

**TYPE  
NAME**

**ML40126N  
ML44126N,ML44126R**

**FEATURES**

ML4xx26 series is AlGaAs laser diodes which provide a stable, single transverse mode oscillation with emission wavelength of 785nm and standard continuous light output of 5mW.

ML4xx26 are hermetically sealed devices having the photodiode for optical output monitoring.

ML4xx26 is produced by the MOCVD crystal growth method which is excellent in mass production and characteristics uniformity.

**FEATURES**

- Output 5mW(CW)
- Built-in monitor photodiode
- Low droop

**APPLICATION**

- Laser Beam Printing, Digital Copy

**ABSOLUTE MAXIMUM RATINGS** (Note 1)

Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	<b>8</b>	<b>mW</b>
VRL	Reverse voltage (laser diode)	-	<b>2</b>	<b>V</b>
VRD	Reverse voltage (Photodiode)	-	<b>30</b>	<b>V</b>
IFD	Forward current (Photodiode)	-	<b>10</b>	<b>mA</b>
Tc	Case temperature	-	<b>-40~ +60</b>	<b>°C</b>
Tstg	Storage temperature	-	<b>-40~ +100</b>	<b>°C</b>

Note1: The maximum rating means the limitation over which the laser should not be operated even instant time, and this does not mean the guarantee of its lifetime.As for the reliability,please refer to the reliability report from Mitsubishi Semiconductor Quality Assurance Department.

**ELECTRICAL / OPTICAL CHARACTERISTICS (Tc=25°C)**


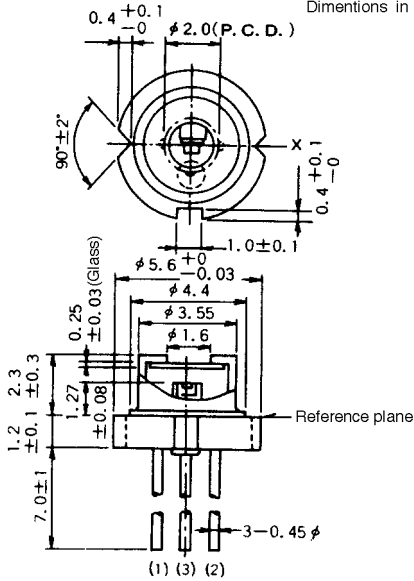
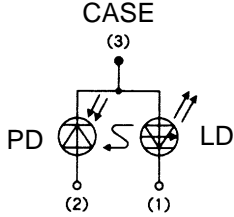
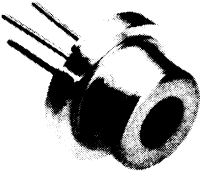
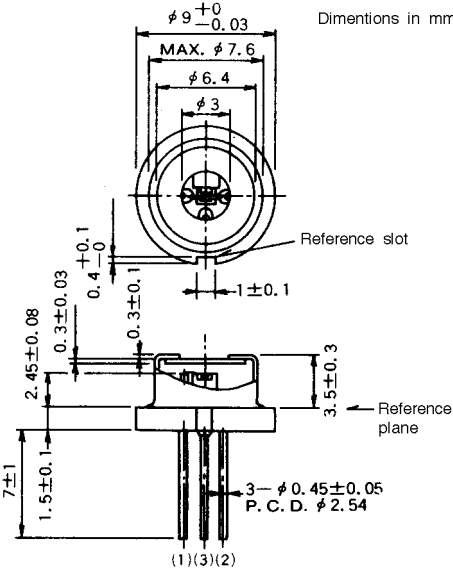
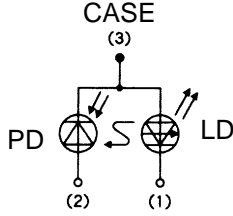
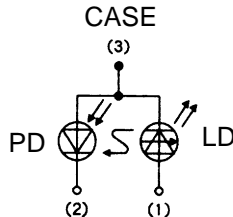
Symbol	Parameter	Test conditions	MIn	Typ.	Max	Unit
Ith	Threshold current	CW	-	<b>25</b>	<b>40</b>	<b>mA</b>
Iop	Operation current	CW,Po=5mW	-	<b>40</b>	<b>70</b>	<b>mA</b>
η	Slope efficiency	CW,Po=5mW	<b>0.25</b>	<b>0.35</b>	<b>0.45</b>	<b>mW/mA</b>
Vop	Operating voltage	CW,Po=5mW	-	<b>2</b>	<b>2.5</b>	<b>V</b>
λp	Peak wavelength	CW,Po=5mW	<b>770</b>	<b>785</b>	<b>800</b>	<b>nm</b>
θ//	Beam divergence angle (parallel)	CW,Po=5mW	<b>8</b>	<b>11</b>	<b>15</b>	<b>°</b>
θ⊥	Beam divergence angle (perpendicular)	CW,Po=5mW	<b>22</b>	<b>29</b>	<b>36</b>	<b>°</b>
Im	Monitoring output current (Photodiode)	CW,Po=5mW, VRD=1V RL=10Ω(Note3)	-	<b>0.45</b>	-	<b>mA</b>
Im(Note2)			-	<b>0.90</b>	-	
ID	Dark current (Photodiode)	VRD=10V	-	-	<b>0.5</b>	<b>μA</b>
Ct	Capacitance (Photodiode)	VRD=5V, f=1MHz	-	<b>7</b>	-	<b>pF</b>
D	Droop	CW,Po=3mW	-	<b>6</b>	-	<b>%</b>

Note 2: Applicable to ML44126R and ML44126N

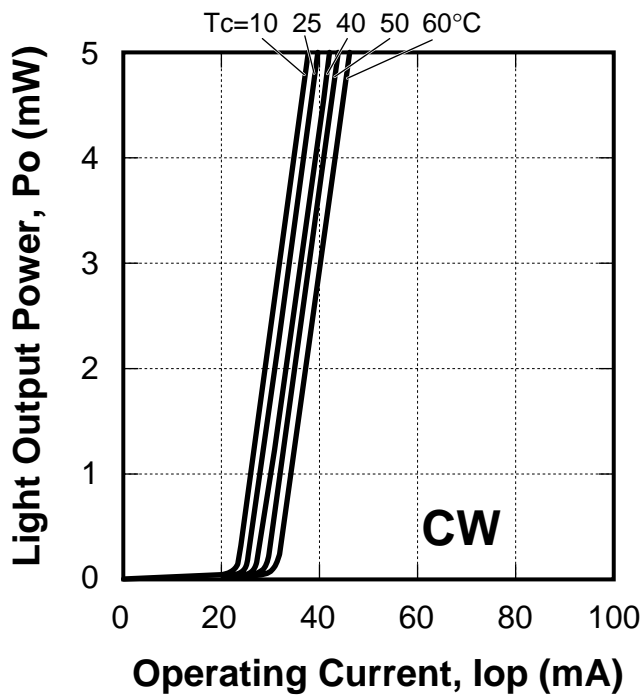
Note 3: RL=the load resistance of photodiode

MITSUBISHI LASER DIODES  
**ML4XX26 SERIES**  
 FOR OPTICAL INFORMATION SYSTEMS

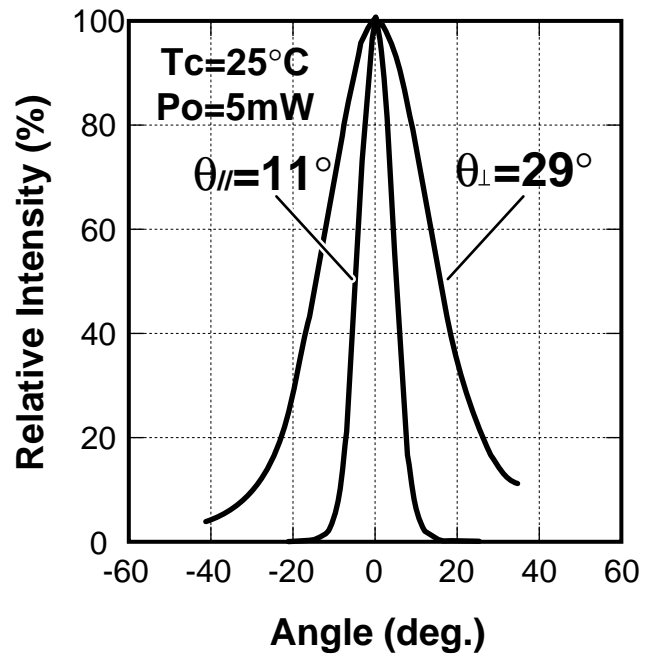
OUTLINE DRAWINGS

<p><b>ML40126N</b></p> 	<p>Dimensions in mm</p>  <p>0.4 +0.1 -0  <math>\phi 2.0</math> (P. C. D.)  <math>90^\circ \pm 2^\circ</math>  <math>\phi 5.6</math> +0 -0.03  <math>\phi 4.4</math>  <math>\phi 3.55</math>  <math>\phi 1.6</math>      Reference plane  <math>1.0 \pm 0.1</math>  <math>0.4 \pm 0.1</math>  <math>0.25 \pm 0.03</math> (Glass)  <math>1.27 \pm 0.08</math>  <math>2.3 \pm 0.1</math>  <math>1.2 \pm 0.1</math>  <math>7.0 \pm 1</math>  <math>3 - \phi 0.45</math>      (1) (3) (2)</p>	<p>CASE (3)</p>  <p>PD S LD      (2) (1)  <b>ML40126N</b></p>
<p><b>ML44126N</b>  <b>ML44126R</b></p> 	<p>Dimensions in mm</p>  <p><math>\phi 9</math> +0 -0.03      MAX. <math>\phi 7.6</math>  <math>\phi 6.4</math>  <math>\phi 3</math>      Reference slot  <math>1 \pm 0.1</math>  <math>0.4 \pm 0.1</math>  <math>0.3 \pm 0.03</math>  <math>0.3 \pm 0.1</math>      Reference plane  <math>2.45 \pm 0.08</math>  <math>0.3 \pm 0.03</math>  <math>3.5 \pm 0.3</math>  <math>7 \pm 1</math>  <math>1.5 \pm 0.1</math>  <math>3 - \phi 0.45 \pm 0.05</math>      P. C. D. <math>\phi 2.54</math>      (1) (3) (2)</p>	<p>CASE (3)</p>  <p>PD S LD      (2) (1)  <b>ML44126N</b></p> <p>CASE (3)</p>  <p>PD S LD      (2) (1)  <b>ML44126R</b></p>

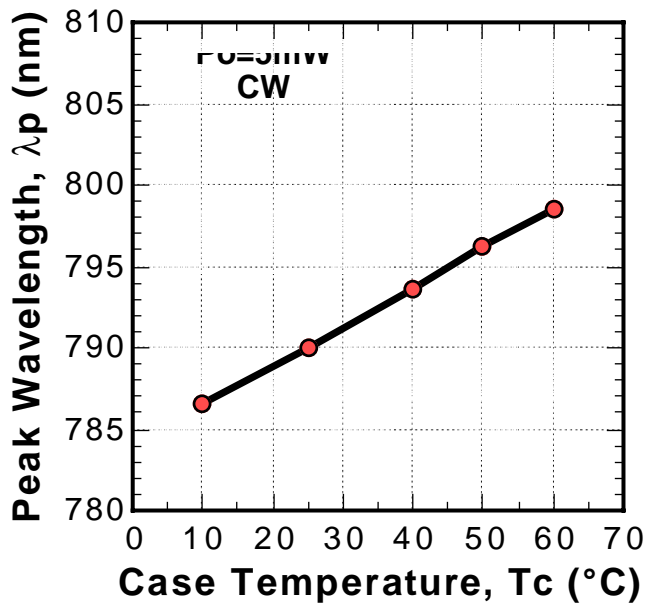
## Typical Characteristics



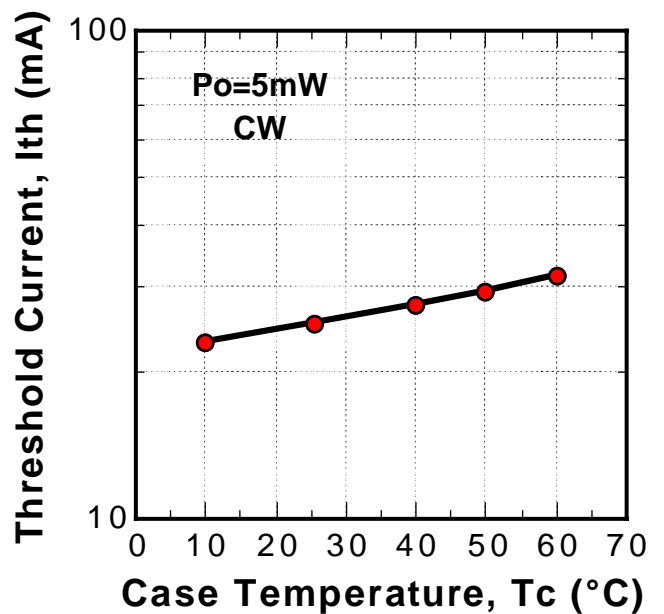
Light Output Power vs. Current (CW)



Far-Filed-Patterns



Peak Wavelength vs. Temperature

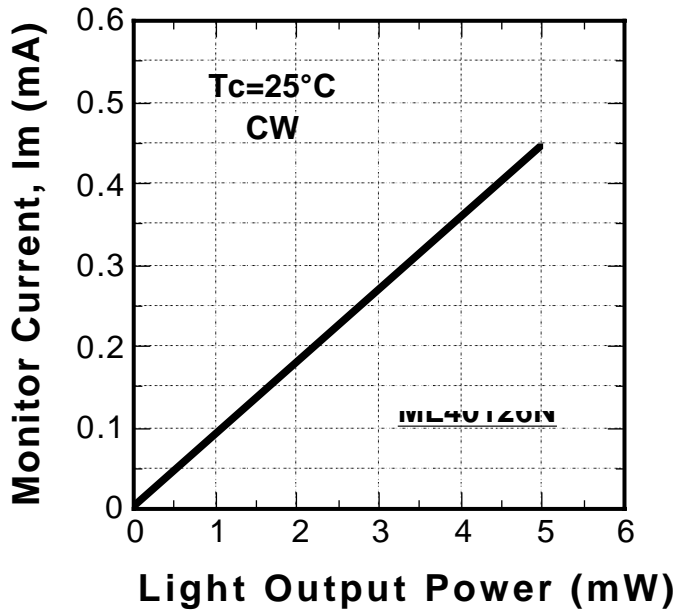


Threshold Current vs. Temperature

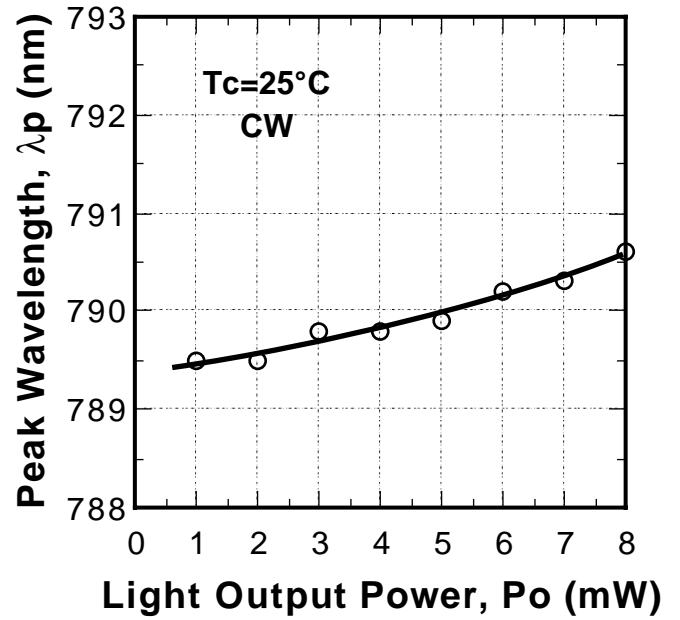
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**Typical Characteristics**



Monitor Photodiode Current



Peak Wavelength vs. Light Output Power