

TENTATIVE

MITSUBISHI LASER DIODES
ML5xx55 LD SERIES
FOR DISPLAY SYSTEM

TYPE
NAME

ML520G55-01 / ML529G55-01

**This type is under development.
Therefore, please note that this data sheet may be changed without any notice.**

DESCRIPTION

Mitsubishi ML5xx55 is a high-power, high-efficient semiconductor laser diode which provides emission wavelength of 638 nm and standard light output of 150mW.

This LD has narrow-stripe structure which enables better beam quality even at high output power.

FEATURES

- High Output Power: 150mW (CW)
- High Efficiency: 0.9mW/mA (typ.)
- Visible Light: 638nm (typ.)
- Package: ϕ 5.6mm TO-CAN PKG (ML520G55)
 ϕ 3.8mm TO-CAN PKG (ML529G55)

APPLICATION

- Display system, Bio-medical

ABSOLUTE MAXIMUM RATINGS (Note 1)

Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	150 (Tc \leq 40 °C) 120 (Tc \leq 60 °C)	mW
		Pulse Duty \leq 75%, Frequency \geq 35KHz	150 (Tc \leq 50 °C) 120 (Tc \leq 60 °C)	mW
VRL	Reverse voltage	-	2	V
Tc	Case temperature	CW	-5 ~ +60	°C
		Pulse Duty \leq 75%, Frequency \geq 35Hz		
Tstg	Storage temperature	-	-40 ~ +100	°C

Note1: The maximum rating means the limitation over which the laser should not be operated even instant time. This does not mean the guarantee of its lifetime. As for the reliability, please refer to the reliability report issued by Quality Assurance Section, HF & Optical Semiconductor Division, Mitsubishi Electric Corporation.


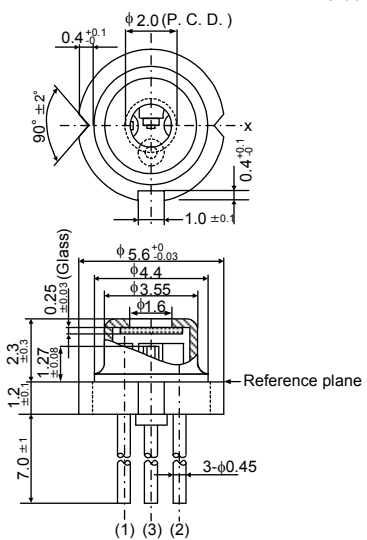
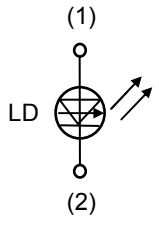

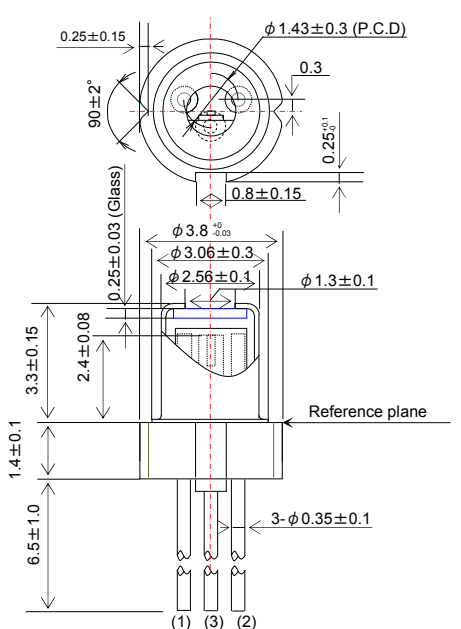
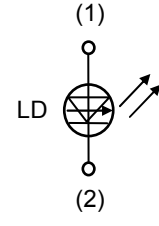
ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C)

Symbol	Parameter	Test conditions	Min.	Typ.	Max	Unit
Ith	Threshold current	CW	40	65	95	mA
Iop	Operating current	CW, Po=150mW	160	230	300	mA
Vop	Operating voltage	CW, Po=150mW	2.4	2.6	3.0	V
η	Slope efficiency	CW, Po=150mW	0.7	0.9	1.3	mW/mA
λ_p	Peak wavelength	CW, Po=150mW	632	638	643	nm
$\theta_{//}$	Beam divergence angle (parallel)	CW, Po=150mW	5	9	13	°
θ_{\perp}	Beam divergence angle (perpendicular)	CW, Po=150mW	14	19	24	°



MITSUBISHI LASER DIODES
ML5xx55 LD SERIES
 FOR DISPLAY SYSTEM

OUTLINE DRAWINGS

<p>ML520G55</p>  <p>$\phi 5.6\text{mm}$</p>	<p>Dimensions in mm</p>  <p>Top view dimensions: $0.4^{+0.1}$, $\phi 2.0$ (P. C. D.), $90^{\circ} \pm 2^{\circ}$, 1.0 ± 0.1, $0.4^{+0.1}$.</p> <p>Side view dimensions: $\phi 5.6^{+0.03}$, $\phi 4.4$, $\phi 3.55$, $\phi 1.6$, $0.25^{+0.03}$ (Glass), $2.3^{+0.03}$, $1.7^{+0.06}$, $1.2^{+0.01}$, 7.0 ± 1, $3-\phi 0.45$.</p> <p>Reference plane</p> <p>(1) (3) (2)</p>	 <p>(1) (3) ● CASE</p> <p>LD</p> <p>(2)</p> <p>ML520G55</p>
<p>ML529G55</p>  <p>$\phi 3.8\text{mm}$</p>	<p>Dimensions in mm</p>  <p>Top view dimensions: 0.25 ± 0.15, $\phi 1.43 \pm 0.3$ (P.C.D.), $90^{\circ} \pm 2^{\circ}$, 0.3, $0.25^{+0.1}$, 0.8 ± 0.15.</p> <p>Side view dimensions: $\phi 3.8^{+0.03}$, $\phi 3.06 \pm 0.3$, $\phi 2.56 \pm 0.1$, $\phi 1.3 \pm 0.1$, 0.25 ± 0.03 (Glass), 3.3 ± 0.15, 2.4 ± 0.08, 1.4 ± 0.1, 6.5 ± 1.0, $3-\phi 0.35 \pm 0.1$.</p> <p>Reference plane</p> <p>(1) (3) (2)</p>	 <p>(1) (3) ● CASE</p> <p>LD</p> <p>(2)</p> <p>ML529G55</p>