

Device Modeling Report

COMPONENTS: Violet Laser Diode
PART NUMBER: NDHV310ACA
MANUFACTURER: NICHIA CORPORATION

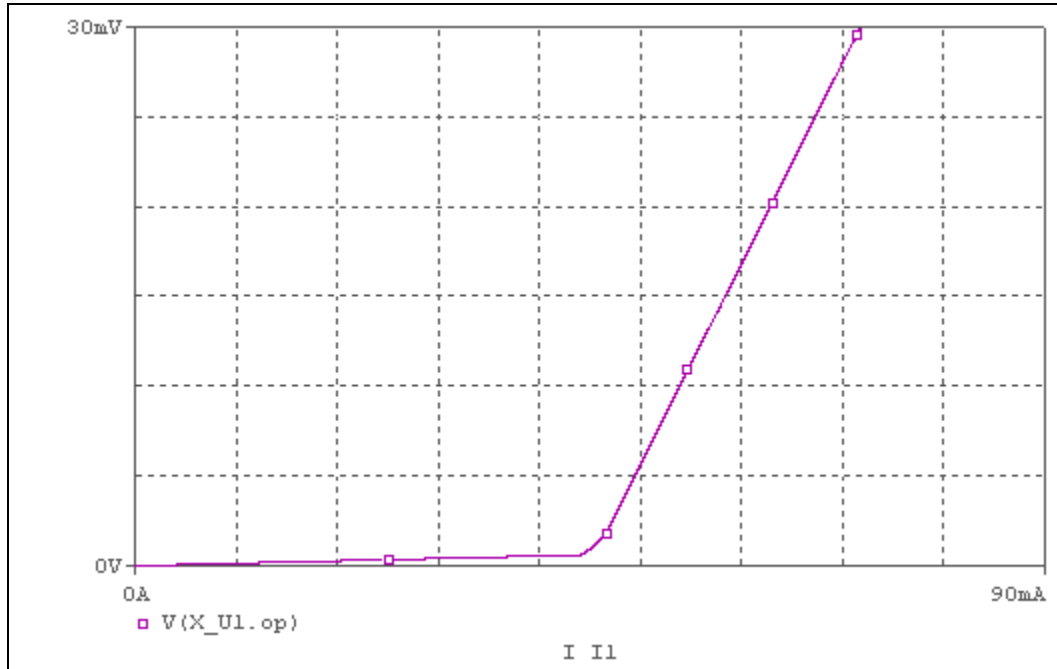


Bee Technologies Inc.

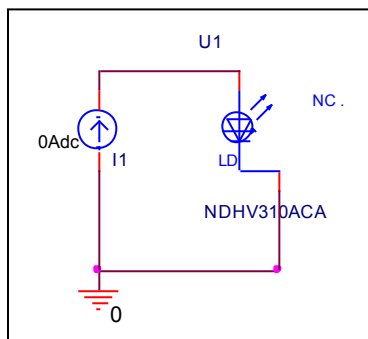
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

Optical Output Power vs. Forward current characteristics

Circuit simulation result

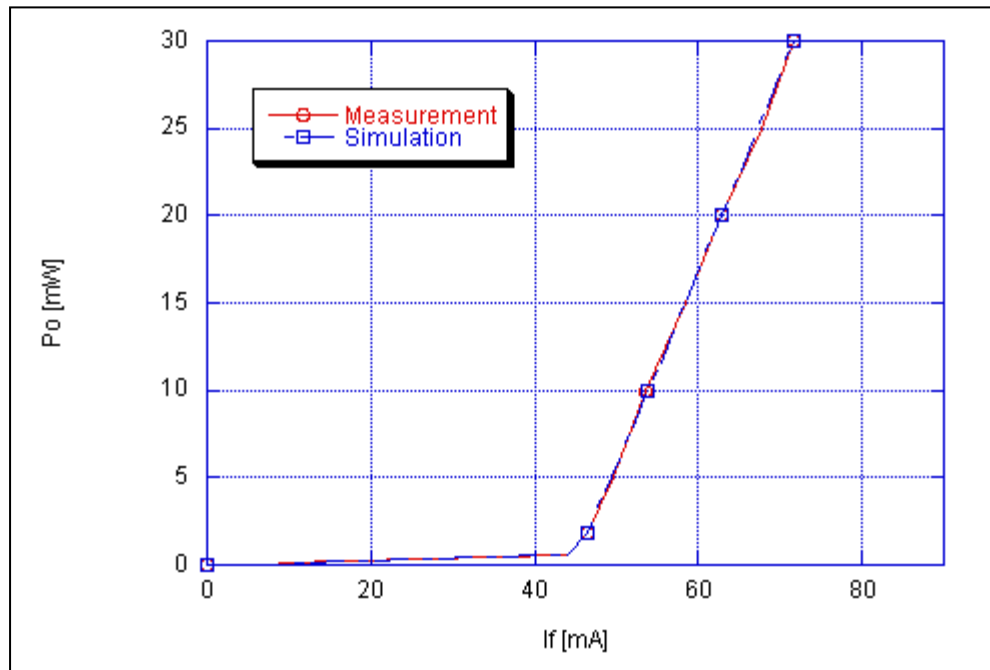


Evaluation circuit



Comparison graph

Circuit simulation result

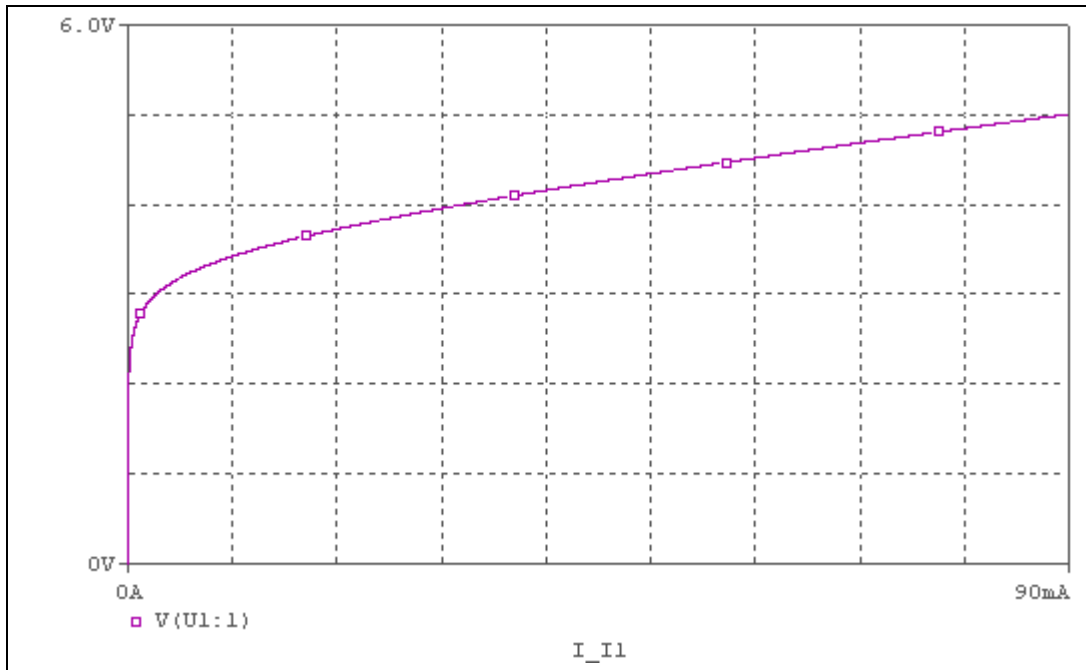


Simulation Result

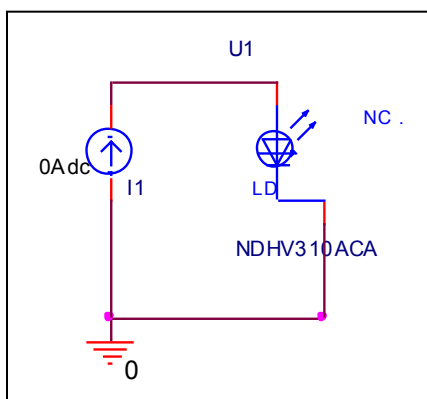
Po[mW]	IF[mA]		Error (%)
	Measurement	Simulation	
5	49.6	49.422	0.358871
10	53.6	53.89	0.541045
15	58.4	58.358	0.071918
20	62.88	62.827	0.084288
25	67.68	67.295	0.568853
30	71.68	71.763	0.115792

Forward Voltage vs. Forward Current characteristics

Circuit simulation result

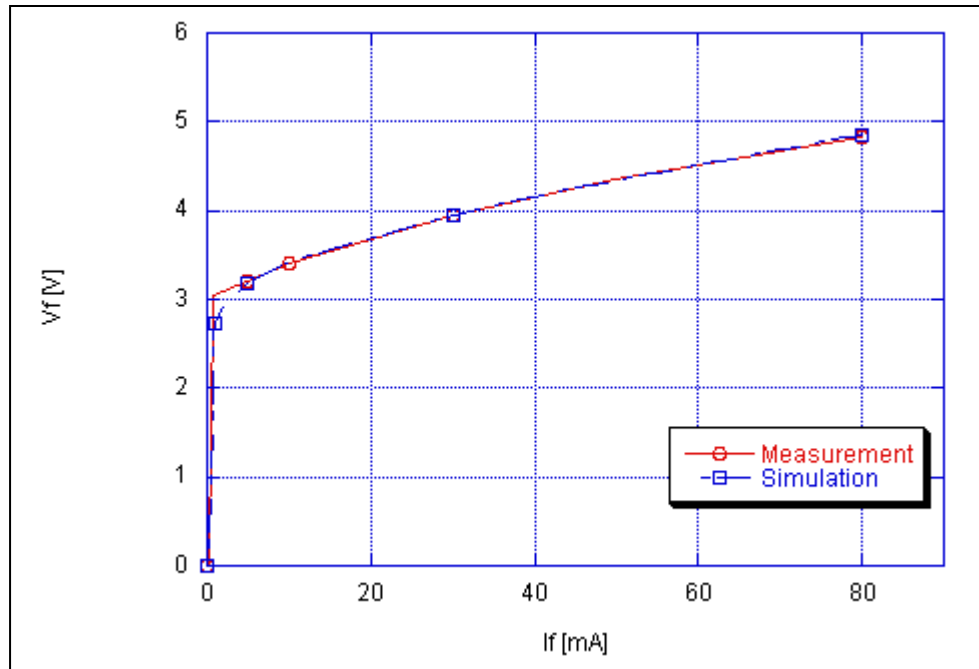


Evaluation circuit



Comparison graph

Circuit simulation result



Simulation Result

If [mA]	Vf [V]		Error (%)
	Measurement	Simulation	
5	3.2	3.1855	0.453125
10	3.4	3.4248	0.729412
30	3.96	3.9578	0.055556
50	4.36	4.3439	0.369266
80	4.84	4.8488	0.181818