

Laser diode

L8231/L7551 series

Receptacle type, 1.3 μm , 1.25, 2.5 Gbps



L8231 and L7551 series are high-speed infrared emitters specifically developed for 1.3 μm band optical fiber communications. These devices incorporate a high-speed Fabry-Perot laser diode integrated in a receptacle module. Packages are available with various connectors and mounting styles.

Features

- High-speed Fabry-Perot laser diode
L8231 series: 1.25 Gbps
L7551 series: 2.5 Gbps
- Compatible with single/multi mode optical fibers

Applications

- Optical fiber communications
- Fiber channel
- Gigabit ethernet
- HDTV
- SDH

■ Absolute maximum ratings (Ta=25 °C)

| Parameter | Symbol | L8231 series | L7551 series | Unit |
|------------------------------|--------|---------------------|---------------------|------|
| Forward current | IF | Ith + 14 (DC) | Ith + 16 (DC) | mA |
| | | Ith + 28 (pulse) *1 | Ith + 32 (pulse) *1 | mA |
| Reverse voltage (laserdiode) | VR | 2 | | V |
| Reverse voltage (photodiode) | VRm | 20 | | V |
| Operating temperature | Topr | -20 to +70 | | °C |
| Storage temperature | Tstg | -40 to +70 | | °C |

*1: Duty ratio 50 %

■ Electrical and optical characteristics (Typ. Ta=25 °C, IF=Ith +10 mA)

| Parameter | Symbol | L8231 series | L7551 series | Unit |
|------------------------------|-------------|--------------|--------------|---------------|
| Peak wavelength | λ_p | 1.31 | 1.31 | μm |
| Forward voltage | VF | 1.1 | 1.1 | V |
| Threshold current | Ith | 6 | 9 | mA |
| Fiber end output *2 | PF | 0.2 | 0.2 | mW |
| Rise time | tr | 250 | 200 | ps |
| Data rate | B | 1.25 | 2.5 | Gbps |
| Monitor current (photodiode) | Im | 0.4 | 0.5 | mA |

*2: Measured using a single-mode optical fiber (mode field diameter 9.5 μm) with a master plug.

■ Package lineup

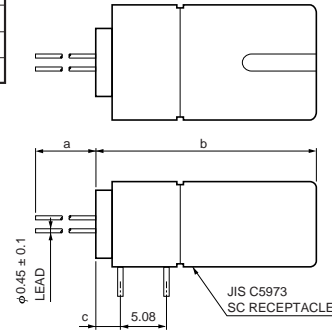
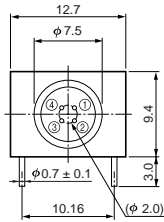
| Parameter | L8231/L7551 | | | | |
|---------------------|-------------|-----|-----|-------|---------------|
| | -21 | -22 | -23 | -32 | -44 |
| Mounting style | Board | | | Panel | Board & panel |
| Connector | SC | FC | MU | FC | LC |
| Dimensional outline | ① | ② | ③ | ④ | ⑤ |

Laser diode L8231/L7551 series

■ Dimensional outlines (unit: mm, tolerance unless otherwise noted: ± 0.2)

① L8231/L7551-21

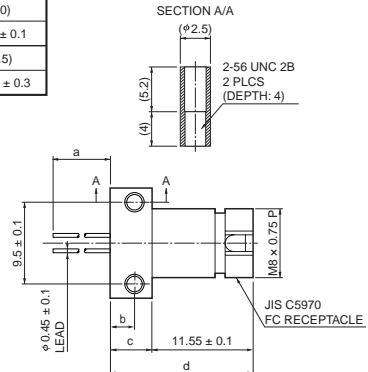
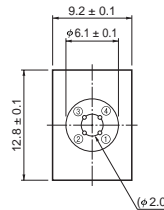
| | L8231-21 | L7551-21 |
|---|----------------|----------------|
| a | (16) | (10) |
| b | 22.5 ± 0.4 | 21.2 ± 0.4 |
| c | 2.75 | 1.45 |



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② L8231/L7551-22

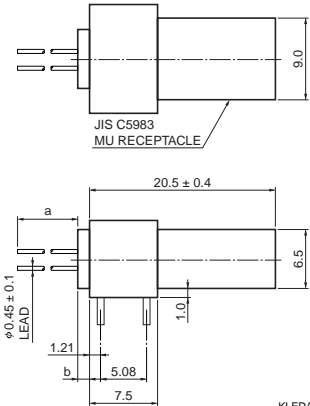
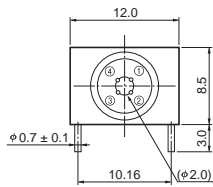
| | L8231-22 | L7551-22 |
|---|-----------------|-----------------|
| a | (16) | (10) |
| b | 2.8 ± 0.1 | 1.75 ± 0.1 |
| c | (4.8) | (3.5) |
| d | 16.35 ± 0.3 | 15.05 ± 0.3 |



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③ L8231/L7551-23

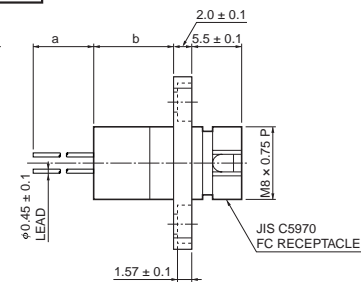
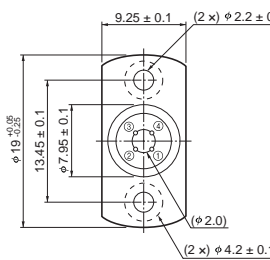
| | L8231-23 | L7551-23 |
|---|----------|----------|
| a | (16) | (10) |
| b | 1.3 | 0 |



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④ L8231/L7551-32

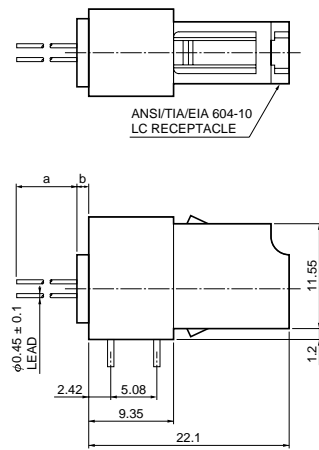
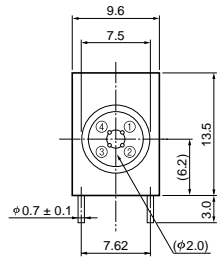
| | L8231-32 | L7551-32 |
|---|----------|----------|
| a | (16) | (10) |
| b | 8.8 | 7.5 |



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⑤ L8231/L7551-44

| | L8231-44 | L7551-44 |
|---|----------|----------|
| a | (16) | (10) |
| b | 1.3 | 0 |



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■ Pin connection

| Pin No. | L8231 series | L7551 series |
|---------|--------------|--------------|
| ① | Anode (PD) | Cathode (PD) |
| ② | Anode (LD) | Cathode (LD) |
| ③ | Cathode (LD) | Anode (LD) |
| ④ | Cathode (PD) | Anode (PD) |

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