

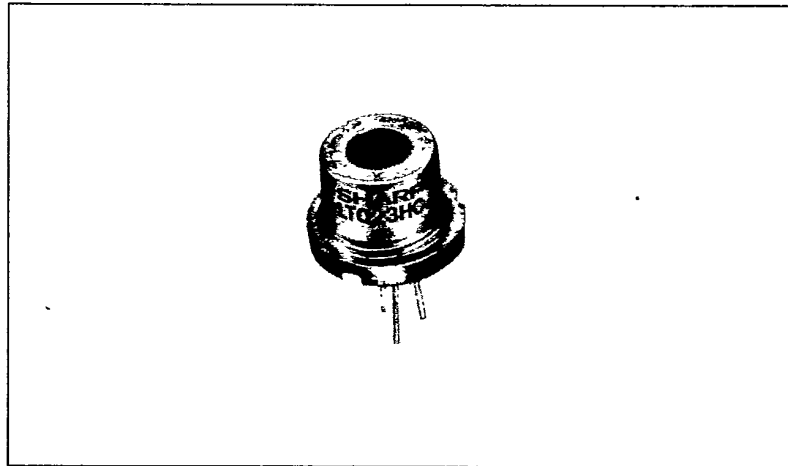
LT023HC

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	Laser	2	V
	PIN	30	
Operating temperature*1	Topr	$-30 \sim +85$	°C
Storage temperature*1	Tstg	$-40 \sim +100$	°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	Ith	—	—	50	90	mA		
Operating current	Iop1	Po=3mW	—	65	110	mA		
Operating voltage	Vop	Po=3mW	—	1.75	2.2	V		
Wavelength*2	λp	Po=3mW	770	780	795	nm		
Monitor current	Im	Po=3mW VR=15V	0.3	0.9	1.6	mA		
Radiation characteristics	Angle*3	Parallel to junction	$\theta //$	Po=3mW	9	11	16	deg
		Perpendicular to junction	$\theta \perp$	Po=3mW	20	37	48	deg
	Ripple		Po=3mW	—	—	± 20	%	
Emission point accuracy	Angle		$\Delta\phi //$	Po=3mW	—	—	± 2	deg
			$\Delta\phi \perp$	Po=3mW	—	—	± 3	deg
	Position	$\Delta x, \Delta y, \Delta z$	—	—	—	± 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	Po=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	VR=15V	—	0.3	—	mA/mW
Dark current	Id	VR=15V	—	—	250	nA
Terminal capacitance	Ct	VR=15V	—	8	20	pF