SHARP

Under development	●
New product	

LT0H49L/T Compact Hologram Laser

Compact Hologram Laser(3-beam) for 16X Speed CD-ROM Drive

■ Features

(1) Built-in high speed(TYP.30MHz) OPIC* for 16X speed CD-ROM drive

(2) Enables to design compact pick-up thanks to compact package (Thickness: 4.8mm)

(3) Voltage output type (Needless of external noise solution)

(4) Low current operation type (Operating current : TYP. 36mA)

■ Applications

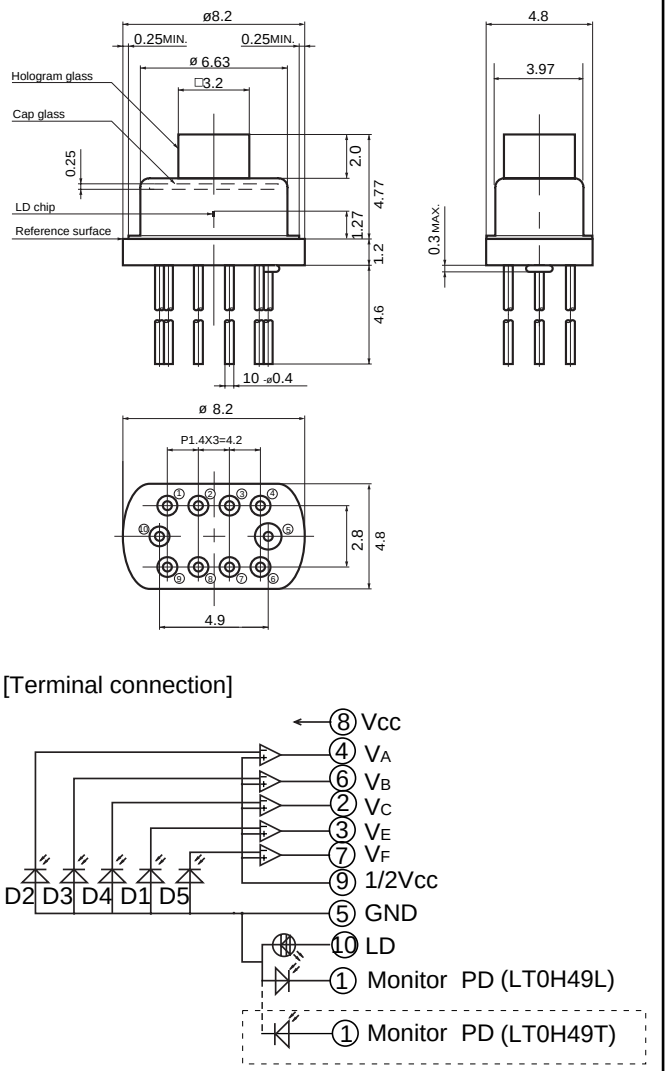
CD-ROM drives

■ Model Name

- LT0H49L----Single power supply
- LT0H49T----Dual power supply

*OPIC: OPIC (Optical IC) is a trademark of the SHARP Corporation.
An OPIC consists of a light-detecting element and signal-processing circuit integrated onto a single chip.

■ Outline Dimensions (Unit:mm)



■ Model Name

(Tc=25˚C)

Parameter		Symbol	Ratings	Unit
*1 Optical power output		P_H	4.3	mW
Reverse voltage	Laser	V_R	2	V
	Monitor photodiode		30	
OPIC supply voltage		V_{CC}	6	
*2 Operating temperature		Topr	-10 to +70	˚C
*2 Storage temperature		Tstg	-40 to +85	
*3 Soldering temperature		Tsol	260(5s or less)	

*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 d shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP de

• 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/)

LT0H49L/T

■ Electro-optical Characteristics (Vcc=5V, Tc=25˚C)

	Parameter	Symbol	Conditions		MIN.	TYP.	MAX.	Unit	Remarks*1
Laser	Threshold current	Ith	-		-	25	39	mA	
	Operating current	Iop	P_H =2.7mW		-	36	45	mA	
	Operating voltage	Vop			-	1.75	2.2	V	
	Wavelength	λp			770	780	795	nm	
	Monitor current	Im	P_H=2.7mW, V_R=15V	LT0H49L	0.06	0.28	0.50	mA	
				LT0H49T	0.12	0.55	1.00		
	Emission point Accuracy(position)	△x	-		- 80	-	80	μm	
		△y			- 80	-	80	μm	
		△z			- 80	-	80	μm	
	Differential efficiency	η	1.8mW / Iop(2.7mW)-Iop(0.9mW)		0.17	0.27	0.55	mW/mA	
Monitor photodiode	Sensitivity(*)	S	V_R=15V		-	0.10	-	mA/mW	
	Dark current	I_D			-	-	150	nA	
	Terminal capacitance	Ct			-	9	-	pF	
OPIC for signal detection	Operating supply voltage	Vcc			4.5	-	5.5	V	
	Collector current	Icc	Vcc=5V		2.0	4.5	9.0	mA	
	Output off-set voltage	V_{OD}		Difference from Vcc/2	-25	0	25	mV	$V_{A\sim F}$
	Extremes of off-set voltage	△V_{OD}	Vcc=5V, No light		-15	0	15	mV	V_A-V_B,V_E-V_F
	Response frequency*2	fc_F	Vcc=5V,-3dB (*3)		24.0	30.0	-	MHz	V_A,V_B,V_C
		fc_R	Vcc=5V,-3dB		1.0	2.0	-	MHz	V_E,V_F

* Sensitivity for output power from hologram laser

*1 Applicable divisions correspond to pattern segment No.

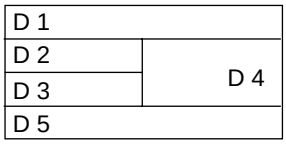


Fig.1

Terminal No.

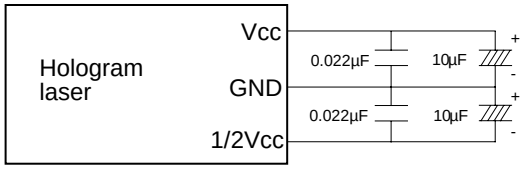
D 1 —— V_E
D 2 —— V_A
D 3 —— V_B
D 4 —— V_C
D 5 —— V_F

*2 Output amplitude = 0dB(input signal 100MHz)

*3 f_{CF}=(fc(V_A)+fc(V_B)+2fc(V_C))/4

Note)Please attach bypass capacitor at the position of 1cm or less from pins (between Vcc and GND, GND and 1/2Vcc).

[Ex.]



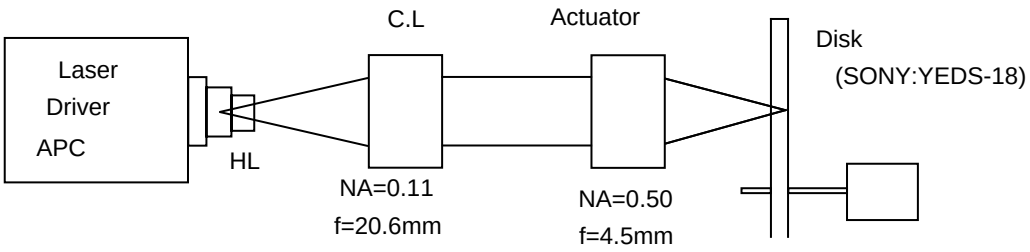
■ Electro-optical Characteristics*1

(Vcc=5V,Tc=25℃)

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Focus error signal offsetting*2		V_{RF}=0.55V	−0.5	−	0.5	μm
Focus error balance*3		V_{RF}=0.55V	−20	−	20	%
Radial error balance*4		P_O=3.0mW	−20	−	20	%
RF output amplitude*5	V_{RF}	P_O=3.0mW	0.38	0.9	−	V p-p
Focus error signal output amplitude*6		V_{RF}=0.55V	0.23	0.35	0.47	V p-p
Radial error signal output amplitude		V_{RF}=0.55V	0.08	0.12	0.16	V p-p

V_A,V_B,V_E,V_F : Refer to pattern segment No.(Fig.1).

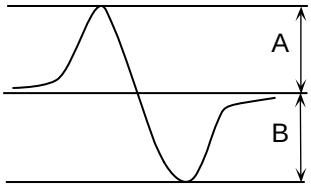
*1 Measuring method is shown below.



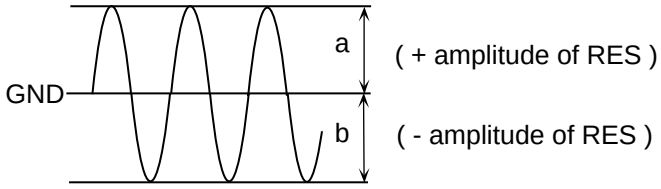
Measuring method of electro-optical characteristics

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

*3 (a - b) / (a + b)



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



*5 Amplitude of $V_A + V_B + 2V_C$, focus/radial servo is ON-state.

*6 V_B-V_A at focus rocking condition

*7 V_E-V_F under the condition that only focus servo is effected.