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)

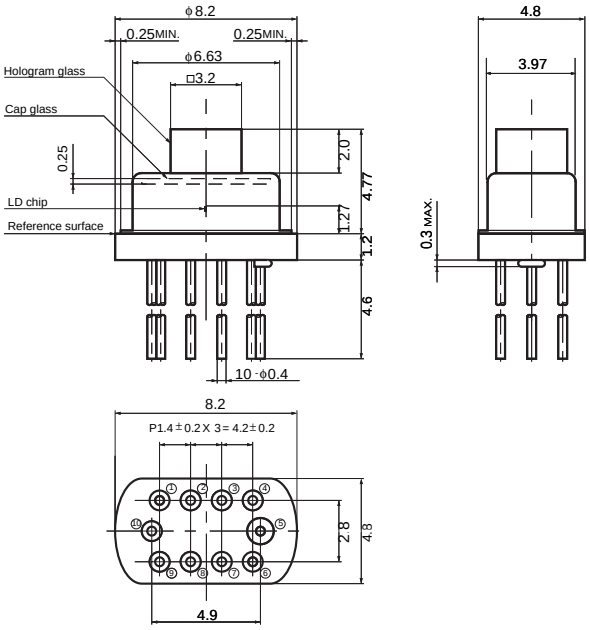
(2) Since its semiconductor laser, signal detection photocell, and circuit array are assembled in a package, the optical pick is simple in assembling and adjustment

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

■ Applications

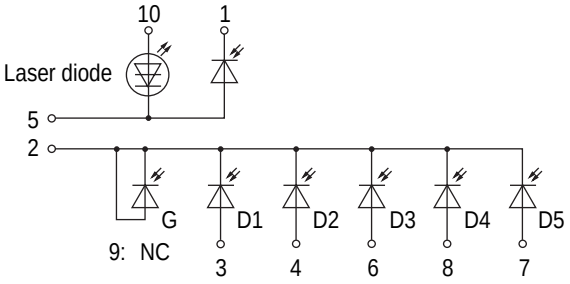
(1) MD players

■ Outline Dimensions (Unit: mm)



[Terminal connection]

LT0H33P



■ 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.

LT0H33P

■ 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				

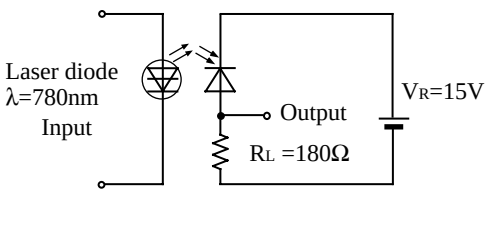
*1 Output power form LD chip

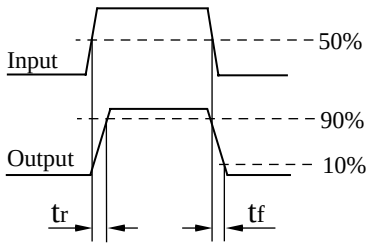
*2 Oscillation mode, transverse single mode

*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

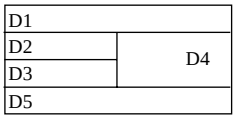
*4 Short-circuit currents between segments D1 and D5 or D3 and D4 shall be within ±10% of the average

*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

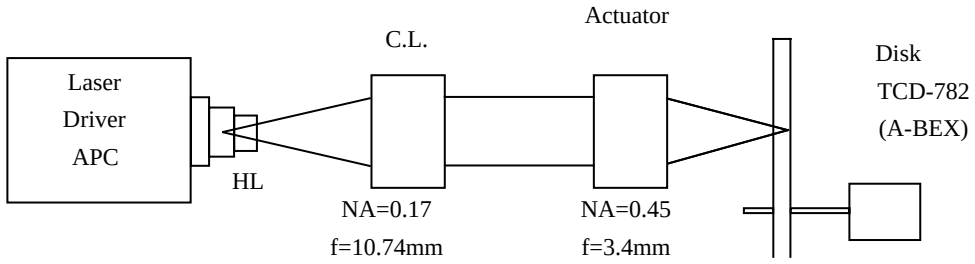
■ Electro-optical Characteristics *1

(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)

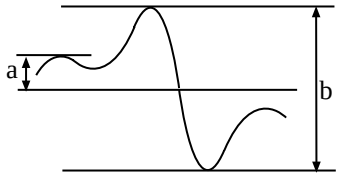
*1 Measuring method is shown below.



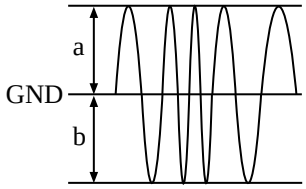
Measuring method of electro-optical characteristics

*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