

# Device Modeling Report

COMPONENTS: Red Laser Diode  
PART NUMBER: SLD1133VS  
MANUFACTURER: SONY

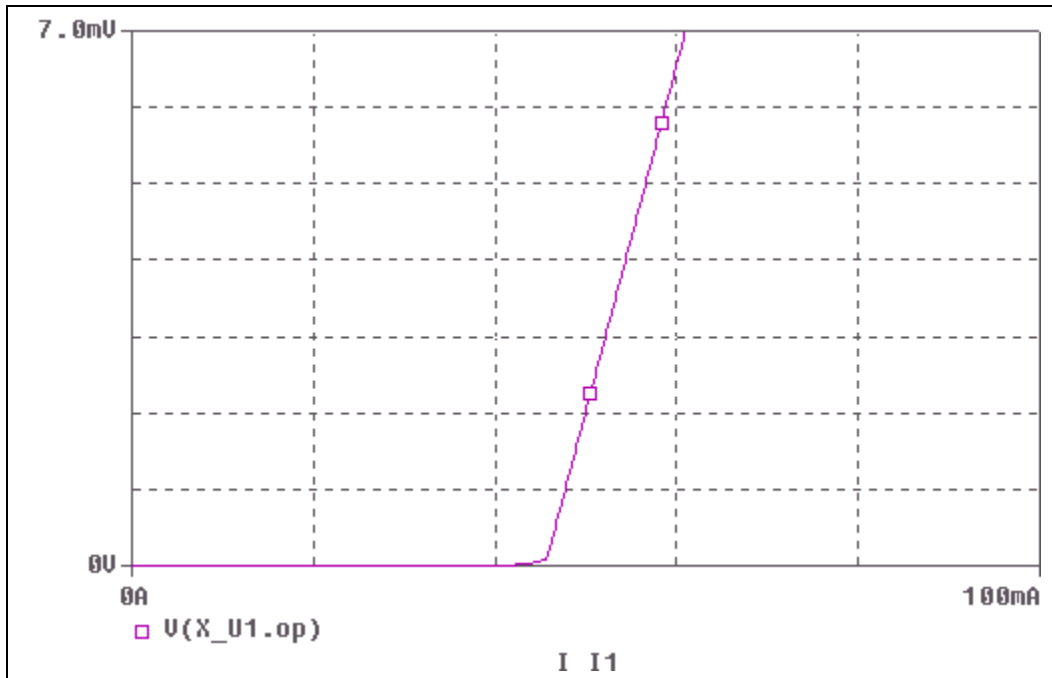


**Bee Technologies Inc.**

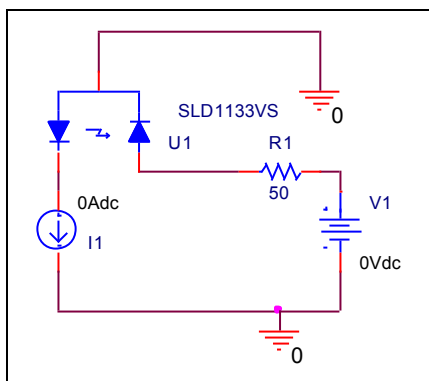
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a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

# Optical Output Power vs. Forward current characteristics

## Circuit simulation result

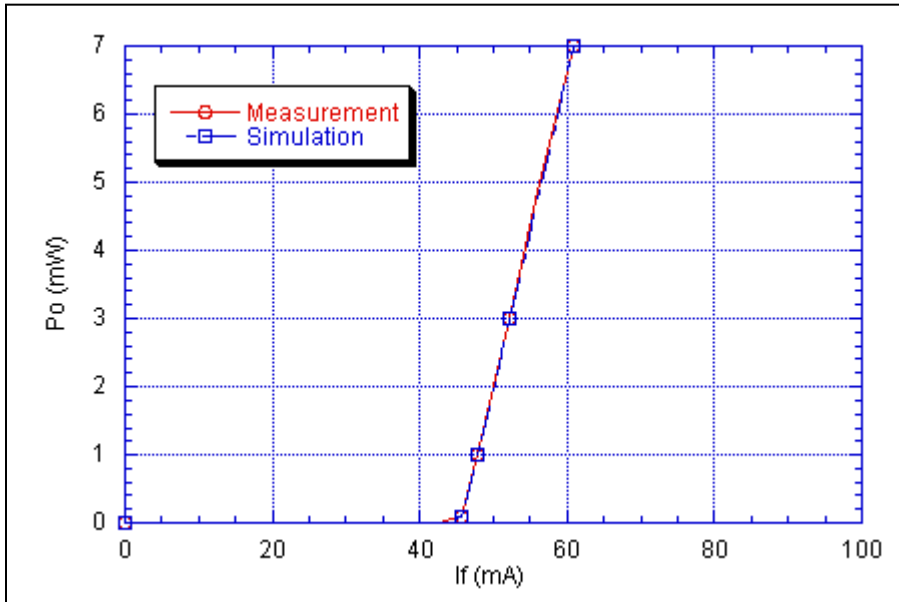


## Evaluation circuit



## Circuit simulation result

### Comparison graph

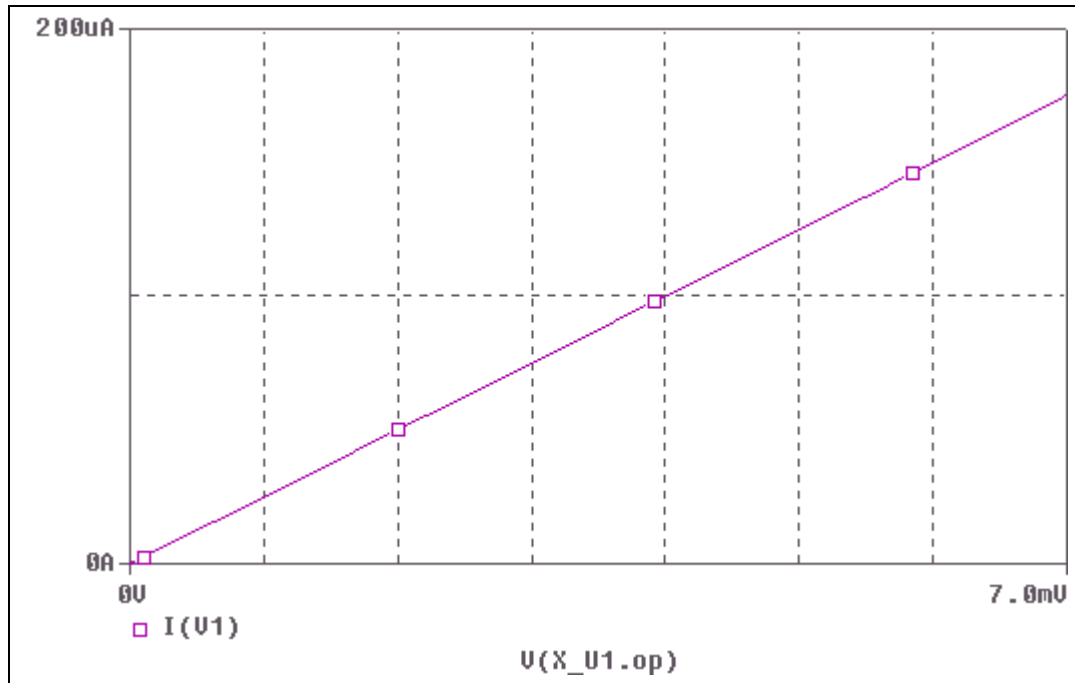


### Simulation Result

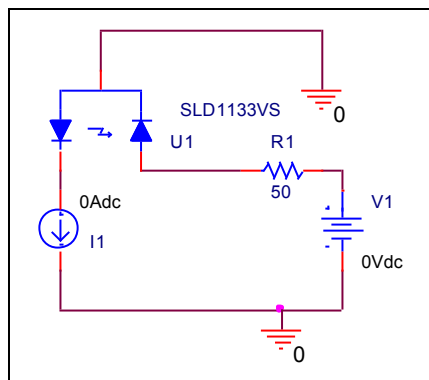
Po[mW]	IF[mA]		Error (%)
	Measurement	Simulation	
1	47.727	47.704	0.048
3	52.18	52.120	0.114
5	56.363	56.536	0.306
7	60.95	60.952	0.003

# Monitor Current vs. Optical Output Power characteristics

## Circuit simulation result

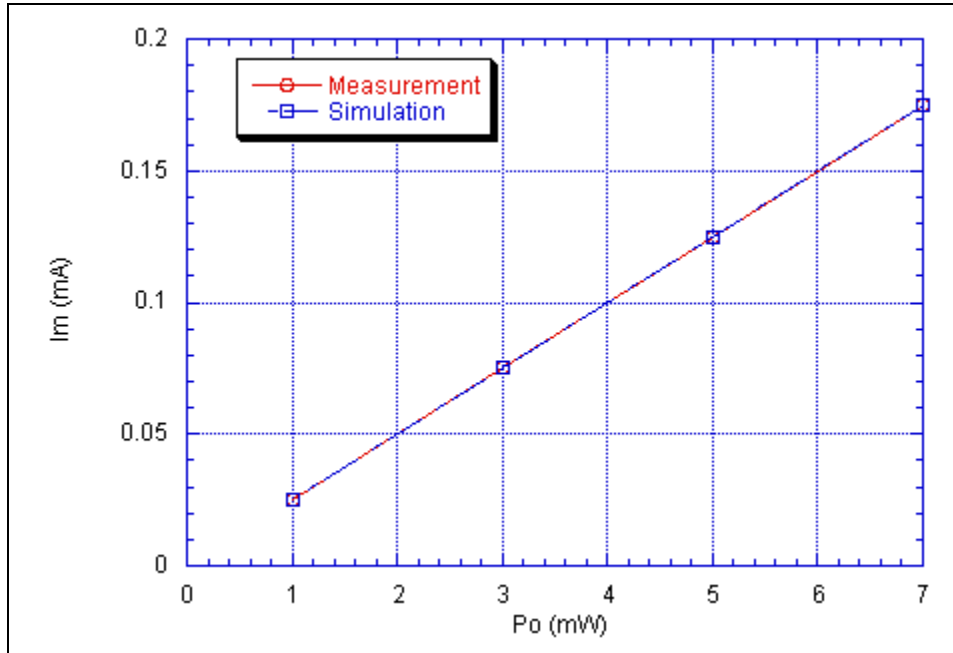


## Evaluation circuit



## Circuit simulation result

### Comparison graph



### Simulation Result

$P_o$ [mW]	$I_m$ [mA]		Error (%)
	Measurement	Simulation	
1	0.025	0.025	0
3	0.075	0.075	0
5	0.125	0.125	0
7	0.175	0.175	0