

# INFRARED LASER DIODE



## DL-7140-201M

Ver.1.2 May. 2003

### Features

- Wavelength : 783 nm (Typ.)
- Low threshold current :  $I_{th} = 30$  mA (Typ.)
- High operating temperature : 180mW(Pulse)
- Small package :  $\phi 5.6$ mm

### Applications

- Optical disc system (CD-R)

### Usage condition

CW:<70mW Pulse:<180mW(peak power)

### Absolute Maximum Ratings

( $T_c=25^\circ\text{C}$ )

Parameter		Symbol	Ratings	Unit
Light Output	CW	$P_o$ (CW)	80	mW
	Pulse <sup>1)</sup>	$P_o$ (pulse)	180	
Reverse Voltage (LD)		VR	2	V
Operating Temperature	CW <sup>2)</sup>	$T_{opr}$	-10 to +60	$^\circ\text{C}$
	Pulse <sup>1) 2)</sup>	$T_{opr}$	-10 to +70	
Storage Temperature		$T_{stg}$	-40 to +85	$^\circ\text{C}$

1) Pulse Width 0.2 $\mu\text{s}$ , Duty 50%, Peak power

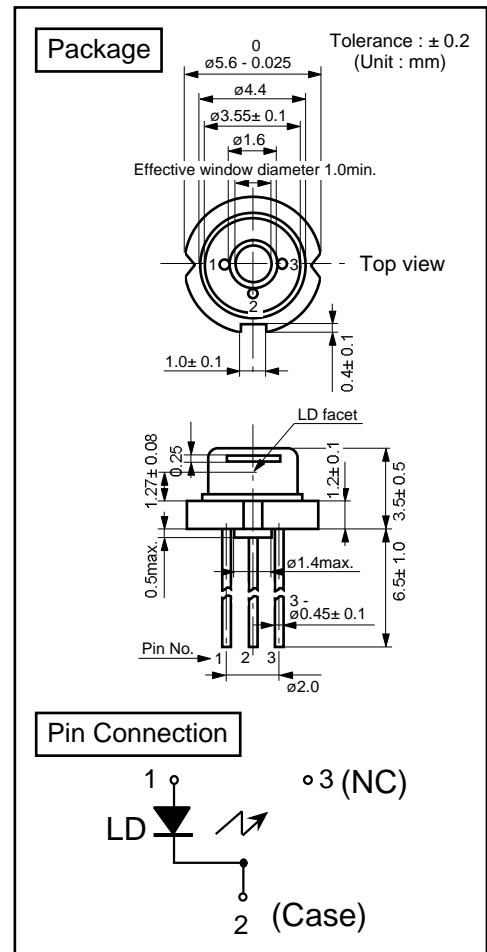
2) Case temperature

### Electrical and Optical Characteristics 3) 4) 5) 7)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current		$I_{th}$	CW	15	30	50	mA
Operating Current	$T_c=25^\circ\text{C}$	$I_{op}$	$P_o=70\text{mW}$	60	100	130	mA
Lasing Wavelength		$L_p$	$P_o=70\text{mW}$	778	783	788	nm
Beam Divergence <sup>6)</sup>	Perpendicular	$Q_v$	$P_o=70\text{mW}$	14	17	18	$^\circ$
	Parallel	$Q_h$	$P_o=70\text{mW}$	7.5	8.5	9.0	$^\circ$
Off Axis Angle	Perpendicular	$dQ_v$	$P_o=70\text{mW}$	-	-	$\pm 2.0$	$^\circ$
	Parallel	$dQ_h$	$P_o=70\text{mW}$	-	-	$\pm 1.5$	$^\circ$
Differential Efficiency		$dP_o/dI_{op}$	$P_o=70\text{mW}$	0.8	1.1	1.3	mW/mA
Astigmatism		As	$P_o=70\text{mW}$	-	-	5	$\mu\text{m}$

3) Initial values. 4) All the above values are evaluated with Tottori sanyo's measuring apparatus.

5) Reference values. 6) Full angle at half maximum. 7) Measured at CW.

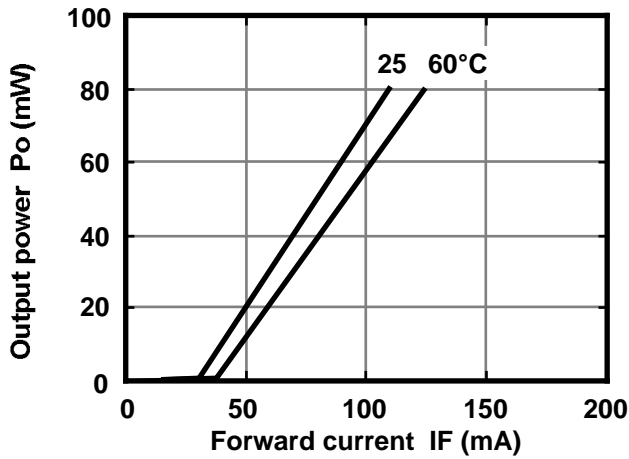


( $T_c=25^\circ\text{C}$ )

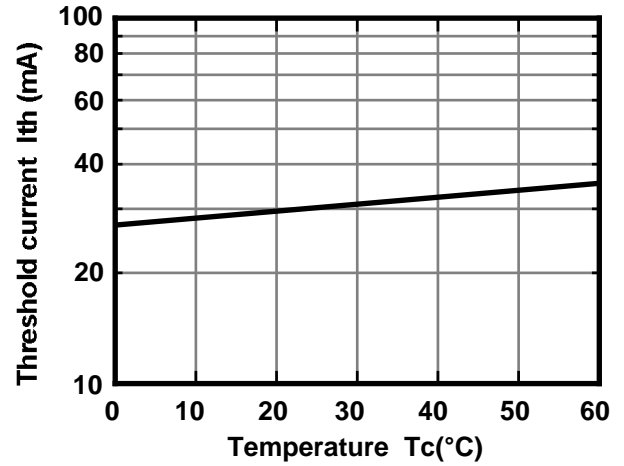
Note : The above product specification are subject to change without notice.

## Characteristics

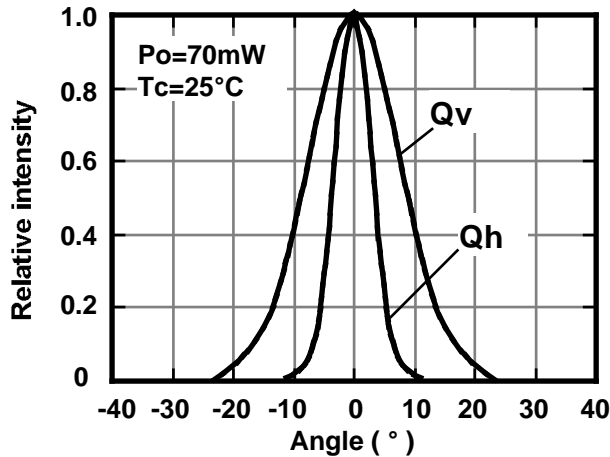
Output power vs. Forward current



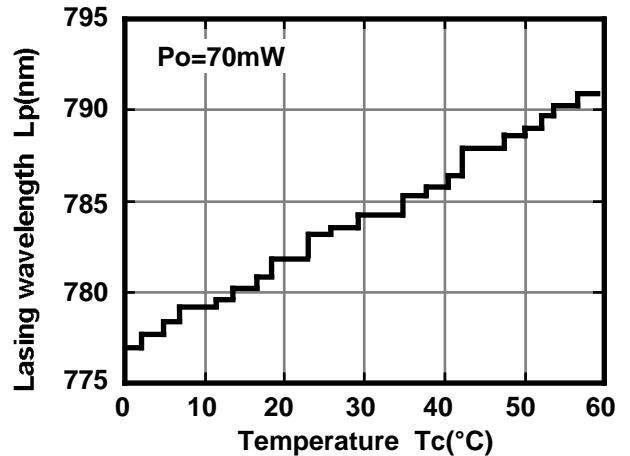
Threshold current vs. Temperature



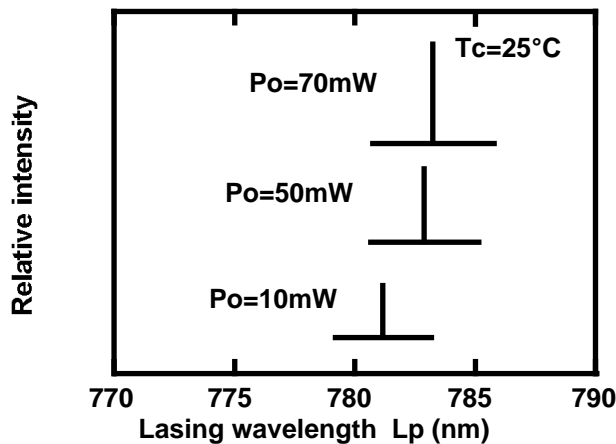
Beam divergence



Lasing wavelength vs. Temperature



Output power vs. Lasing wavelength



This is typical data and it may not represent all products.