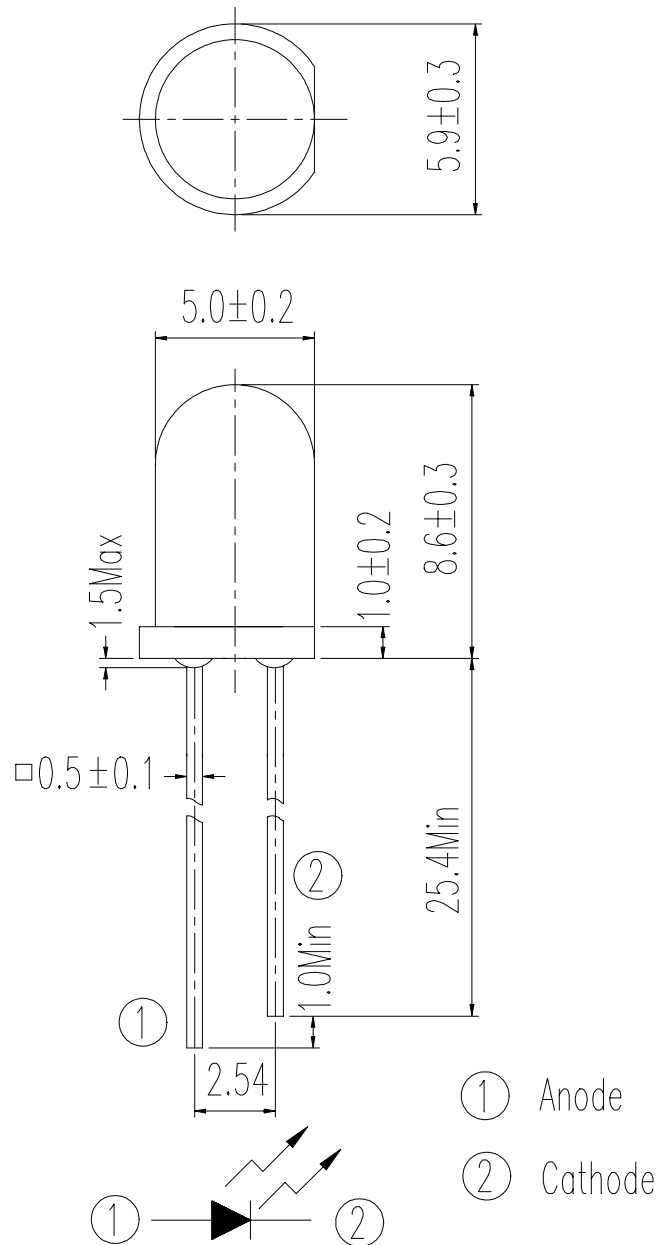


EVERLIGHT

EVERLIGHT ELECTRONICS CO., LTD.

Device Number: DIR-033-113REV: 1.1MODEL NO: IR333C/L10

ECN: _____

Page: 1/8**Package Dimensions:**

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 (22 Lines)

FAX: 886-2-2267-6189

©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 : Water clear.
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 (IR333C/L10) is a high intensity diode, molded in a clear, untinted 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 20°
- High reliability

Applications

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

Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I _F	60	mA
Peak Forward Current Pulse width=100 μs, 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	7.8	20		mW/sr	I _F =20mA
			85			I _F =100mA, t _p =100 μs, t _p /T=0.01
			750			I _F =1A, t _p =100 μs, t _p /T=0.01
Peak Wavelength	λ _p		940		nm	I _F =20mA
Spectral Bandwidth	Δλ		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 μs, t _p /T=0.01
			2.6	4.0		I _F =1A, t _p =100 μs, t _p /T=0.01
Reverse Current	I _R			10	μA	V _R =5V
View Angle	2θ _{1/2}		20		deg	I _F =20mA

To Distinguish Intensity

(Ta=25°C)

CONDITION: I_F=20mA

Unit : mW/sr

Bin Number	M	N	P	Q
Min	7.80	11.00	15.00	21.00
Max	12.50	17.60	24.00	34.00

Typical Electrical/Optical/Characteristics Curves

Fig. 1 Forward Current vs. Ambient Temperature

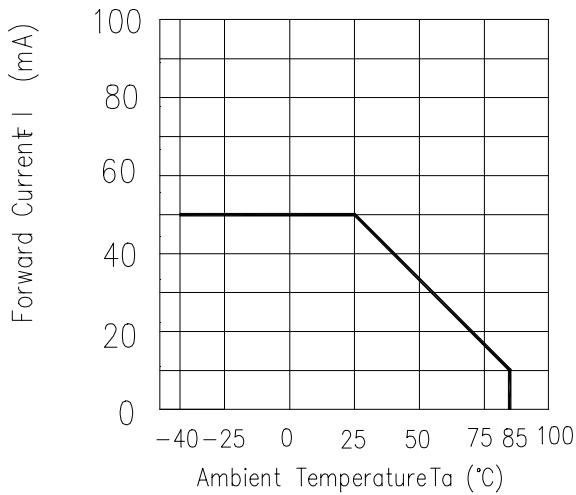


Fig. 2 Spectral Distribution

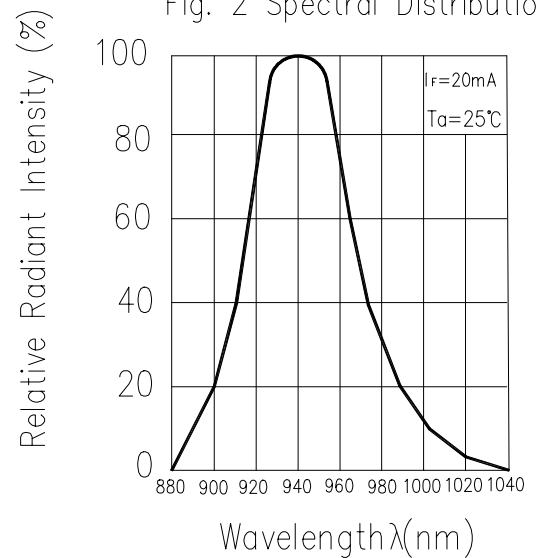


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

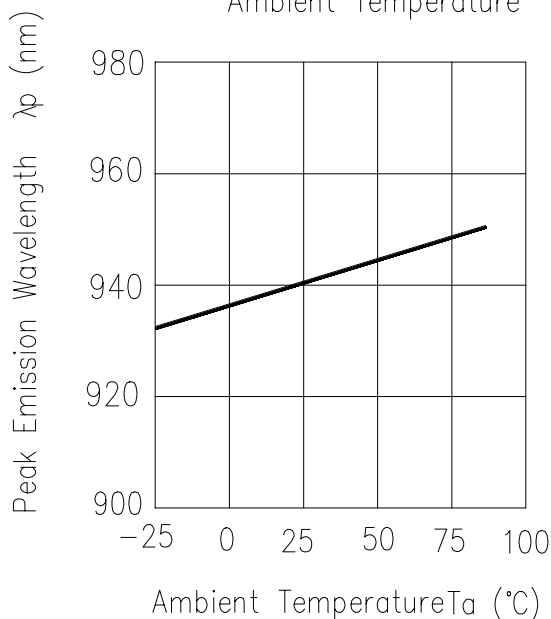
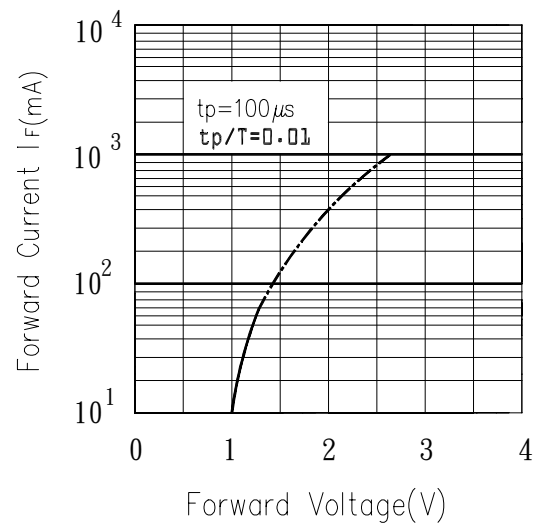


Fig. 4 Forward Current vs. Forward Voltage



Typical Electrical/Optical/Characteristics Curves

Fig. 5 Relative Intensity vs. Forward Current

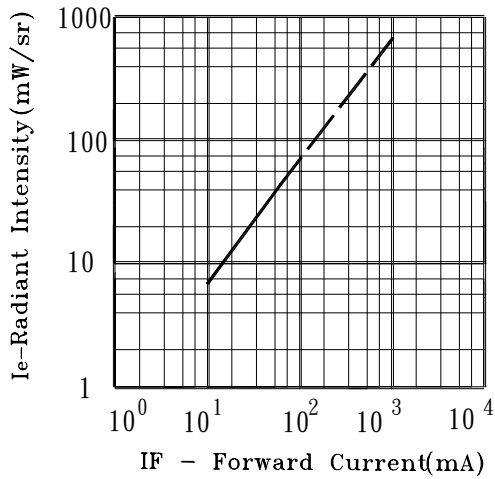


Fig. 6 Relative Radiant Intensity vs. Angular Displacement

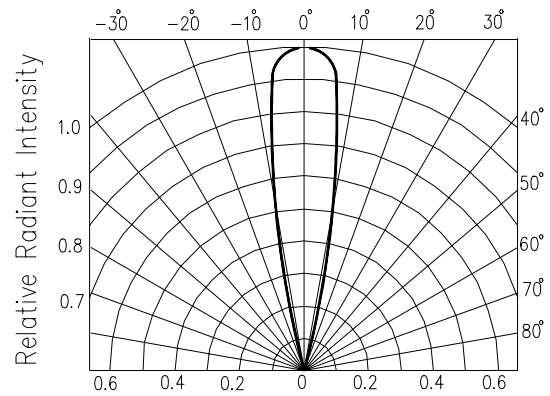


Fig. 7 Relative Intensity vs. Ambient Temperature (°C)

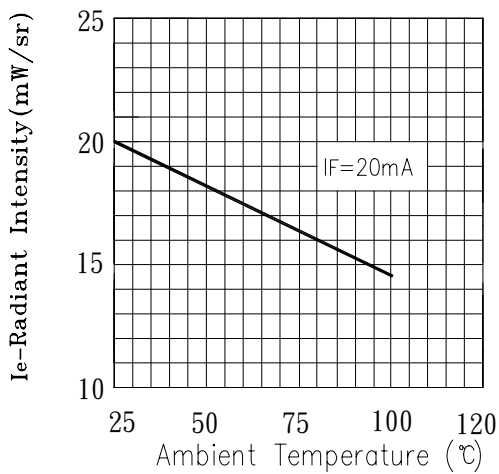
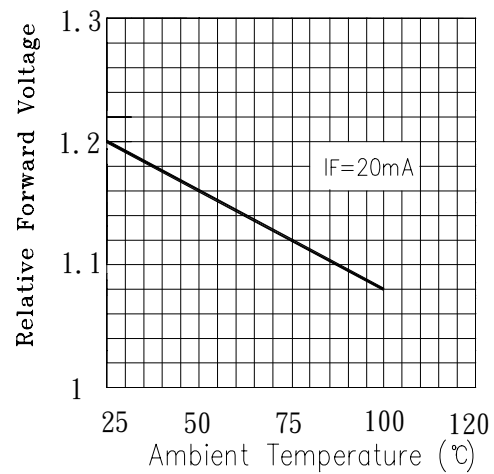


Fig. 8 Forward Current vs. Ambient Temperature (°C)



Reliability

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

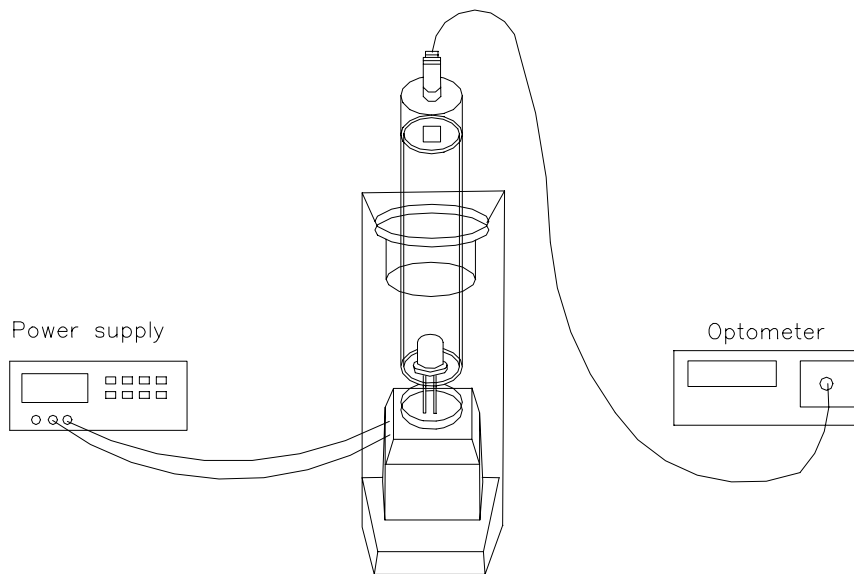
Confidence level : 90%

LTPD : 10%

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

Test Method For PowerCondition : $I_F=20$ 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

EVERLIGHT

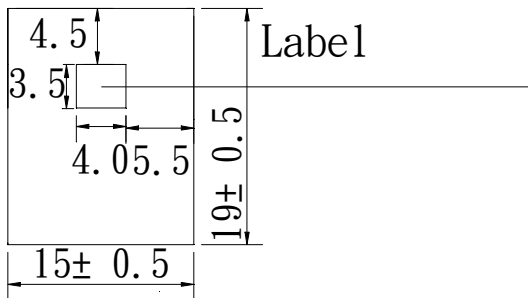
EVERLIGHT ELECTRONICS CO., LTD.

Device Number: DIR-033-113REV: 1.1MODEL NO: IR333C/L10

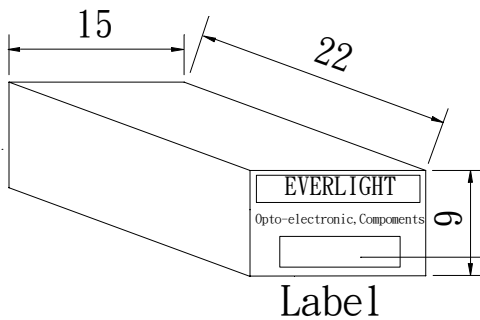
ECN: _____

Page: 8/8**Packing Specifications**

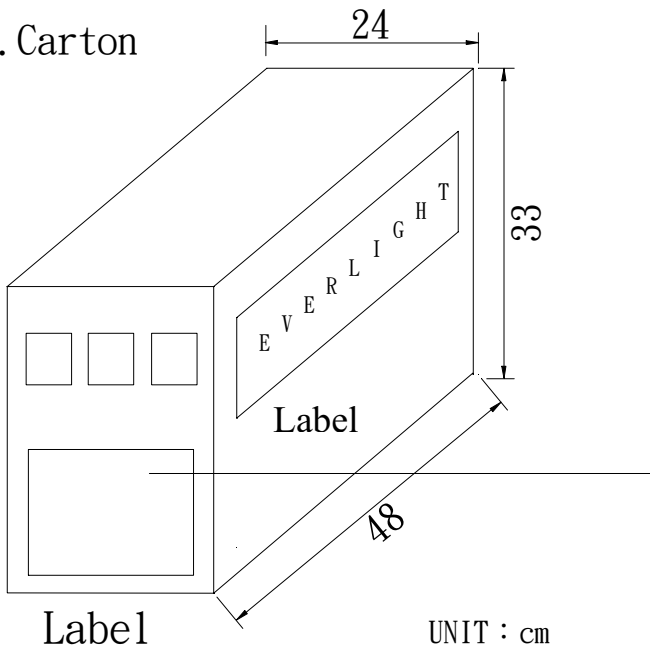
1. Bag



2. Box



3. Carton



UNIT : cm

EVERLIGHT

CPN:

P/N:

IR333C/L10

QTY:

LOT NO:

CAT:

HUE:

REF:

MADE IN TAIWAN

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