



## 5mm Infrared With Stopper LED,T-1 3/4

MODEL NO : IR333/H0/P3-A

### ■ Features :

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

### ■ Description :

- EVERLIGHT's Infrared Emitting Diode (IR333/H0/P3-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





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### ■ 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 $\mu$ s, Duty cycle=1%	$I_{FP}$	1.0	A	
Reverse Voltage	$V_R$	5	V	
Operating Temperature	Topr	-40 ~ +85	$^\circ\text{C}$	
Storage Temperature	Tstg	-40 ~ +85	$^\circ\text{C}$	
Soldering Temperature	Tsol	260	$^\circ\text{C}$	4mm from mold body less than 5 seconds
Power Dissipation at(or below) 25 $^\circ\text{C}$ Free Air Temperature	Pd	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	$\lambda_P$	----	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	1.8		$I_F=100\text{mA}, t_p=100 \mu\text{s}, t_p/T=0.01$
		----	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	$\mu\text{A}$	$V_R=5\text{V}$
View Angle	$2\theta_{1/2}$	----	40	----	deg	$I_F=20\text{mA}$



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### ■ Typical Electrical/Optical/Characteristics Curves

Fig. 1 Forward Current vs. Ambient Temperature

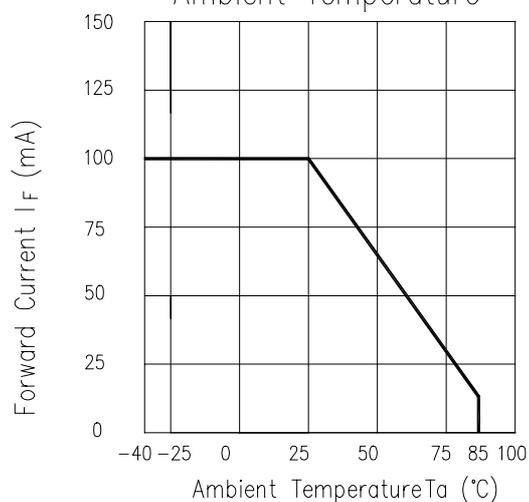


Fig. 2 Spectral Distribution

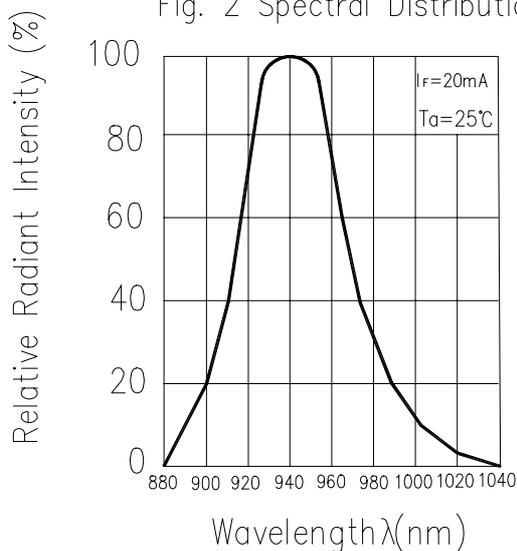


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

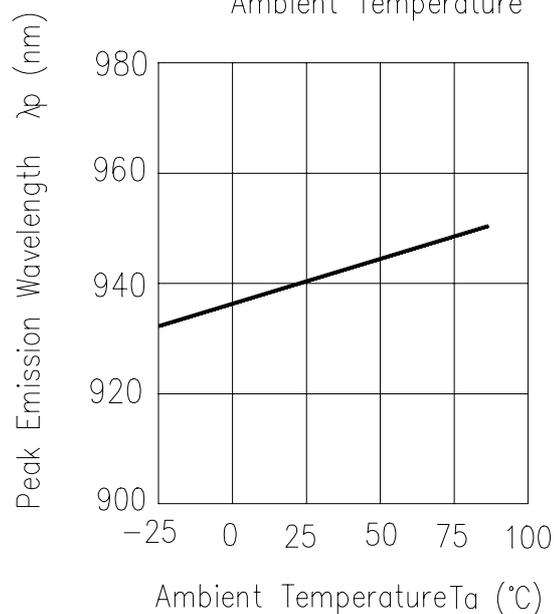
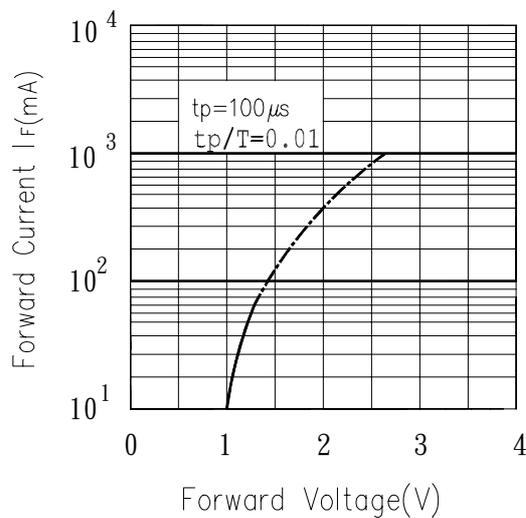


Fig. 4 Forward Current vs. Forward Voltage





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### ■ Typical Electrical/Optical/Characteristics Curves

Fig. 5 Relative Intensity vs. Forward Current

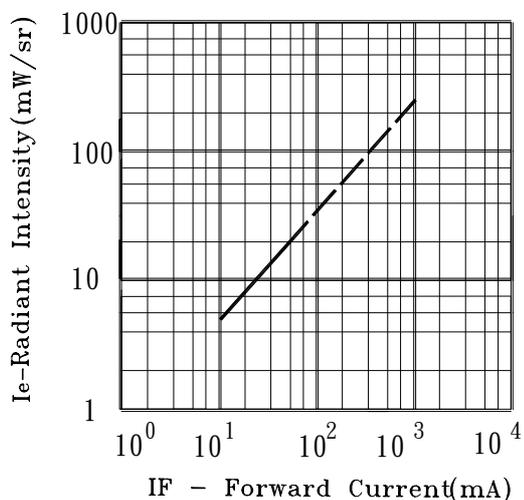


Fig. 6 Relative Radiant Intensity vs. Angular Displacement

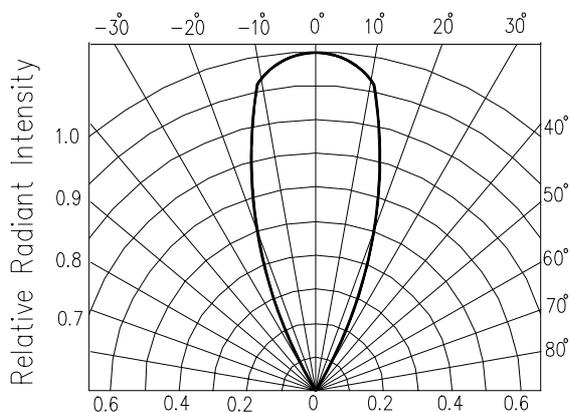


Fig. 7 Relative Intensity vs. Ambient Temperature (°C)

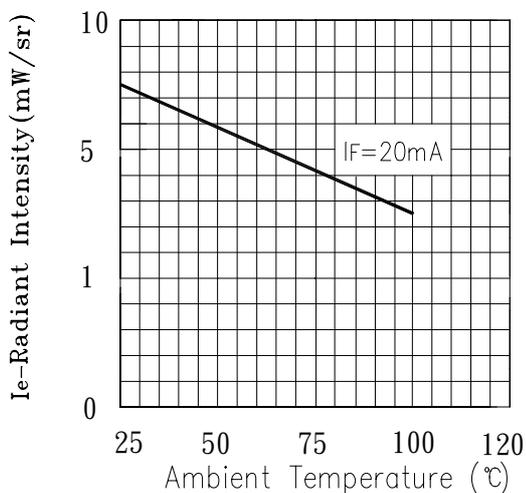
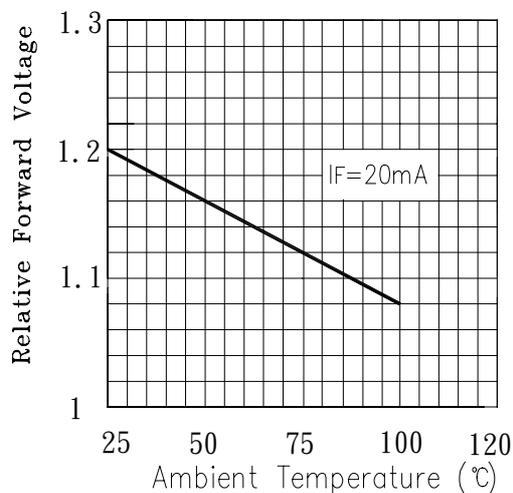


Fig. 8 Forward Current vs. Ambient Temperature (°C)





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DEVICE NUMBER : DIR-033-036      REV : 1.3  
 ECN : \_\_\_\_\_      PAGE : 6/8

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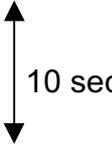
MODEL NO : IR333/H0/P3-A

### ■ 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 Sizes	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  L : -55°C    30 mins	50 cycles	22 pcs	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$	0/1
3	Thermal Shock	H : +100°C    5 mins  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	$I_F = 20\text{mA}$	1000 hrs	22 pcs		0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 hrs	22 pcs		0/1



**5mm Infrared With Stopper LED,T-1 3/4**

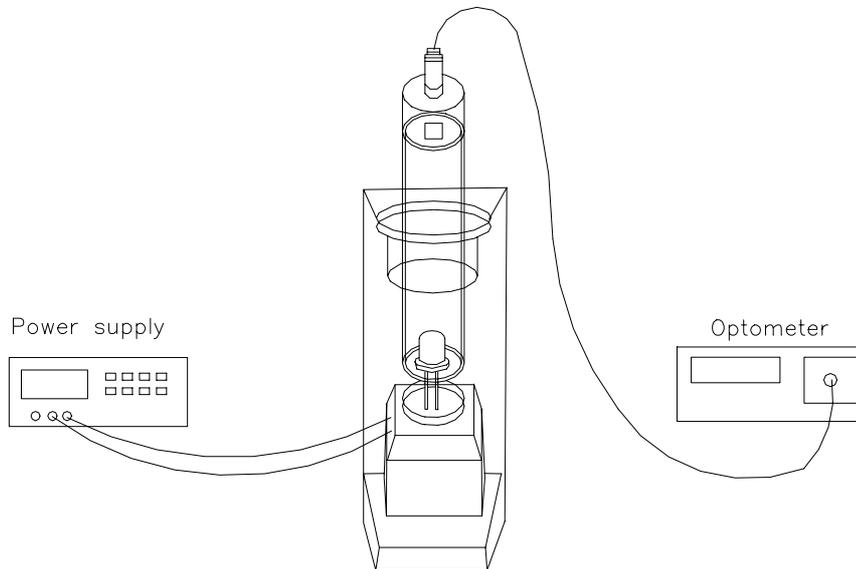
MODEL NO : IR333/H0/P3-A

■ **Test Method For Power :**

Condition :  $I_F=20\text{ mA}$

Test Item : Radiant Intensity

Unit : mW/sr



■ **To Distinguish Intensity:**

Condition:  $I_F=20\text{mA}$

Unit : mW/sr

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

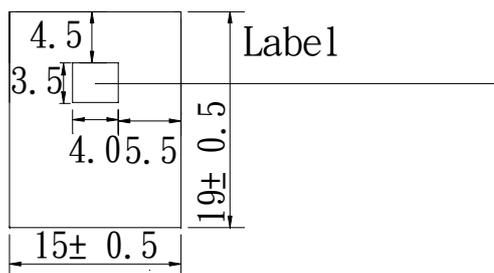


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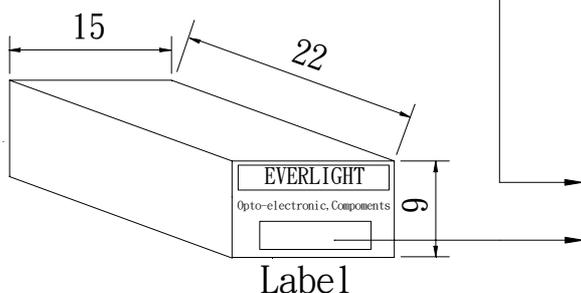
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### ■ Packing Specifications

1. Bag



2. Box



EVERLIGHT

CPN:  
P/N:



IR333/H0/P3-A

QTY:

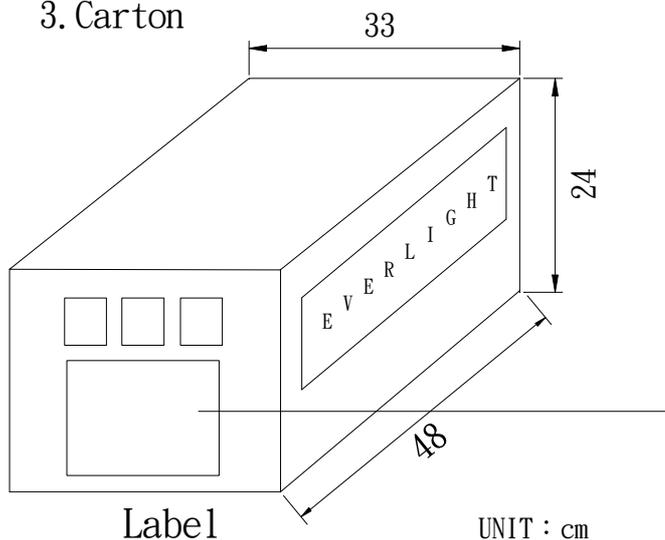


CAT:  
HUE:  
REF:

LOT NO:

MADE IN TAIWAN

3. Carton



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

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