

Device Modeling Report

COMPONENTS: THYRISTOR
PART NUMBER: MCR72-6
MANUFACTURER: ON SEMICONDUCTOR



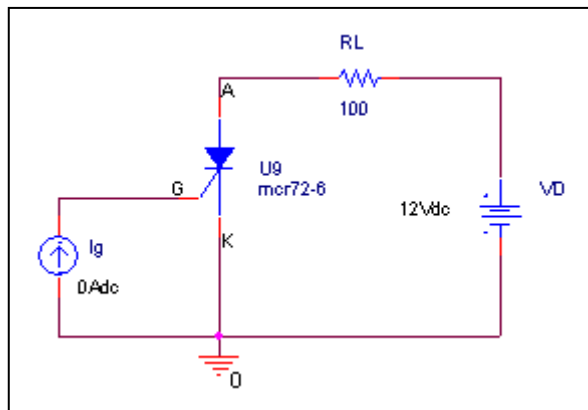
Bee Technologies Inc.

DIODE MODEL

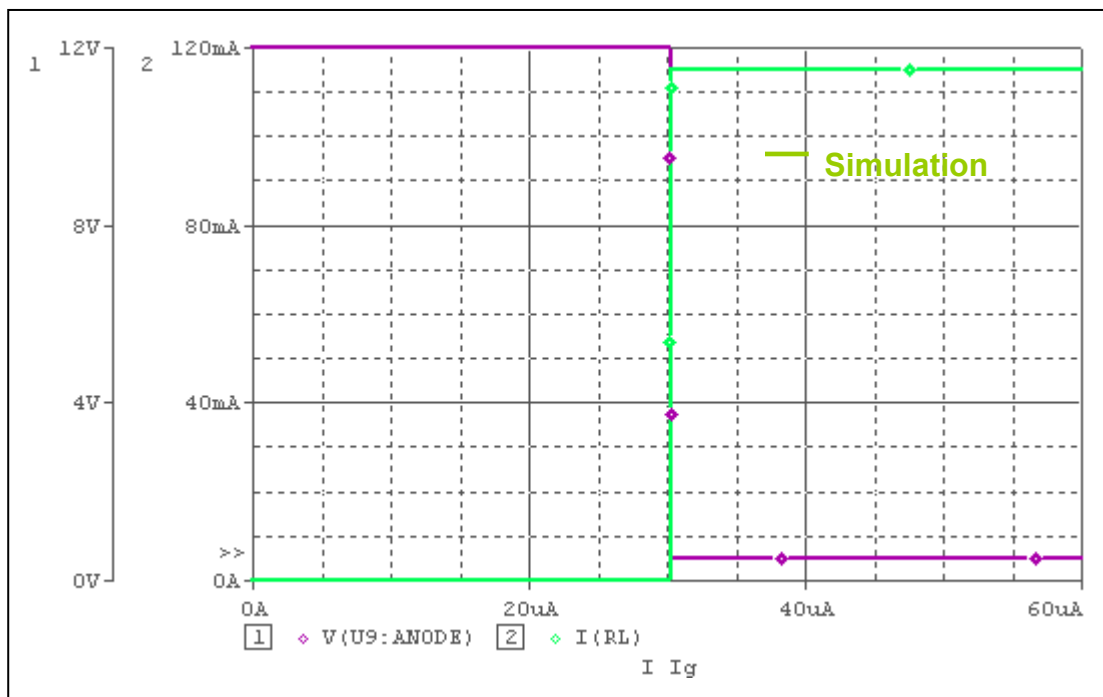
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

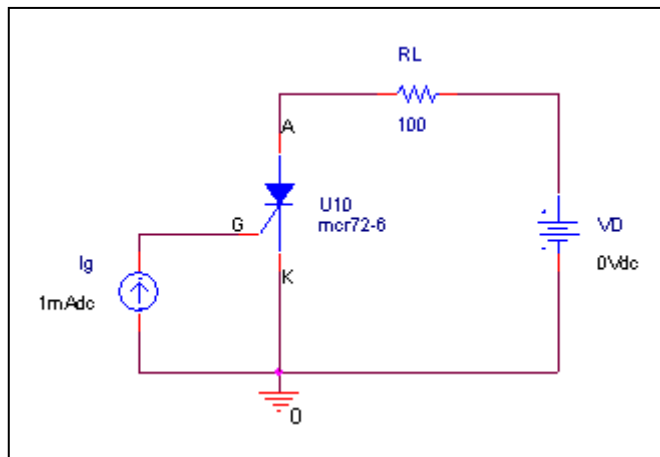


Comparison Table

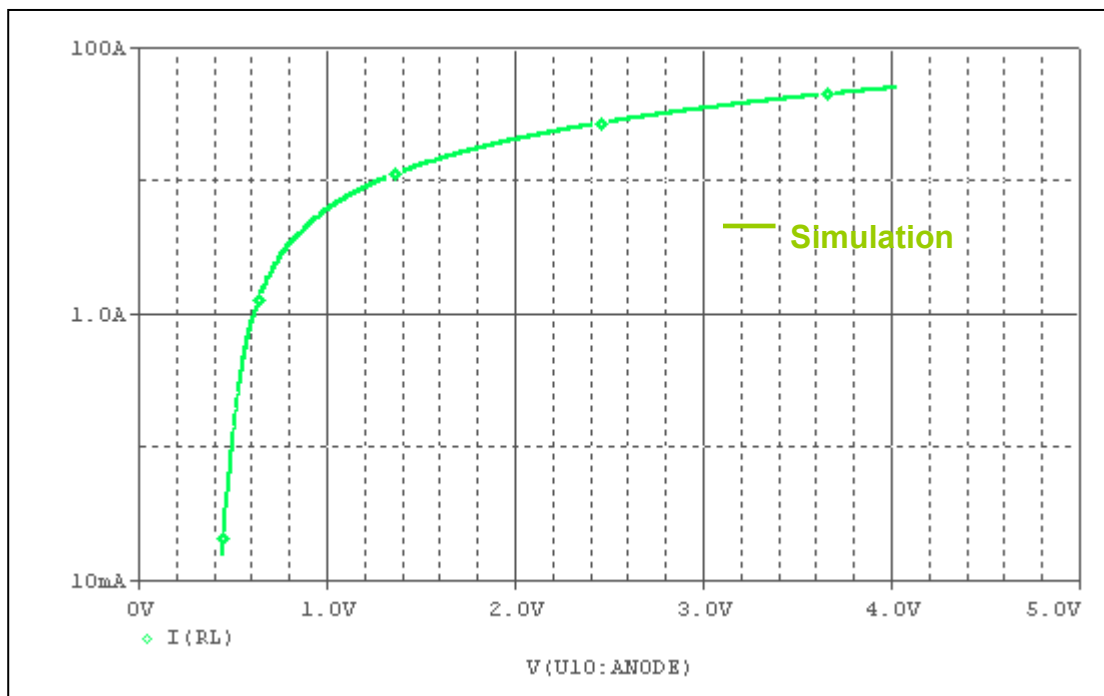
	Measurement	Simulation	% Error
I_{GT} (μA)	30	30.360	1.20000
V_{GT} (V)	0.5	0.498073	-0.38540

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

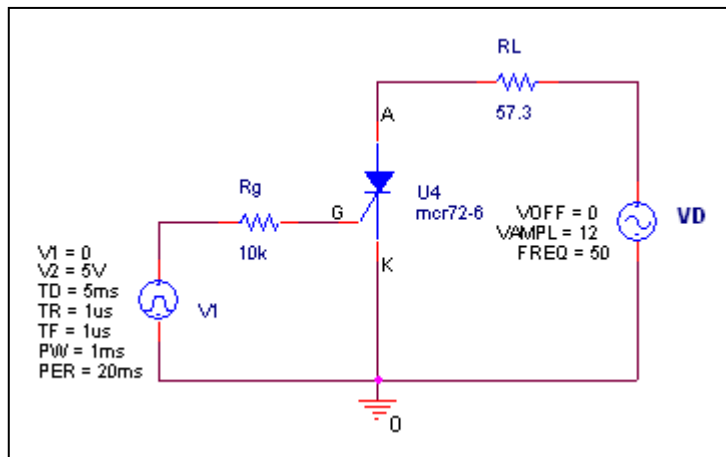


Comparison Table

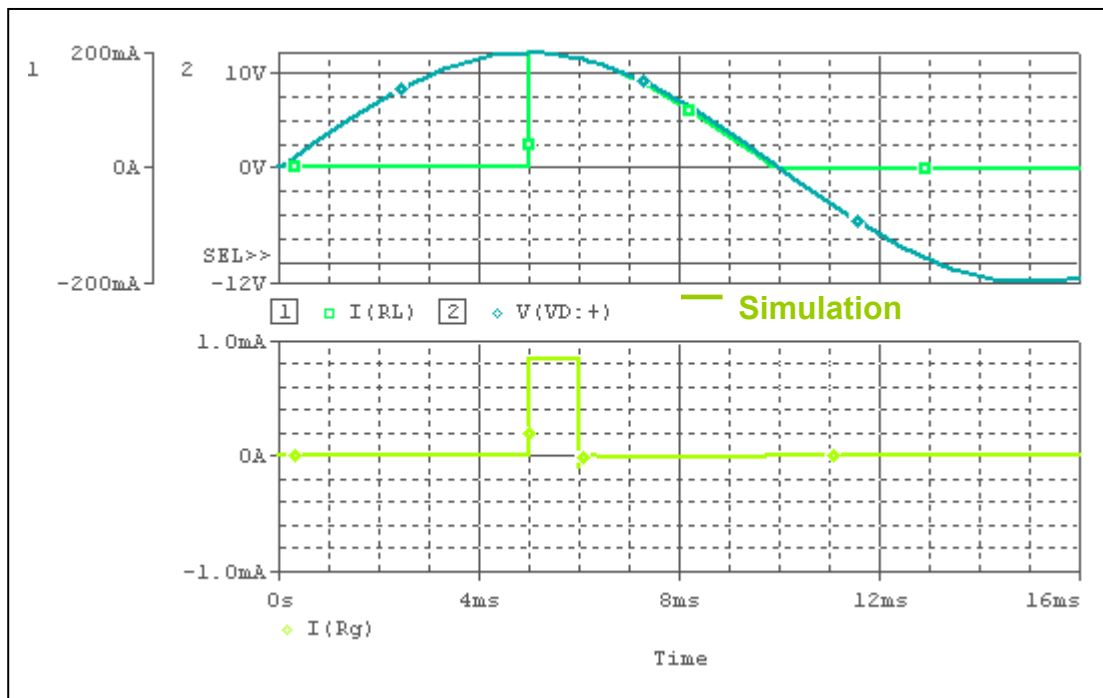
At ITM=16A	Measurement	Simulation	% Error
VTM(V)	1.7	1.6989	-0.06471

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

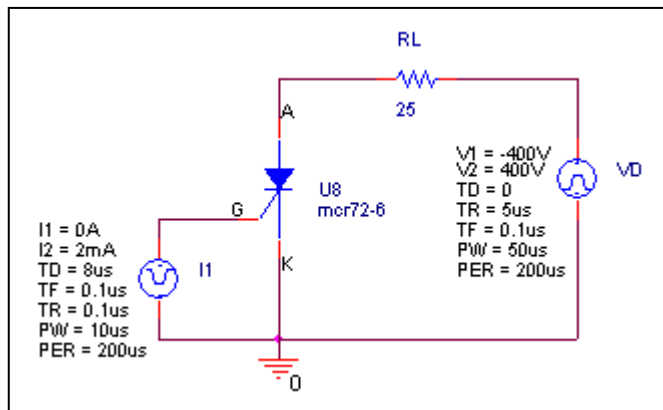


Comparison Table

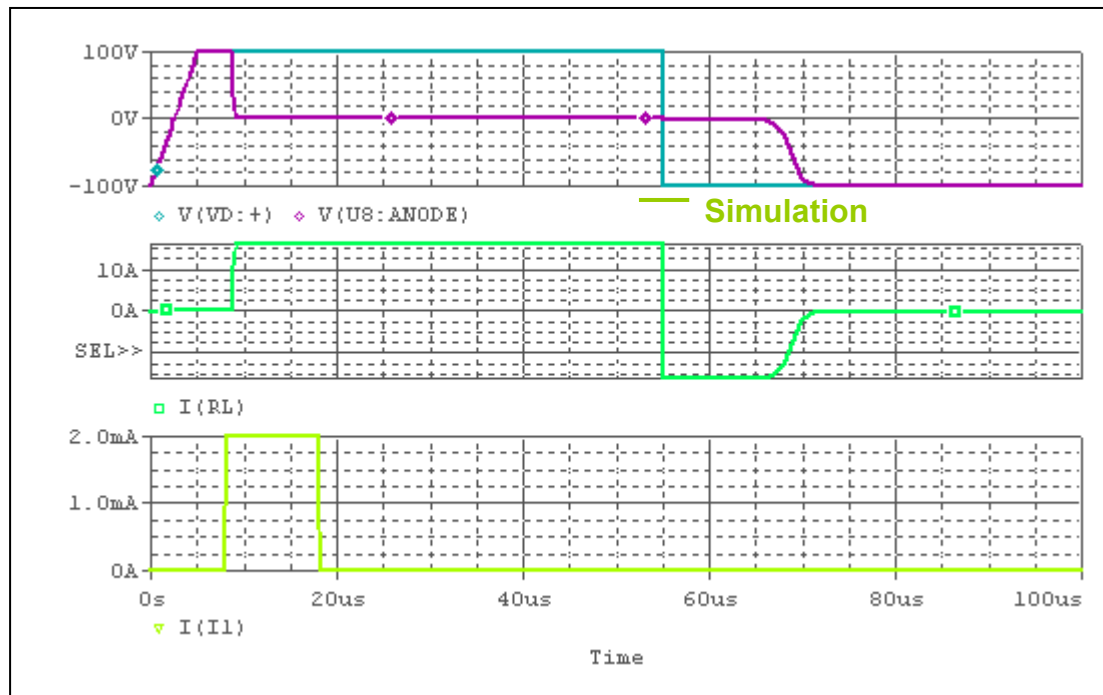
VD=12V	Measurement	Simulation	% Error
IH(mA)	6(max)	5.7463	-4.22833

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
$T_{on}(\mu s)$	1	0.993430	-0.65700