Device Modeling Report

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PART NUMBER:MCR310-4
MANUFACTURER: MOTOROLA SEMICONDUCTOR

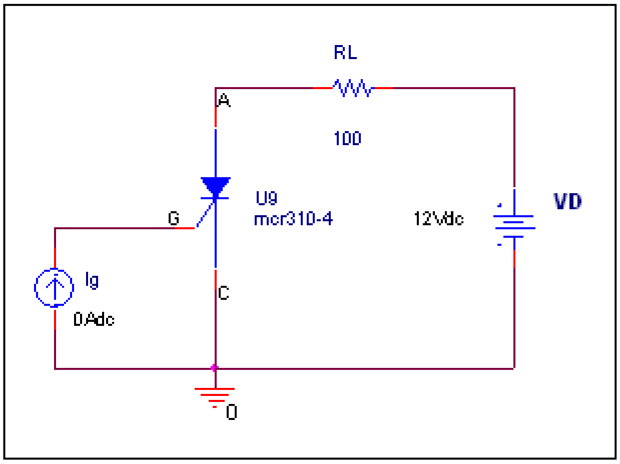
Bee Technologies Inc.

DIODE MODEL

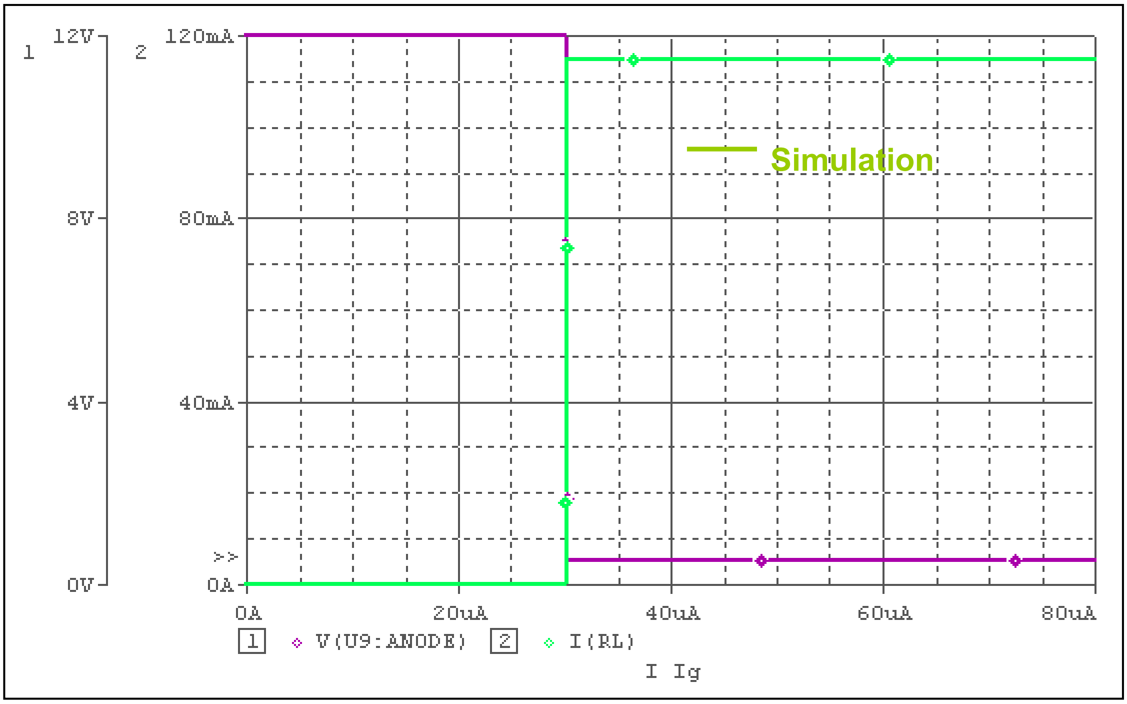
Pspice model Parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

IG-VT Characteristic

Evaluation Circuit



Simulation result

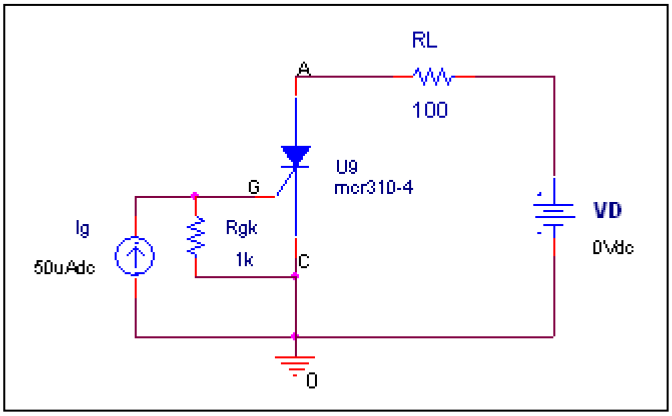


Comparison Table

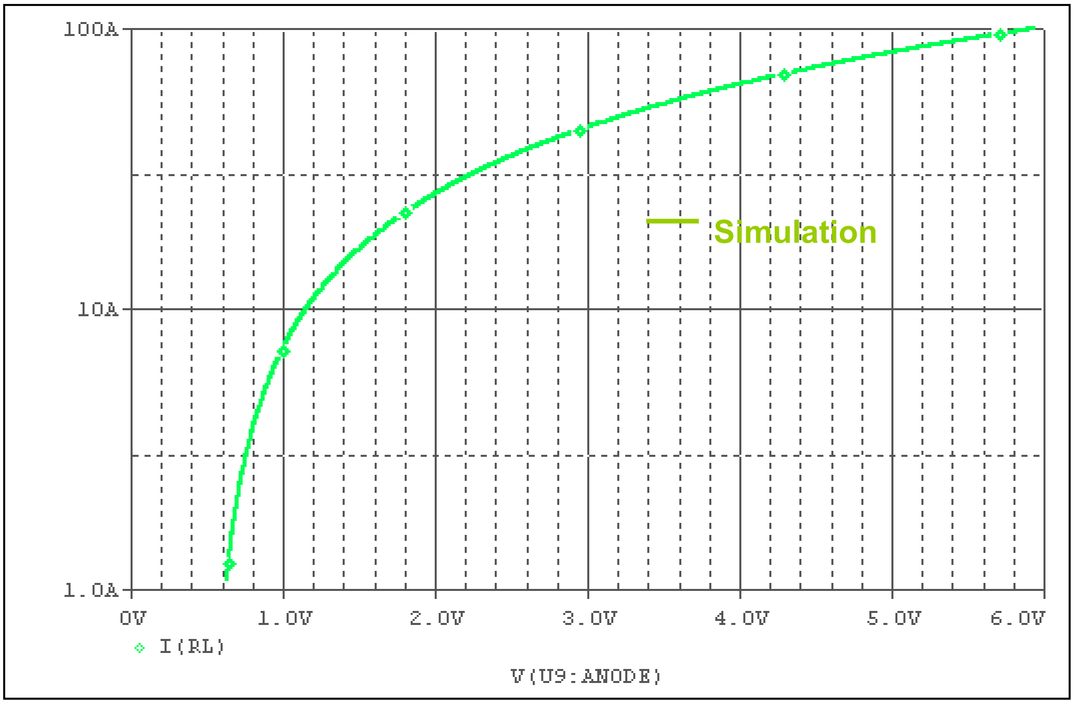
	Measurement	Simulation	% Error
IG_T (uA)	30	30	0
V_{GT} (V)	0.5	0.519288	3.85760

ITM-VTM Characteristic

Evaluation Circuit



Simulation result

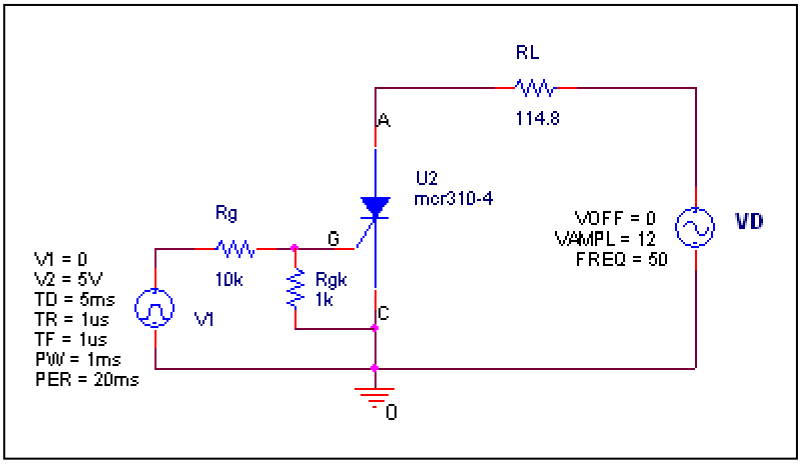


Comparison Table

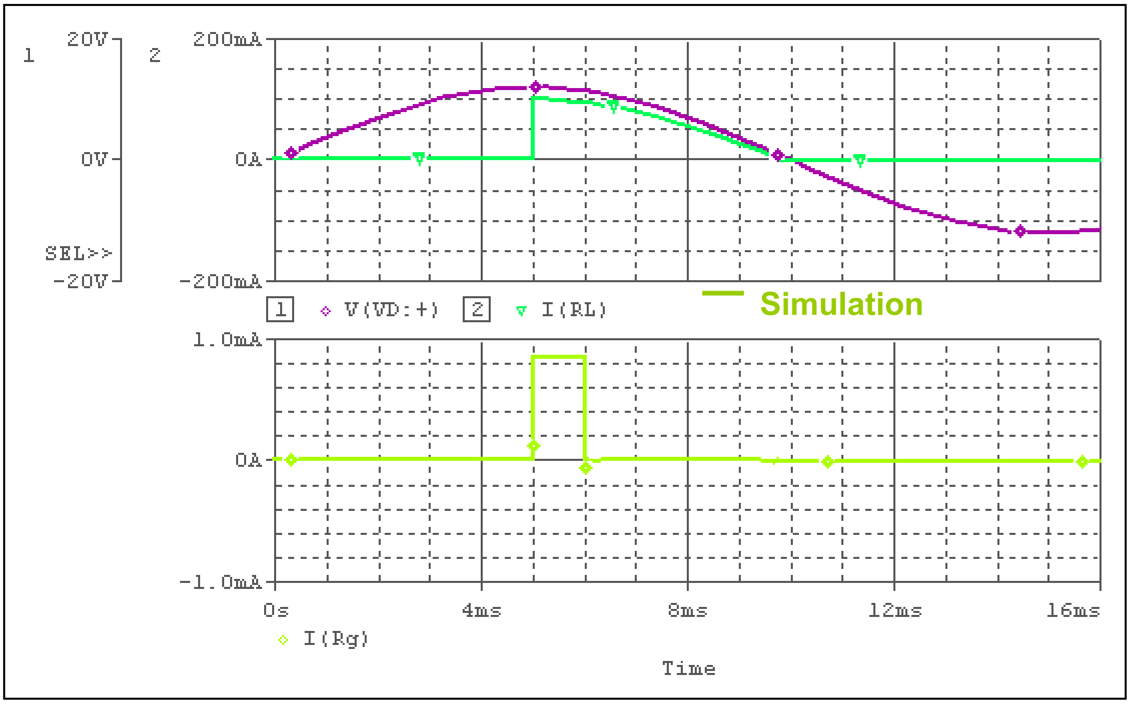
At ITM=20A	Measurement	Simulation	% Error
VTM(V)	1.7	1.7	0

Holding Characteristic (IH)

Evaluation Circuit



Simulation result

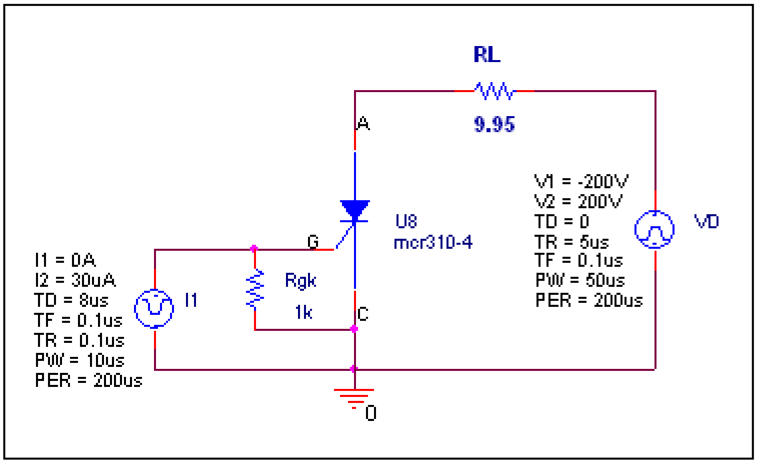


Comparison Table

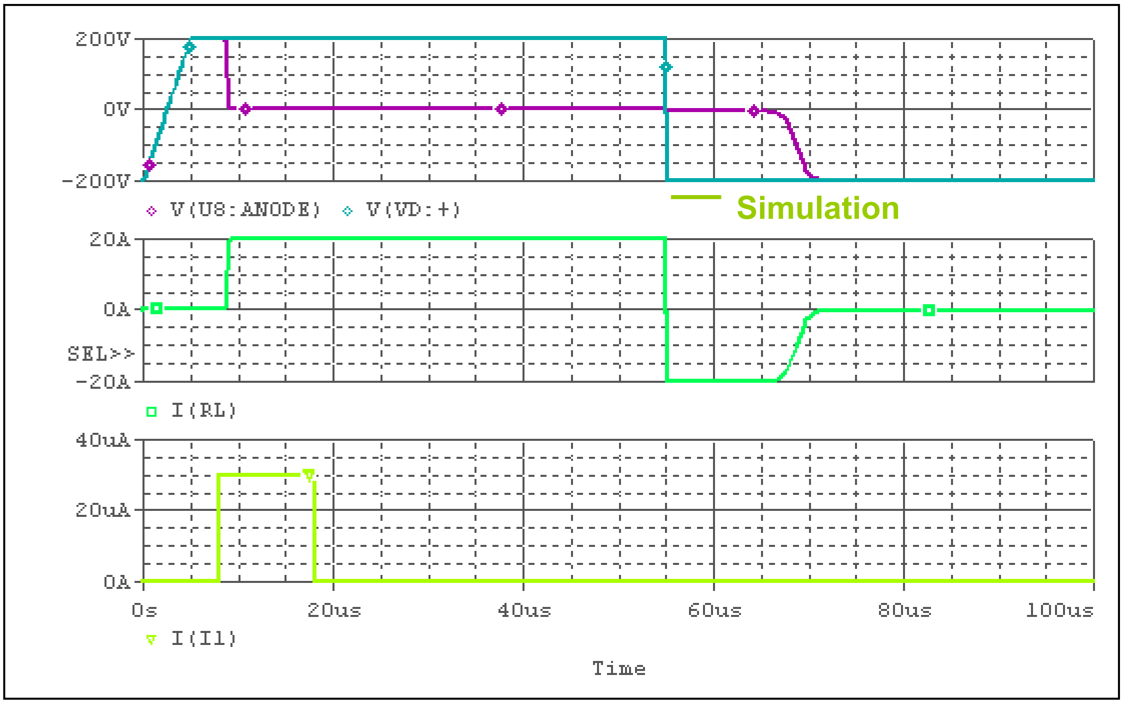
VD=12V	Measurement	Simulation	% Error
IH(mA)	6(max)	5.7783	-3.6950

Switching Time Characteristic

Evaluation Circuit



Simulation result



Comparison Table

	Measurement	Simulation	%Error
Ton(us)	1	1.0292	2.9200