Device Modeling Report

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PART NUMBER:MCR706A
MANUFACTURER: ON SEMICONDUCTOR

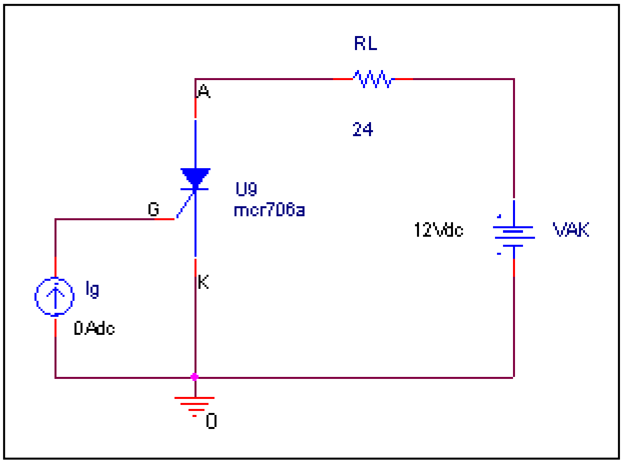
Bee Technologies Inc.

DIODE MODEL

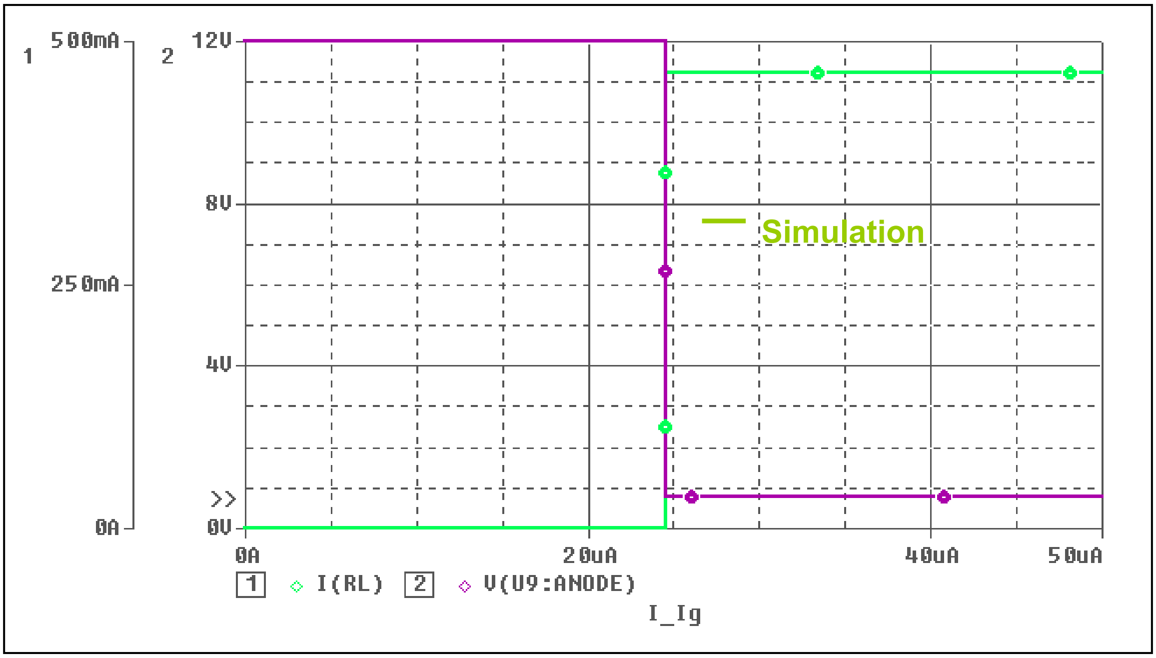
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

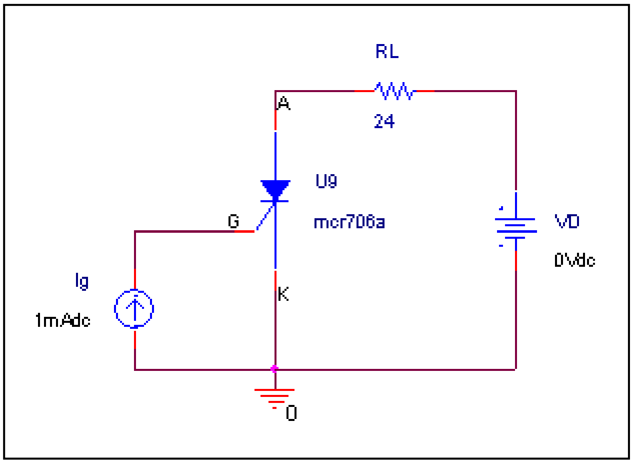


Comparison Table

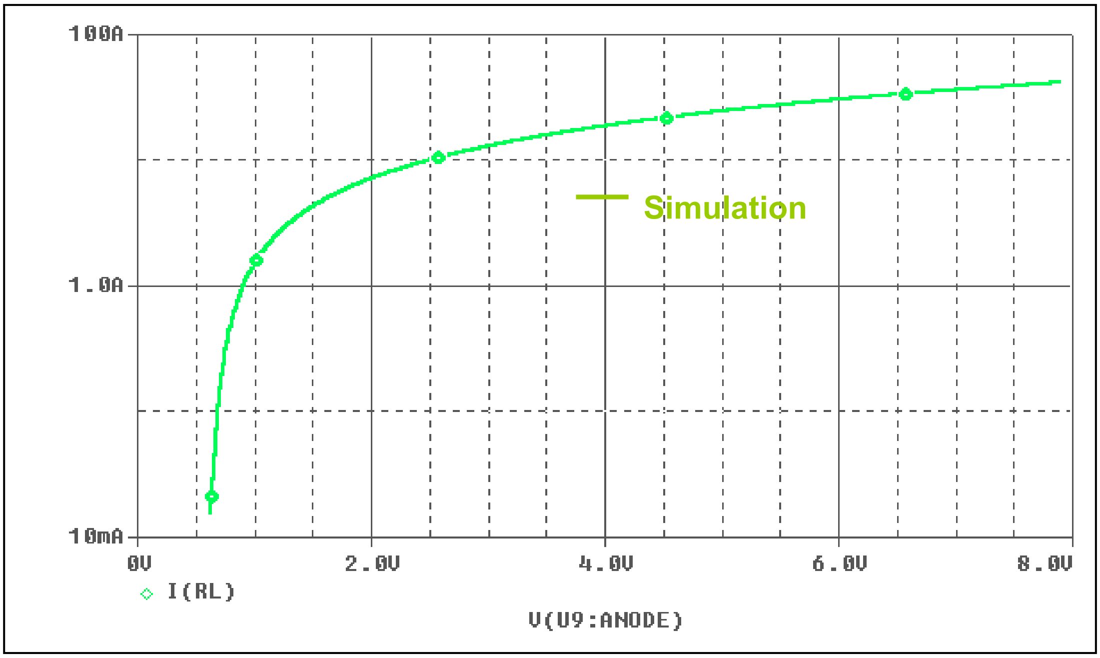
	Measurement	Simulation	% Error
IG_T (uA)	25	24.881	-0.47600
V_{GT} (V)	0.8(max)	0.794261	-0.71738

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

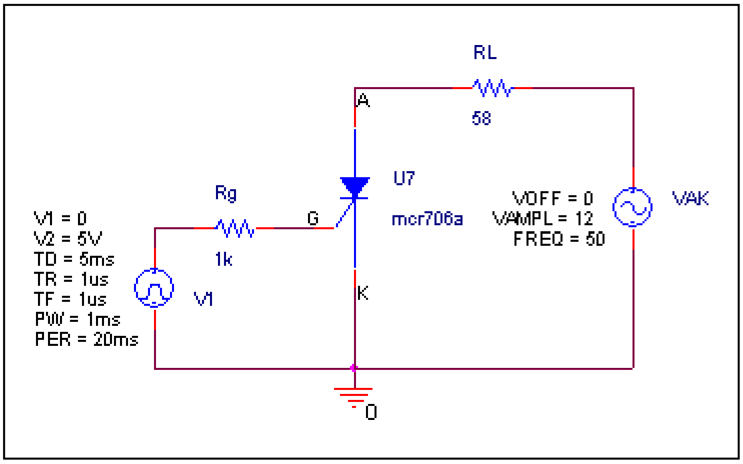


Comparison Table

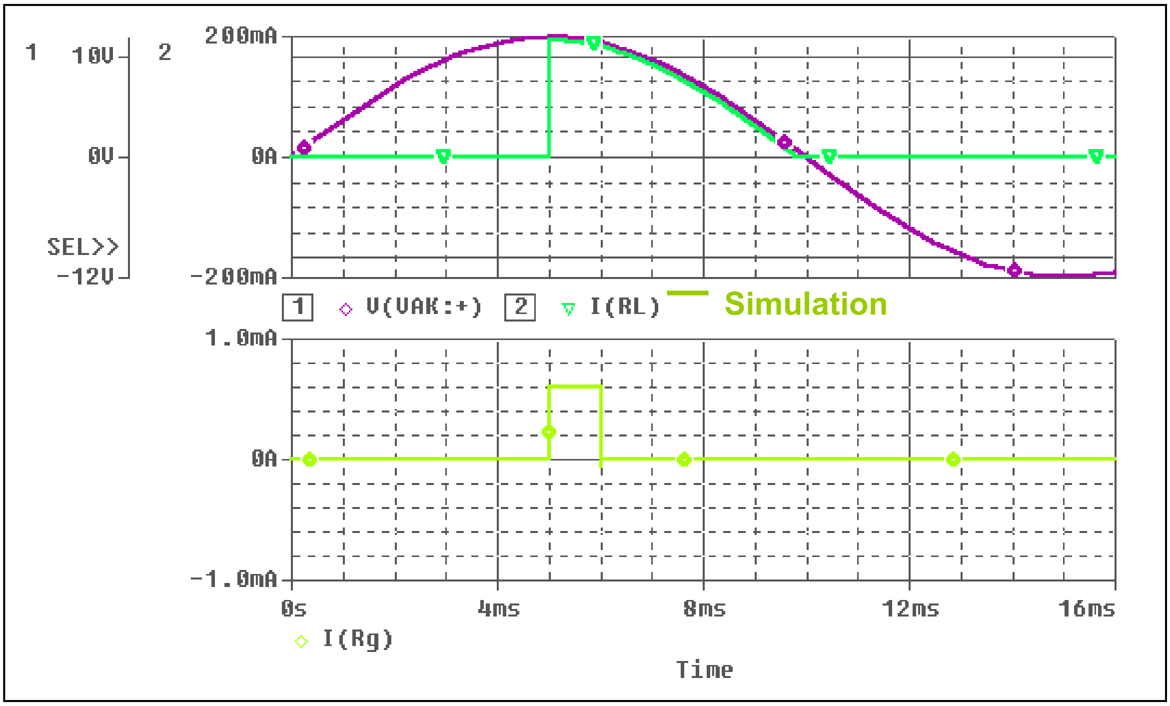
At ITM=8.2A	Measurement	Simulation	% Error
VTM(V)	2.2(max)	2.1875	-0.56818

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

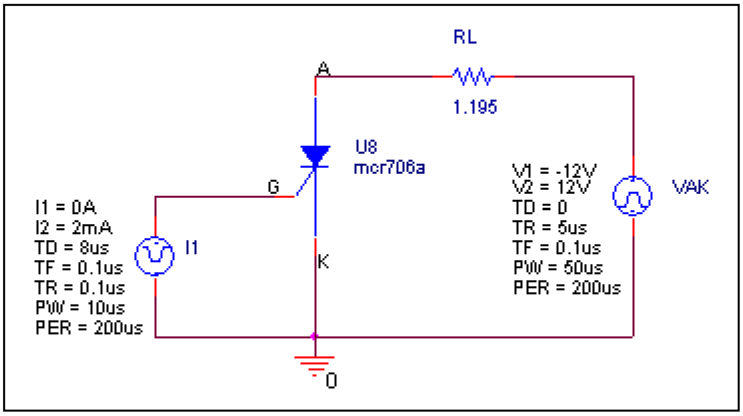


Comparison Table

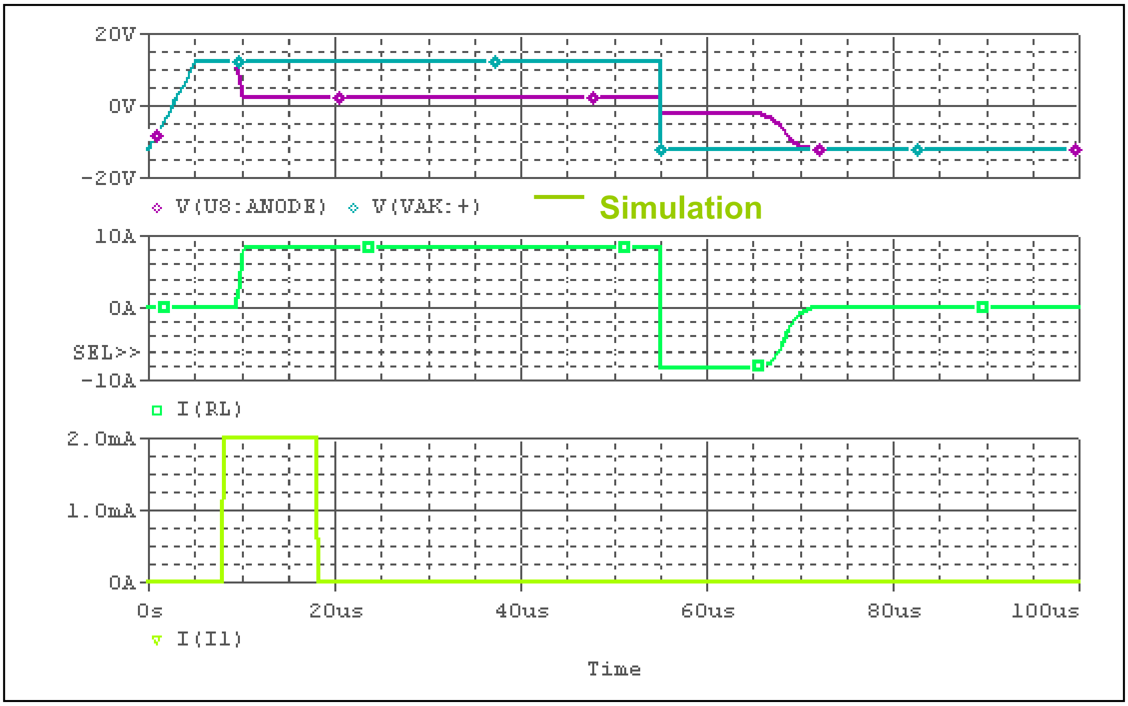
VD=12V	Measurement	Simulation	% Error
IH(mA)	5.0(max)	4.8026	-3.94800

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Ton(us)	2.0	2.0183	0.91500