GH06560B7C

(Under development)

High Power Red Laser Diode for ×4 Speed DVD Drive (658nm-pulse 100mW)

■ Features

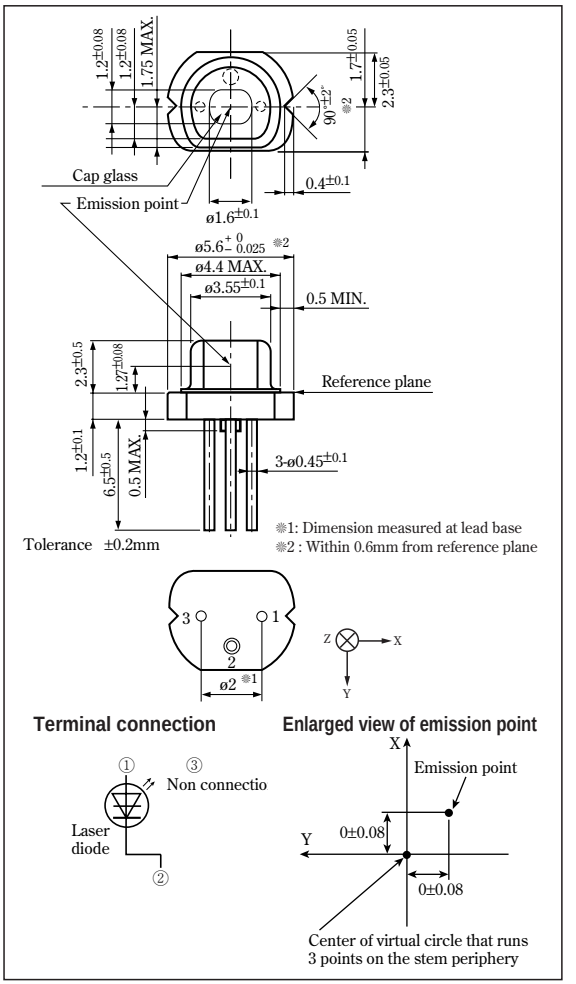
(1) ×4 speed DVD-R/+R/-RW/+RW/RAM drives
(2) High power output (pulse MAX. 100mW)
(3) Low aspect ratio type (Aspect ratio : 1.7)
The shaping prism of a pick-up becomes unnecessary and the composition of optical parts can be simplified.
(4) To set MAX. 662 nm wavelength to be compatible with pigment media such as DVD-R/+R
(5) Operating temperature : MAX. 70˚C
(6) Bottom and upper face cutting package (ϕ5.6mm) enables to design a slim draive.

■ Applications

(1) DVD-R/+R drives
(2) DVD-RW/+RW drives
(3) DVD-RAM drives

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Tc=25˚C ※1)

Parameter			Symbol	Rating	Unit
※3 Optical power output			Po	60	mW
※2 Optical power output (pulse)			Pp	100	mW
Reverse voltage		Laser	Vrl	2	V
※1 Operating temperature	※3	CW	Topc(c)	-10 to +70	˚C
	※2	Pulse	Topp(c)	-10 to +70	˚C
Storage temperature			Tstg	-40 to +85	˚C
※4 Soldering temperature			Tsld	300	˚C

※1 Case temperature
※2 Pulse width : 0.3μs, Duty : 50%
※3 CW (Continuous Wave) drive
※4 At the position of 1.6mm or more from the lead base (within 3s)

■ Electro-optical Characteristics※1

(Tc=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold current		I_{th}	–	-	40	55	mA
Operating current		I_{op}	Po=50mW	-	85	105	mA
Operating voltage		V_{op}		-	2.6	3	V
Wavelength		λ_p		652	658	662	nm
Half intensity angle	※2※3 Parallel	θ//		7.5	10	12	°
	※2※3 Perpendicular	θ⊥		15	17	19	°
※4 Ripple		R_l		-20	-	+20	%
Misalignment angle	※3 Parallel	Δθ//		-2	-	+2	°
	※3 Perpendicular	Δθ⊥		-2	-	+2	°
Differential efficiency		η_d	$\frac{40mW}{I(50mW)-I(10mW)}$	0.8	1.0	-	mW/mA
Interference pattern intensity		α	Po=50mW	-	-	1	-
※5 Kink		K-LI	P1=20mW, P2=60mW, P3=100mW	-5	-	+5	%
Polarization angle		ω	Po=3mW, NA=0.13	-20	-	+20	°
Polarization ratio		P_l		20	-	-	-

※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 $R_l=\Delta P/P$ ΔP : the maximum deviation of the far field pattern from its approximate curve P : the peak of the approximate curve

※5 Pulse drive (Pulse width : 0.3μs, Duty : 50%)

• Please refer to the chapter "Handling Precautions"

NOTICE

- The circuit application examples in this publication are provided to explain representative applications of SHARP devices and are not intended to guarantee any circuit design or license any intellectual property rights. SHARP takes no responsibility for any problems related to any intellectual property right of a third party resulting from the use of SHARP's devices.
- Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device. SHARP reserves the right to make changes in the specifications, characteristics, data, materials, structure, and other contents described herein at any time without notice in order to improve design or reliability. Manufacturing locations are also subject to change without notice.
- Observe the following points when using any devices in this publication. SHARP takes no responsibility for damage caused by improper use of the devices which does not meet the conditions and absolute maximum ratings to be used specified in the relevant specification sheet nor meet the following conditions:

  (i) The devices in this publication are designed for use in general electronic equipment designs such as:
  - Personal computers
  - Office automation equipment
  - Telecommunication equipment [terminal]
  - Test and measurement equipment
  - Industrial control
  - Audio visual equipment
  - Consumer electronics

  (ii) Measures such as fail-safe function and redundant design should be taken to ensure reliability and safety when SHARP devices are used for or in connection with equipment that requires higher reliability such as:
  - Transportation control and safety equipment (i.e., aircraft, trains, automobiles, etc.)
  - Traffic signals
  - Gas leakage sensor breakers
  - Alarm equipment
  - Various safety devices, etc.

  (iii) SHARP devices shall not be used for or in connection with equipment that requires an extremely high level of reliability and safety such as:
  - Space applications
  - Telecommunication equipment [trunk lines]
  - Nuclear power control equipment
  - Medical and other life support equipment (e.g., scuba).
- Contact a SHARP representative in advance when intending to use SHARP devices for any "specific" applications other than those recommended by SHARP or when it is unclear which category mentioned above controls the intended use.
- If the SHARP devices listed in this publication fall within the scope of strategic products described in the Foreign Exchange and Foreign Trade Law of Japan, it is necessary to obtain approval to export such SHARP devices.
-
- Contact and consult with a SHARP representative if there are any questions about the contents of this publication.