

LT023HC

Features

- Wide temperature range
($-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$)
- 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

(Tc=25°C)

Parameter	Symbol	Ratings	Units
Optical power output	Po	5	mW
Reverse voltage	V _R	2	V
		30	
Operating temperature*1	Topr	$-30 \sim +85$	$^{\circ}\text{C}$
Storage temperature*1	Tstg	$-40 \sim +100$	$^{\circ}\text{C}$
Soldering temperature*2	Tsol	260 (less than 5 seconds)	$^{\circ}\text{C}$

*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 _{th}	—	—	50	90	mA
Operating current			I _{op1}	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		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

Electrical Characteristics of Photodiode

(Tc=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