

Spec. No. : ODT-W010-06(1)
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SPECIFICATION

MODEL NAME : Infrared Emitting Diode
MODEL NO. : OL94TMLE

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Infrared Emitting Diode (GaAlAs)

OL94TMLE

■ Description

The OL94TMLE is a high power GaAlAs IRED mounted in a clear side-looking package, is compact low profile, and easy to mount.



■ Features

- Compact
- Low profile package
- Low-cost plastic package

■ Applications

- Optical sensor
- Photo-interrupters
- Mouse, Toys

■ Absolute Maximum Ratings (Ta= 25℃)

Parameter	Symbol	Ratings	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	50	mA
Pulse Forward Current *1	I_{FP}	1	A
Power Dissipation	P_D	100	mW
Operating Temperature	T_{OPR}	-25 ~ 85	℃
Storage Temperature	T_{STG}	-30 ~ 100	℃

*1 : Pulse width $t_w=100\mu s$, $T=10ms$

■ Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F=20mA$	—	1.2	1.6	V
Reverse Current	I_R	$V_R=5V$	—	—	10	μA
Power output (Light current P_{Tr})*1	P_o	$I_F=4\text{ mA}$ $V_{CE}=3.5V$	0.21	—	1.0	mA
Peak Wavelength	λ_p	$I_F=20mA$	—	940	—	nm
Spectral Bandwidth 50%	$\Delta \lambda$	$I_F=20mA$	—	50	—	nm
Half Angle	$\Delta \theta$		—	± 30	—	Deg.

*1 : Refer to page4, ■ classification of light current

■ Typical electrical / Optical characteristic curves

(Ta=25 °C)

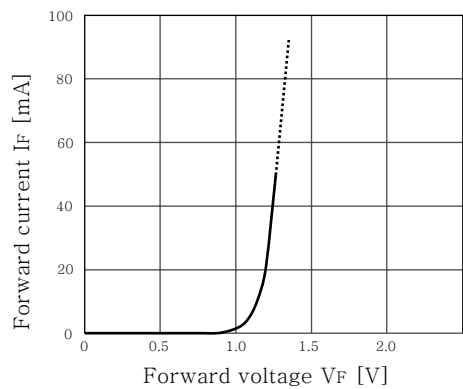


Fig.1 Forward current vs. Forward voltage

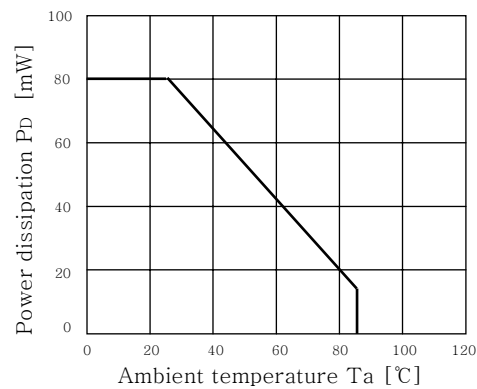


Fig.2 Power dissipation vs. Ambient temperature

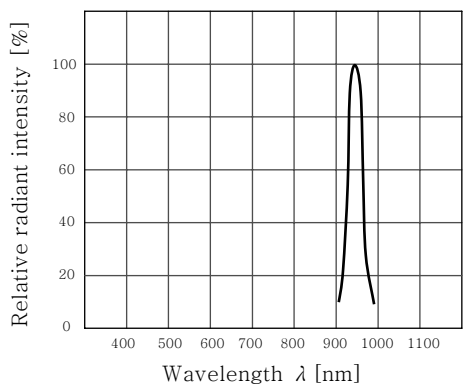


Fig.3 Relative radiant intensity

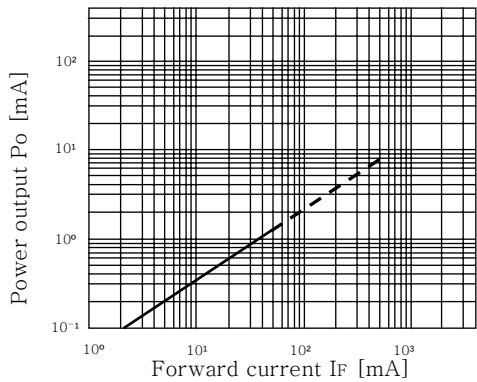


Fig.4 Power output vs. Forward current

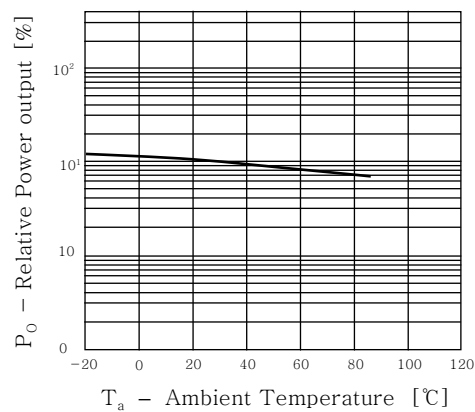


Fig.5 Relative power output vs. Ambient temperature

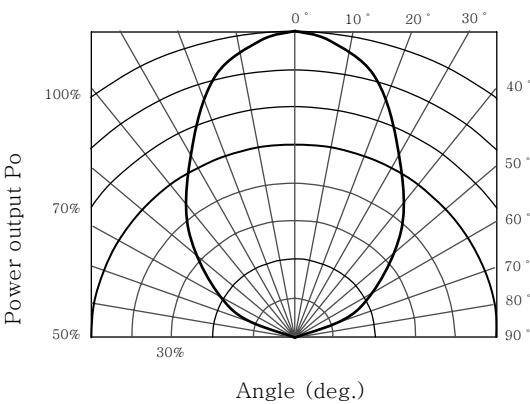
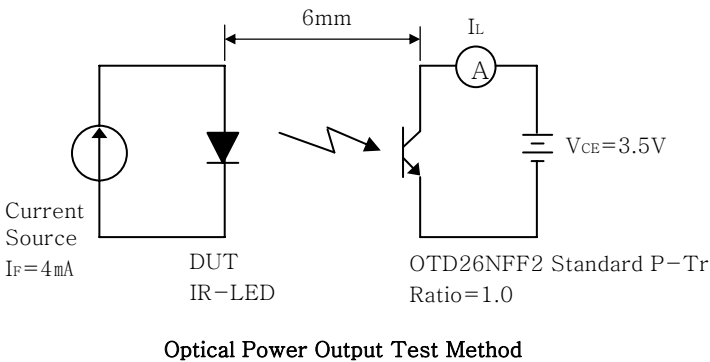


Fig.6 Radiant pattern

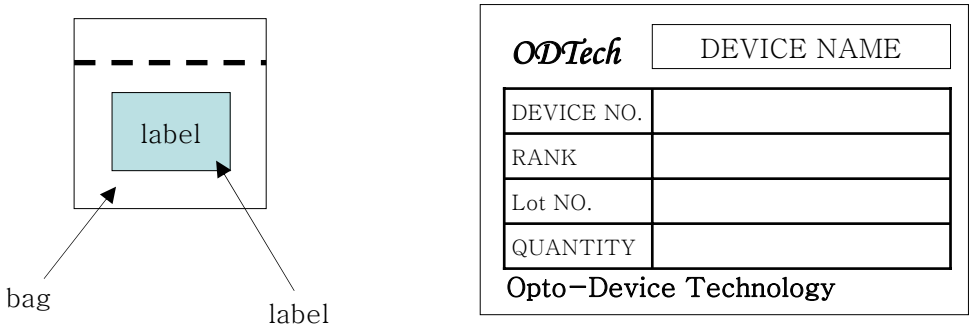
Classification of Light Current (IL)

Ranks	IL (mA)
	Outgoing
C	0.21~0.40
D	0.30~0.51
E	0.38~0.63
F	0.47~0.75
G	0.55~0.86
H	0.66~1.00



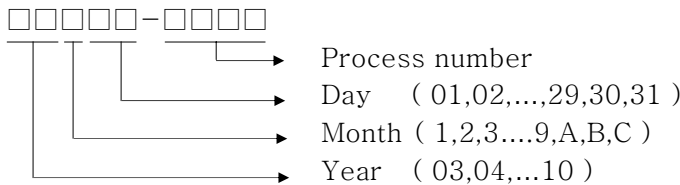
Packing method

- The optical detectors are packed in boxes after packing in bags. Please refer to figure. The label on the minimum packing unit shows ; Part number, Lot number, Ranking, Quantity
- In order to protect the optical devices from mechanical shock, we pack them in boxes for transportation.
- The optical detectors may be damaged if the boxes are dropped or receive a strong impact against them so precautions must be taken to prevent any damage.
- The boxes are not water resistant and therefore must be kept away from water and moisture.



Lot number

- The first five digits number shows lot number.
- The lot number is composed of the following characters;



■ Cleaning

- When washing is required, isopropyl alcohol should be used.
- The influence of ultrasonic cleaning on the optical detectors differs depending on factors such as oscillator output and how the optical detectors are mounted. Before cleaning by ultrasonic wave, testing should be performed to ensure this will not cause damage to the optical detectors.

■ Storage

- The optical detectors should be stored at 30℃ or less and 70%R.H or less after being shipped from ODTech and the storage life limits are 3 months. If the optical devices are stored for 3months or more, they can be stored for a year in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- ODTech optical detectors leads are comprised of a gold plated iron alloy. The gold surface may be affected by environments which contain corrosive gases and so on. Please avoid conditions which may cause the optical detectors to corrode, tarnish or discolor. This corrosion or discoloration may cause difficulty during soldering operations. It is recommended that the optical devices be used as soon as possible.
- Please avoid rapid transitions in ambient temperature, especially, in high humidity environments where condensation can occur.

■ Lead forming

- When forming leads, the leads should be bent at a point at least 3 mm from the base of the lead. Do not use the base of the lead as a fulcrum during lead forming.
- Lead forming should be done before soldering .
- Do not apply any bending stress to the base of the lead. The stress to the base may damage the optical detector's characteristics of it may break the optical devices.
- When mounting the optical devices onto a printed circuit board, the holes on the circuit board should be exactly aligned with the leads of the optical devices. If the optical devices are mounted with stress at the leads, it causes deterioration of the can and this will degrade the optical detectors

■ Soldering condition

- Solder the optical devices no closer than 3 mm from the base of the lead.
- Maximum Allowable Soldering Conditions.

Soldering	Soldering Dipping
Soldering Iron : 30W Max. Temperature : 300℃ Max. Soldering Time : 3 seconds Max. Position : No closer than 3 mm from the base of the lead.	Pre-Heat : 100℃ Max. Per-Heat Time : 60 seconds Max. Solder Bath Temperature : 260 ℃ Max. Dipping Time : 5seconds Max. Dipping Position : No lower than 3 mm from the base of the lead.

Outline Dimensions

(Unit : mm)

