

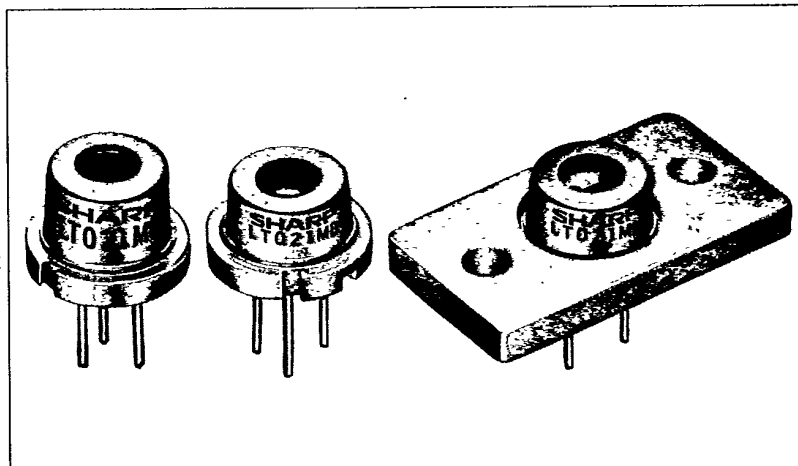
# LT021MC/MD/MF

## Features

- High power (maximum optical power output: 15 mW)
- Wavelength: 780nm
- Single transverse mode

## Applications

- High speed laser printers
- Bar code readers
- Information processing equipment



## Absolute Maximum Ratings

(Tc=25°C)

| Parameter               | Symbol       | Ratings                   | Units |
|-------------------------|--------------|---------------------------|-------|
| Optical power output    | Po           | 15                        | mW    |
| Reverse voltage         | Laser<br>PIN | VR                        | V     |
|                         |              |                           |       |
| Operating temperature*1 | Topr         | -10 ~ +60                 | °C    |
| Storage temperature*1   | Tstg         | -40 ~ +85                 | °C    |
| Soldering temperature*2 | Tsol         | 260 (less than 5 seconds) | °C    |

\*1 Case temperature \*2 At point 1.6 mm from lead base

## Electro-optical Characteristics\*1

(Tc=25°C)

| Parameter               |                           | Symbol           | Condition                                   | Ratings |     |     | Units |
|-------------------------|---------------------------|------------------|---------------------------------------------|---------|-----|-----|-------|
|                         |                           |                  |                                             | MIN     | TYP | MAX |       |
| Threshold current       |                           | I <sub>th</sub>  | —                                           | —       | 45  | 80  | mA    |
| Operating current       |                           | I <sub>op</sub>  | P <sub>o</sub> =10mW                        | —       | 75  | 110 | mA    |
| Operating voltage       |                           | V <sub>op</sub>  | P <sub>o</sub> =10mW                        | —       | 1.8 | 2.5 | V     |
| Wavelength*2            |                           | λ <sub>p</sub>   | P <sub>o</sub> =10mW                        | 770     | 780 | 790 | nm    |
| Monitor current         |                           | I <sub>m</sub>   | P <sub>o</sub> =10mW<br>V <sub>R</sub> =15V | 1.0     | 3.0 | 5.0 | mA    |
| Radiation angles*3      | Parallel to junction      | θ <sub>  </sub>  | P <sub>o</sub> =10mW                        | 8       | 11  | 16  | deg   |
|                         | Perpendicular to junction | θ <sub>⊥</sub>   | P <sub>o</sub> =10mW                        | 20      | 33  | 45  | deg   |
| Emission point accuracy | Angle                     | Δφ <sub>  </sub> | P <sub>o</sub> =10mW                        | —       | —   | ±2  | deg   |
|                         |                           | Δφ <sub>⊥</sub>  | P <sub>o</sub> =10mW                        | —       | —   | ±3  | deg   |
|                         | Position*4                | Δx, Δy, Δz       | —                                           | —       | —   | ±80 | μm    |

\*1 Initial value

\*2 Single transverse mode

\*3 Angle at 50% peak intensity (full width at half-maximum)

\*4 Not specified for LT021MF

## Electrical Characteristics of Photodiode

(Tc=25°C)

| Parameter            | Symbol | Condition | Ratings |     |     | Units |
|----------------------|--------|-----------|---------|-----|-----|-------|
|                      |        |           | MIN     | TYP | MAX |       |
| Sensitivity          | S      | VR=15V    | —       | 0.3 | —   | mA/mW |
| Dark current         | ID     | VR=15V    | —       | —   | 150 | nA    |
| Terminal capacitance | Ct     | VR=15V    | —       | 8   | —   | pF    |

# LT021 Series Characteristics Diagrams

Fig. 51-1 Forward Current vs. Forward Voltage

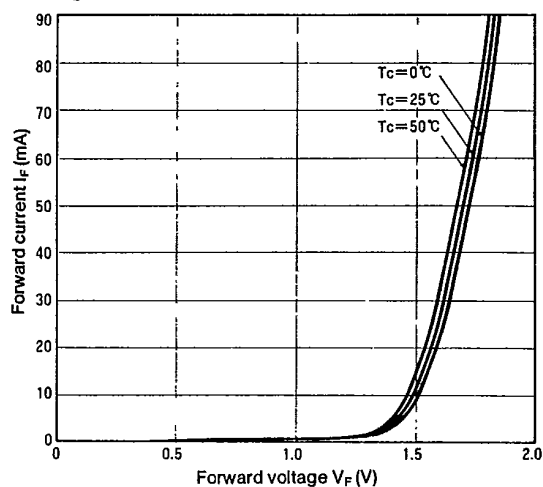


Fig. 51-4 Wavelength vs. Temperature

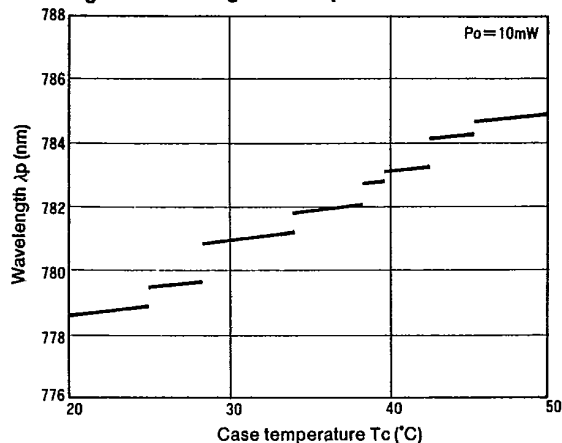


Fig. 51-2 Optical Power Output vs. Forward Current and Monitor Current

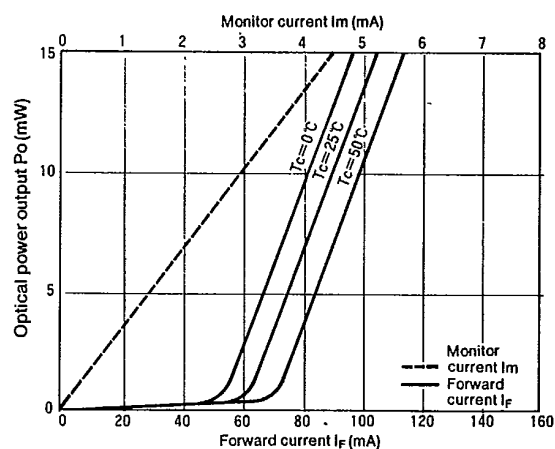


Fig. 51-3 Threshold Current vs. Temperature

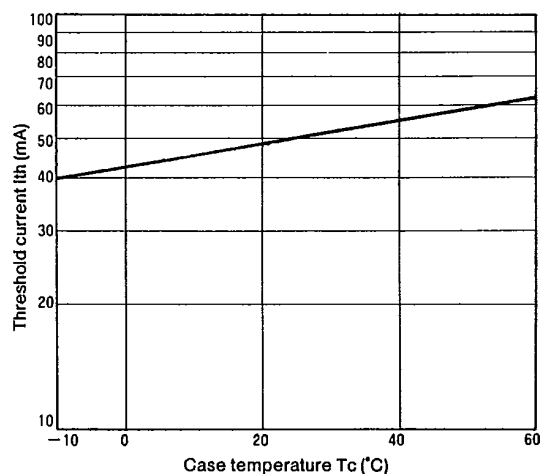
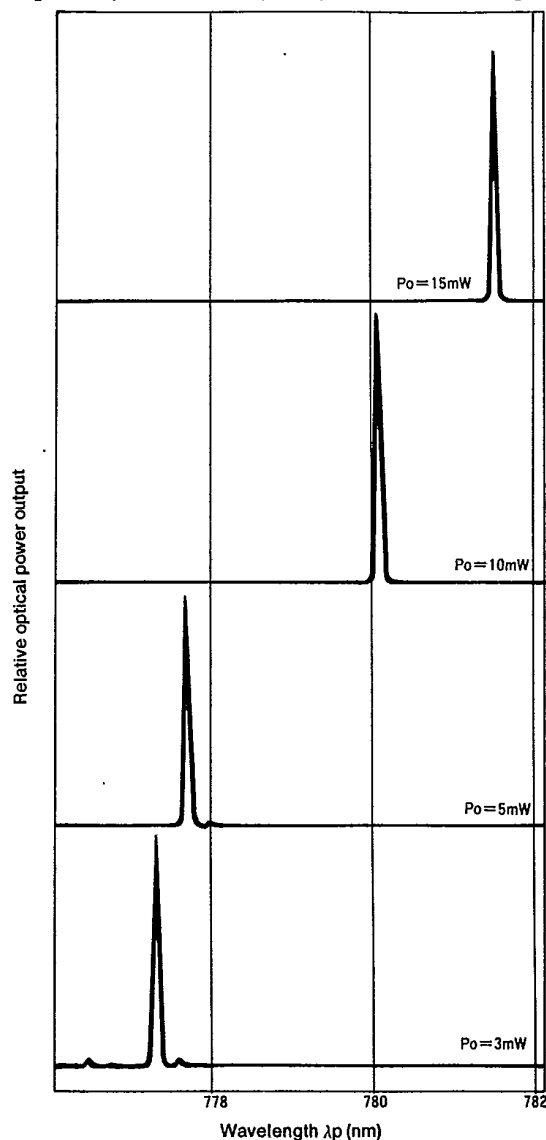


Fig. 51-5 Optical Power Output Dependence of Wavelength



Note: All data on this page is typical only, and is not intended as a specification. The shapes of these curves can be used as a general reference, but the actual characteristics will vary from device to device.