

DEVICE NUMBER : DIR-033-006 REV : 2.0
ECN : _____ PAGE : 1/8

5mm Infrared LED

MODEL NO : IR333/H0-A

■ Features :

- High radiant intensity
- Peak wavelength $\lambda_p=940\text{nm}$
- View angle 40°
- High reliability
- 2.54mm Lead spacing

■ Description :

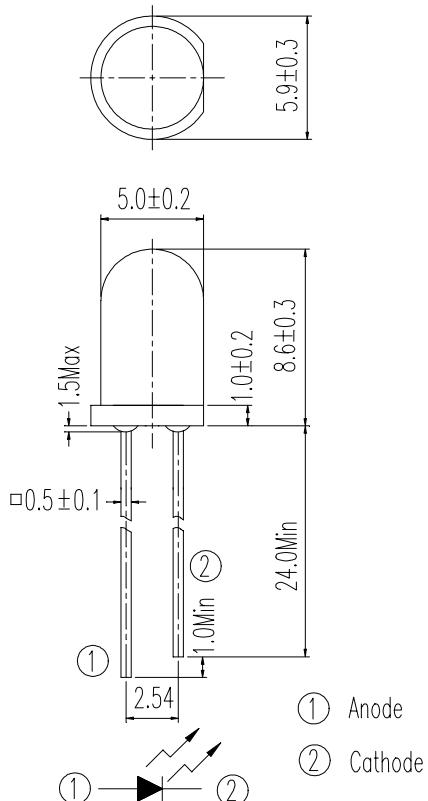
- EVERLIGHT's Infrared Emitting Diode (IR333/H0-A) is a high intensity diode, molded in a blue transparent plastic package.

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

■ Applications :

- Free air transmission system
- Optoelectronic switch
- Floppy disk drive
- Infrared applied system
- Smoke detector

PART NO.	CHIP	LENS COLOR
	MATERIAL	
IR	GaAlAs	Blue

5mm Infrared LEDMODEL NO : IR333/H0-A**■ Package Dimensions :****■ Notes :**

1. All dimensions are in millimeter.
2. Protruded resin under flange 1.5 mm Max.
3. Lead spacing is measured where the lead emerge from the package.
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.

5mm Infrared LEDMODEL NO : IR333/H0-A**■ Absolute Maximum Ratings at $T_A = 25^\circ\text{C}$**

Parameter	Symbol	Rating	Unit	Notice
Continuous Forward Current	I_F	100	mA	
Peak Forward Current Pulse width=100 μs , Duty cycle=1%	I_{FP}	1.0	A	
Reverse Voltage	V_R	5	V	
Operating Temperature	T_{opr}	-40 ~ +85	$^\circ\text{C}$	
Storage Temperature	T_{stg}	-40 ~ +85	$^\circ\text{C}$	
Soldering Temperature	T_{sol}	260	$^\circ\text{C}$	4mm from mold body less than 5 seconds
Power Dissipation at(or below) 25 $^\circ\text{C}$ Free Air Temperature	P_d	150	mW	

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant Intensity	Ee	5.6	7.8	----	mW/sr	$I_F=20\text{mA}$
		----	35	----		$I_F=100\text{mA}, t_p=100 \mu\text{s}, t_p/T=0.01$
		----	350	----		$I_F=1\text{A}, t_p=100 \mu\text{s}, t_p/T=0.01$
Peak Wavelength	λ_p	----	940	----	nm	$I_F=20\text{mA}$
Spectral Bandwidth	$\Delta \lambda$	----	45	----	nm	$I_F=20\text{mA}$
Forward Voltage	V_F	----	1.2	1.5	V	$I_F=20\text{mA}$
		----	1.4	1.85		$I_F=100\text{mA}, t_p=100 \mu\text{s}, t_p/T=0.01$
		----	2.6	4.0		$I_F=1\text{A}, t_p=100 \mu\text{s}, t_p/T=0.01$
Reverse Current	I_R	----	----	10	μA	$V_R=5\text{V}$
View Angle	$2\Theta 1/2$	----	40	----	deg	$I_F=20\text{mA}$

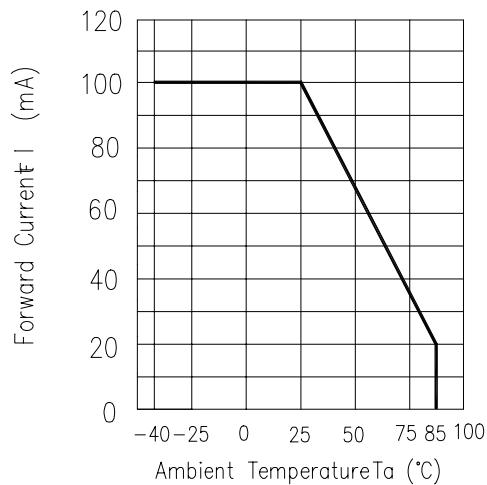
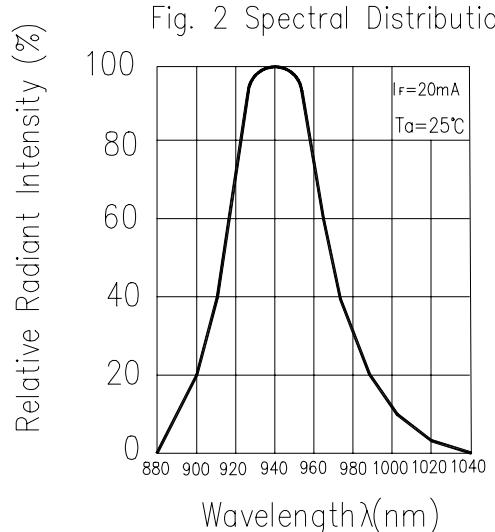
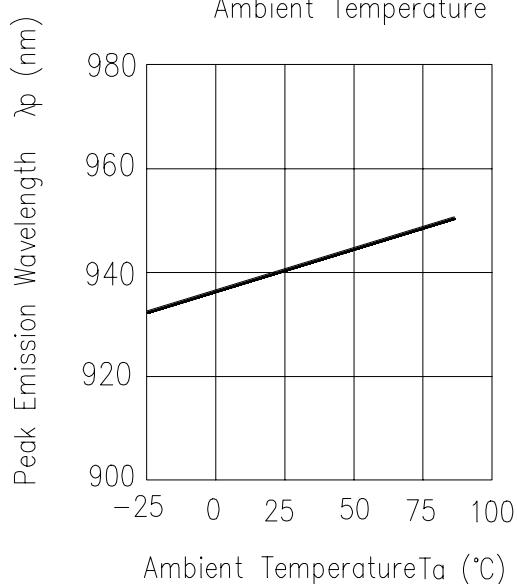
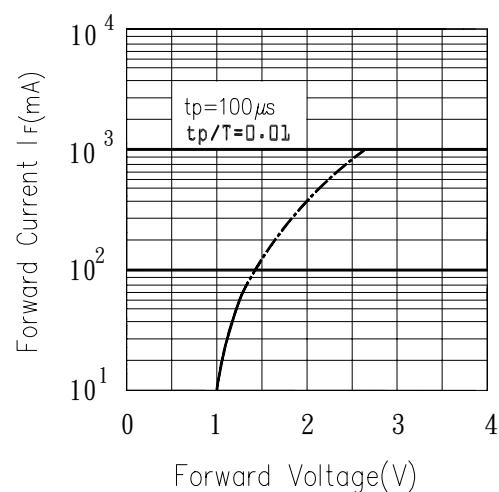
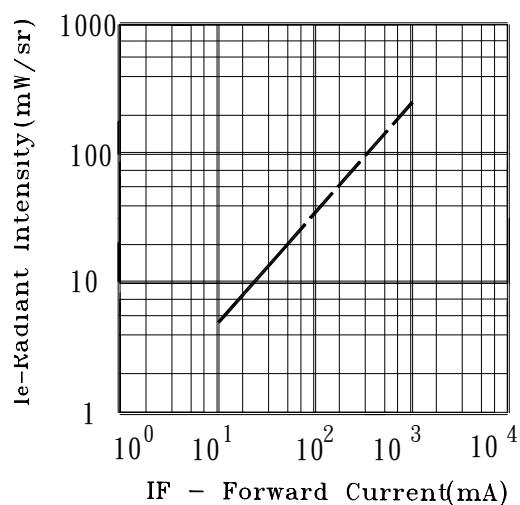
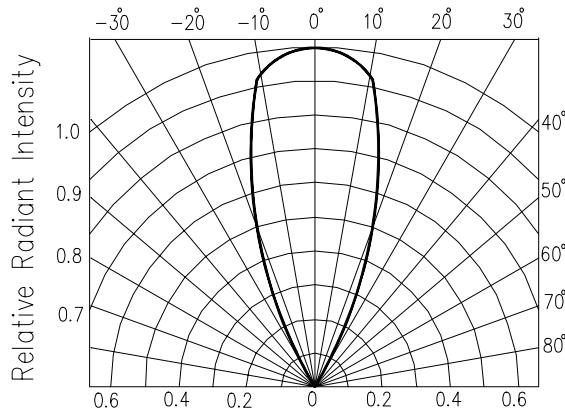
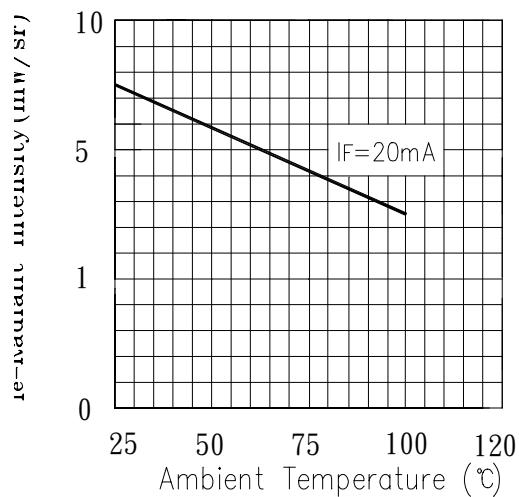
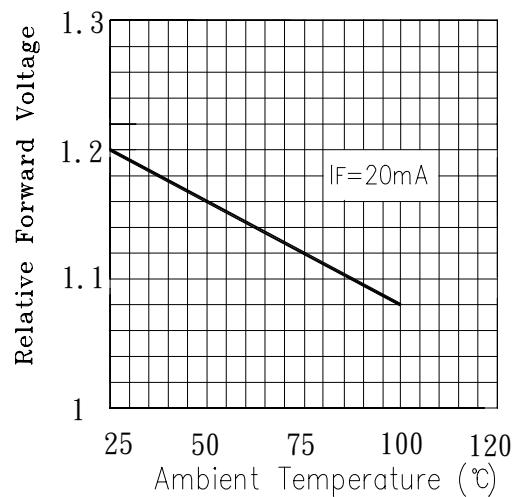
5mm Infrared LEDMODEL NO : IR333/H0-A**■ Typical Electrical/Optical/Characteristics Curves**Fig. 1 Forward Current vs.
Ambient Temperature

Fig. 2 Spectral Distribution

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

5mm Infrared LEDMODEL NO : IR333/H0-A**■ Typical Electrical/Optical/Characteristics Curves**Fig. 5 Relative Intensity vs.
Forward CurrentFig. 6 Relative Radiant Intensity vs.
Angular DisplacementFig. 7 Relative Intensity vs.
Ambient Temperature (°C)Fig. 8 Forward Current vs.
Ambient Temperature (°C)



5mm Infrared LED

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■ Reliability Test Item And Condition

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

Confidence level:90%

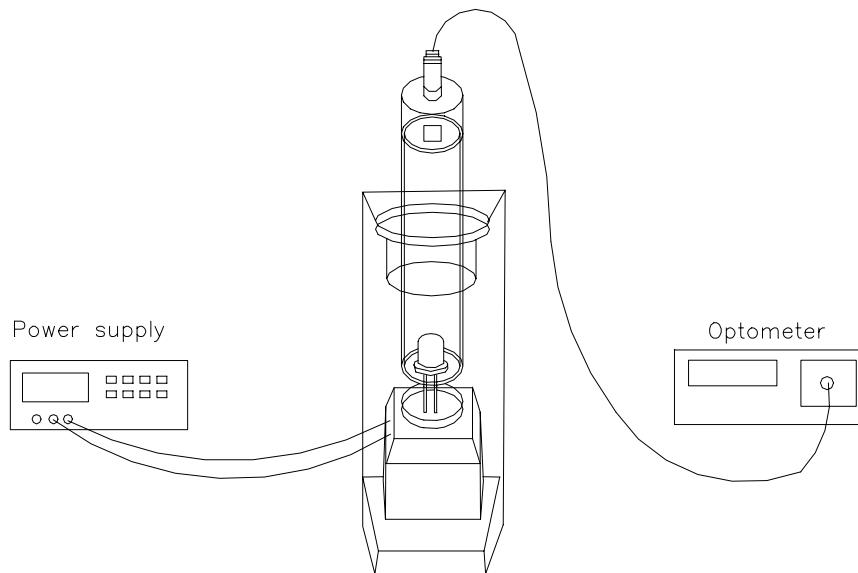
LTPD:10%

NO.	Item	Test Conditions	Test Hours/Cycles	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 secs	22 pcs		0/1
2	Temperature Cycle	H : +85°C 30 mins 5 mins L : -55°C 30 mins	50 cycles	22 pcs	$I_R \geq U_x$ 2 $Ee \leq L_x$ 0.8 $V_F \geq U_x$ 1.2	0/1
3	Thermal Shock	H : +100°C 5 mins 10 secs L : -10°C 5 mins	50 cycles	22 pcs	U :Upper specification limit L :Lower specification limit	0/1
4	High Temperature Storage	TEMP. : +100°C	1000 hrs	22 pcs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 hrs	22 pcs		0/1
6	DC Operating Life	$I_F=20mA$	1000 hrs	22 pcs		0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 hrs	22 pcs		0/1

DEVICE NUMBER : DIR-033-006 REV : 2.0
ECN : _____ PAGE : 7/8**5mm Infrared LED**MODEL NO : IR333/H0-A**■ Test Method For Power :**Condition : $I_F=20$ mA

Test Item : Radiant Intensity

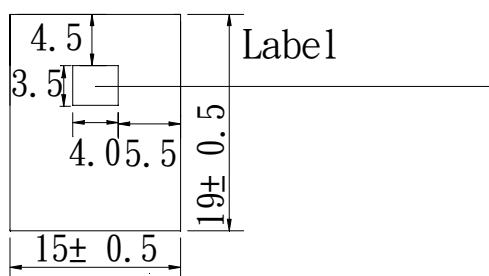
Unit : mW/sr

**■ To Distinguish Intensity:**Condition: $I_F=20$ mA

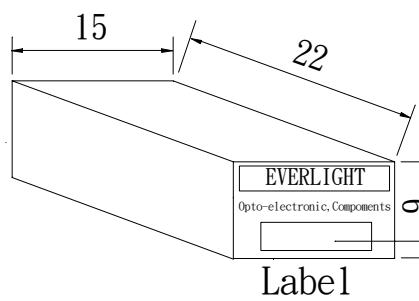
Bin Number	L	M	N
Min	5.60	7.80	11.0
Max	8.90	12.5	17.6

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ECN : _____ PAGE : 8/8**5mm Infrared LED**MODEL NO : IR333/H0-A**■ Packing Specifications**

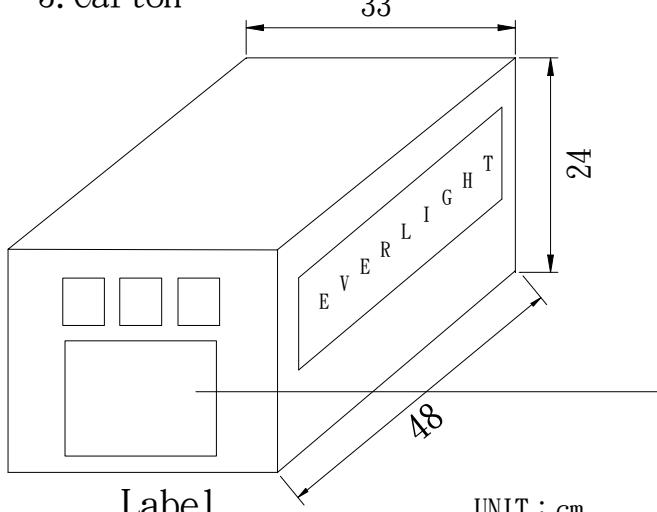
1. Bag



2. Box



3. Carton



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. 500 Pcs/1Bag , 6 Bags/1Box
2. 10 Boxes/1Carton