

# VISIBLE LASER PRODUCTS

RoHS  
Conformity

(LASER DIODE)

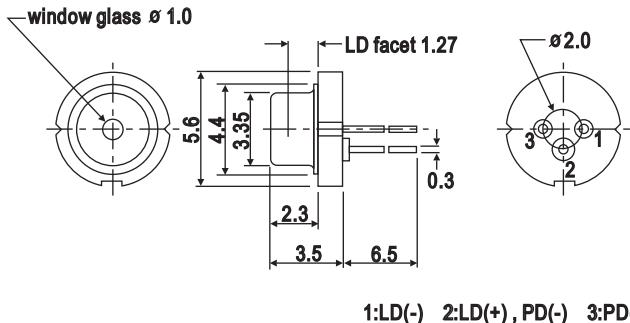
REV:E  
DATE:2008/8/19

**ESD PRODUCT !**

DEVICE NO:HLDH-650-A-10-01 (650nm, 10mW, TO-18)

PACKAGE DIMENSIONS:

Material: AlGaNp



NOTE:  
 1. All dimensions are in millimeter.  
 2. Lead spacing is measured where the lead emerge from the package.  
 3. specifications are subject to change without notice.  
 4. Tolerance is 0.25mm unless otherwise noted.

ABSOLUTE MAXIMUM RATINGS:

TA=25°C

PARAMETER	SYMBOL	MAX. RATING		UNIT
Optical Output	Po	13		mW
Reverse Voltage	Laser	VR	2	V
	PIN PD	VR(PIN)	30	V
Operating Temperature	Topr	-10 ~ +50		°C
Storage Temperature	Tstg	-40 ~ +85		°C
Dip Soldering Temperature (3mm from case Bottom 260 °C for 5 seconds)				

ELECTRIC-OPTICAL CHARACTERISTICS:

TA=25°C

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT	
Threshold Current	Ith	---	---	18	20	mA	
Operating Current	Iop	Po=10mW	---	28	30	mA	
Operating Voltage	Vop	Po=10mW	---	2.2	2.5	V	
Slope Efficiency	$\eta$	Po=5-7mW	0.7	0.85	1.2	mW/mA	
Monitor Current	Im	Po=10mW	0.1	0.3	0.4	mA	
Beam Divergence (FWHM)	Parallel	$\theta_{//}$	Po=10mW	6	9.5	12	Degree
	Perpendicular	$\theta_{\perp}$	Po=10mW	25	28	32	Degree
Parallel Deviation Angle	$\Delta\theta_{//}$	Po=10mW	-2	0	+2	Degree	
Perpendicular Deviation Angle	$\Delta\theta_{\perp}$	Po=10mW	-2	0	+2	Degree	
Emission Point Accuracy	$\Delta X$	PO=10MW	-80	0	+80	um	
	$\Delta Y$	PO=10MW	-80	0	+80	um	
	$\Delta Z$	PO=10MW	-80	0	+80	um	
Lasing Wavelength	$\lambda$	Po=10mW	645	655	660	nm	

\*1.  $\theta_{//}$  and  $\theta_{\perp}$  are defined as the angle within which the intensity is 50% of the peak value.

HUEY JANN ELECTRONICS INDUSTRY CO., LTD.