

GH16507S2A

(Under development)

■ Features

- (1) $\phi 5.6\text{mm}$ open type insert lead frame structure
(Optically compatible with the conventional $\phi 5.6\text{mm}$ package)
- (2) Employing a self-oscillating laser chip enables a compact and low cost pick-up.
It eliminates the need for radio frequency modulation circuits and related resistors/shields.
- (3) Maximum optical power output : 7mW (CW)
- (4) Wavelength : TYP. 654nm

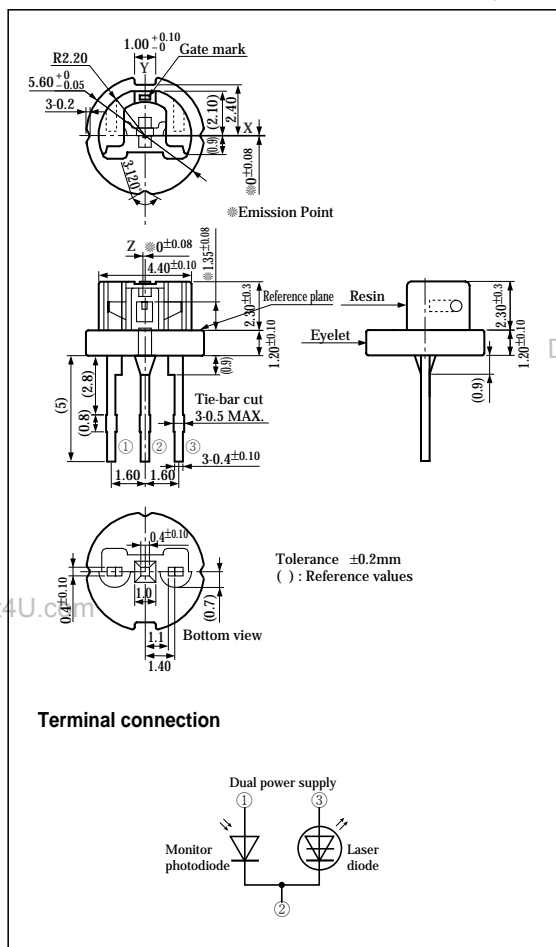
■ Applications

- (1) DVD-ROM drives
- (2) DVD video players

Self-oscillating Type Insert Frame Structure, Red Laser Diode for DVD Video Player (654nm-7mW)

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

($T_c=25^\circ\text{C}$ ^{*1})

Parameter	Symbol	Rating	Unit
^{*3} Optical power output	P _O	7	mW
Reverse voltage	Laser V _{rl}	2	V
	Monitor photodiode V _{rd}	30	
^{*1} Operating temperature	T _{op(c)}	-10 to +70	°C
Storage temperature	T _{stg}	-40 to +85	°C
^{*2} Soldering temperature	T _{slid}	260	°C

^{*1} Case temperature

^{*2} At the position of 1.6mm or more from the lead base (within 5s)

^{*3} CW (Continuous Wave) drive

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■ Electro-optical Characteristics^{*1}

(T_c=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Threshold current	I _{th}	-	-	(65)	85	mA	
Operating current	I _{op}	P _o =5mW	-	(75)	91	mA	
Operating voltage	V _{op}		-	(2.5)	3.0	V	
Wavelength	λ _p		648	(654)	663	nm	
Half intensity angle	^{*2*} Parallel		θ//	7	(8.5)	11	°
	^{*2*} Perpendicular		θ⊥	29	(35)	42	°
^{*4} Ripple	R _r		-20	-	+20	%	
Misalignment angle	^{*3} Parallel		Δθ//	-2	-	+2	°
	^{*3} Perpendicular		Δθ⊥	-3	-	+3	°
Differential efficiency	η _d		$\frac{3mW}{I(5mW)-I(2mW)}$	0.25	(0.45)	0.75	mW/mA
Interference pattern intensity	α		P _o =5mW	-	-	0.9	-

*1 Initial value, CW (Continuous Wave) drive

*2 Angle at 50% peak intensity (full-width at half-maximum)

*3 Parallel to the junction plane (X-Z plane), Perpendicular to the junction plane (Y-Z plane)

*4 R_r=ΔP/P ΔP : the maximum deviation of the far field pattern from its approximate curve P : the peak of the approximate curve

■ Electrical Characteristics of Photodiode

(T_c=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output current	I _m	P _o =5mW, V _{rd} =5V	(0.05)	(0.15)	(0.3)	mA
Dark current	I _D	V _{rd} =5V	-	-	150	nA
Terminal capacitance	C _t	V _{rd} =5V, f=1MHz	-	(9)	-	PF

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● Operating and handling precautions

- This product employs open type package. Be careful not to touch gold wires, laser chips, or monitor sub-mount chips directly, or characteristics may be damaged.
- The lead pins of this product consist of silver-plating.
Do not operate under the conditions of freezing or dew formation. The use in such conditions may cause short circuits due to silver migration.
- Please finish soldering within 7 days, or keep the products in the N₂-purged box after opening the package to prevent silver oxidation or damage to solderability.

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- Industrial control
- Audio visual equipment
- Consumer electronics

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