

# Device Modeling Report

COMPONENTS: Laser Diode  
PART NUMBER: ML776H10  
MANUFACTURER: MITSUBISHI

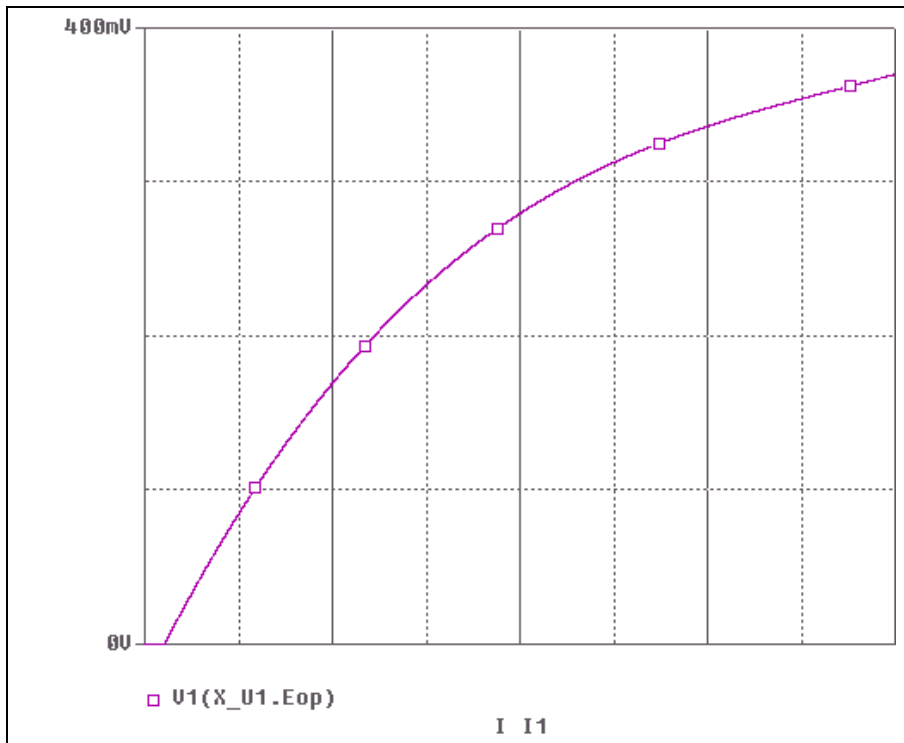


**Bee Technologies Inc.**

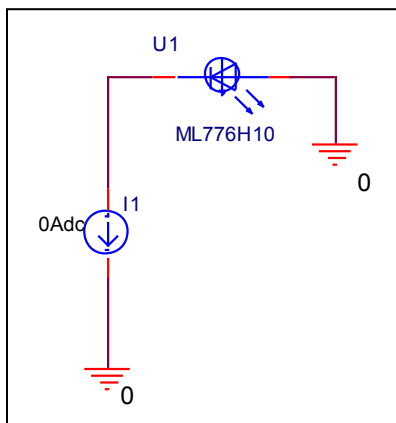
| PSpice model parameter | Model description                           |
|------------------------|---------------------------------------------|
| IS                     | Saturation Current                          |
| N                      | Emission Coefficient                        |
| RS                     | 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

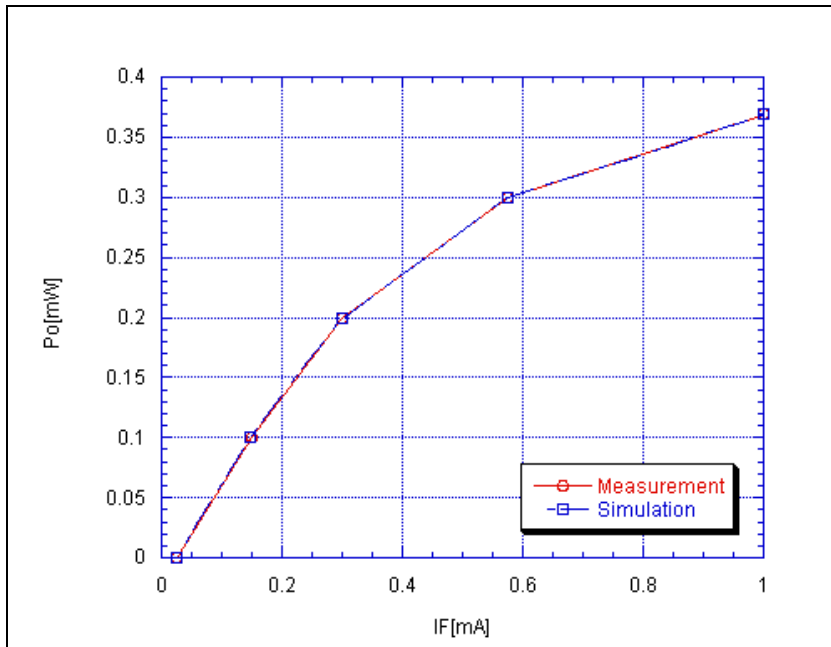


Evaluation circuit



## Comparison graph

### Circuit simulation result



### Simulation Result

| Po[mW] | IF[mA]      |            | Error (%) |
|--------|-------------|------------|-----------|
|        | Measurement | Simulation |           |
| 0      | 0.025       | 0.025      | 0         |
| 0.1    | 0.15        | 0.148      | 1.3333    |
| 0.2    | 0.3         | 0.305      | 1.6666    |
| 0.3    | 0.575       | 0.571      | 0.6956    |
| 0.37   | 1           | 1          | 0         |