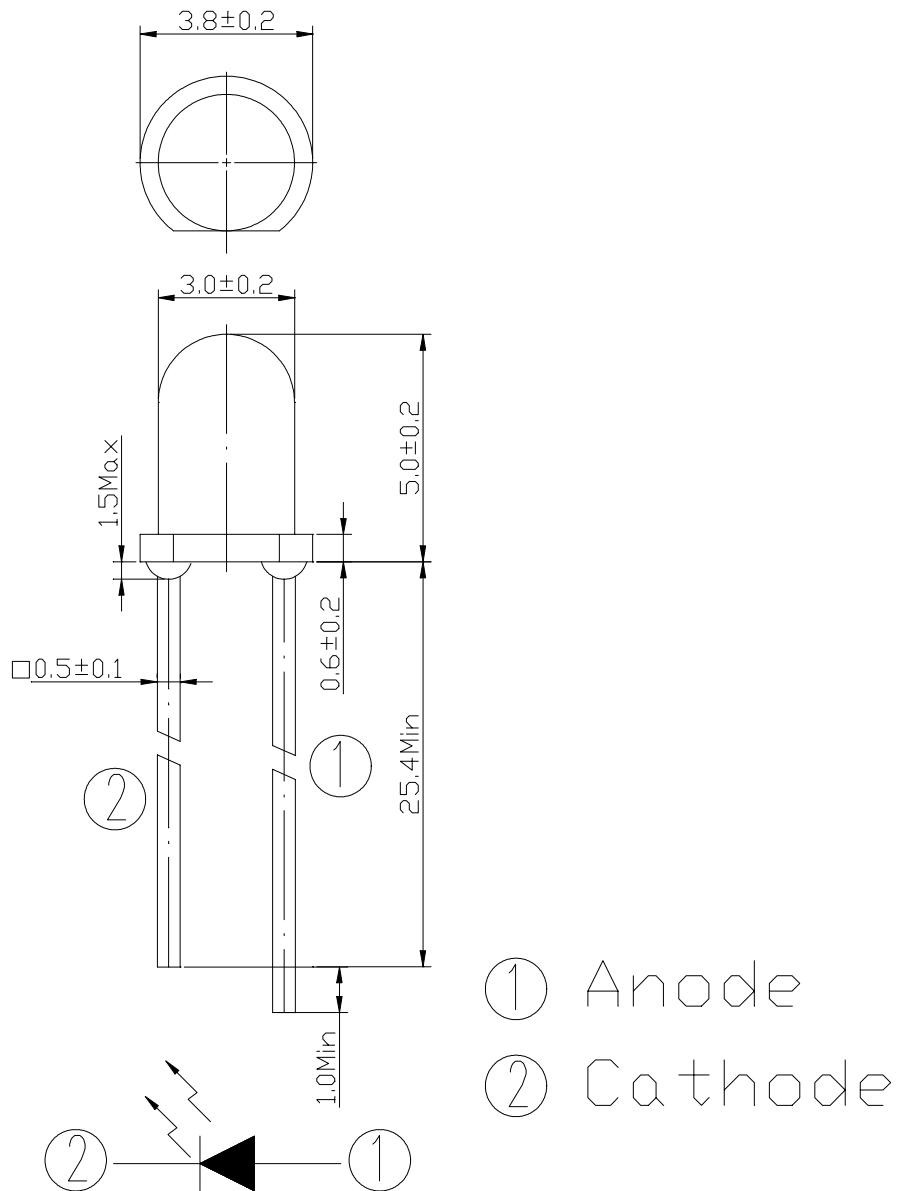


EVERLIGHT

EVERLIGHT ELECTRONICS CO., LTD.

Device Number: DIR-125-147 REV: 1.0
MODEL NO: IR1254-R8 ECN: _____ Page: 1/8**Package Dimensions:**

① Anode
② Cathode

DESIGNER	CHECKER	APPROVED

Office: NO 25, Lane 76, Chung Yang Rd., Sec. 3
Tucheng, Taipei 236, Taiwan, R.O.C.
TEL: 886-2-2267-2000, 267-9936(22Lines)
FAX: 886-2-2267-6189

Device Number: DIR-125-147REV: 1.0MODEL NO: IR1254-R8ECN: Page: 2/8**① Notes :**

1. All dimensions are in millimeters.
2. Lead spacing is measured where the lead emerge from the package .
3. Protruded resin under flange 1.5 mm Max.
4. Lens color : Blue transparent.
5. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
6. These specification sheets include materials protected under copyright of EVERLIGHT corporation . Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.
7. When using this product , please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.

Description

EVERLIGHT's infrared emitting diode (IR1254-R8) is a high intensity diode, molded in a clear, blue transparent plastic package.

The device is spectrally matched with phototransistor, photodiode and infrared receiver module.

Features

- High radiant intensity
- Peak wavelength $\lambda_p = 940\text{nm}$
- View angle 35°
- High reliability

Applications

- Free air transmission system
- Optoelectronic switch
- Infrared remote control units with high power requirement

EVERLIGHT

EVERLIGHT ELECTRONICS CO., LTD.

Device Number: DIR-125-147REV: 1.0MODEL NO: IR1254-R8

ECN: _____

Page: 3/8**Absolute Maximum Ratings**

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I _F	60	mA
Peak Forward Current Pulse width=100 μ s, Duty cycle=1%	I _{FP}	1.0	A
Reverse Voltage	V _R	5	V
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +85	°C
Lead Soldering Temperature (1/16 inch from body for 5 sec.)	Tsol	260	°C
Power Dissipation at (or below) 25°C Free Air Temperature	Pd	160	mW

Electro Optical Characteristics

(Ta=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Radiant Intensity	Ee	4.0	7.8		mW/sr	I _F =20mA
			35			I _F =100mA, t _p =100 μ s, t _p /T=0.01
			400			I _F =1A, t _p =100 μ s, t _p /T=0.01
Peak Wavelength	λ p		940		nm	I _F =20mA
Spectral Bandwidth	$\Delta\lambda$		45		nm	I _F =20mA
Forward Voltage	V _F		1.2	1.5	V	I _F =20mA
			1.4	1.85		I _F =100mA, t _p =100 μ s, t _p /T=0.01
			2.6	4.0		I _F =1A, t _p =100 μ s, t _p /T=0.01
Reverse Current	I _R			10	μ A	V _R =5V
View Angle	2θ1/2		35		deg	I _F =20mA

To Distinguish Intensity

(Ta=25°C)

CONDITION: I_F=20mA

Unit : mW/sr

Bin Number	K	L	M	N
Min	4.00	5.60	7.80	11.0
Max	6.40	8.90	12.5	17.6

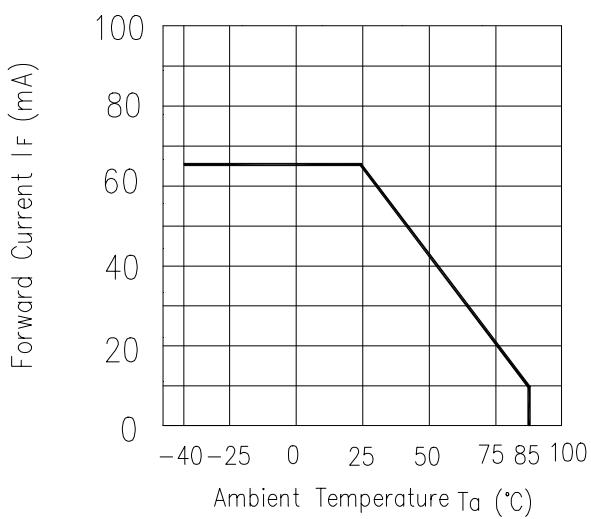
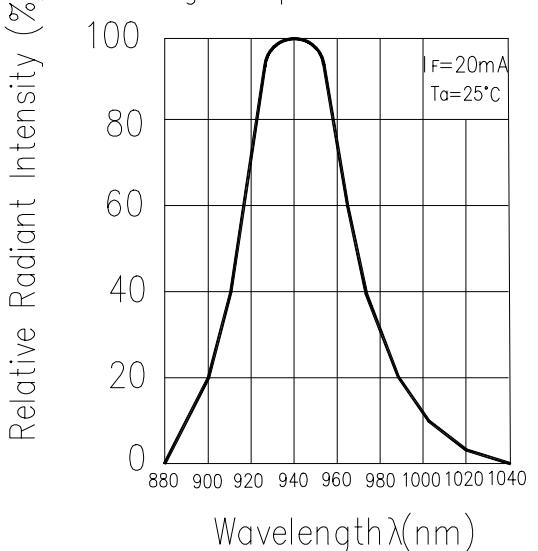
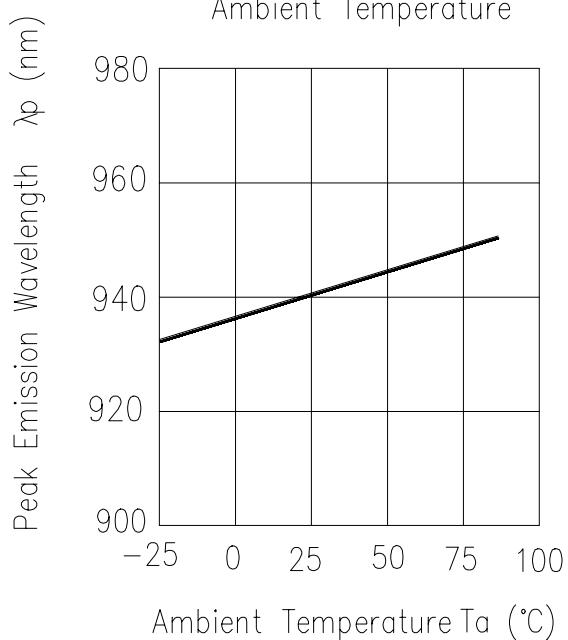
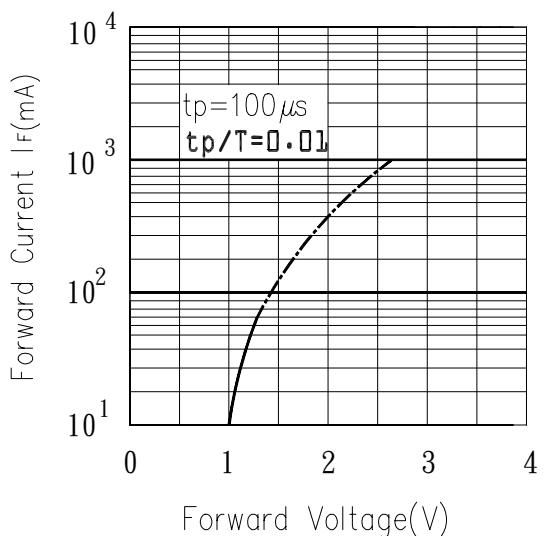
Typical Electrical/Optical/Characteristics CurvesFig. 1 Forward Current vs.
Ambient Temperature

Fig. 2 Spectral Distribution

Fig. 3 Peak Emission Wavelength vs.
Ambient TemperatureFig. 4 Forward Current vs.
Forward Voltage

Device Number: DIR-125-147 REV: 1.0
MODEL NO: IR1254-R8 ECN: Page: 5/8

Typical Electrical/Optical/Characteristics Curves

Fig. 5 Relative Intensity vs.
Forward Current

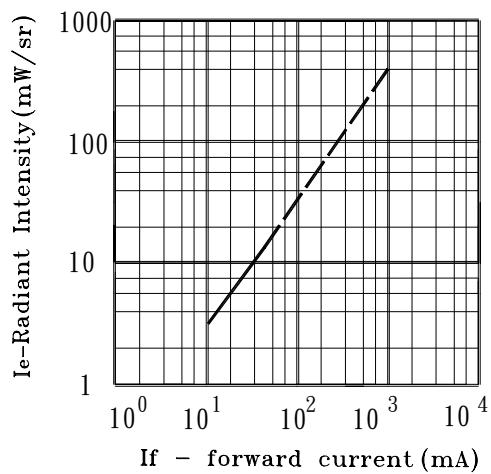


Fig. 6 Relative Radiant Intensity vs.
Angular Displacement

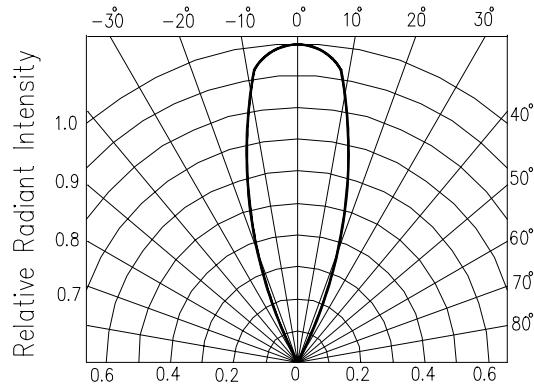


Fig. 7 Relative Intensity vs.
Ambient Temperature (°C)

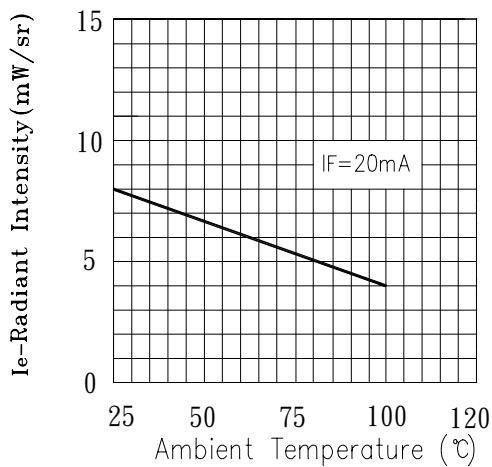
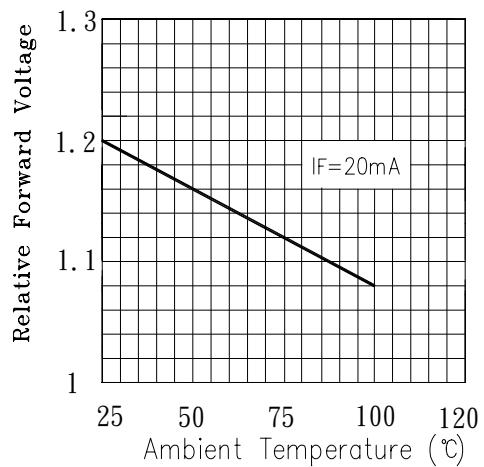


Fig. 8 Forward Current vs.
Ambient Temperature (°C)



Device Number: DIR-125-147REV: 1.0MODEL NO: IR1254-R8ECN: Page: 6/8**Reliability**

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

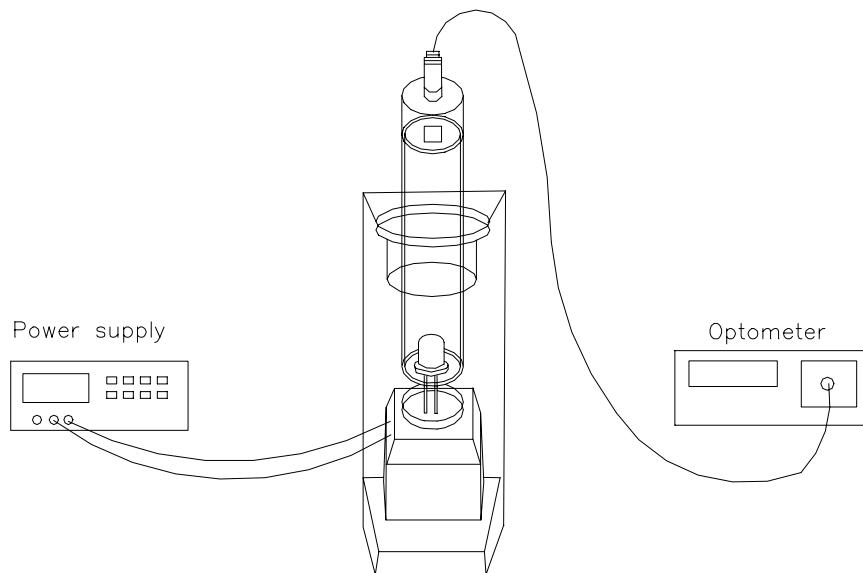
LTPD : 10%

Test Items	Test Conditions	Failure Judgement Criteria	<u>Samples(n)</u>
			Defective(c)
Operation life	$I_F=20mA$, $T_a : 25^{\circ}C$ 1000hrs		$n = 22$, $c = 0$
Temperature cycle	1 cycle $-55^{\circ}C$ to $+25^{\circ}C$ to $+85^{\circ}C$ (30min) (5min) (30min) 50 cycle test t	$I_R \geq U \times 2$ $Ee \leq L \times 0.8$ $V_F \geq U \times 1.2$	$n = 22$, $c = 0$
Thermal shock	$-10^{\circ}C$ to $+100^{\circ}C$ (5min) (10sec) (5min) 50cycle test		$n = 22$, $c = 0$
High temperature storage	Temp : $+100^{\circ}C$ 1000hrs	U : Upper specification limit	$n = 22$, $c = 0$
Low temperature storage	Temp : $-55^{\circ}C$ 1000hrs	L : Lower specification limit	$n = 22$, $c = 0$
High temperature High humidity	$T_a : 85^{\circ}C$ RH : 85% 1000hrs		$n = 22$, $c = 0$
Solder heat	Temp : $260 \pm 5^{\circ}C$ 5sec 4mm Form the bottom of the package.		$n = 22$, $c = 0$
Solderability	Temp : $230 \pm 5^{\circ}C$ 5sec 4mm Form the bottom of the package.	More than 90% of Lead to be covered by soldering	$n = 22$, $c = 0$

Device Number: DIR-125-147 REV: 1.0
MODEL NO: IR1254-R8 ECN: Page: 7/8

Test Method For PowerCondition : $I_F=20\text{ mA}$

Test Item : Radiant Intensity (mW/sr)

**Supplements**

1. Parts

(1) Chip

Type	Material	Peak Wavelength
IR	GaAlAs	940nm

(2) Material

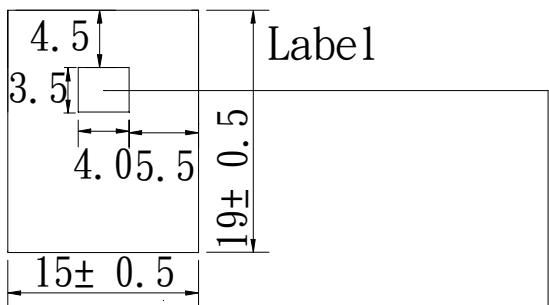
Type	Lead Frame	Wire	Package
Material	SPCC	Gold	Epoxy

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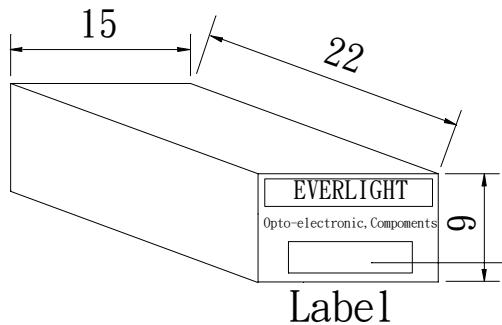
Device Number: DIR-125-147 REV: 1.0
MODEL NO: IR1254-R8 ECN: Page: 8/8

Packing Specifications

1. Bag



2. Box

**EVERLIGHT**CPN:
P/N:

IR1254-R8

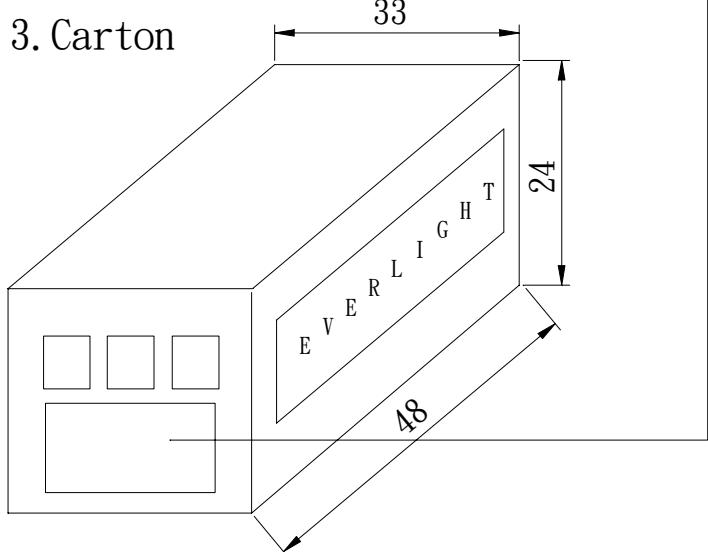
QTY:

CAT:
HUE:
REF:

LOT NO:

MADE IN TAIWAN

3. Carton



Label

UNIT : cm

CPN : Customer's Production Number

P/N : Production Number

QTY : Packing Quantity

CAT : Ranks

HUE : Peak Wavelength

REF : Reference

LOT NO : Lot Number

MADE IN TAIWAN : Production Place

Packing Quantity Specification

1.500Pcs/1Bag , 6Bags/1Box

2.10Boxes/1Carton