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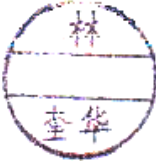
APPROVAL SHEET

(承认书)

ITEM: EDL-94S8W1

版本 (Version) : PL013532-EL Rev.0

日期 (Date) : 2019-01-28

| Prepared By (制订) | Confirmed By (确认) | Approved By (承认) |
|---|---|------------------|
|  |  | |
| Date (日期) | Date (日期) | Date (日期) |

Infrared Laser Diode Chip

EDL-94S8W1

PL013532-EL Rev.0

940nm/0mW A 3532 package VCSEL chip

Dimension

◆ Features

- Lumentum High Power Infrared VCSEL
- 364 Emitter VCSEL Chip
- FFP single lateral mode
- Rectangle Light Pattern

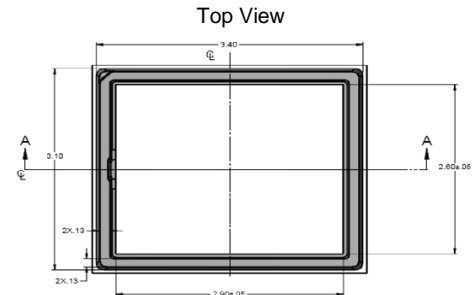
◆ Applications

- ToF, 3D sensing
- High Power illumination Light Source

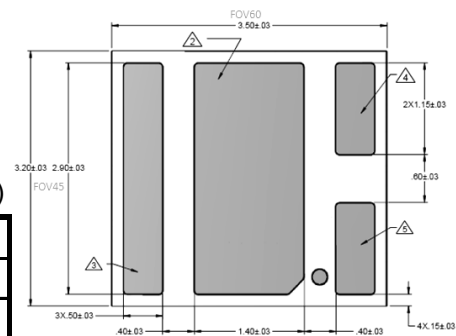
◆ Absolute maximum ratings

(TC=25°C)

| Parameter | Condition | Rating | Unit |
|-----------------------------|-----------|-------------------------|------|
| Power Dissipation | | 8.1 | W |
| Reverse Voltage | | 5 | V |
| DC Forward Current | | 3.5 A | A |
| Operating temperature Range | | -10~+50 | °C |
| Storage Temperature Range | | -10~+75 | °C |
| SMT Soldering Condition | | 260°C for 10 second Max | NA |



Bottom View



Pin connection

- ② LASER CATHODE (-)
- ③ LASER ANODE (+)
- ④ PD CATHODE (-)
- ⑤ PD ANODE (+)

◆ Electrical / Optical Characteristics (Pulse mode: 0.5ms, Duty cycle 1%) (TC=25°C)

| Parameter | Symble | Min | Typ. | Max. | Unit | Remark |
|-----------------------------|-----------------|----------------------------|------|------|--------|-------------------------------|
| Output optical power | I_{OP} | | 2100 | | mW | 25°C Operation Temp, $I_F=3A$ |
| Slope efficiency | SE | --- | 0.8 | --- | W/A | |
| Threshold current | I_{TH} | 0.2 | 0.3 | 0.4 | A | |
| Operating voltage | V_{OP} | --- | 2.4 | --- | V | |
| Center wavelength | λ_C | 934 | 940 | 946 | nm | |
| Wavelength shift | λ | 0.06 | 0.07 | 0.08 | nm/oC | |
| Divergence angle | θ_{FWHM} | 60(H) X 45(V), (± 5) | | | Degree | |
| Power conversion efficiency | PCE | --- | 30 | --- | % | |

Note: FOV 60 degree align with 3.5mm; FOV 45 degree align with 3.2mm

● 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 the 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 laser specification by contacting us prior to purchase or use of the product.

**For reference only. Contents above are subject to change without notice.*

Infrared Laser Diode Chip

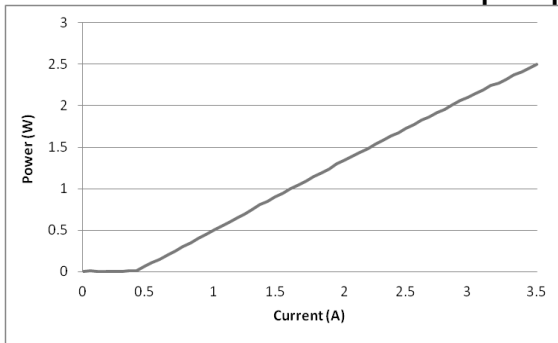
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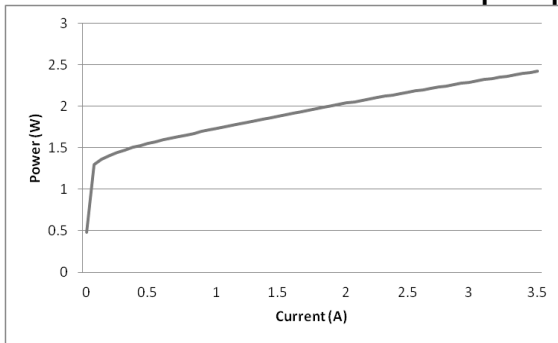
◆ Photodiode Electrical / Optical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | MIN | TYP | MAX | UNIT |
|---------------------------|-------------|---|-----|-----|-----|---------------|
| Forward voltage | V_F | $I_F=10\text{mA}$. $H=0$ | 0.5 | | 1.3 | V |
| Reverse breakdown voltage | V_{BR} | $I_R=100\mu\text{A}$. $H=0$ | 35 | | | V |
| Reverse dark current | I_D | $V_R=10\text{V}$. $H=0$ | | 2 | 10 | nA |
| Light current | I_L | $V_R=5\text{V}$. $1\text{mW}/\text{cm}^2$ @940nm | | 0.5 | | μA |
| Peak sensing wavelength | λ_p | | | 940 | | nm |

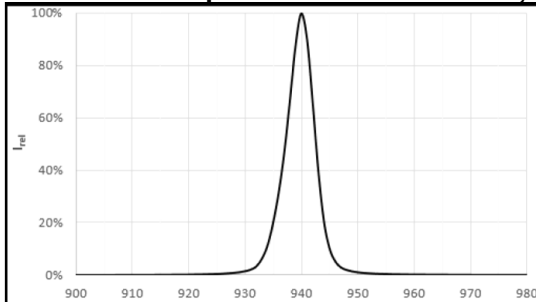
◆ Forward current V.S. Output power (Ta=25°C)



◆ Forward current V.S. Output power (Ta=25°C)



◆ Relative Spectral Emission, Wavelength



◆ Divergence angel measurement

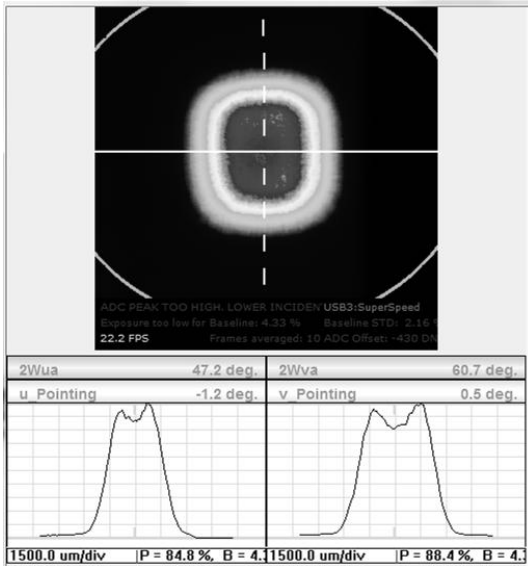
| Samples | Divergence angel(V) | Divergence angel(H) |
|---------|---------------------|---------------------|
| #1 | 47.36 degree | 60.75 degree |

Infrared Laser Diode Chip

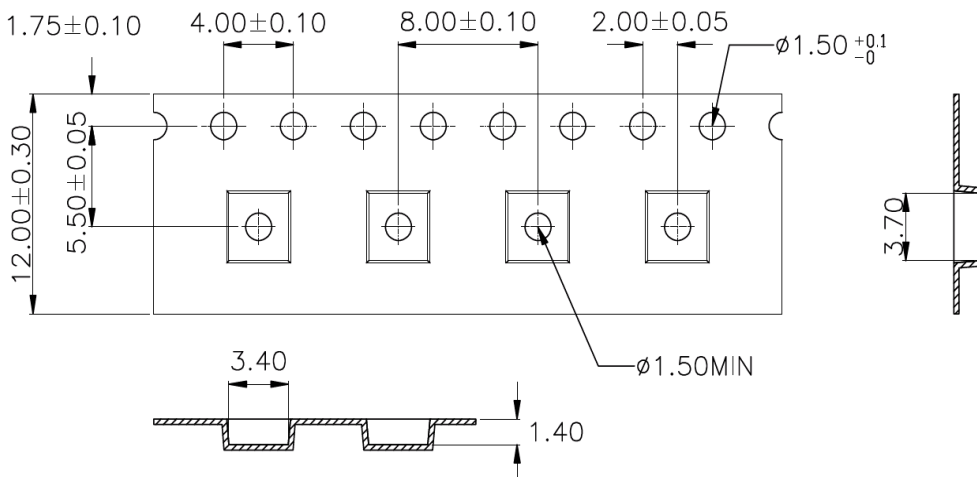
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◆ Far field pattern measurement by CCD



◆ Package Dimensions of Tape and Reel



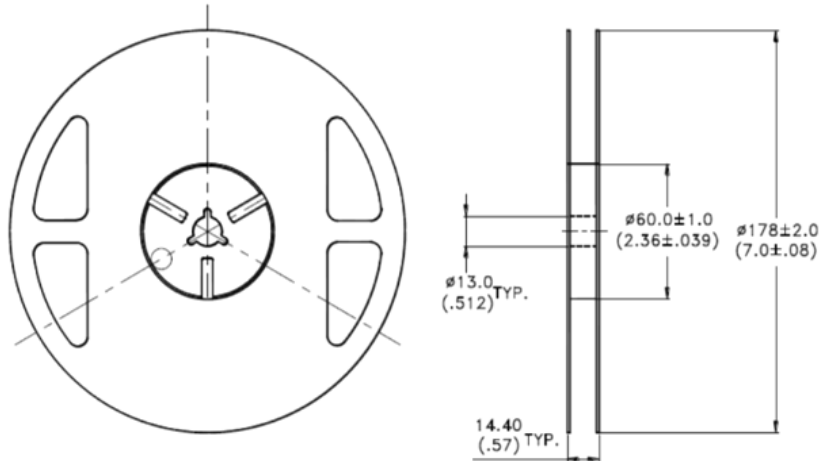
- Note: 1.10sprocket hole pitch cumulative tolerance ± 0.20 .
 2.Carrier camber is within 1mm in 250mm.
 3.Material : Black Conductive Polystyrene Alloy.
 4.All dimensions meet EIA-481 requirements.
 5.Thickness : 0.30 ± 0.05 mm.
 6.Packing length per 19" reel : 500.0 Meters(1:12) W=105.
 7.Component load per 13" reel : 5000 pcs.

Infrared Laser Diode Chip

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◆ Package Dimensions of Tape and Reel



- Note: 1.All dimensions are in millimeters (inches).
2.Minimum 2000pcs for one reel.
3.Empty component pockets sealed with top cover tap.
4.The maximum number of consecutive missing parts is two.
5.In accordance with ANSI/EIA 481-1-A1994 specifications.

