

# Device Modeling Report

COMPONENTS: THYRISTOR  
PART NUMBER: MCR265-6  
MANUFACTURER: MOTOROLA SEMICONDUCTOR



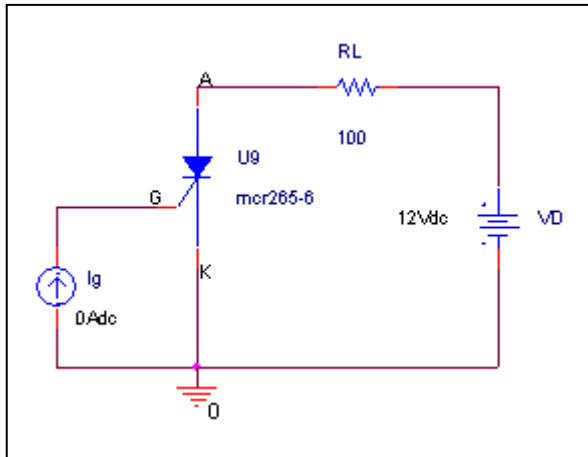
**Bee Technologies Inc.**

## DIODE MODEL

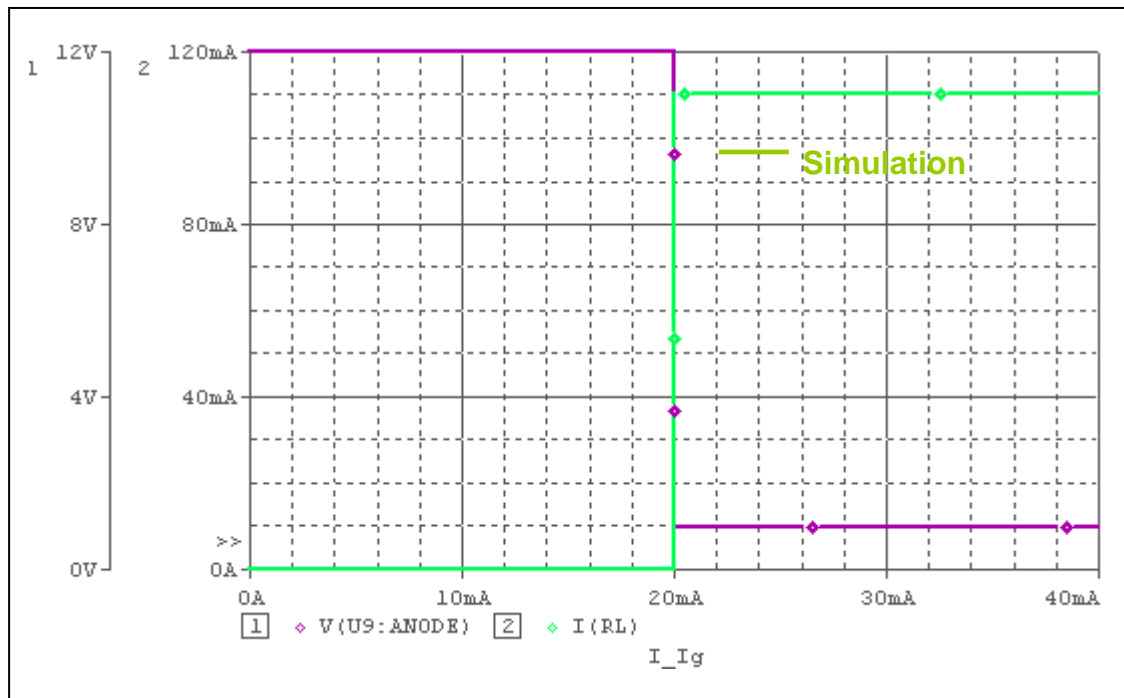
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

# IG-VT Characteristic

## Evaluation Circuit



## Simulation result

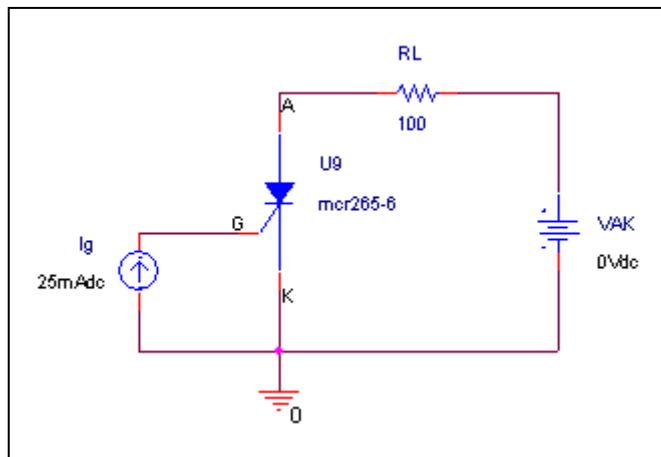


## Comparison Table

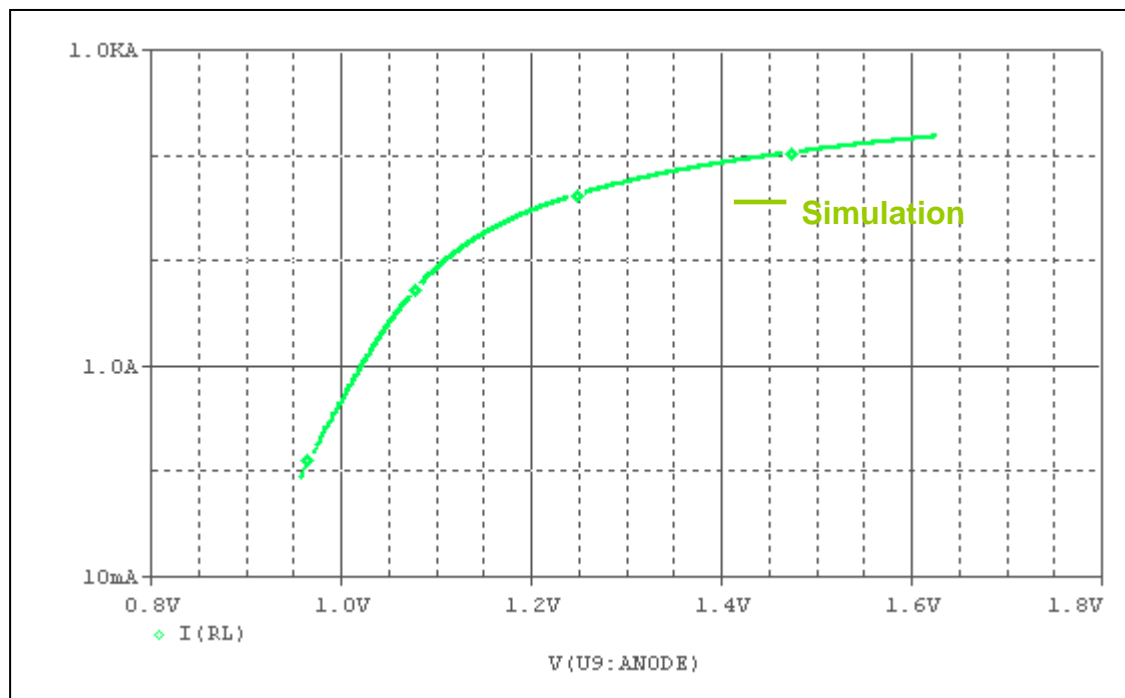
	Measurement	Simulation	% Error
$I_{G_T}$ (mA)	20	20	0
$V_{G_T}$ (V)	1	0.962594	-3.74060

# ITM-VTM Characteristic

## Evaluation Circuit



## Simulation result

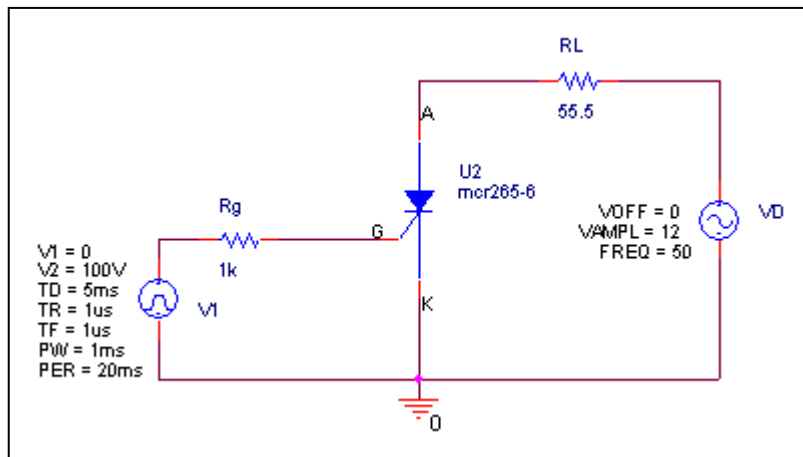


## Comparison Table

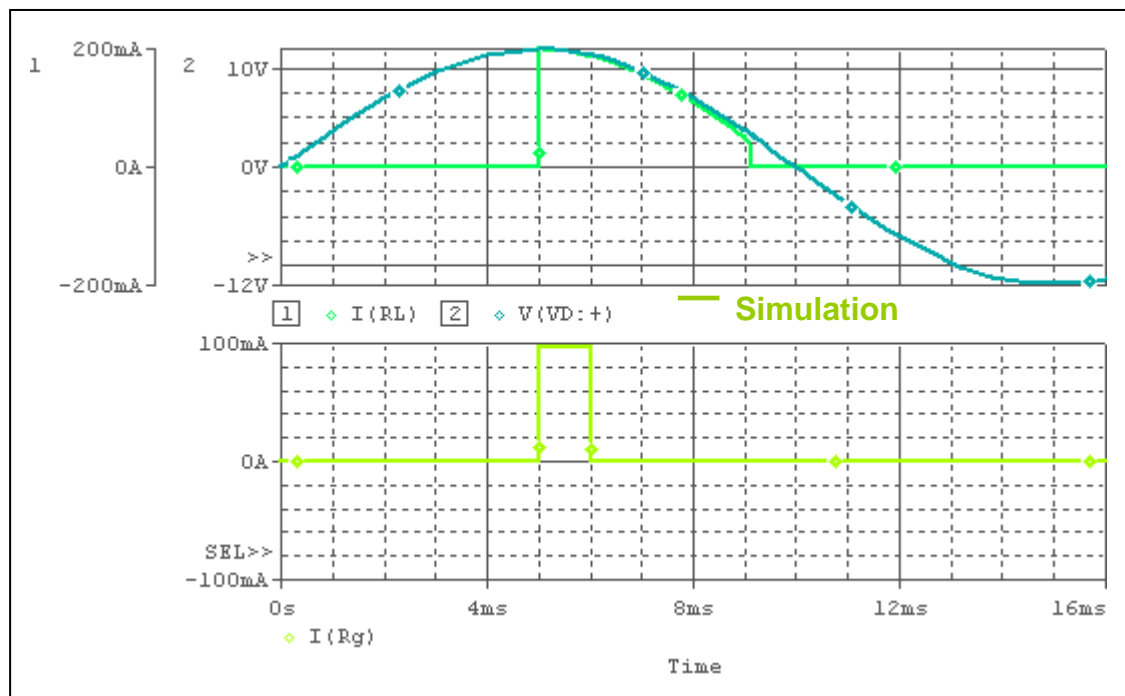
At ITM=110A	Measurement	Simulation	% Error
VTM(V)	1.5	1.4911	-0.59333

## Holding Characteristic (IH)

### Evaluation Circuit



### Simulation result

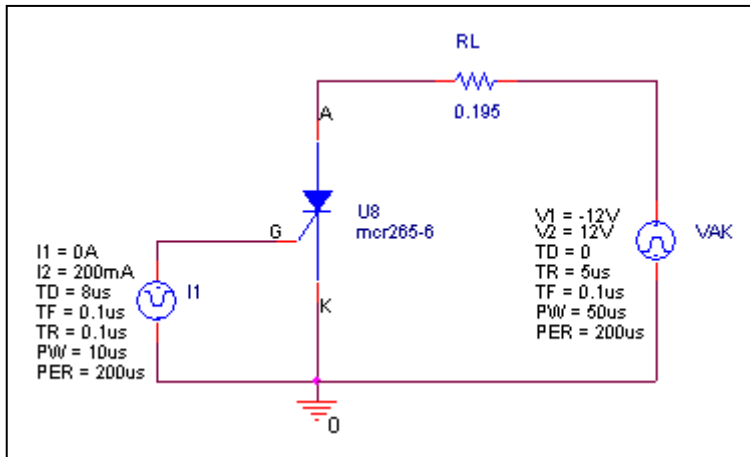


### Comparison Table

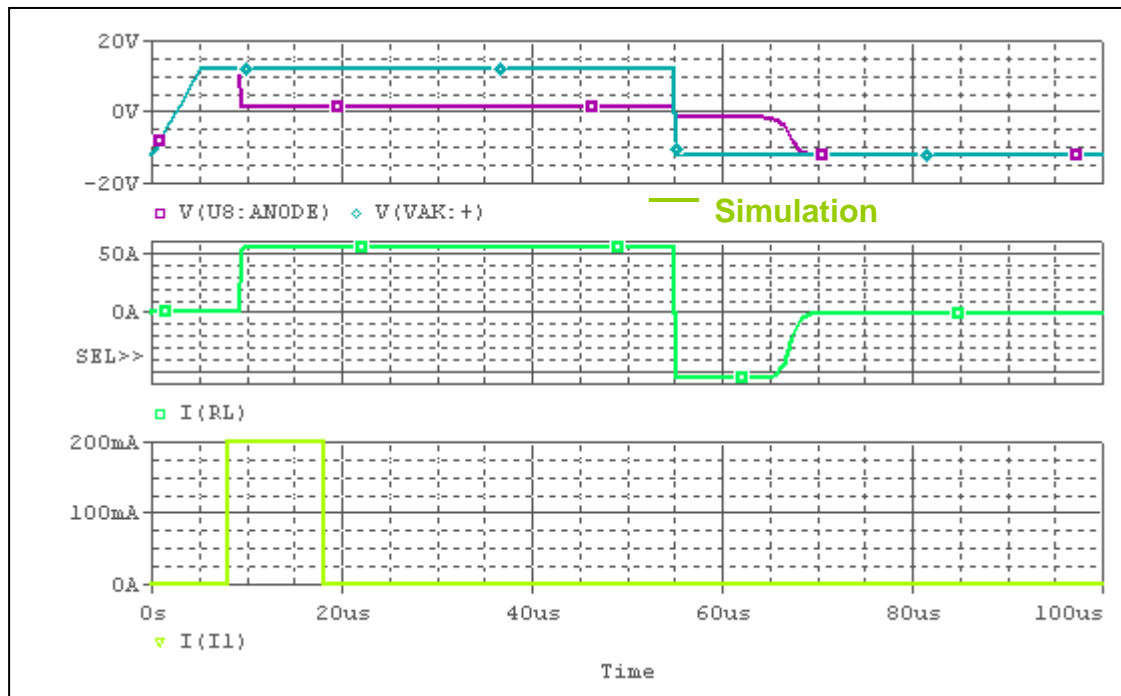
VAK=12V	Measurement	Simulation	% Error
IH(mA)	30	29.831	-0.56333

# Switching Time Characteristic

## Evaluation Circuit



## Simulation result



## Comparison Table

	Measurement	Simulation	%Error
<b>Ton(us)</b>	<b>1.5</b>	<b>1.5013</b>	<b>0.08667</b>