

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.

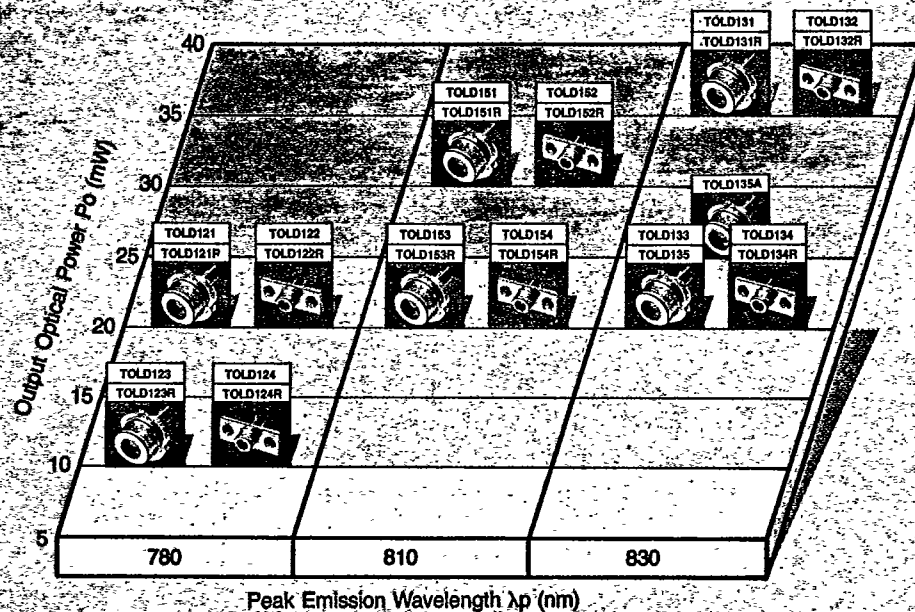
Feature

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

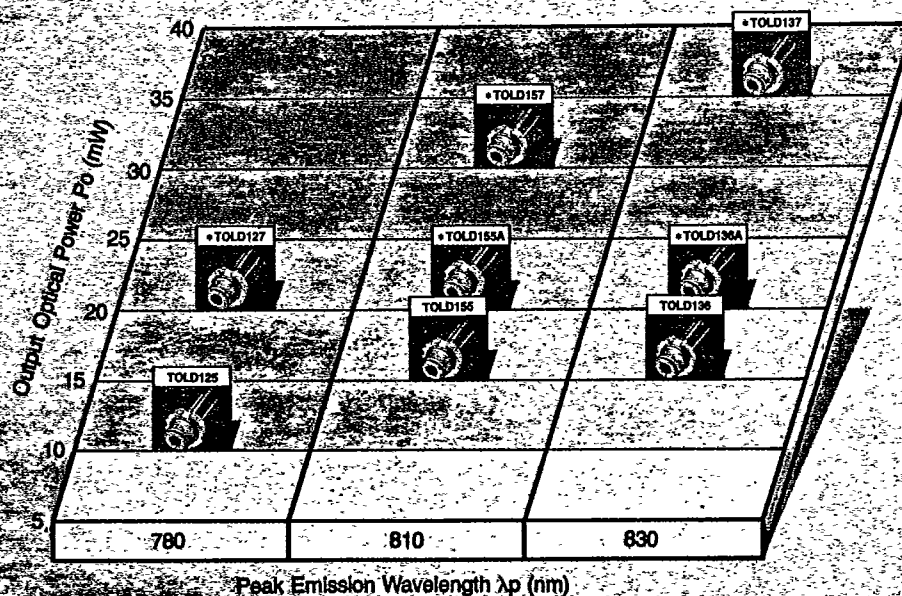
Application

- 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.

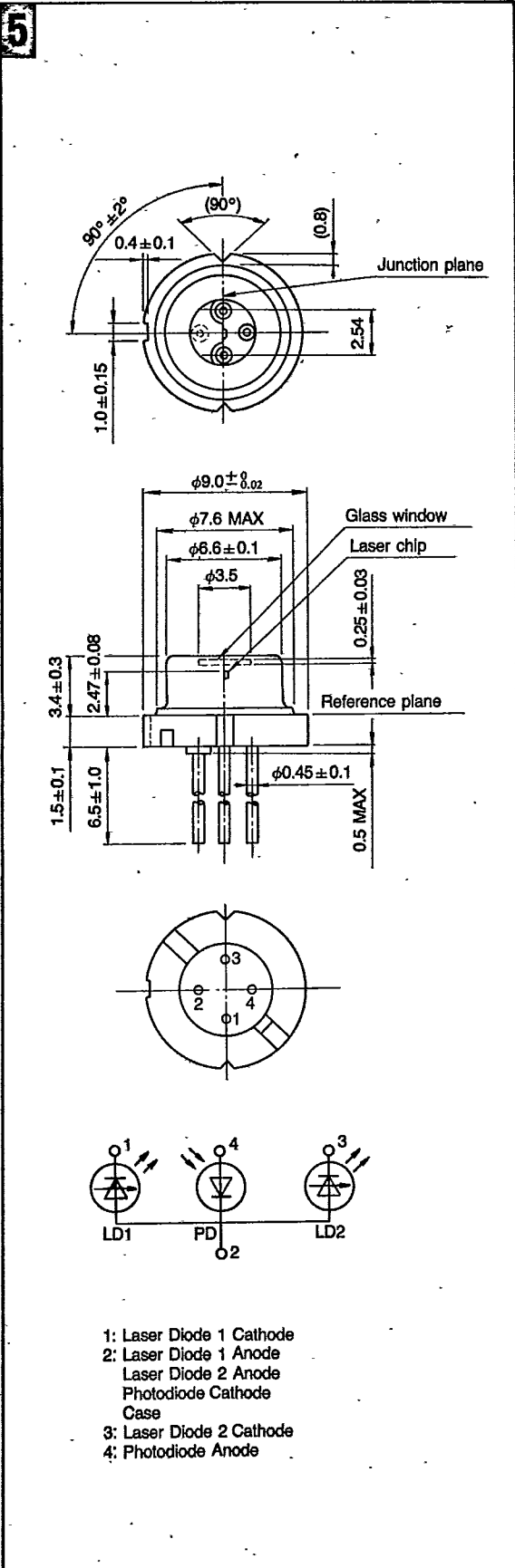
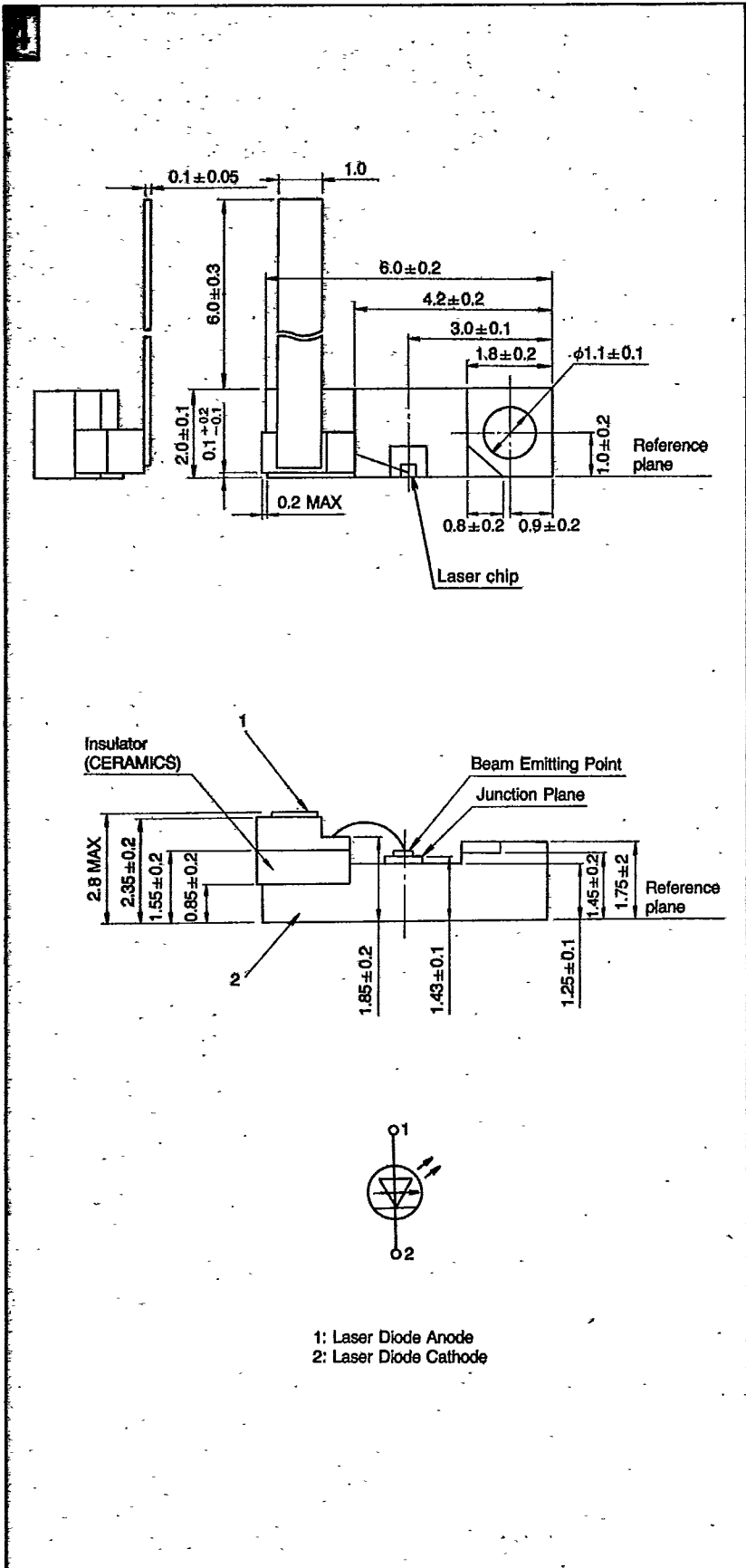
With low and high reflective coatings on its front and rear cloven facet.

Low noise type.

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

DIMENSIONAL OUTLINES

Unit: mm



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 Unit | Topr °C | Po mW | Po mW | Ith mA | Iop mA | λp nm | θp 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 Unit | Topr °C | Po mW | Po mW | Ith mA | Iop mA | λp nm | θp deg | | θ⊥ deg |
| 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 Unit | Topr °C | Po mW | Po mW | Ith mA | Iop mA | λp nm | θp deg | | θ⊥ deg |
| 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

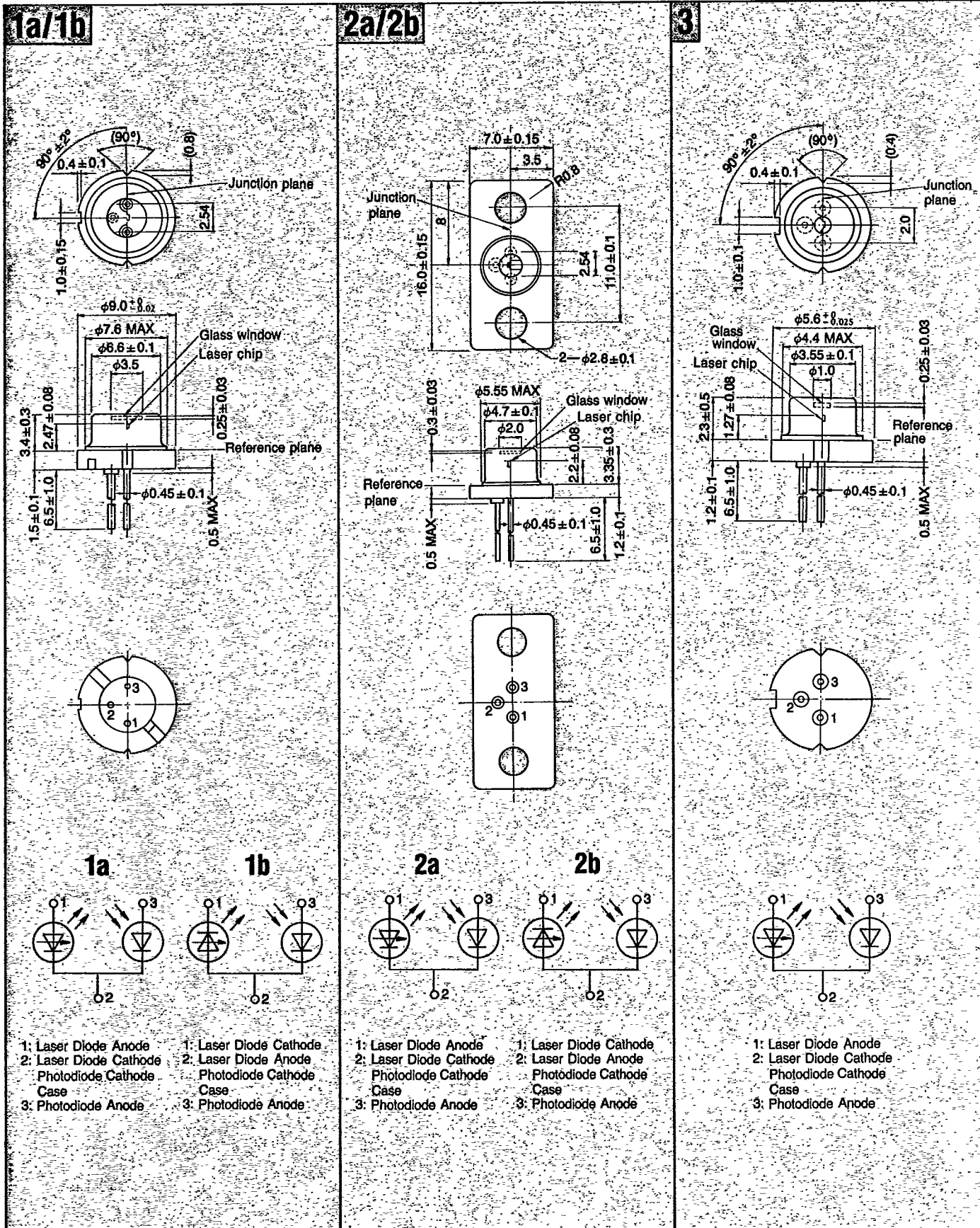
Standard type

| 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 Unit | Topr °C | Po mW | Po mW | Ith mA | Iop mA | λp nm | θ _r deg | θ _⊥ deg | |
| 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



Chip carrier type

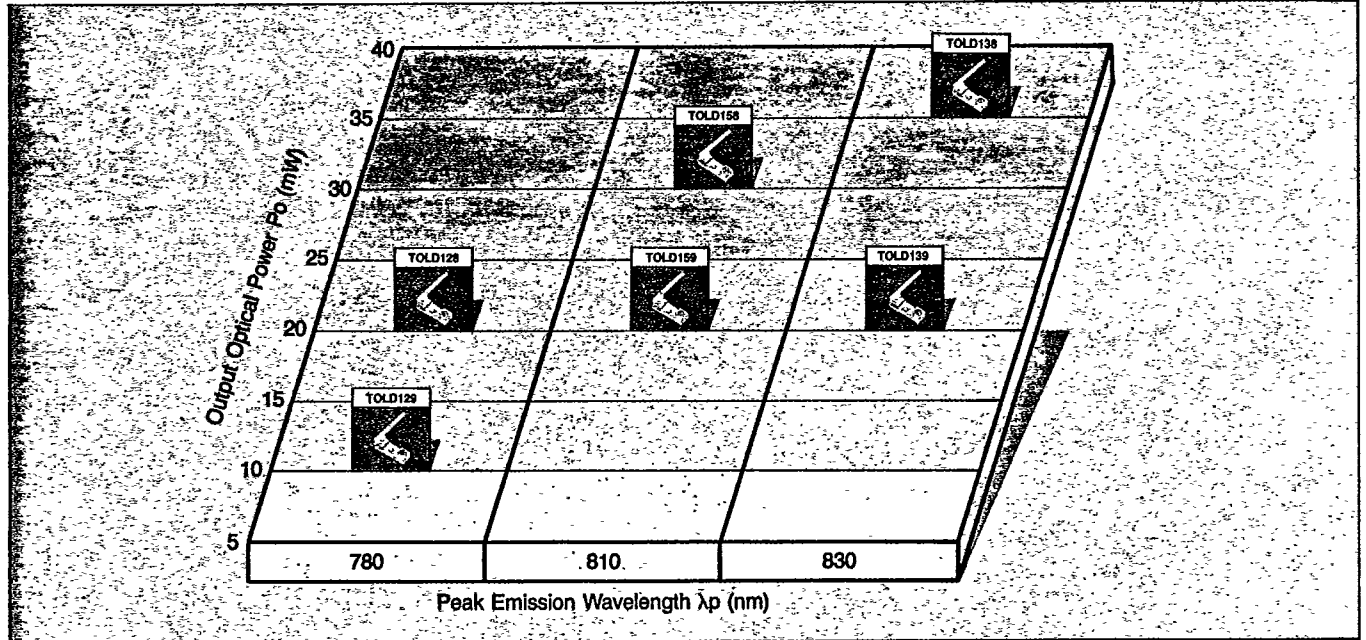
In this type, chip is bare mounted on the carrier without monitoring photodiode. Chip carrier type must be set using thermal conductive heat sink in optical module devices and then sealed hermetically.

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

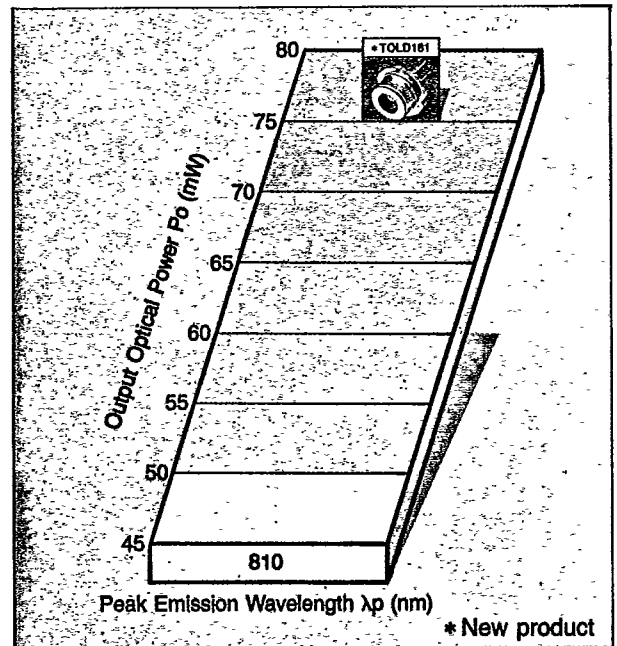
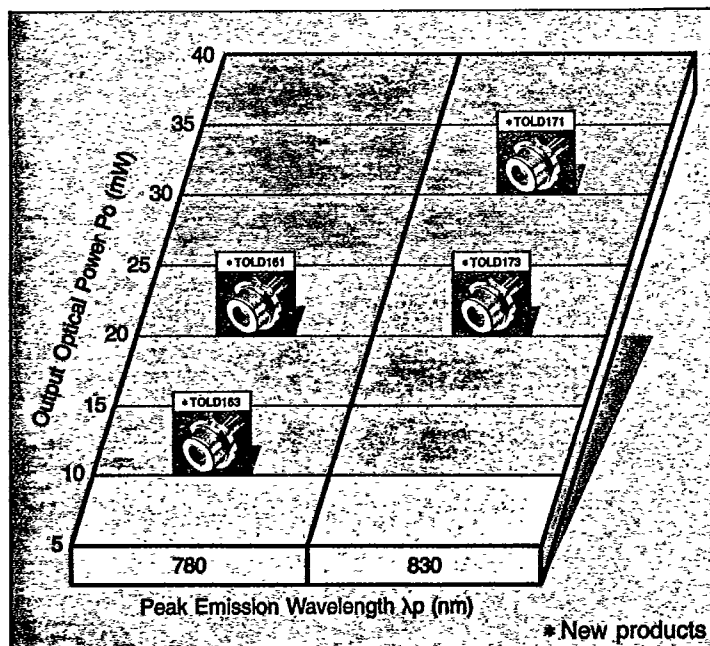
Multiple lasers which can be driven simultaneously are in one chip. Each lasers are not in phase locked.

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.