

Device Modeling Report

COMPONENTS: THYRISTOR
PART NUMBER: MCR22-4
MANUFACTURER: MOTOROLA SEMICONDUCTOR



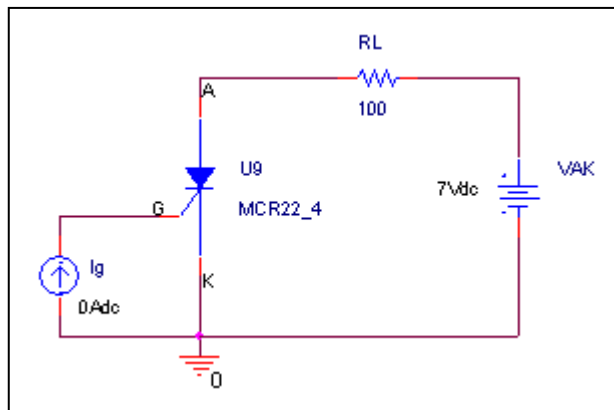
Bee Technologies Inc.

DIODE MODEL

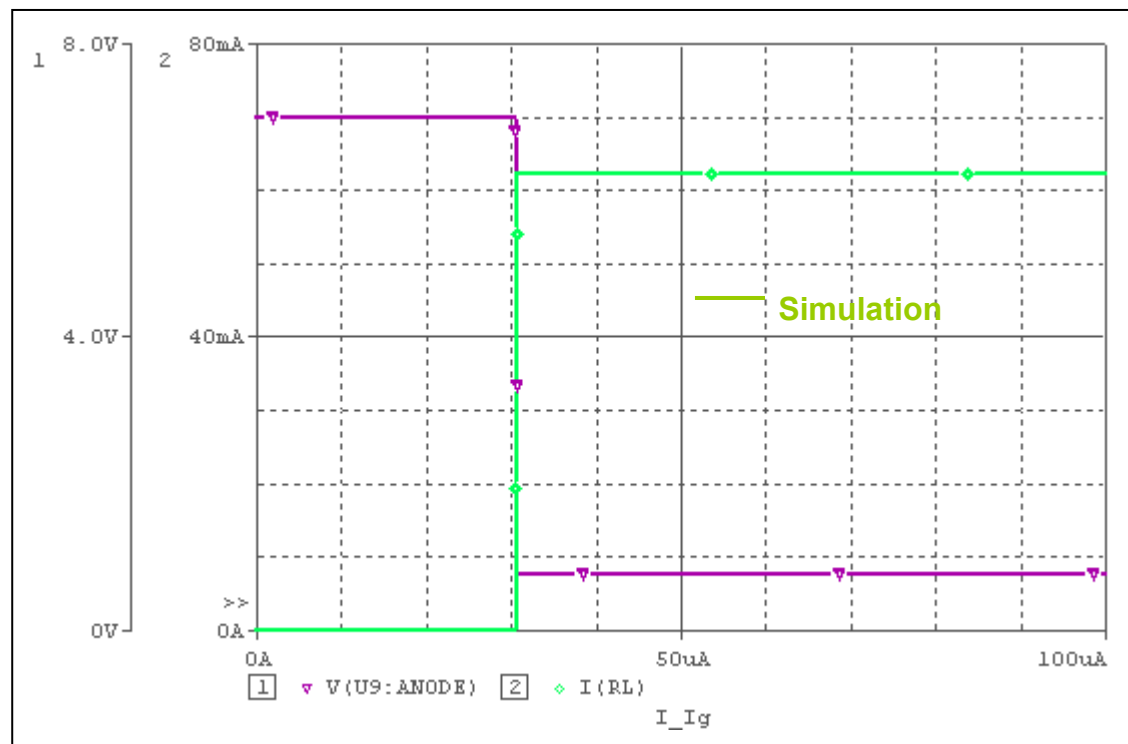
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

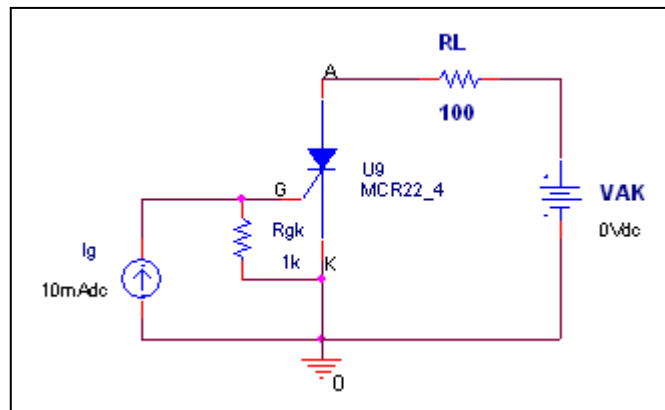


Comparison Table

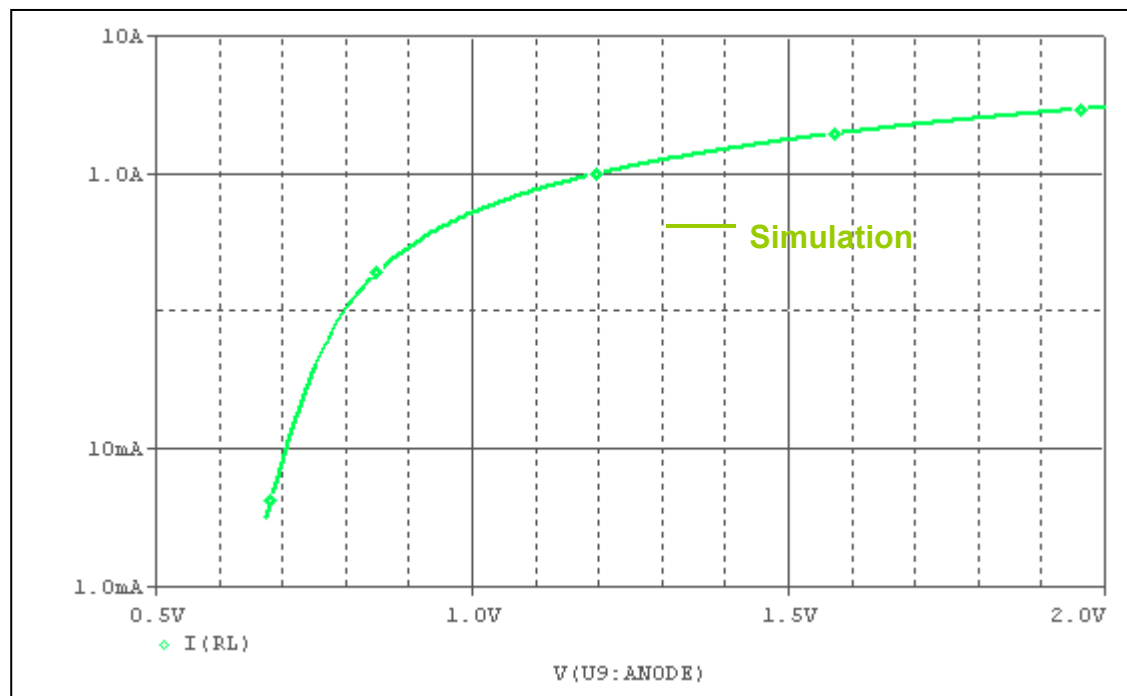
	Measurement	Simulation	% Error
I_{GT} (uA)	30	30.500	1.66667
V_{GT} (V)	0.8(max)	0.771116	-3.61050

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

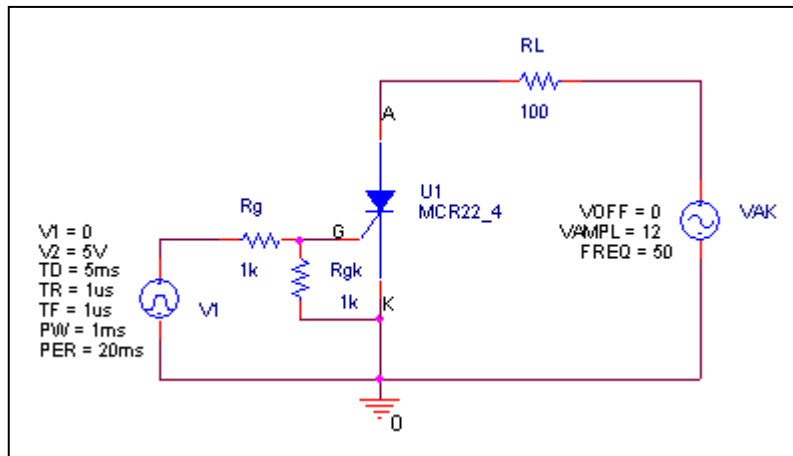


Comparison Table

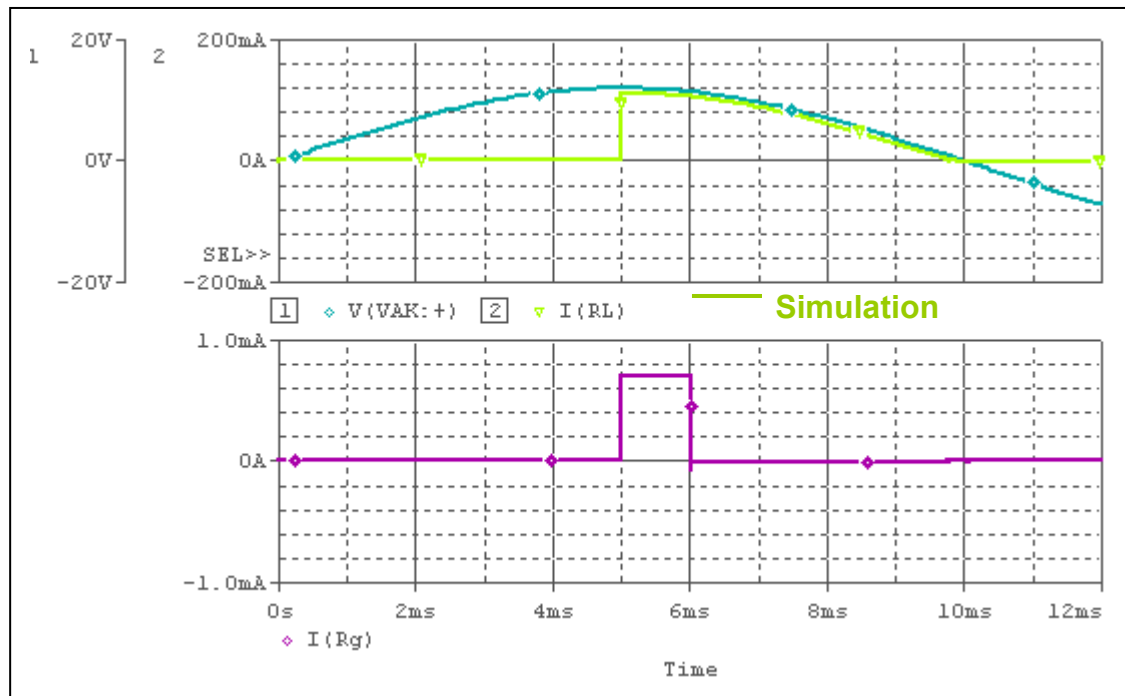
At ITM=1A	Measurement	Simulation	% Error
VTM(V)	1.2	1.1981	-0.15833

Holding Characteristic (IH)

valuation Circuit



Simulation result



Comparison Table

VAK=12V	Measurement	Simulation	% Error
IH(mA)	2	2.0470	2.35000