

Hologram Laser

LT0H12M

Hologram Laser(1 beam) for Magneto-Optical disk

■ Features

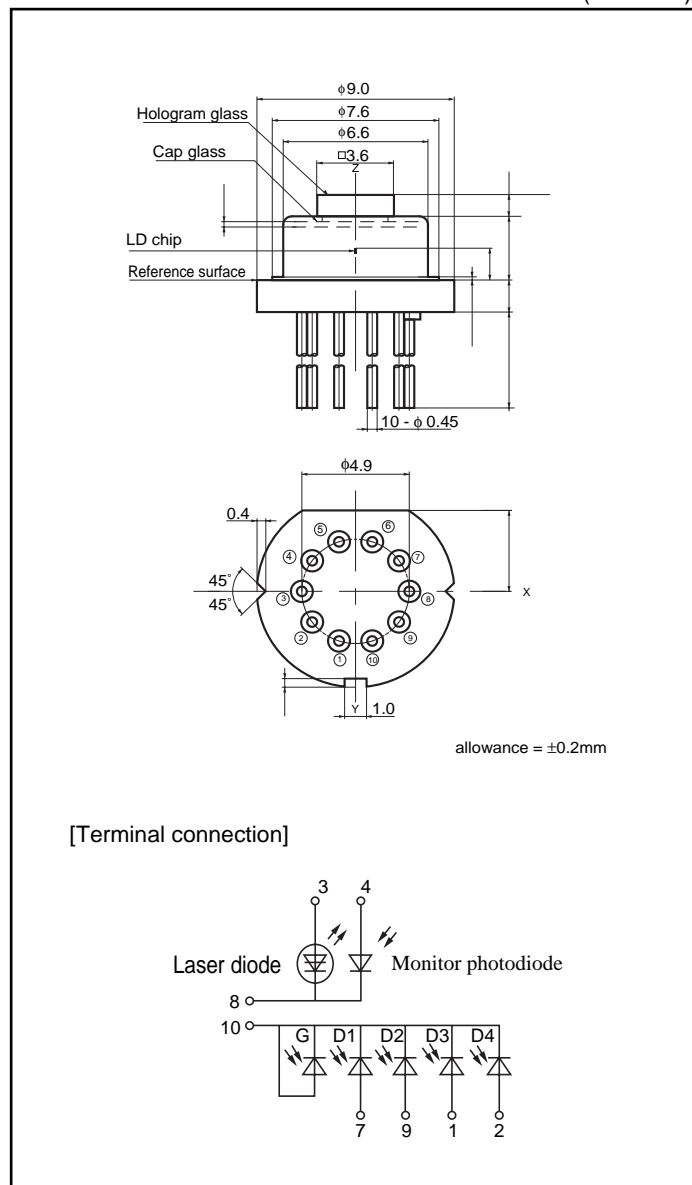
- (1) Maximum optical output: 35mW
- (2) Pickups reduced in size and weight on request
- (3) The housing of pickups shifted from aluminum die-cast to formed resin on request (reducing the weight to 1/3)
- (4) Since its semiconductor laser, signal detection photocell, and circuit array are assembled in a package, the optical pickup is simple in assembling and adjustment

■ Applications

- (1) Magneto-optical disk drives
- (2) CD-Rs

■ Outline Dimensions

(Unit: mm)



■ Absolute Maximum Ratings

Parameter	Symbol	Ratings	Units
Optical power output*1	P _O	35	mW
Reverse voltage	Laser	2	V
	Monitor photodiode	30	
	Photodiode for signal detection	15	
Operating temperature*2	T _{opr}	-10 to +50	°C
Storage temperature *2	T _{stg}	-40 to +85	
Soldering temperature *3	T _{sol}	260(5s or less)	

*1 Output power from LD chip

*2 Case temperature

*3 At the position of 1.6mm from the bottom face of resin package.

(Notice)

- In the absence of device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.
- Specifications are subject to change without notice for improvement.

LT0H12M

■ Electro-optical Characteristics

(T_c=25°C)

Parameter		Symbol	Condition	MIN	TYP	MAX	Units		
Laser (without hologram glass)	Threshold current	I _{th}	-	-	60	80	mA		
	Operating current	I _{op}	P _o =30mW *1	-	115	150	mA		
	Operating voltage	V _{op}		-	1.85	2.2	V		
	Wavelength *2	λ _p		770	780	795	nm		
	Monitor current	I _m	P _o =30mW *1 ,V _R =15V	0.1	0.3	2	mA		
	Radiation Characteristics	Angle *3	Parallel	P _o =30mW *1	θ _{//}	8	9.5	13	°
			Perpen- dicular		θ _⊥	20.	26	32	°
		Ripple				-20	-	20	%
	Emission Point accuracy	Angle	Δφ _{//}		-2	-	2	°	
			Δφ _⊥		-3	-	3	°	
	Positon	ΔX,Y,Z	-	-80	-	80	μm		
Differential efficiency	η	$\frac{20mW}{I_{op}(30mW) - I_{op}(10mW)}$		0.3	0.55	0.8	mW/mA		
Monitor Photodiode	Sensitivity	S	V _R =15V	-	10	-	μA/mW		
	Dark current	I _D		-	-	150	nA		
	Terminal capacitance	C _t		-	8	-	pF		
Photodiode for signal detection	Reverse voltage	V _R	I _R =10μA	A,B	15	-	-	V	
	Dark current	I _d	V _R =15V	A,B	-	-	20	nA	
	Terminal capacitance	C _t	V _R =15V, f=1MHz	A	0.6	2.8	5	pF	
				B	0.8	3	5.4		
	Short circuit current *4	I _{sc}	E _v =1000L _x *5	A	85	170	270	nA	
B				260	460	670			
Response time *6	t _r ,t _f	V _R =15V, R _L =180Ω	A,B	-	10	140	ns		

*1 Output power form LD chip

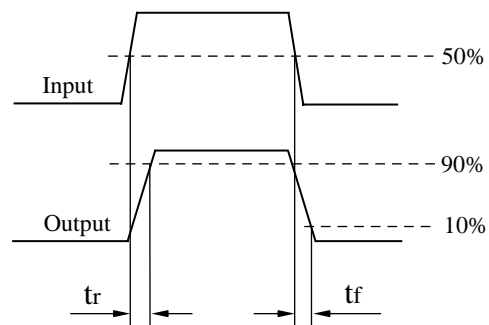
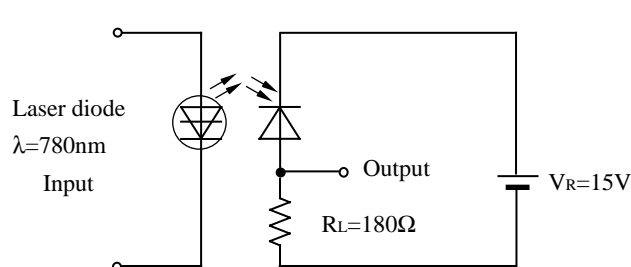
*2 Oscillation mode, transverse single mode

*3 An angle for 50% of the peak intensity (full angle at half maximum).

*4 Values in each element. Elements other than subject elements shall be measured while the anode and the cathode are short-circuited to each other

*5 Illumination intensity by CIE standard light (Tungsten lamp)

*6 Measuring method is shown below

*7 Applicable divisions correspond to pattern segment No.

D1	D2	D3	D4
----	----	----	----

Segment No.

D2,D3 A

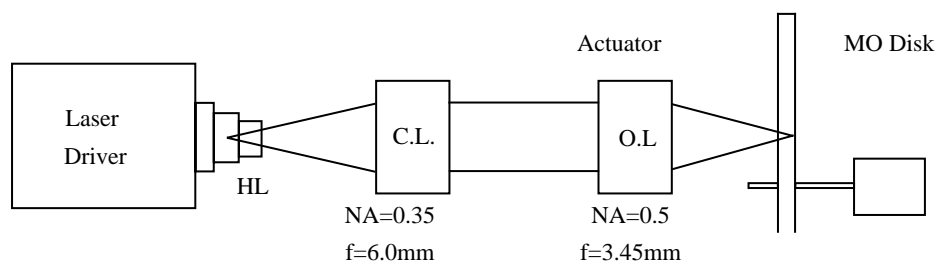
D1,D4 B

LT0H12M

■ Electro-optical Characteristics *1

(Tc=25°C)					
Parameter	Condition	MIN	TYP	MAX	Units
Focus error signal offsetting *2	Laser output 4.2mW	-20	-12	-4	%
Lead-in for focus error signal *3		-	90	-	μm
Radial offsetting *4		-10	-	10	%
FES Output amplitude *5		2.4	3.9	5.0	μA p-p
RES Output amplitude *5		2.5	3.3	4.1	μA p-p

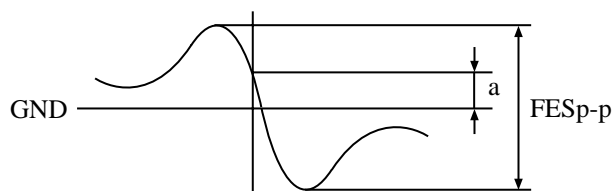
*1 Measuring method is shown below.



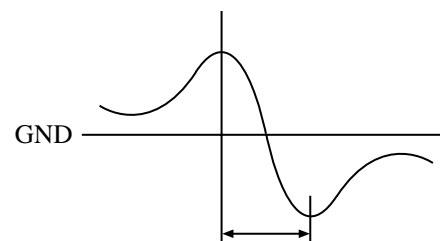
* Distance between C.L-O.L: 27mm C.L: Collimator lens O.L: Objective lens

Measuring method of electro-optical characteristics

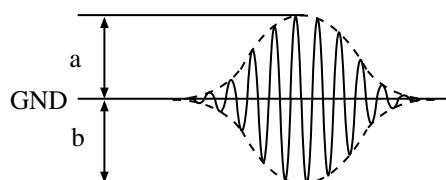
*2 FES output (a)/FESp-p at Maximum point of the FES output amplitude



*3



*4 $(a - b) / 2(a + b)$



*5 Values at 4.2mW of the laser output
Both FES output amplitude (D2-D3)
and RES output amplitude (D1-D4) are
p-p values at focusing oscillation

*4 $(a - b) / (a + b)$

