



# VISIBLE LASER PRODUCTS

(LASER DIODE)

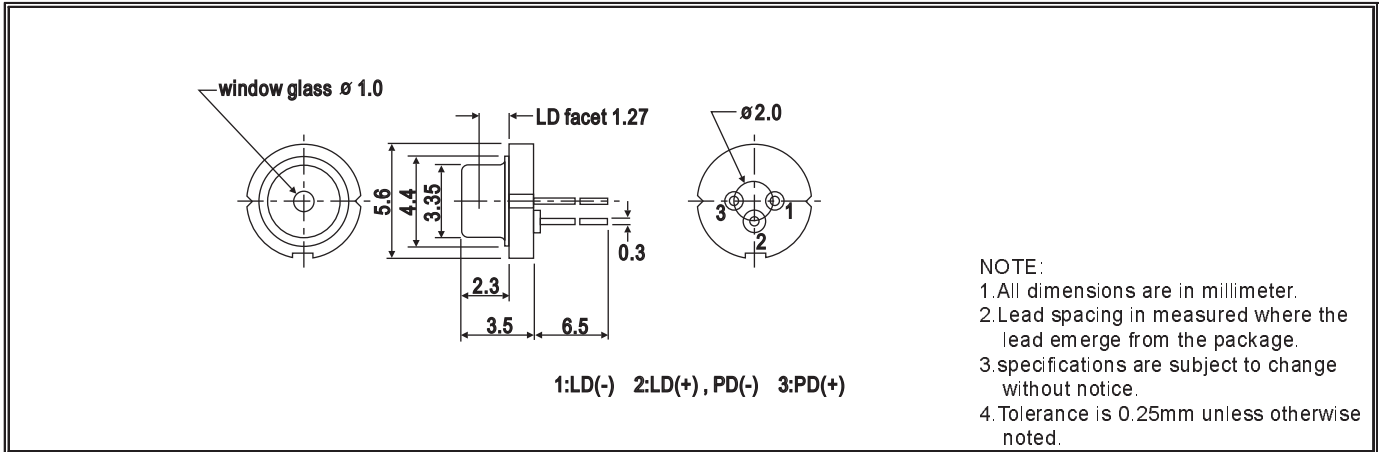
REV:E  
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## ESD PRODUCT !

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

PACKAGE DIMENSIONS:

Material: AlGaInP



## ABSOLUTE MAXIMUM RATINGS:

TA=25°C

PARAMETER	SYMBOL	MAX. RATING	UNIT
Optical Output	Po	13	mW
Reverse Voltage	Laser	2	V
	PIN PD	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.