

# Laser Diode Delivery Specification

Customer

伊烙亞

LD Model No.

**ADL-63072GB2**

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	= 10/17/14		
	10/17/14	10/17/14	10/17/14
	Sales Dept.	QA Dept.	Engineering Dept.
Customer	Arima Lasers Corp.		

**1 Scope:**

ADL-63072GB2 auto power controlled laser diode is a 635nm7mW laser light source with stable light output. It features in high reliable operation and high efficiency.

**2 General Specification:****2.1 Absolute maximum rating**

Item	Symbol	Rating	Unit
Power supply voltage	$V_{cc}$	2.5-6.0*	V
Laser optical output power	$P_o$	10	mW
Operation temperature	$T_{opr}$	-10 ~ +40	°C
Storage temperature	$T_{stg}$	-40 ~ +85	°C

\* Effective heat sink is recommended on 6V case due to extra heat.

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

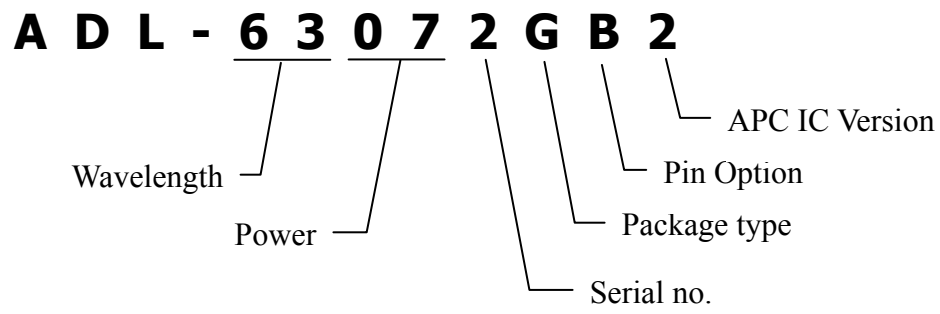
Item	Symbol	Min.	Typ.	Max.	Unit	Condition
Wavelength	$\lambda$	630	639	642	nm	$P_o=7\text{mW}$
Operation current	$ICC1$	-	37	45	mA	$P_o=7\text{mW } V_{cc}=3\text{V}$
	$ICC2$	-	41	50	mA	$P_o=9\text{mW } V_{cc}=3\text{V}$
Variable resistor	$VR1$	2	4	10	$K\Omega$	$P_o=7\text{mW } V_{cc}=3\text{V}$
	$VR2$	1	3	8	$K\Omega$	$P_o=9\text{mW } V_{cc}=3\text{V}$
Parallel divergence angle	$\theta_{\parallel}$	5	7	10	Deg	$P_o=7\text{mW}$
Perpendicular divergence angle	$\theta_{\perp}$	25	30	35	Deg	
Parallel FFP deviation angle	$\Delta\theta_{\parallel}$	-3.0	0	+3.0	Deg	
Perpendicular FFP deviation angle	$\Delta\theta_{\perp}$	-3.0	0	+3.0	Deg	
Emission point accuracy	$\Delta x \Delta y \Delta z$	-80	0	+80	$\mu\text{m}$	-
Power-Temp stability (25~40 °C)	$\Delta P_{oT}$	-20	-10	0	%	$P_o=7\text{mW}, V_{cc}=3.0\text{V}$
Power- $V_{cc}$ stability (6.0~3.0V)	$\Delta P_{oV}$	-15	-10	0	%	$P_o=7\text{mW}, \text{Temp}=25^\circ\text{C}$
Power- $V_{cc}$ stability (3.0~2.5V)	$\Delta P_{oV}$	-15	-10	0	%	$P_o=7\text{mW}, \text{Temp}=25^\circ\text{C}$

**2.3 Classification test for 9mW**

Item	Rank A	Rank B	Rank C	Rank D	Rank E
variable resistor( $k\Omega$ )	$1 \leq A < 2$	$2 \leq B < 3$	$3 \leq C < 4$	$4 \leq D < 5$	$5 \leq E < 6$
Item	Rank F	Rank G			
variable resistor( $k\Omega$ )	$6 \leq F < 7$	$7 \leq G < 8$			

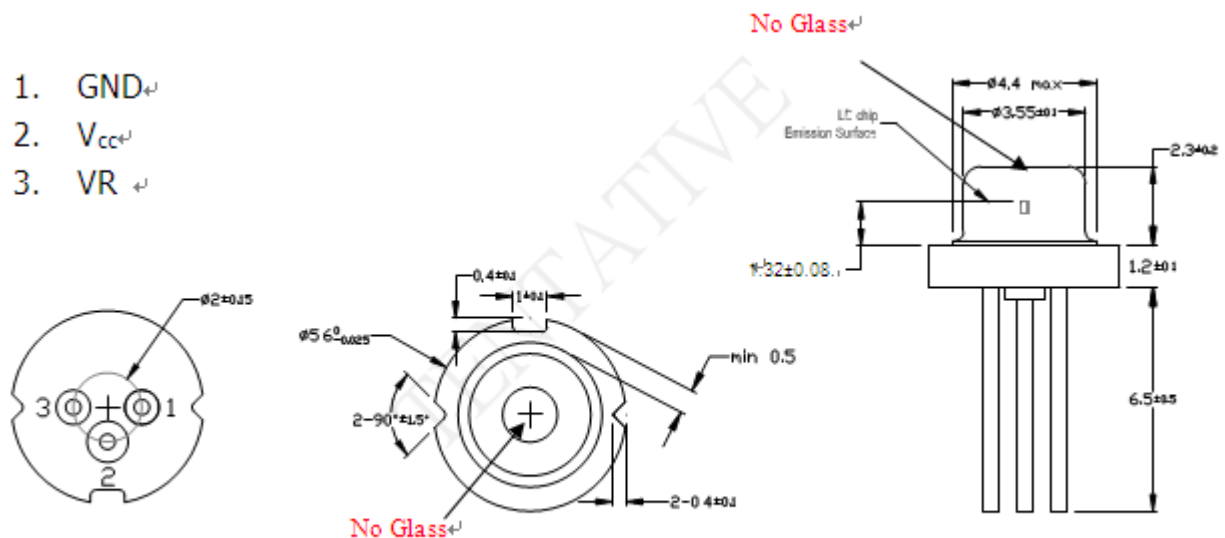
\*\*please note: There is a  $\pm 0.5k\Omega$  measurement error in each VR ranking

### 3 Indication:

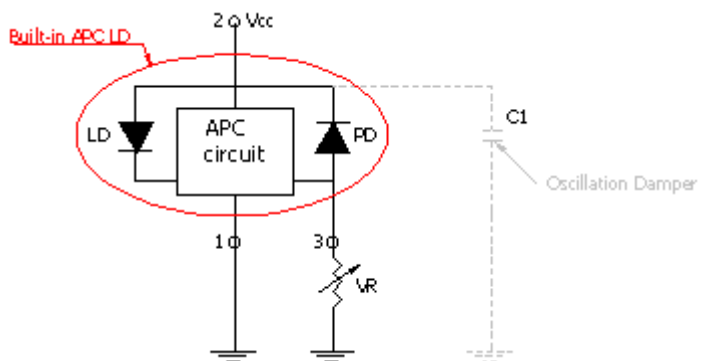


## 4 Dimensions:

1. GND<sub>+</sub>
2. V<sub>CC</sub><sub>+</sub>
3. VR<sub>+</sub>



## 5 Pin Connection:



## 6 Quality Inspection:

### 6.1 Acceptance Criteria :

#### 6.1.1 Appearances Inspection: General Inspection Standards II

6.1.1.1 Seriously Defective : AQL 0.065

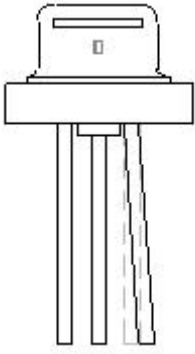
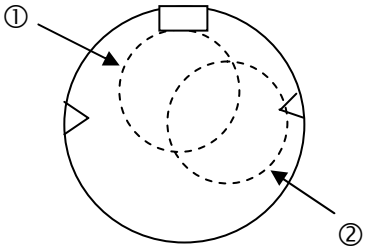
6.1.1.2 Defective : AQL 0.65

#### 6.1.2 O/E Testing Inspection Standards:

Shipment (pcs)	Sample size	Ac / Re
1~80	ALL	0 / 1
81~10000	80	0 / 1
10001~35000	125	0 / 1

## 6.2 Specifications :

### 6.2.1 Appearances Inspection :

Visual Inspection, No microscope needed		
Items	Rejection Criteria	AQL
Lead bent 	NG if the outer lead bends exceeding the edge of the lead.	0. 65
Cap displaced 	NG if Cap is placed outside the tolerance: - Cap on index-guide ① - Cap on V-ditch ②	0. 65

### 6.2.2 O/E Testing :

Based on Item 2.2

### 6.2.3 Periphery Specification : $\phi$ 5.575 ~ 5.6 mm ◦

## 7 Reliability Target / $T_c=40^\circ\text{C}$ , Output Power=7mW:

Estimated MTTF > 1,500 hr (QAT sample size  $\geq$  20)

(Extrapolated  $I_{op}$  increases 20%)

## 8 Packing Method :

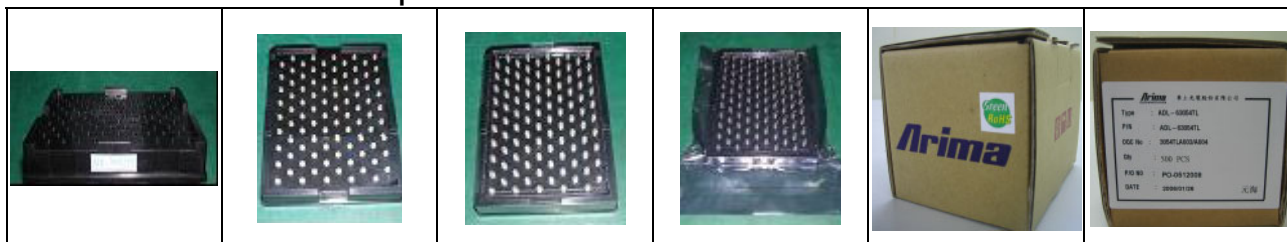
### 8.1 Packing material:

Material	Size (mm)	Capacity (If applicable)
Vinyl Bag	--	For one set of cover and tray
Tray Cover	--	For one tray
Shipping Tray	119X85X15.8	100 LDs
Inner Box	128X103X100	500 LDs
Outside Carton	560X276X114	5,000 LDs
Shipping Carton	580X292X265	10,000 LDs

### 8.2 Packing Method:

- 8.2.1 Put 100 pieces laser diode in a shipping tray. Labeling product type on side of shipping tray and place a cover on shipping tray.
- 8.2.2 The shipping tray is packed in a vinyl bag and sealed by vacuum machine.
- 8.2.3 5 shipping trays in an inner box.
- 8.2.4 10 inner boxes in an outside carton (For larger shipping quantity).
- 8.2.5 2 outside cartons in a shipping carton (For larger shipping quantity).

### 8.2.6 Reference photos:



For larger shipping quantity:




### 8.2.7 Ranking labeling:



Rank A:	$1 \leq A < 2k\Omega$	Yellow
Rank B:	$2 \leq B < 3k\Omega$	Green
Rank C:	$3 \leq C < 4k\Omega$	Pink
Rank D:	$4 \leq D < 5k\Omega$	Blue
Rank E:	$5 \leq E < 6k\Omega$	White
Rank F:	$6 \leq F < 7k\Omega$	Dark green
Rank G:	$7 \leq G < 8k\Omega$	Purple

## 9 Labeling :

 華信光電科技股份有限公司	
Type	:
PIN	:
QQC No :	
Qty	:
P/O No :	
Date	:

## 10 Disposition of Defect:

If any defect that listed on section 6.2 is found, the customer shall inform Arima Lasers. The replacement would be sent after mutual agreement.

## 11 Precautions:

- 11.1 To protect laser from overdriving condition, setting VR to maximum value before you turn on Vcc can minimized the laser output power.
- 11.2 Do not operate the device above the maximum rating condition, even momentarily. It may cause unexpected permanent damage to the device.
- 11.3 Semiconductor laser device is very sensitive to electrostatic discharge. High voltage spike current may change the characteristics of the device, or malfunction at any time during its service period. Therefore, proper measures for preventing electrostatic discharge are strongly recommended.
- 11.4 To obtain a stable characteristic and good reliability, the effective heat sink is necessary. So it is recommended that always apply proper heat sink before the device operating.
- 11.5 Do not look into the laser beam directly by bare eyes. The laser beam may cause severe damage to human eyes.

Date	Rev.	Revision Items		Note
		Before	After	
2014/10/21	0		First issue	