



## 5mm Infrared LED

MODEL NO : IR333/S5

### ■ 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/S5) 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<sub>A</sub> = 25°C

Parameter	Symbol	Rating	Unit	Notice
Continuous Forward Current	I <sub>F</sub>	50	mA	
Peak Forward Current Pulse width=100 μs, Duty cycle=1%	I <sub>FP</sub>	1.0	A	
Reverse Voltage	V <sub>R</sub>	5	V	
Operating Temperature	Topr	-40 ~ +85	°C	
Storage Temperature	Tstg	-40 ~ +85	°C	
Soldering Temperature	Tsol	260	°C	4mm from mold body less than 5 seconds
Power Dissipation at(or below) 25°C Free Air Temperature	Pd	100	mW	

### ■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant Intensity	Ee	4.0	8.9	----	mW/sr	I <sub>F</sub> =20mA
		----	40	----		I <sub>F</sub> =100mA, tp=100 μs, t <sub>p</sub> /T=0.01
		----	400	----		I <sub>F</sub> =1A, tp=100 μs, t <sub>p</sub> /T=0.01
Peak Wavelength	λ <sub>P</sub>	----	940	----	nm	I <sub>F</sub> =20mA
Spectral Bandwidth	Δλ	----	45	----	nm	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	----	1.2	1.5	V	I <sub>F</sub> =20mA
		----	1.4	1.85		I <sub>F</sub> =100mA, tp=100 μs, t <sub>p</sub> /T=0.01
		----	2.6	4.0		I <sub>F</sub> =1A, tp=100 μs, t <sub>p</sub> /T=0.01
Reverse Current	I <sub>R</sub>	----	----	10	μA	V <sub>R</sub> =5V
View Angle	2θ1/2	----	40	----	deg	I <sub>F</sub> =20mA



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### ■ Typical Electrical/Optical/Characteristics Curves

Fig. 1 Forward Current vs. Ambient Temperature

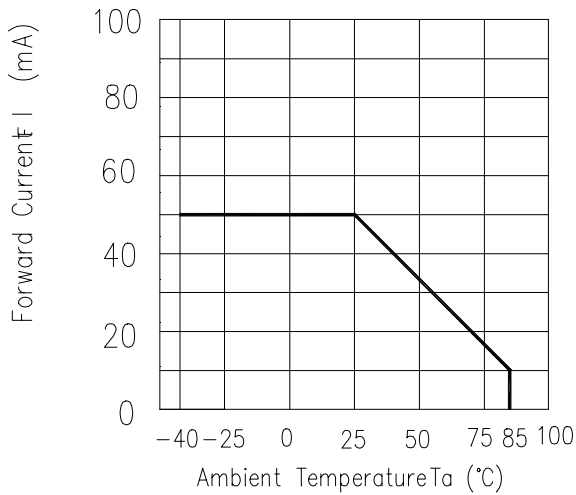


Fig. 2 Spectral Distribution

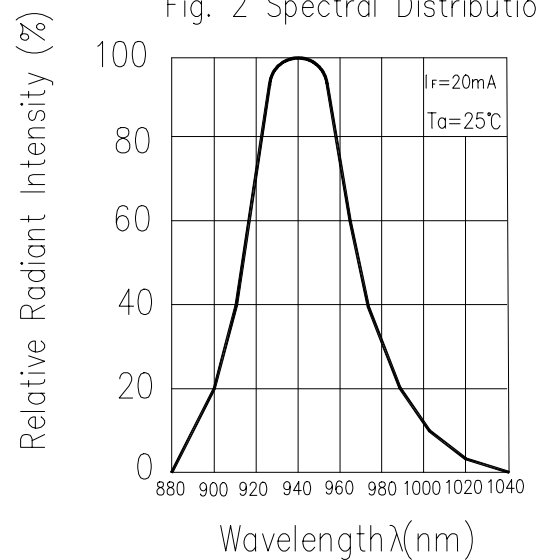


Fig. 3 Peak Emission Wavelength  $\lambda_p$  vs. Ambient Temperature

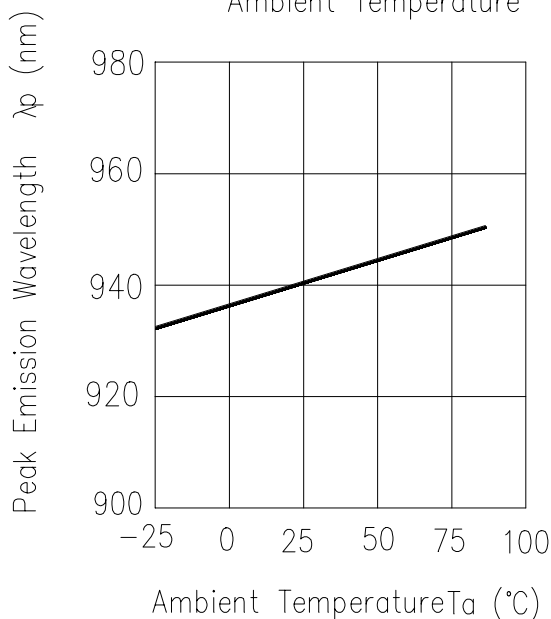
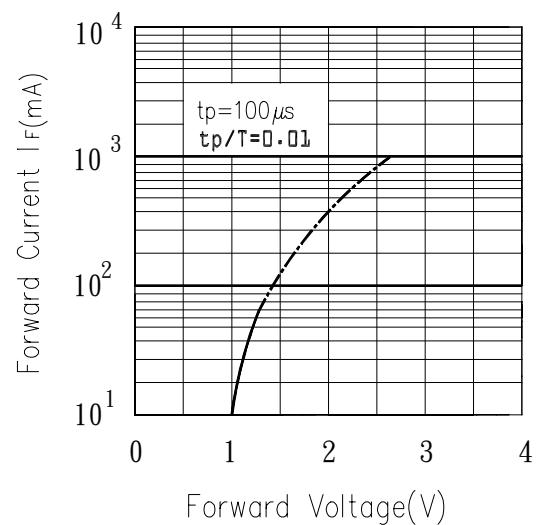


Fig. 4 Forward Current vs. Forward Voltage



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Fig. 5 Relative Intensity vs. Forward Current

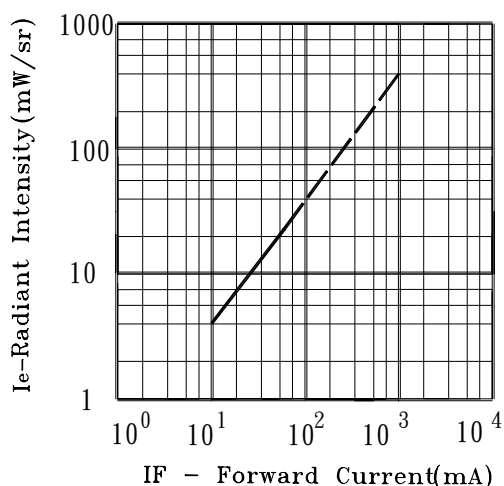


Fig. 6 Relative Radiant Intensity vs. Angular Displacement

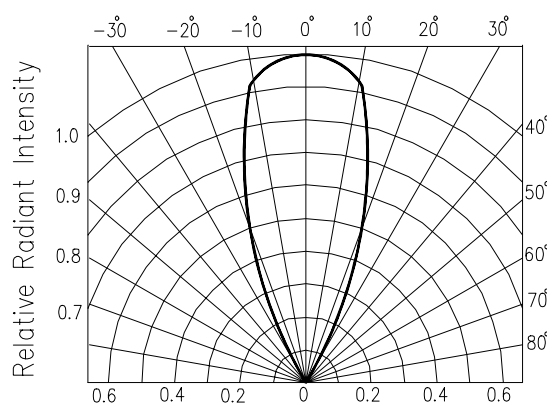


Fig. 7 Relative Intensity vs. Ambient Temperature (°C)

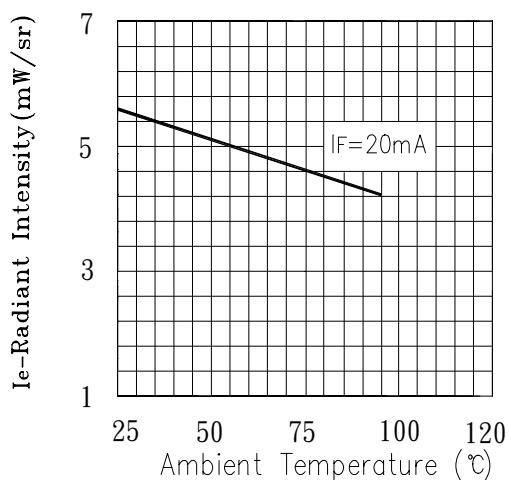
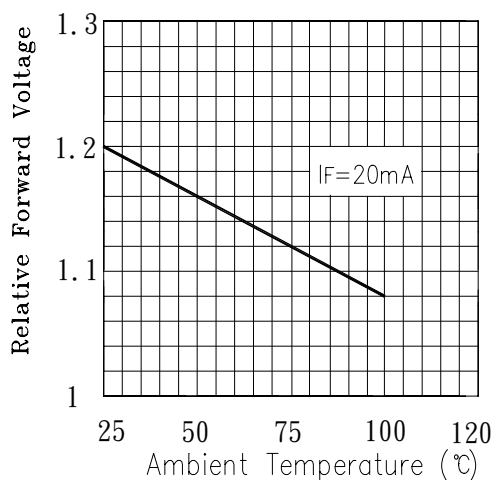


Fig. 8 Forward Current vs. Ambient Temperature (°C)





# EVERLIGHT ELECTRONICS CO., LTD.

DEVICE NUMBER : DIR-033-055      REV : 1.1  
 ECN : \_\_\_\_\_      PAGE : 6/8

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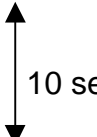
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### ■ Reliability Test Item And Condition

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

Confidence level:90%

LTPD:10%

NO.	Item	Test Conditions	Test Hours/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 sec	22 PCs		0/1
2	Temperature Cycle	H : +85°C    30 min  L : -55°C    30 min	50 cycle	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 min  L : -10°C    5 min	50 cycle	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



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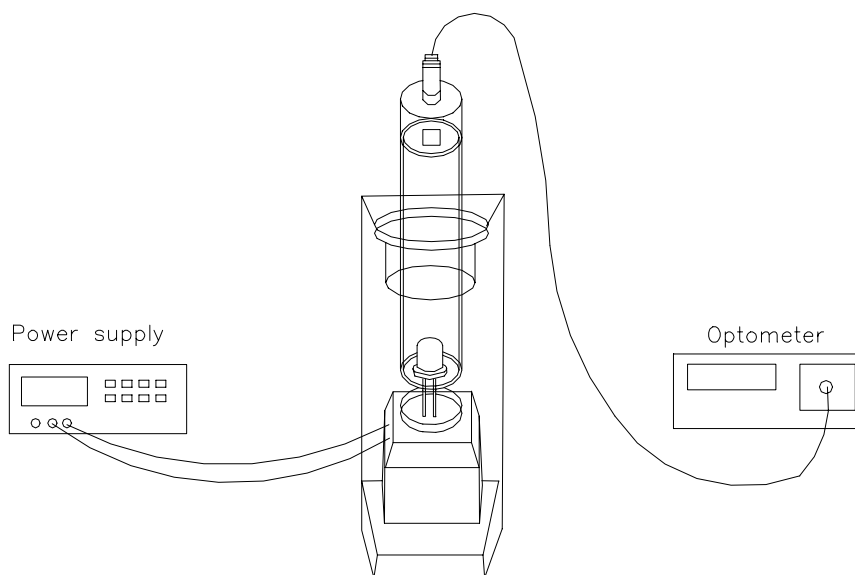
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### ■ Test Method For Power :

Condition :  $I_F=20$  mA

Test Item : Radiant Intensity

Unit : mW/sr



### ■ To Distinguish Intensity:

Condition:  $I_F=20$ mA

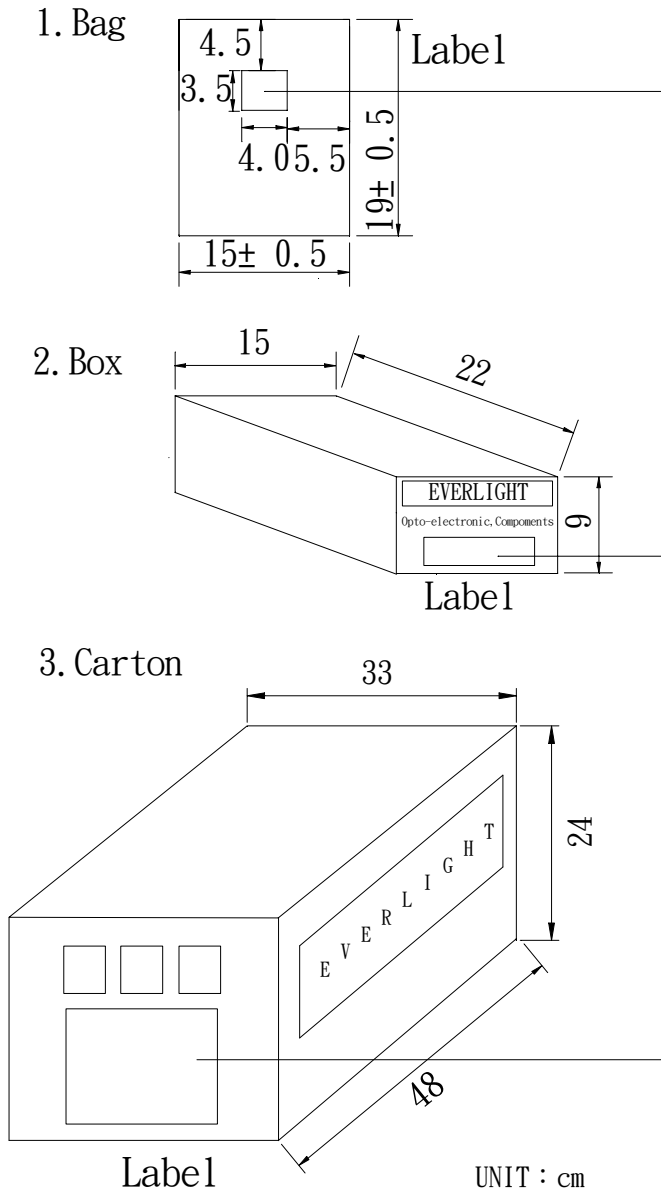
Bin Number	K	L	M	N
Min	4.00	5.60	7.80	11.0
Max	6.40	8.90	12.5	17.6



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■ Packing Specifications



EVERLIGHT

CPN:  
P/N:  
IR333/S5  
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. 500 Pcs/1Bag , 6 Bags/1Box
- 2. 10 Boxes/1Carton