

## 650nm 10mW 70°C Reliable Operation

### Features

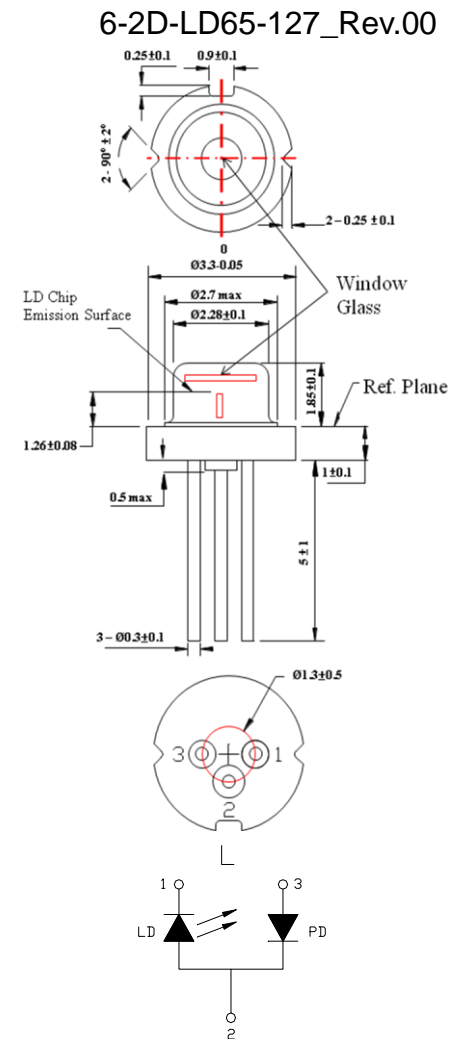
- Output Power : 10mW
- Small Package :  $\Phi 3.3\text{mm}$
- TE mode
- Single Transverse Mode
- Stable reliability

### Applications

- Industry : Laser level, illumination, meter, scanner, detector
- Consumer : Point light, sweeper, game lighting
- Health : Special wavelength light source

### Absolute maximum ratings

Parameter	Symbol	Condition	Rating	Unit
Light output power	$P_O$	CW	11	mW
Reverse voltage (LD)	$V_{RL}$	-	2	V
Case temperature	$T_C$	-	-10~+70	$^{\circ}\text{C}$
Storage temperature	$T_S$	-	-40~+85	$^{\circ}\text{C}$



### Electrical and optical characteristics ( $T_c=25^{\circ}\text{C}$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Peak wavelength	$\lambda$	645	650	660	nm	$P_o=10\text{ mW}$
Threshold current	$I_{th}$	-	20	28	mA	
Operating current	$I_{op}$	-	32	40	mA	$P_o=10\text{ mW}$
Operating voltage	$V_{op}$	-	2.2	2.6	V	$P_o=10\text{ mW}$
Differential efficiency	$\eta$	0.6	0.9	1.1	mW/mA	$P_o=7\text{-}10\text{mW}$
Monitor current	$I_m$	0.1	0.3	0.45	mA	$P_o=10\text{mW}, V_{RD}=5\text{V}$
Parallel divergence angle	$\theta_{//}$	6	9	12	deg.	$P_o=10\text{ mW}$
Perpendicular divergence angle	$\theta_{\perp}$	24	26	32	deg.	
Parallel FFP deviation angle	$\Delta\theta_{//}$	-3	0	+3	deg.	
Perpendicular FFP deviation angle	$\Delta\theta_{\perp}$	-3	0	+3	deg.	
Emission point accuracy	$\Delta x\Delta y\Delta z$	-80	0	+80	$\mu\text{m}$	

### • Precautions

- \* Do not operate the device above maximum ratings. Doing so may cause unexpected and permanent damage to the device.
- \* Take precautions to avoid electrostatic discharge and/or momentary power spikes. A change in the characteristics of the laser or premature failure may result.
- \* Proper heat sinking of the device assures stability and lifetime. Always ensure that maximum operating temperatures are not exceeded.
- \* Observing visible or invisible laser beams with the human eye directly, or indirectly, can cause permanent damage. Use a camera to observe the laser.
- \* No laser device should be used in any application or situation where life or property is at risk in event of device failure.
- \* Specifications are subject to change without notice. Ensure that you have the latest specification by contacting us prior to purchase or use of the product.

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