

Device Modeling Report

COMPONENTS:THYRISTOR
PART NUMBER:MCR704A
MANUFACTURER: ON SEMICONDUCTOR



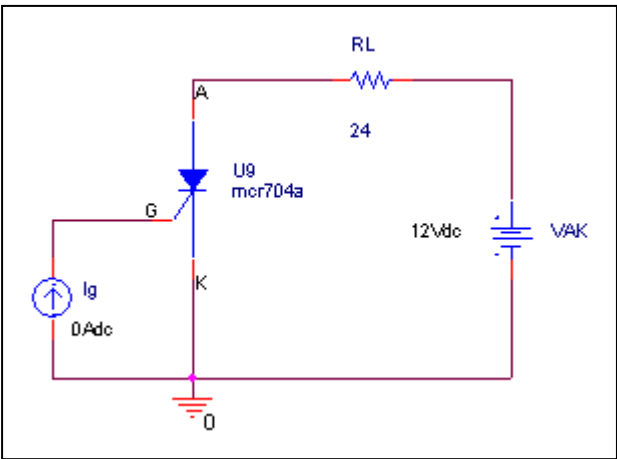
Bee Technologies Inc.

DIODE MODEL

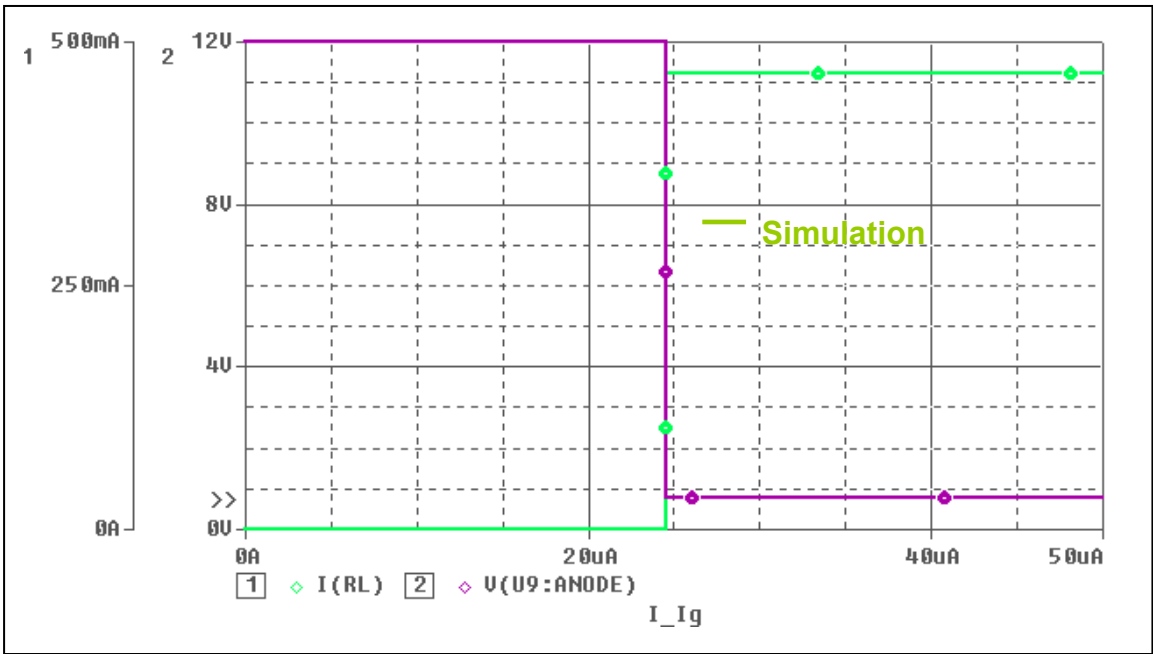
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

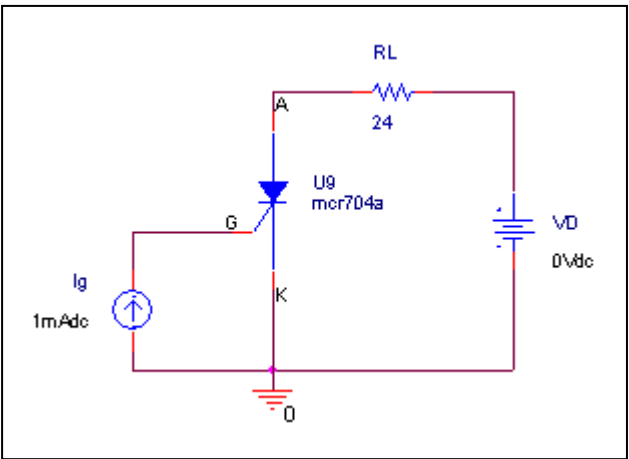


Comparison Table

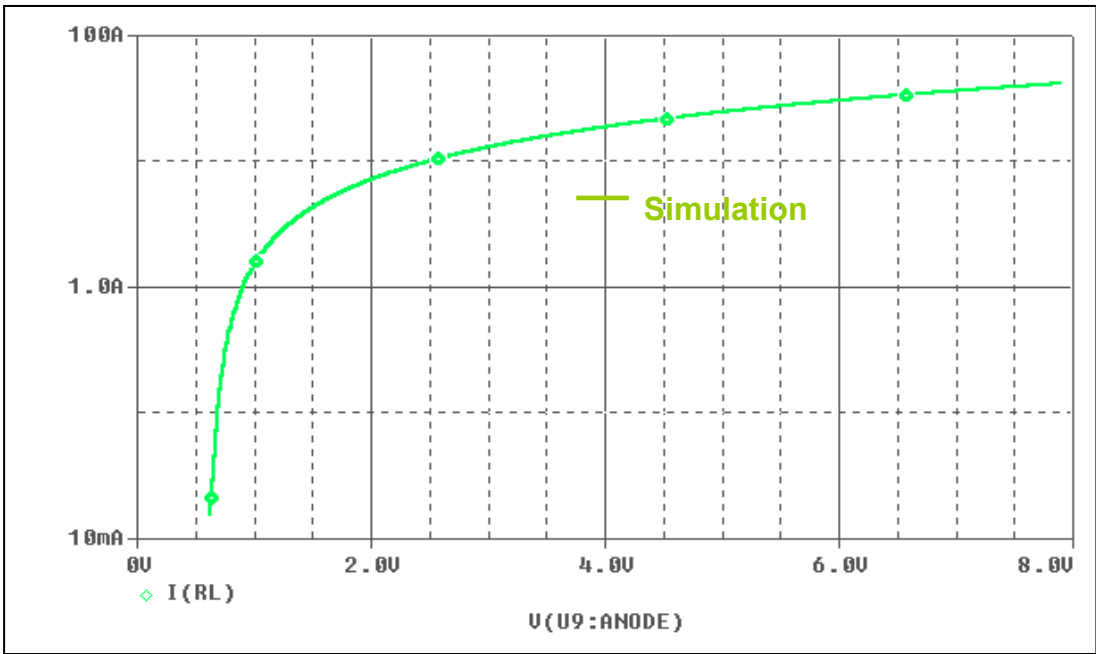
	Measurement	Simulation	% Error
I_{GT} (μA)	25	24.550	-1.80000
V_{GT} (V)	0.8(max)	0.794261	-0.71738

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

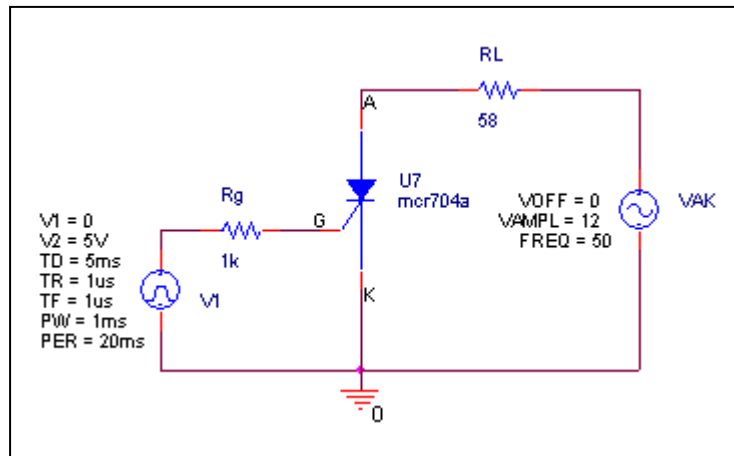


Comparison Table

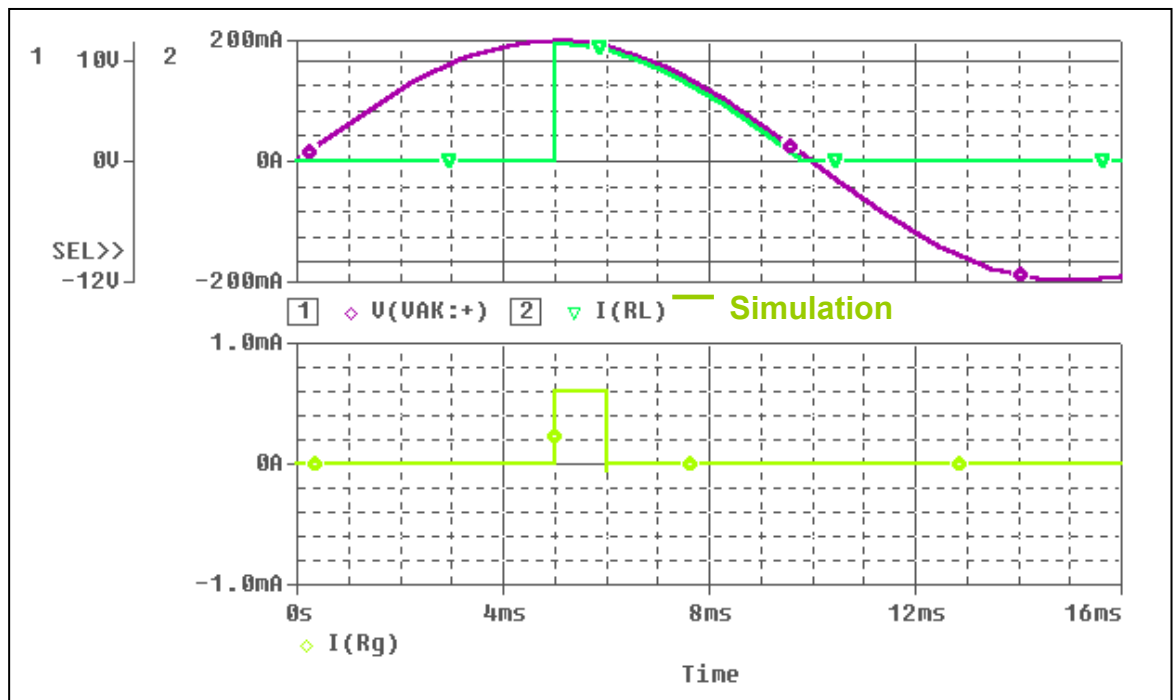
At ITM=8.2A	Measurement	Simulation	% Error
VTM(V)	2.2(max)	2.1875	-0.56818

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

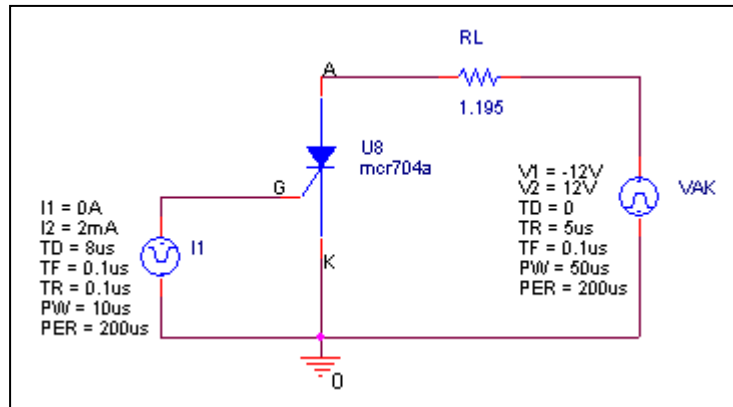


Comparison Table

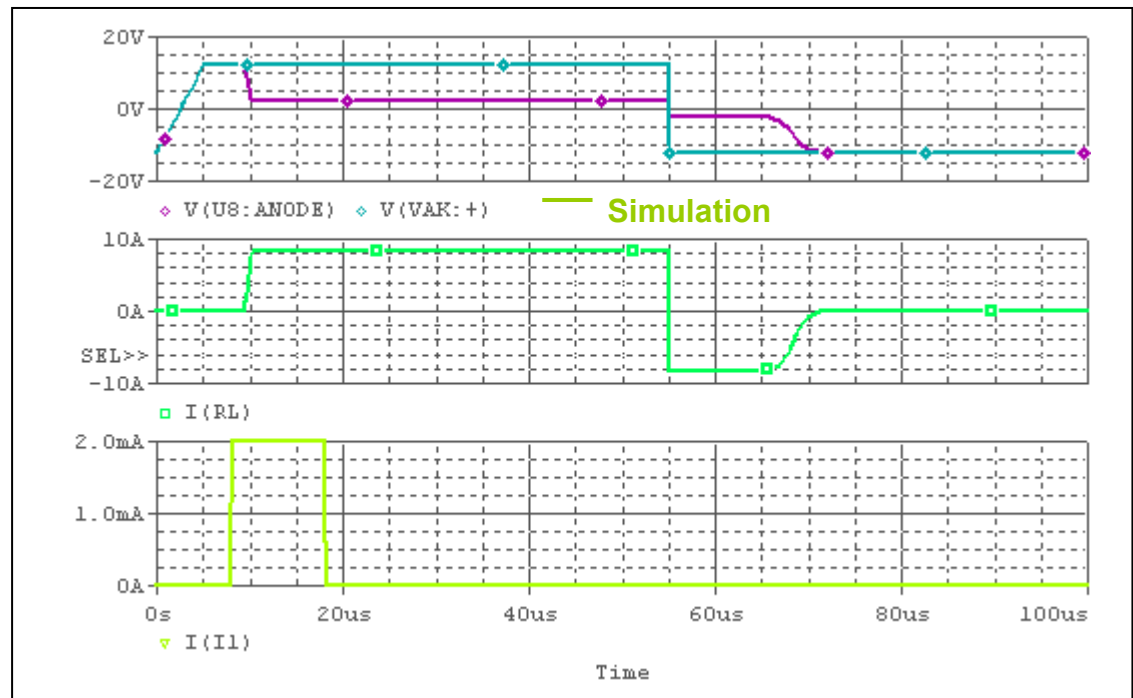
VD=12V	Measurement	Simulation	% Error
IH(mA)	5.0(max)	4.8584	-2.83200

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Ton(us)	2.0	2.0353	1.76500