Device Modeling Report

COMPONENTS:THYRISTOR
PART NUMBER:MCR718
MANUFACTURER: ON SEMICONDUCTOR

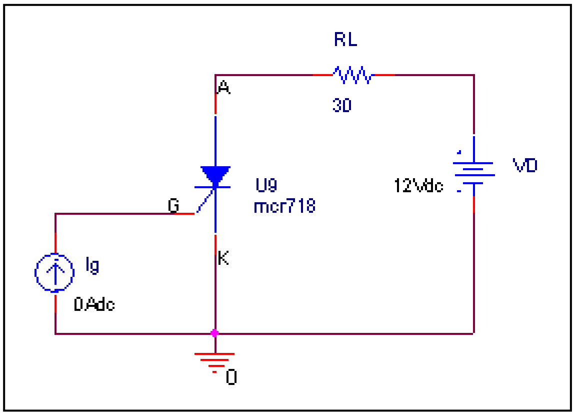
Bee Technologies Inc.

DIODE MODEL

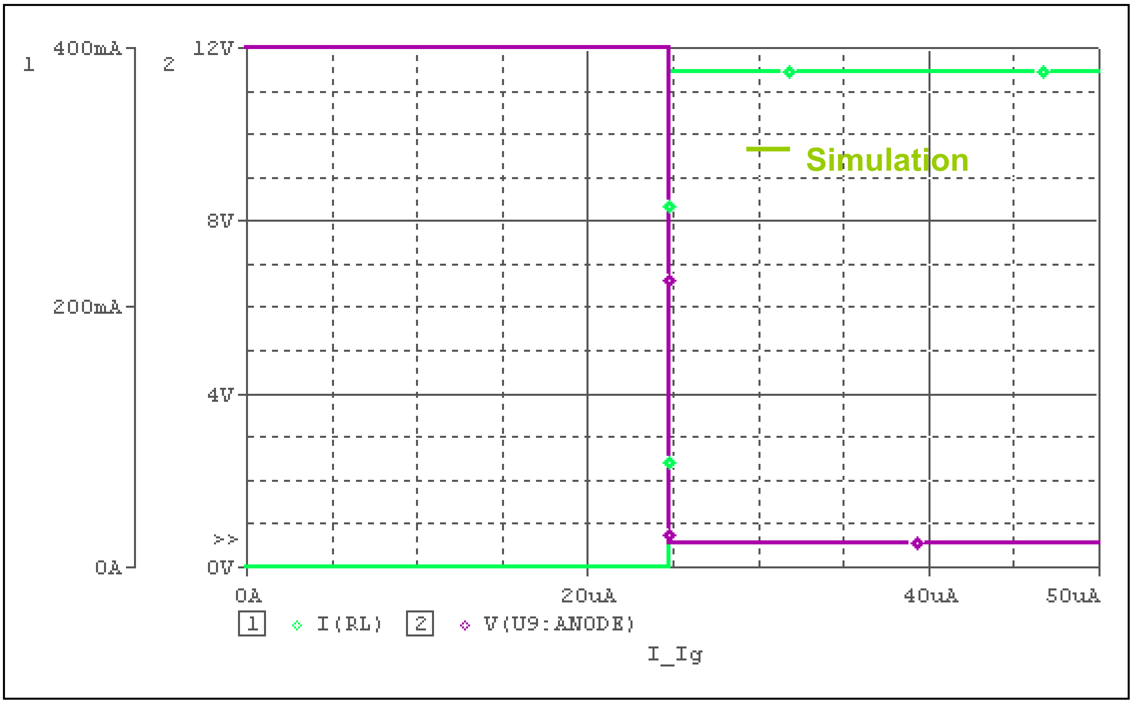
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

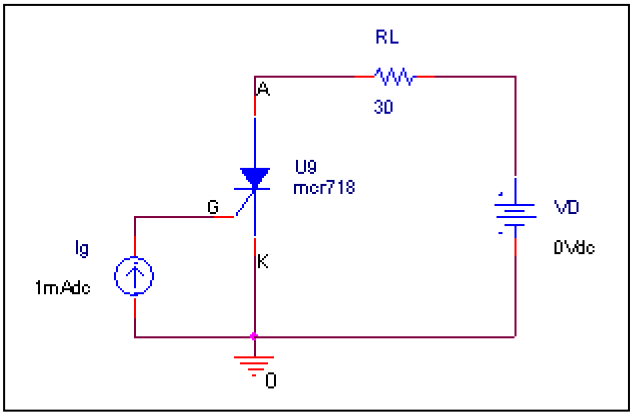


Comparison Table

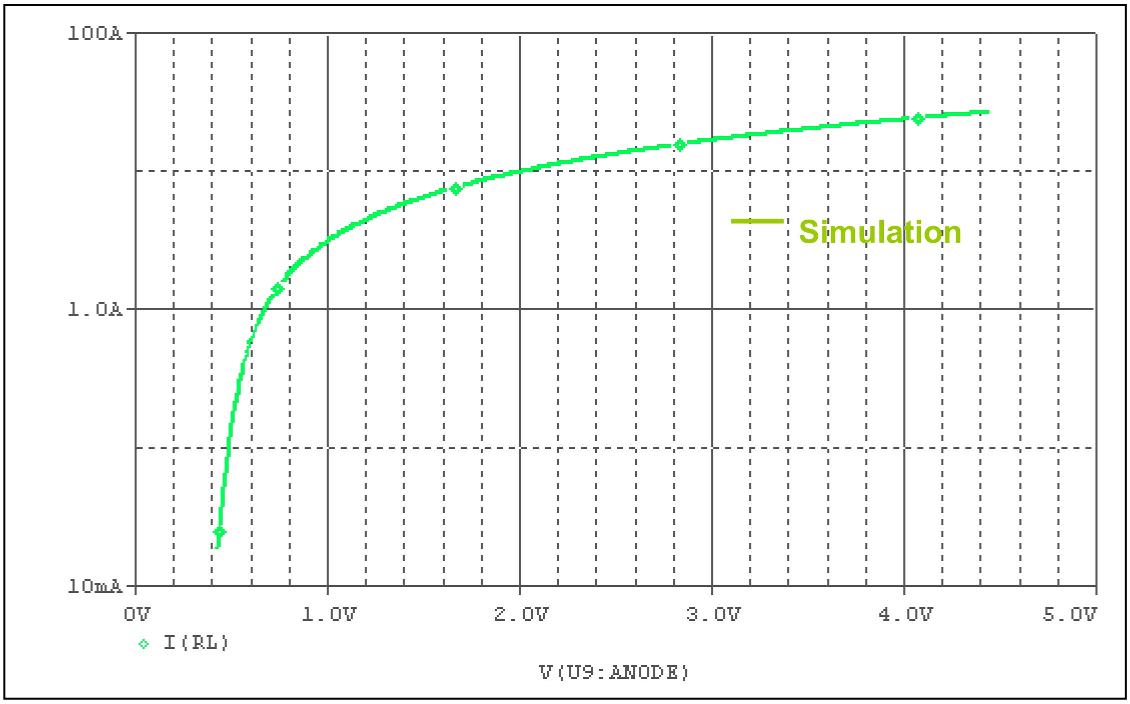
	Measurement	Simulation	% Error
IG_T (uA)	**25**	**24.850**	**-0.60000**
V_{GT} (V)	**0.55**	**0.559226**	**1.67745**

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

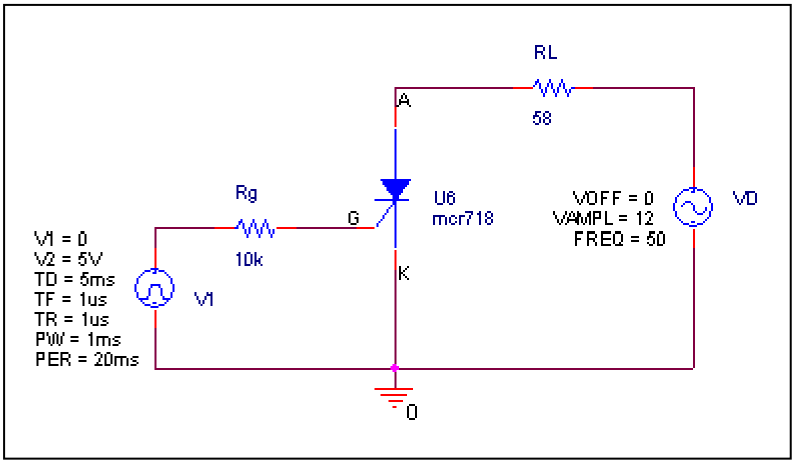


Comparison Table

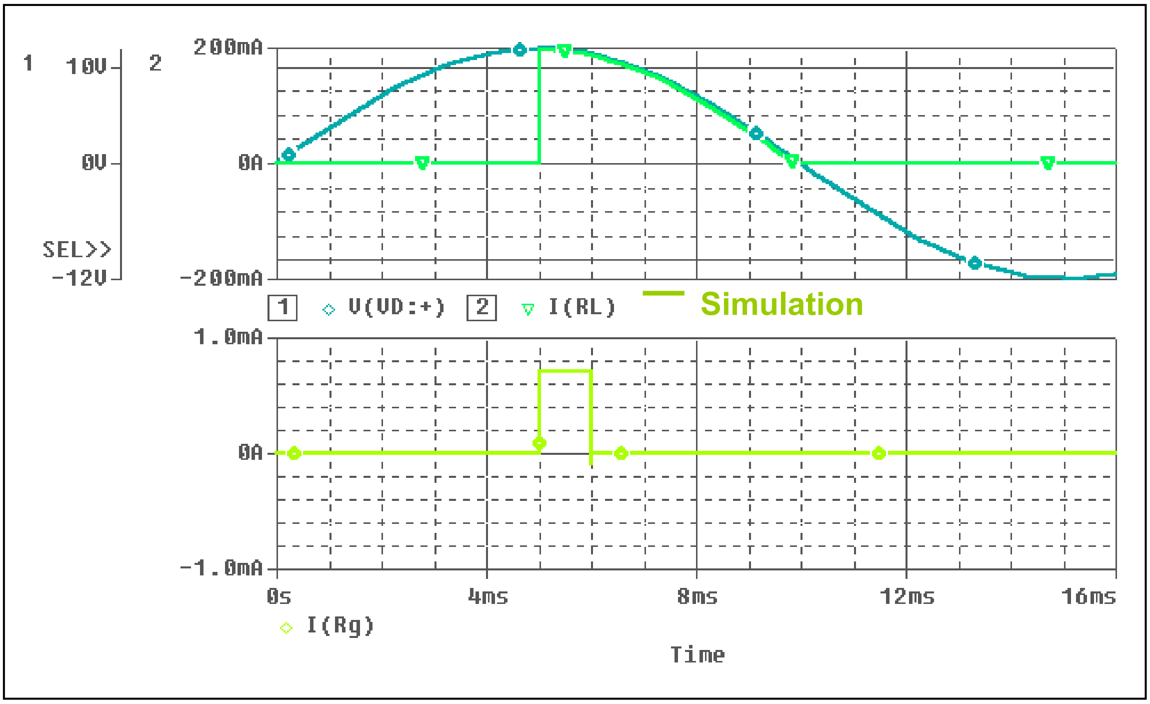
At ITM=5.0A	Measurement	Simulation	% Error
VTM(V)	1.3	1.2929	-0.54615

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

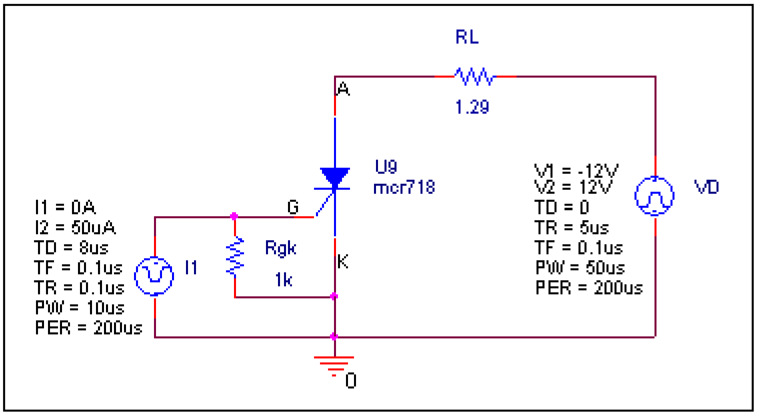


Comparison Table

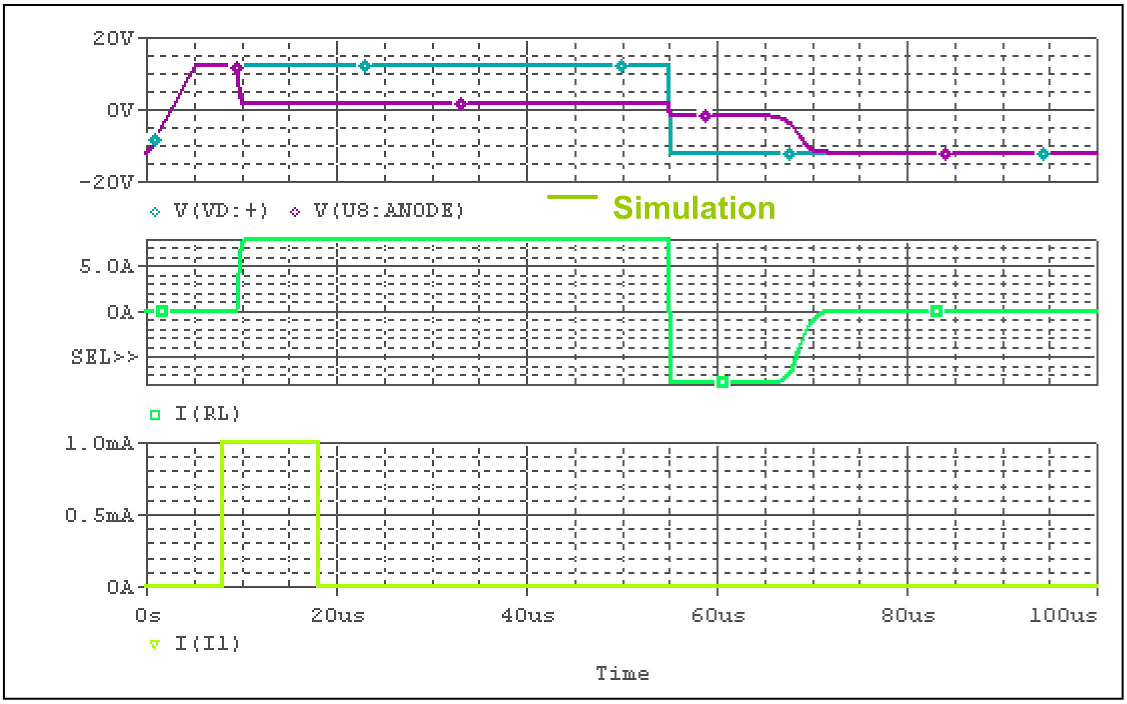
VD=12V	Measurement	Simulation	% Error
IH(mA)	5.0(max)	4.9772	-0.45600

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Ton(us)	2.0	1.9940	-0.3000