TOSHIBA LASER DIODES FOR OPTICAL INFORMATION PROCESSINGS

Standard type

Standard type can be used in wide range of application. Three package types are the 9mm-diameter round flange, the 7mm × 16mm rectangular flange, and the 5.6mm round flange.

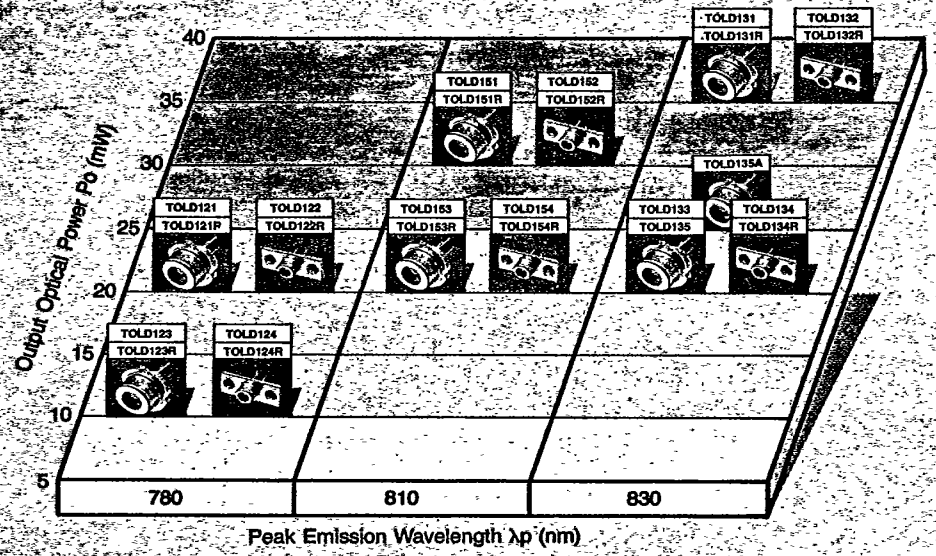
Feature

- Single transverse mode.
- Small focused spot size.
- Long life, High reliability
- Built-in PIN photodiode for monitoring.

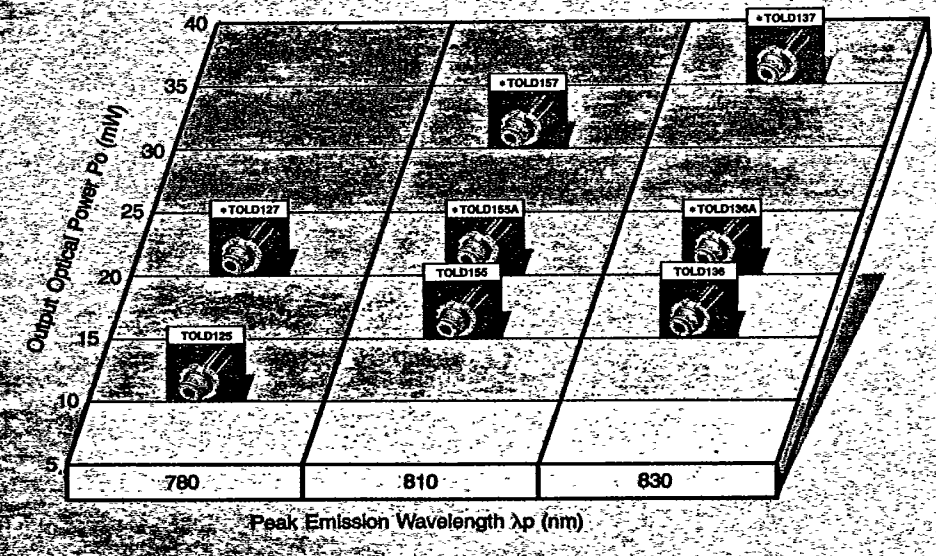
Application

- Optical disc memory.
- Laser beam printer.
- Nd-YAG Laser excitation.
- Measuring instrument.

9mm-diameter round flange, and 7mm × 16mm rectangular flange types.



5.6mm-diameter round flange types.



* New products

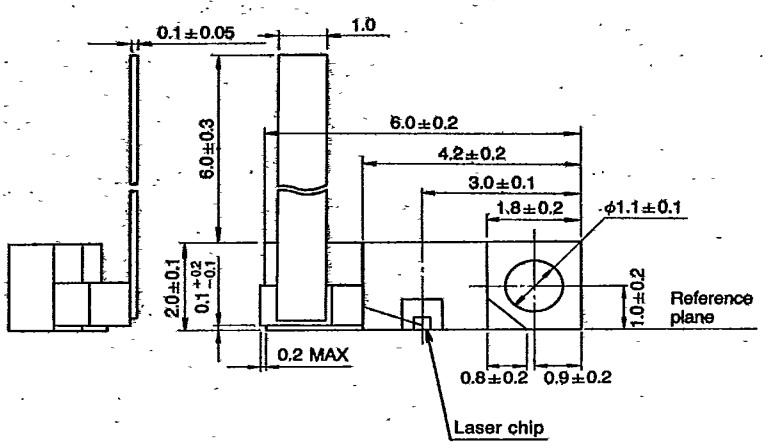
High power type.
With low and high reflective coatings on its front and rear cloven facet.

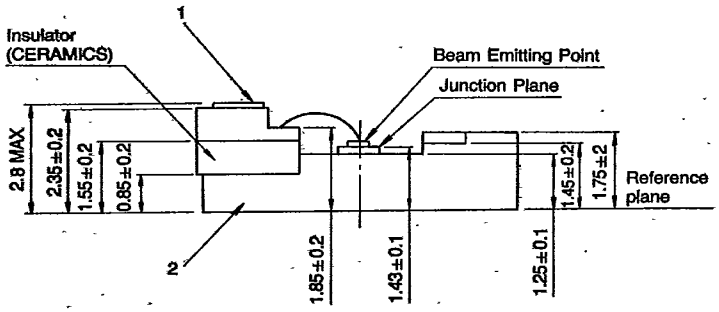
Low noise type.
With same reflective coatings on its front and rear cloven facets.

DIMENSIONAL OUTLINES

Unit: mm

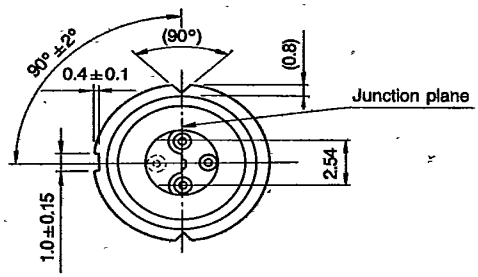
4

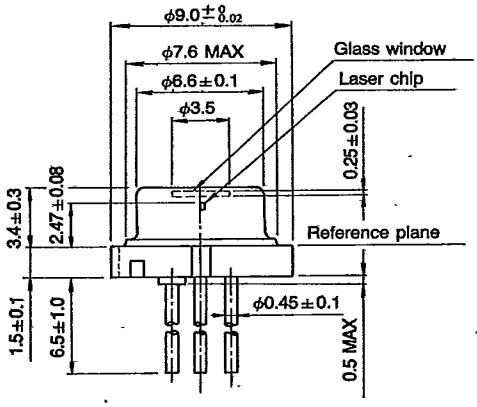


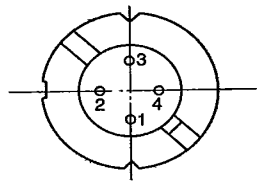


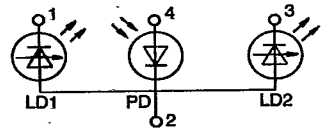
1: Laser Diode Anode
2: Laser Diode Cathode

5









1: Laser Diode 1 Cathode
2: Laser Diode 1 Anode
Laser Diode 2 Anode
Photodiode Cathode
Case
3: Laser Diode 2 Cathode
4: Photodiode Anode

ELECTRICAL AND OPTICAL CHARACTERISTICS

Chip carrier type

Item	Absolute Maximum Ratings (Tc=25°C)		Electrical and Optical Characteristics (Tc=25°C)						Package Type
	Operating Temperature	Optical Output Power	Test Condition Optical Output Power	Threshold Current	Operating Current	Peak Emission Wavelength	Parallel Half Intensity Angle	Perpendicular Half Intensity Angle	
Symbol	Topr	Po	Po	Ith	Iop	λp	$\theta_{//}$	$\theta_{\perp}$	
Unit	°C	mW	mW	mA	mA	nm	deg	deg	
Type	—	—	—	Typ	Typ	Typ	Typ	Typ.	
TOLD128	−10 to +50	25	20	55	85	780	10	27	4
TOLD129	−10 to +50	15	10	50	80	780	10	27	4
TOLD138	−10 to +50	40	35	60	105	830	10	27	4
TOLD139	−10 to +50	25	20	55	115	830	10	27	4
TOLD158	−10 to +50	35	30	60	95	810	10	27	4
TOLD159	−10 to +50	25	20	55	115	810	10	27	4

Twin beam type

Item		Absolute Maximum Ratings (Tc=25°C)		Electrical and Optical Characteristics (Tc=25°C)							Package Type
		Operating Temperature	Optical Output Power	Test Condition Optical Output Power	Threshold Current	Operating Current	Peak Emission Wavelength	Parallel Half Intensity Angle	Perpendicular Half Intensity Angle	Monitoring Output Current	
Symbol		Topr	Po	Po	Ith	Iop	λp	$\theta_{//}$	$\theta_{\perp}$	Im	
Unit		°C	mW	mW	mA	mA	nm	deg	deg	mA	
Type		—	—	—	Typ	Typ	Typ	Typ	Typ	Typ	
*TOLD161	LD1	−10 to +50	25	20	55	85	780	10	27	0.25	5
	LD2	−10 to +50	25	20	55	85	780	10	27	0.25	
*TOLD163	LD1	−10 to +50	15	10	50	80	780	10	27	1.0	5
	LD2	−10 to +50	15	10	50	80	780	10	27	1.0	
*TOLD171	LD1	−10 to +50	35	30	60	95	830	10	27	0.4	5
	LD2	−10 to +50	35	30	60	95	830	10	27	0.4	
*TOLD173	LD1	−10 to +50	25	20	55	115	830	10	27	2.0	5
	LD2	−10 to +50	25	20	55	115	830	10	27	2.0	

*New products

Array type

Item	Absolute Maximum Ratings (Tc=25°C)		Electrical and Optical Characteristics (Tc=25°C)						Package Type
	Operating Temperature	Optical Output Power	Test Condition Optical Output Power	Threshold Current	Operating Current	Peak Emission Wavelength	Parallel Half Intensity Angle	Perpendicular Half Intensity Angle	Monitoring Output Current	
Symbol	Topr	Po	Po	Ith	Iop	λp	$\theta_{//}$	$\theta_{\perp}$	Im	
Unit	°C	mW	mW	mA	mA	nm	deg	deg	mA	
Type	—	—	—	Typ	Typ	Typ	Typ	Typ	Typ	
*TOLD181	−10 to +50	80	75	170	280	810	10	27	1.0	1a

*New product

ELECTRICAL AND OPTICAL CHARACTERISTICS

■ Standard type

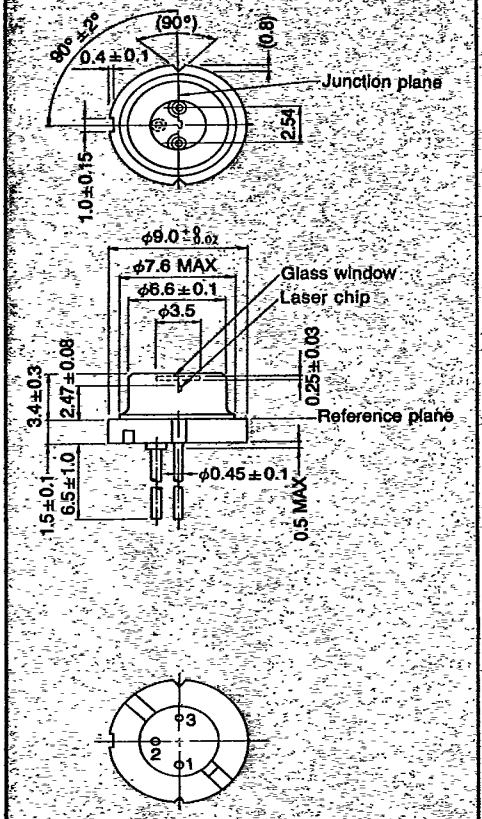
Item	Absolute Maximum Ratings (Tc=25°C)		Electrical and Optical Characteristics (Tc=25°C)							Package Type
	Operating Temperature	Optical Output Power	Test Condition Optical Output Power	Threshold Current	Operating Current	Peak Emission Wavelength	Parallel Half Intensity Angle	Perpendicular Half Intensity Angle	Monitoring Output Current	
Symbol	Topr	Po	Po	Ith	Iop	λp	$\theta_{\parallel}$	$\theta_{\perp}$	Im	
Unit	°C	mW	mW	mA	mA	nm	deg	deg	mA	
Type	—	—	—	Typ	Typ	Typ	Typ	Typ	Typ	
TOLD121	−10 to +50	25	20	55	85	780	10	27	0.2	1a
TOLD121R										1b
TOLD122										2a
TOLD122R										2b
TOLD123	−10 to +50	15	10	50	80	780	10	27	0.6	1a
TOLD123R										1b
TOLD124										2a
TOLD124R										2b
TOLD125	−10 to +50	15	10	50	80	780	10	27	1.1	3
*TOLD127	−10 to +50	25	20	55	85	780	10	27	0.2	3
TOLD131	−10 to +50	40	35	60	105	830	10	27	0.4	1a
TOLD131R										1b
TOLD132										2a
TOLD132R										2b
TOLD133	−10 to +50	25	20	55	115	830	10	27	1.5	1a
TOLD134										2a
TOLD134R										2b
TOLD135										1b
TOLD135A	−10 to +50	30	25	55	125	830	10	27	1.8	1b
TOLD136	−10 to +50	20	15	55	110	830	10	27	1.8	3
*TOLD136A	−10 to +50	25	20	55	115	830	10	27	2.4	3
*TOLD137	−10 to +50	40	35	60	105	830	10	27	0.4	3
TOLD151	−10 to +50	35	30	60	95	810	10	27	0.3	1a
TOLD151R										1b
TOLD152										2a
TOLD152R										2b
TOLD153	−10 to +50	25	20	55	115	810	10	27	1.5	1a
TOLD153R										1b
TOLD154										2a
TOLD154R										2b
TOLD155	−10 to +50	20	15	55	110	810	10	27	1.8	3
*TOLD155A	−10 to +50	25	20	55	115	810	10	27	2.4	3
*TOLD157	−10 to +50	35	30	60	95	810	10	27	0.3	3

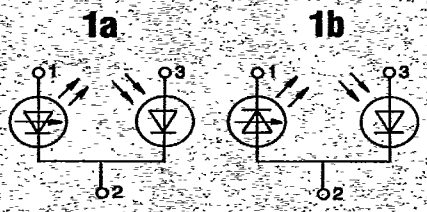
*New products

DIMENSIONAL OUTLINES

Unit: mm

1a/1b

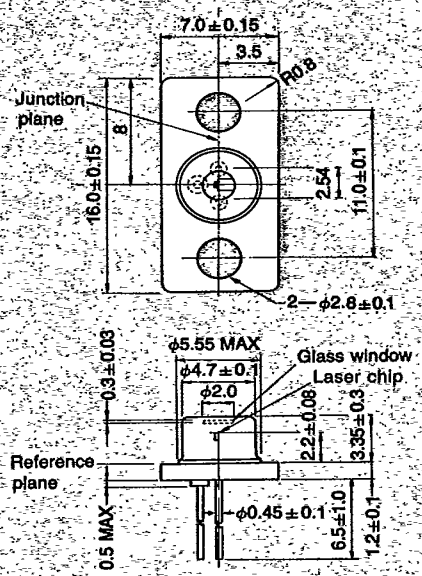


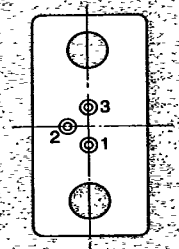


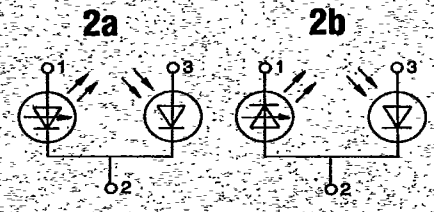
1: Laser Diode Anode
2: Laser Diode Cathode
Photodiode Cathode
Case
3: Photodiode Anode

1: Laser Diode Cathode
2: Laser Diode Anode
Photodiode Cathode
Case
3: Photodiode Anode

2a/2b



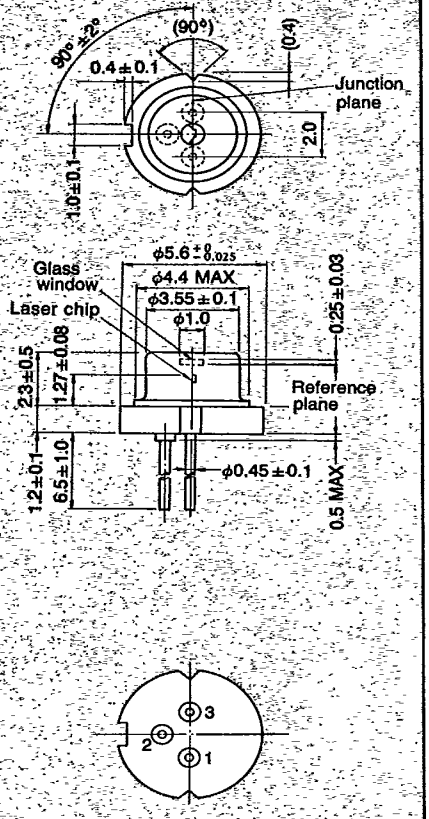


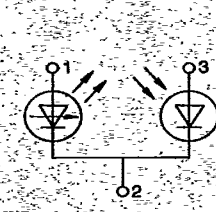


1: Laser Diode Anode
2: Laser Diode Cathode
Photodiode Cathode
Case
3: Photodiode Anode

1: Laser Diode Cathode
2: Laser Diode Anode
Photodiode Cathode
Case
3: Photodiode Anode

3





1: Laser Diode Anode
2: Laser Diode Cathode
Photodiode Cathode
Case
3: Photodiode Anode

6.

Chip carrier type

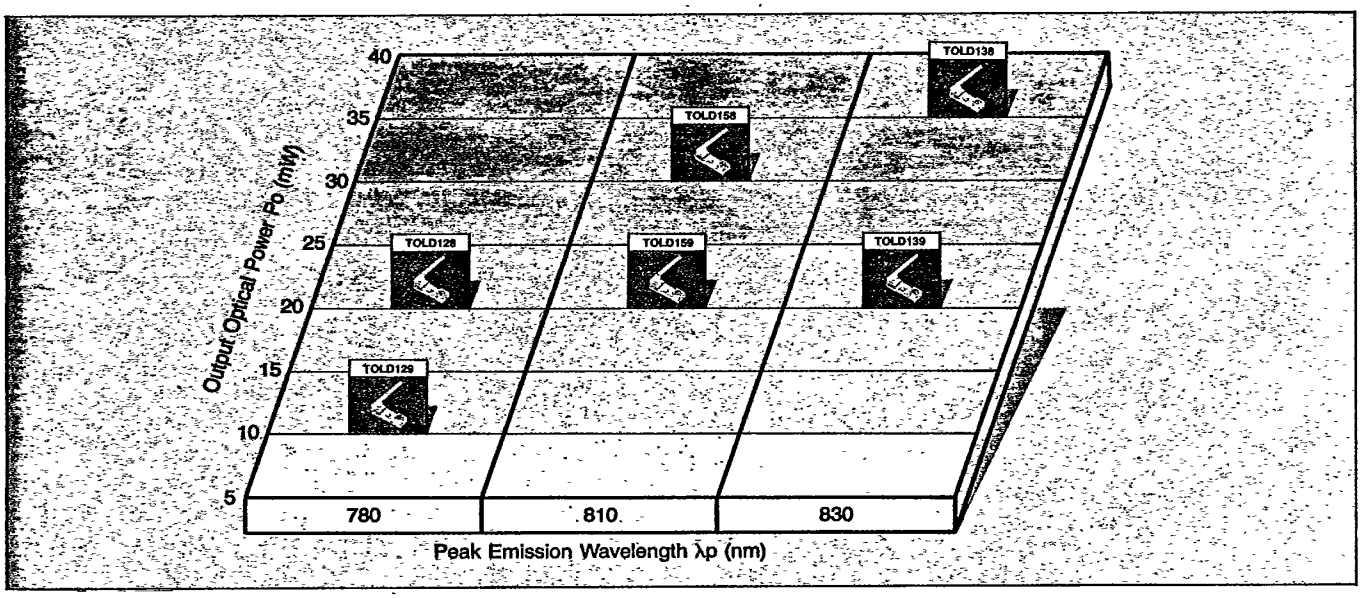
In this type, chip is bare mounted on the carrier without monitoring photodiode. Chip carrier type must be set using thermal conductive heat sink in optical module devices and then sealed hermetically.

Feature

- Small size and light weight.

Application

- Assembled into the optical unit.



Twin beam type

In this type, two lasers which can be driven independently are in one chip. Built-in photodiode is common for two lasers.

Feature

- Close two laser beam in one chip independently drivable.

Application

- High speed laser beam printer.
- High speed optical disc memory.

Array type

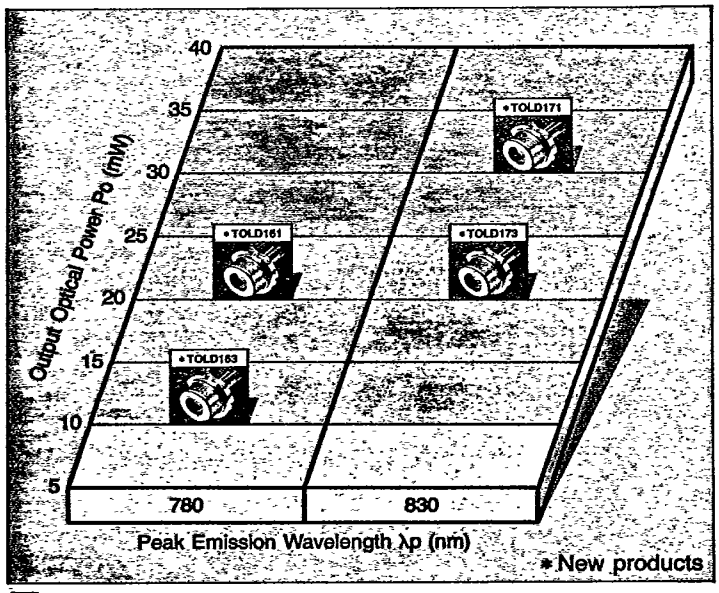
Multiple lasers which can be driven simultaneously are in one chip. Each lasers are not in phase locked.

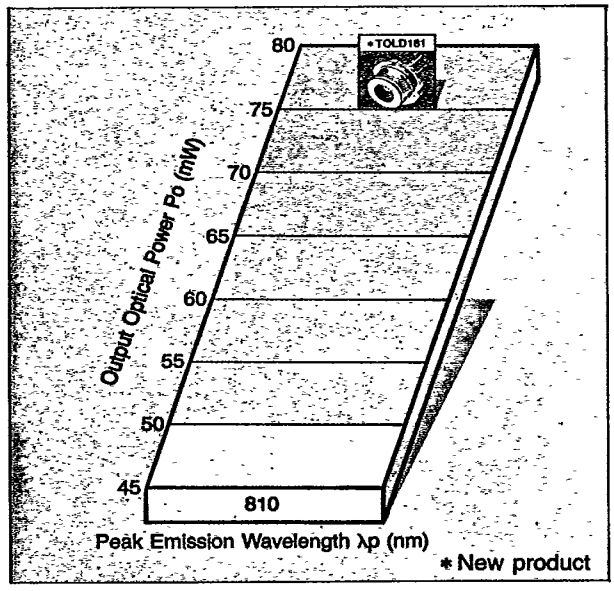
Feature

- Multi beams, multe focused spots.
- High optical output power.

Application

- Nd-YAG Laser excitation.
- Laser sensor.





High power type.
With low and high reflective coatings on its front and rear cloven facet.

Low noise type.
With same reflective coatings on its front and rear cloven facets.