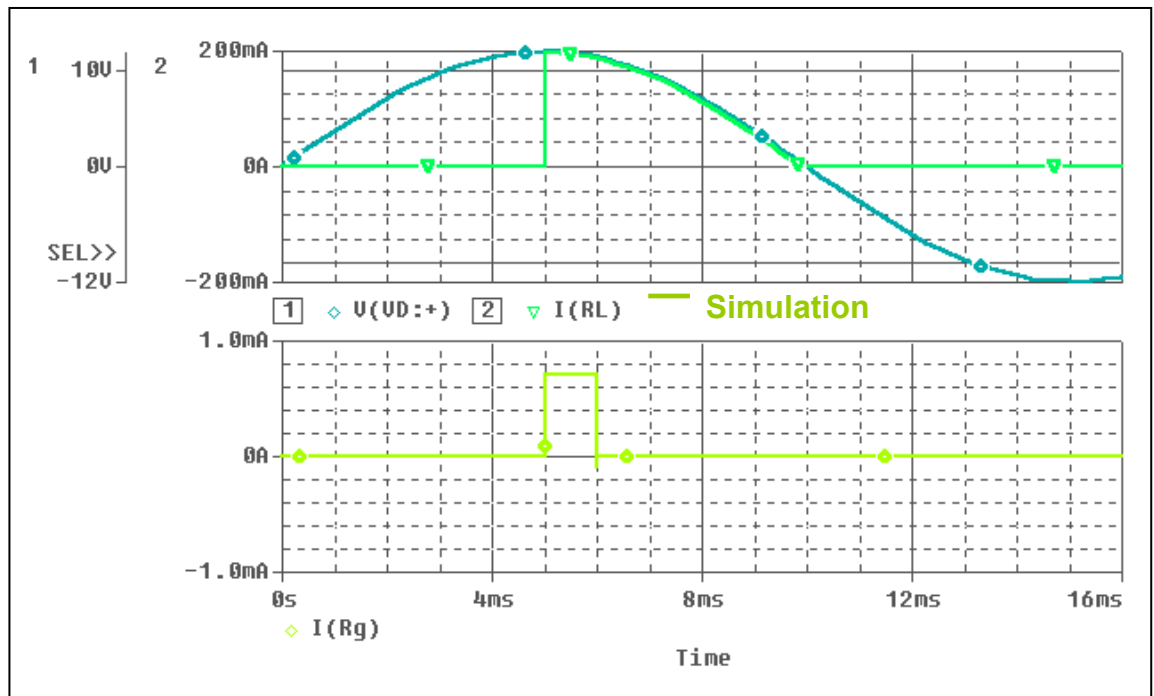
At ITM=5.0A	Measurement	Simulation	% Error
VTM(V)	1.3	1.2929	-0.54615

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

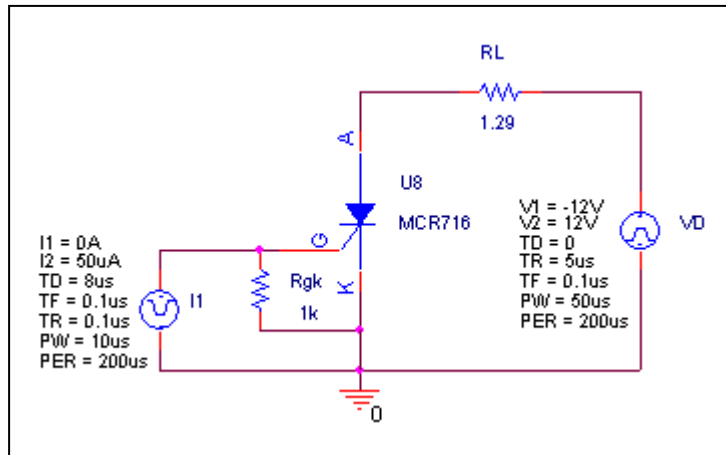


Comparison Table

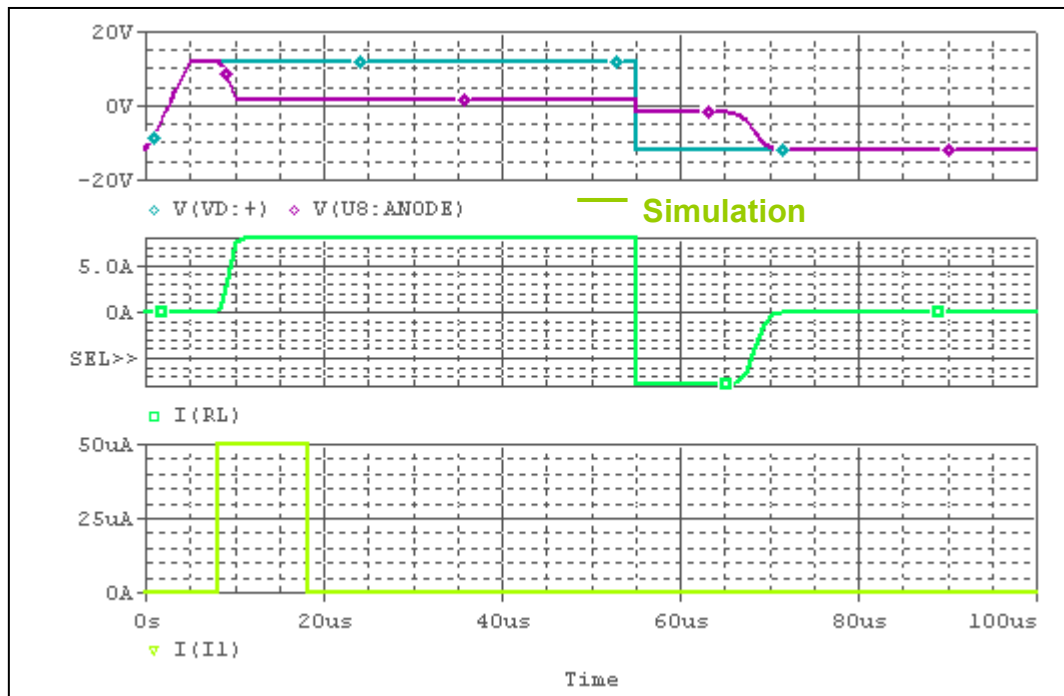
VD=12V	Measurement	Simulation	% Error
IH(mA)	5.0(max)	4.9772	-0.45600

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Ton(us)	2.0	2.0394	1.9700