

TOSHIBA SEMICONDUCTOR

TECHNICAL DATA

TOSHIBA LASER DIODE

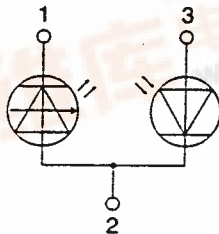
TOLD9442M
InGaAlP LD

TENTATIVE

Light Source for Bar Code Reader

- Lasing Wavelength : $\lambda_p = 650 \text{ nm (typ.)}$
- Optical Output Power : $P_o = 5 \text{ mW}$
- Operation Case Temperature : $T_c = -10 \sim 60^\circ\text{C}$

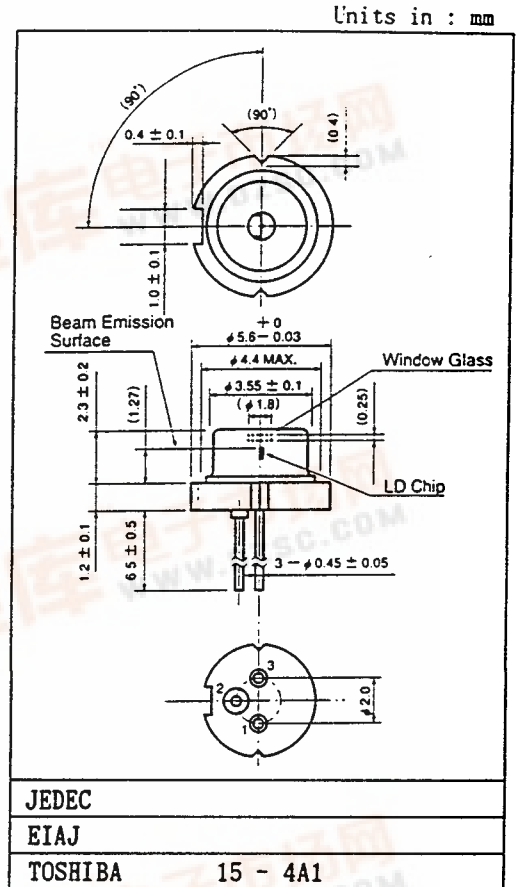
PIN CONNECTION



1. LASER DIODE CATHODE
2. LASER DIODE ANODE
3. PHOTODIODE CATHODE

Maximum Ratings ($T_c = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Optical Output Power (CW)	P_o	5	mW
LD Reverse Voltage	$V_{R(LD)}$	2	V
PD Reverse Voltage	$V_{R(PD)}$	30	V
Operation Case Temperature	T_c	-10 ~ 60	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ~ 85	$^\circ\text{C}$



Optical-Electrical Characteristics ($T_c = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Threshold Current	I_{th}	CW Operation	—	30	55	mA
Operation Current	I_{op}	$P_o = 5 \text{ mW}$	—	35	60	mA
Operation Voltage	V_{op}	$P_o = 5 \text{ mW}$	—	2.2	3.0	V
Lasing Wavelength	λ_p	$P_o = 5 \text{ mW}$	640	650	660	nm
Beam Divergence	$\theta_{ }$	$P_o = 5 \text{ mW}$	5	8	12	$^\circ$
	θ_{\perp}	$P_o = 5 \text{ mW}$	24	28	35	$^\circ$
Monitor Current	I_m	$P_o = 5 \text{ mW}$	0.07	0.25	0.5	mA
PD Dark Current	$I_D(PD)$	$V_R = 5 \text{ V}$	—	—	100	nA
PD Total Capacitance	$C_T(PD)$	$V_R = 5 \text{ V}, f = 1 \text{ MHz}$	—	—	20	pF

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