

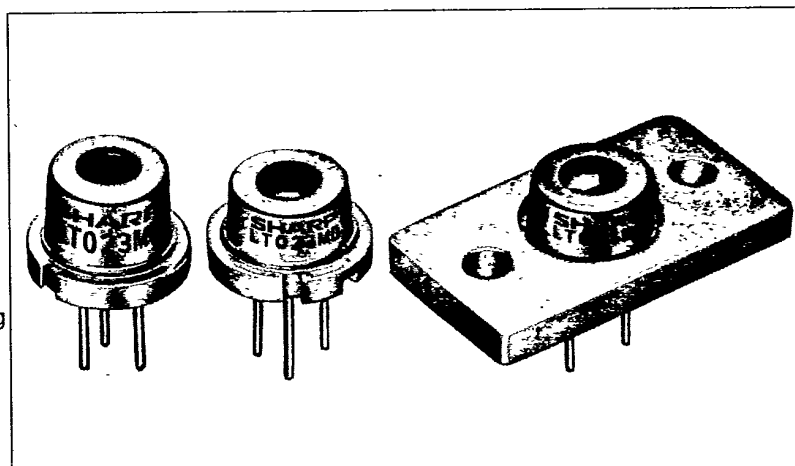
LT023MC/MD/MF

Features

- Low noise
S/N: 80 dB (according to measurement method Fig. 29-2)
- Wavelength: 780nm
- Single transverse mode
- Multi longitudinal mode

Applications

- Video disc players
- Fiber optic communications
- Light source for analog processing
- Measurement instruments
- Analysis instruments



Absolute Maximum Ratings

(T_c=25°C)

| Parameter | Symbol | Ratings | Units |
|-------------------------------------|------------------|---------------------------|-------|
| Optical power output | P _o | 5 | mW |
| Reverse voltage | V _R | 2 | V |
| | | 30 | |
| Operating temperature* ¹ | T _{opr} | -10 ~ +60 | °C |
| Storage temperature* ¹ | T _{stg} | -40 ~ +85 | °C |
| Soldering temperature* ² | T _{sol} | 260 (less than 5 seconds) | °C |

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

Electro-optical Characteristics*¹

(T_c=25°C)

| Parameter | | | Symbol | Condition | Ratings | | | Units |
|---------------------------|------------------------|---------------------------|-----------------|--------------------------------------------------------|---------|------|------|-------|
| | | | | | MIN | TYP | MAX | |
| Threshold current | | | I _{th} | — | — | 50 | 90 | mA |
| Operating current | | | I _{op} | P _o =3mW | — | 65 | 110 | mA |
| Operating voltage | | | V _{op} | P _o =3mW | — | 1.75 | 2.2 | V |
| Wavelength* ² | | | λ _p | P _o =3mW | 770 | 780 | 795 | nm |
| Monitor current | | | I _m | P _o =3mW V _R =15V | 0.3 | 0.9 | 1.6 | mA |
| Radiation characteristics | Angle* ³ | Parallel to junction | θ _∥ | P _o =3mW | 9 | 11 | 16 | deg |
| | | Perpendicular to junction | θ _⊥ | P _o =3mW | 20 | 37 | 48 | deg |
| | Ripple | | | P _o =3mW | — | — | ±20 | % |
| Emission point accuracy | Angle | | Δφ _∥ | P _o =3mW | — | — | ±2 | deg |
| | | | Δφ _⊥ | P _o =3mW | — | — | ±3 | deg |
| | Position* ⁴ | | Δx, Δy, Δz | — | — | — | ±80 | μm |
| Differential efficiency | | | η | $\frac{2\text{mW}}{I_F(3\text{mW}) - I_F(1\text{mW})}$ | 0.1 | 0.25 | 0.6 | mW/mA |
| Coherence | | | γ | P _o =3mW | — | — | 0.47 | |

*¹ Initial value*³ Angle at 50% peak intensity (full width at half-maximum)*² Single transverse mode*⁴ Not specified for LT023MF

Electrical Characteristics of Photodiode

(T_c=25°C)

| Parameter | Symbol | Condition | Ratings | | | Units |
|----------------------|----------------|---------------------|---------|-----|-----|-------|
| | | | MIN | TYP | MAX | |
| Sensitivity | S | V _R =15V | — | 0.3 | — | mA/mW |
| Dark current | I _D | V _R =15V | — | — | 250 | nA |
| Terminal capacitance | C _t | V _R =15V | — | 8 | 20 | pF |