HOLOGRAM LASER	LT0H33P

Hologram Laser(3 beam) for MD players

■ Features

(1) Enables to design compact pick-up thanks to compact package. (Thickness; 4.8mm)

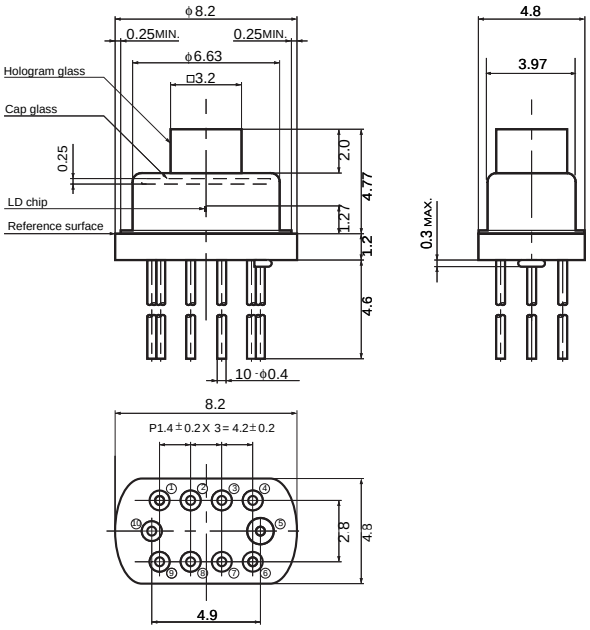
(2) Since its semiconductor laser, signal detection photocell, and circuit array are assembled in a package, the optical pick is simple in assembling and adjustment

(3) The adjustment during pickup assembly is eased and can easily be automated.

■ Applications

(1) MD players

■ Outline Dimensions (Unit: mm)



[Terminal connection]

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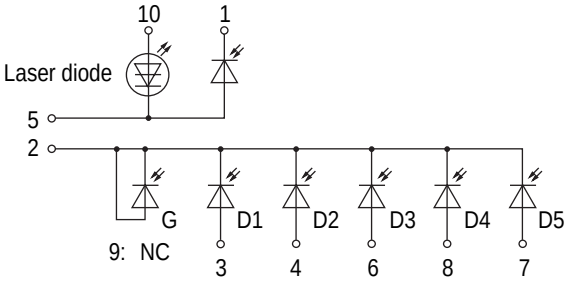

■ Absolute Maximum Ratings

Parameter		Symbol	Ratings	Units
Optical power output *1		P_O	7.0	mW
Reverse voltage	Laser	V_R	2	V
	Monitor photodiode		30	
	Photodiode for signal detection		15	
Operating temperature*2		Topr	-25 to +70	˚C
Storage temperature *2		Tstg	-40 to +85	˚C
Soldering temperature *3		Tsol	260(5s or less)	˚C

*1 Output power from hologram laser
*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.

(Internet)

• Data for Sharp's optoelectronic/power devices is provided for internet. (Address http://www.sharp.co.jp/ecg/)

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■ Electro-optical Characteristics

(Tc=25˚C)

Parameter				Symbol	Condition		MIN	TYP	MAX	Units
Laser (without hologram glass)	Threshold current			Ith	-		-	45	60	mA
	Operating current			Iop	P_o = 6mW *1		-	63	85	mA
	Operating voltage			Vop			-	-	2.0	V
	Wavelength *2			λp			770	780	800	nm
	Monitor current			Im	P_o =6mW *1, V_R=15V		0.15	0.5	1	mA
	Radiation Characteristics	Angle	Parallel	θ//	P_o = 6mW *1		8.5	11	13	°
			Perpendicular	θ⊥			29	38	43	°
	Emission Point accuracy		Angle	Δϕ //			-	-	±1	°
				Δϕ ⊥			-	-	±3	°
			Positon	Δx	-		-	-	±20	μm
				Δy			-	-	±20	μm
				Δz			-	-	±80	μm
	Differentioal efficiency			η	$\frac{18.3mW}{Iop(6mW)-Iop(6mW)}$		0.15	0.3	0.6	mW/mA
Monitor Photodiode	Sensitivity			S	V_R=1.5V		-	0.08	-	mA/mW
	Dark current			Id			-	-	150	nA
	Terminal capacitance			Ct			-	20	-	pF
Photodiode for signal detection	Reverse voltage			V_R	I_R=10μA	A	15	-	-	V
						B				
						C				
	Dark current			Id	V_R=1.5V	A	-	-	10	nA
						B				
						C				
	Terminal capacitance			Ct	V_R=1.5V,f=1MHz	A	1	-	8	pF
						B	0.6	-	6	
						C				
	Short circuit current*3 *4			Isc	Ev=1000Lx	A	120	210	-	nA
						B	40	80	-	
						C	60	115	-	
	Response time *5			tr,tf	V_R=1.5V, R_L=180Ω	A	-	-	660	ns
						B	-	-	660	
						C				

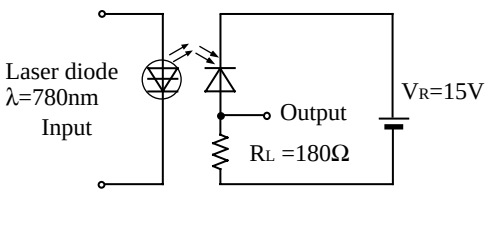
*1 Output power form LD chip

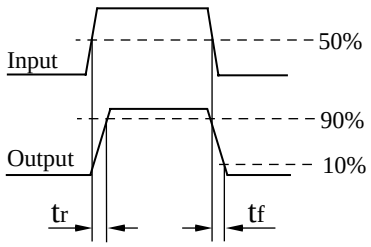
*2 Oscillation mode, transverse single mode

*3 Values in each element. Elements other than subject elemens shall be measured while the anode and the cathode are short-sircuited to each other

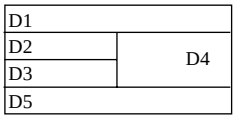
*4 Short-circuit currents between segments D1 and D5 or D3 and D4 shall be within ±10% of the average

*5 Measuring method is shown below.





*6 ▭ Applicabledivisions correspond to pattern segment No.



Segment No.

D1,D5 ••••••• A

D2,D3 ••••••• B

D4 •••••••••• C

Fig.1

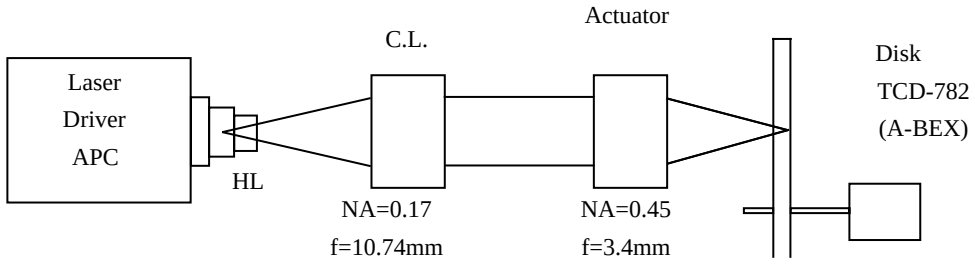
■ Electro-optical Characteristics *1

(Tc=25˚C)

Parameter	Condition	MIN	TYP	MAX	Units
Focus error signal offsetting *2		-0.4	-	+0.4	µm
Focus error noise *3		-	19	-	µm
Radial error balance *4		-20	-	+20	%
RF Output amplitude *5	D2 + D3 + D4	6.0	10.6	-	µA p-p
FES Output amplitude *6	D2 - D3	3.3	5.5	8.1	µA p-p
RES Output amplitude *6	D1 - D5	0.6	1.3	2.2	µA p-p

D1,D2,D3,D4,D5: Refer to pattern segment No. (Fig.1)

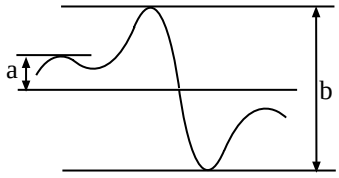
*1 Measuring method is shown below.



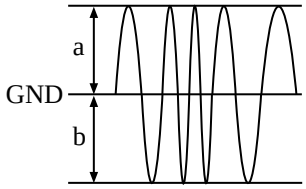
Measuring method of electro-optical characteristics

*2 Distance between FES=0 and jitter Min. point

*3 $\frac{a}{b}$



*4 $\frac{(a - b) / 2}{a + b}$



*5 Focus/radial servo is ON-state

*6 FES output amplitude: focus rocking condition
RES output amplitude: under the condition that only focus servo is effected