



## Technical Data Sheet

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

#### IR333C-A

#### Features

- High reliability
- High radiant intensity
- Peak wavelength  $\lambda_p=940\text{nm}$
- 2.54mm Lead spacing
- Low forward voltage

#### Descriptions

- EVERLIGHT'S Infrared Emitting Diode(IR333C-A) is a high intensity diode , molded in a water clear plastic package.
- The device is spectrally matched with phototransistor , photodiode and infrared receiver module.



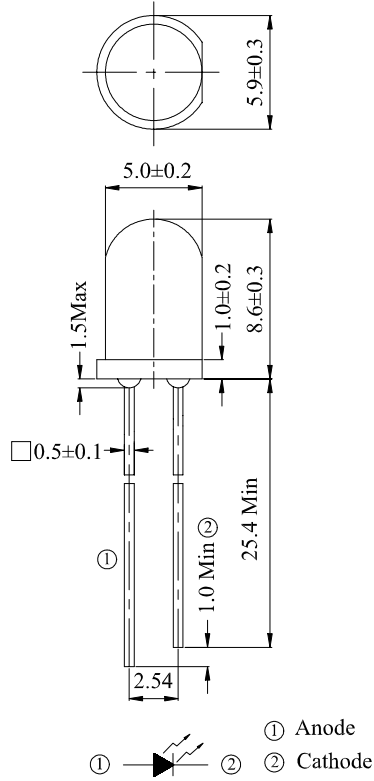
#### Applications

- Free air transmission system
- Infrared remote control units with high power requirement
- Smoke detector
- Infrared applied system

#### Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
IR	GaAlAs	Water clear

**Package Dimensions**



- Notes:** 1.All dimensions are in millimeters  
 2.Tolerances unless dimensions  $\pm 0.25\text{mm}$

**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Units
Continuous Forward Current	$I_F$	100	mA
Peak Forward Current	$I_{FP}$	1.0	A
Reverse Voltage	$V_R$	5	V
Operating Temperature	$T_{opr}$	-40 ~ +85	°C
Storage Temperature	$T_{stg}$	-40 ~ +85	°C
Soldering Temperature	$T_{sol}$	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	$P_d$	150	mW

- Notes:** \*1: $I_{FP}$  Conditions--Pulse Width  $\leq 100 \mu\text{s}$  and Duty  $\leq 1\%$ .  
 \*2:Soldering time  $\leq 5$  seconds.

**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	Ee	I <sub>F</sub> =20mA	7.8	20	--	mW/sr
		I <sub>F</sub> =100mA Pulse Width ≤ 100 μs ,Duty ≤ 1%	--	85	--	
		I <sub>F</sub> =1A Pulse Width ≤ 100 μs ,Duty ≤ 1%.	--	750	--	
Peak Wavelength	λ <sub>p</sub>	I <sub>F</sub> =20mA	--	940	--	nm
Spectral Bandwidth	Δλ	I <sub>F</sub> =20mA	--	45	--	nm
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA		1.2	1.5	V
		I <sub>F</sub> =100mA Pulse Width ≤ 100 μs ,Duty ≤ 1%	--	1.4	1.8	
		I <sub>F</sub> =1A Pulse Width ≤ 100 μs ,Duty ≤ 1%.	--	2.6	4.0	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	--	--	10	μA
View Angle	2θ <sub>1/2</sub>	I <sub>F</sub> =20mA	--	20	--	deg

**Rank**

 Condition : I<sub>F</sub>=20mA

Unit : mW/sr

Bin Number	M	N	P	Q
Min	7.80	11.0	15.0	21.0
Max	12.5	17.6	24.0	34.0

**Typical Electro-Optical Characteristics Curves**

Fig.1 Forward Current vs. Ambient Temperature

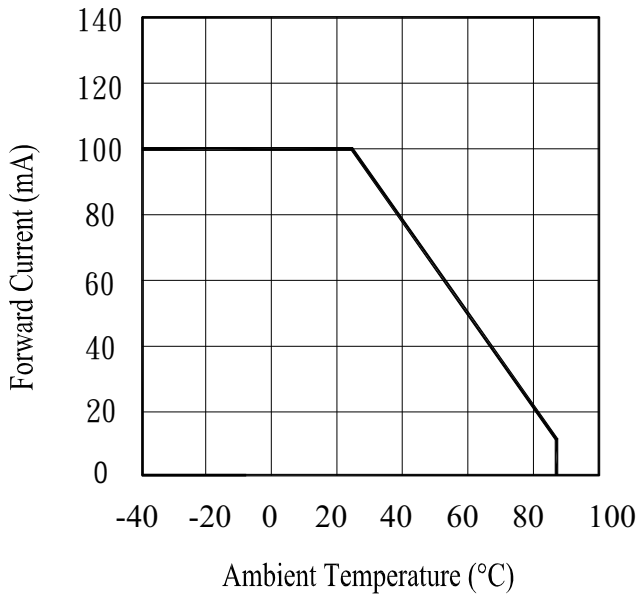


Fig.2 Spectral Distribution

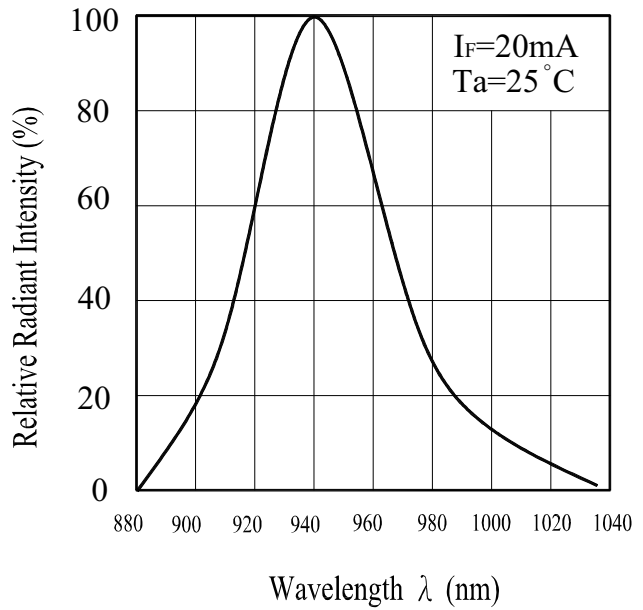


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

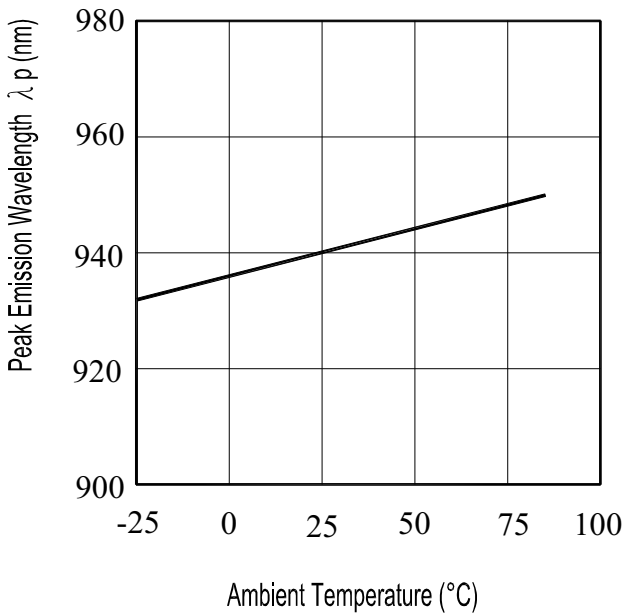
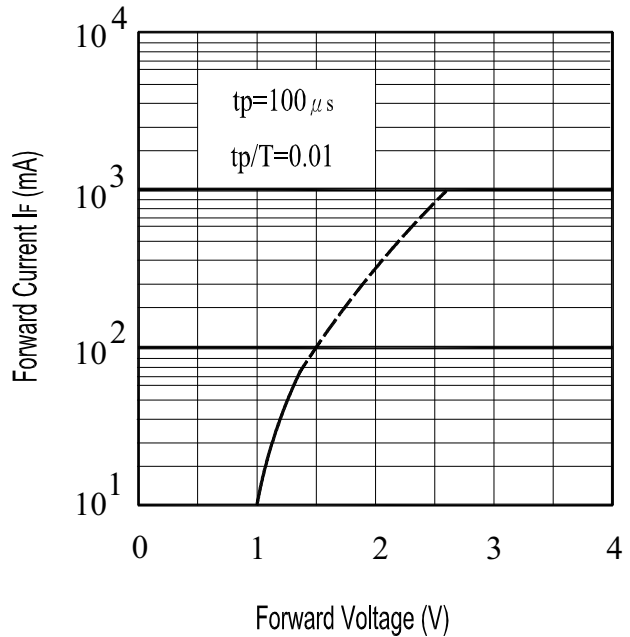


Fig.4 Forward Current vs. Forward Voltage



**Typical Electro-Optical Characteristics Curves**

Fig.5 Relative Intensity vs. Forward Current

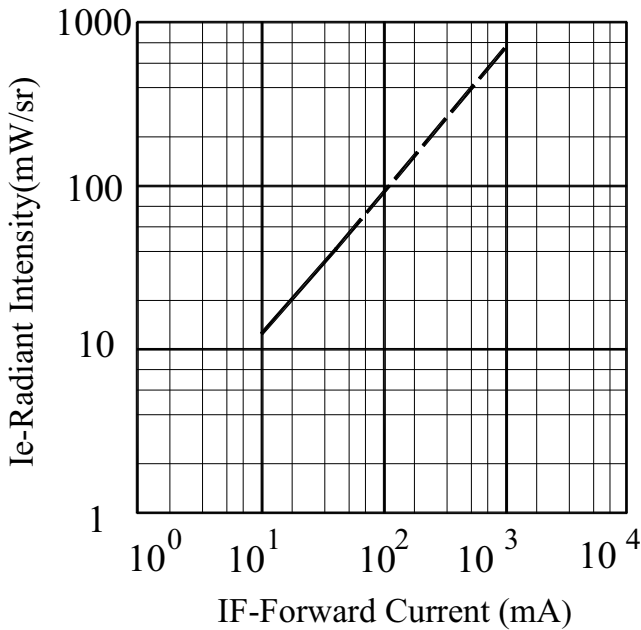


Fig.6 Relative Radiant Intensity vs. Angular Displacement

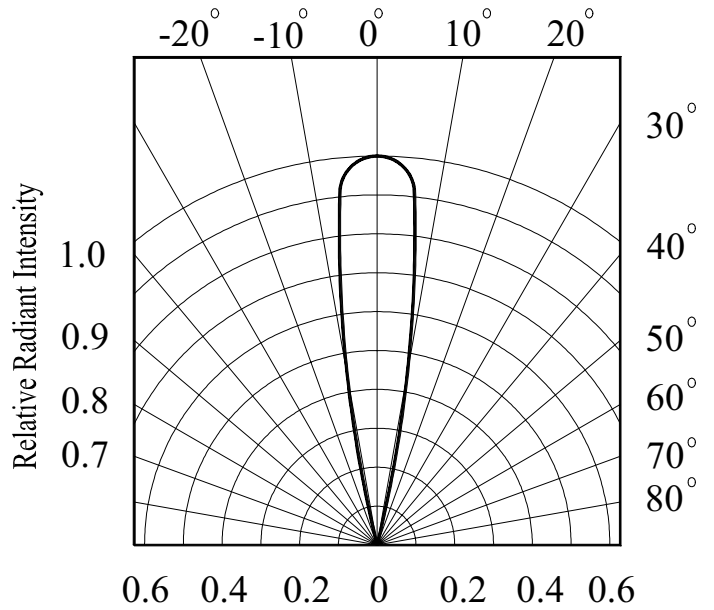


Fig.7 Relative Intensity vs. Ambient Temperature(° C)

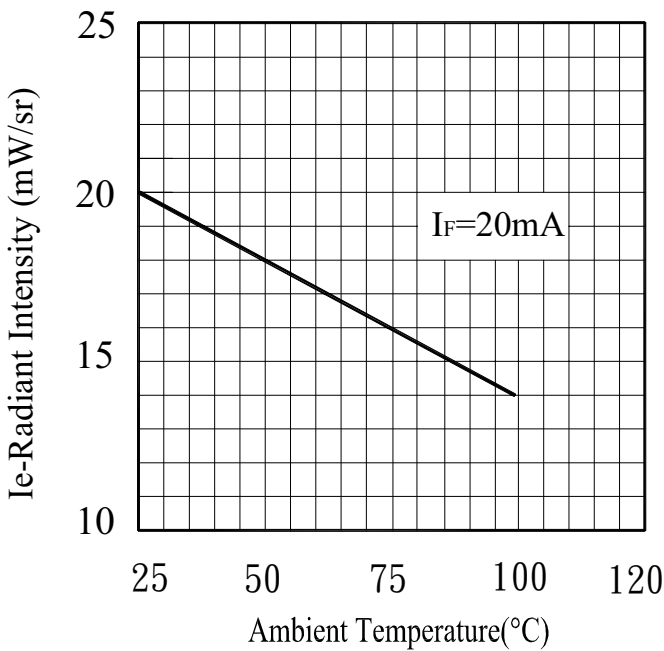
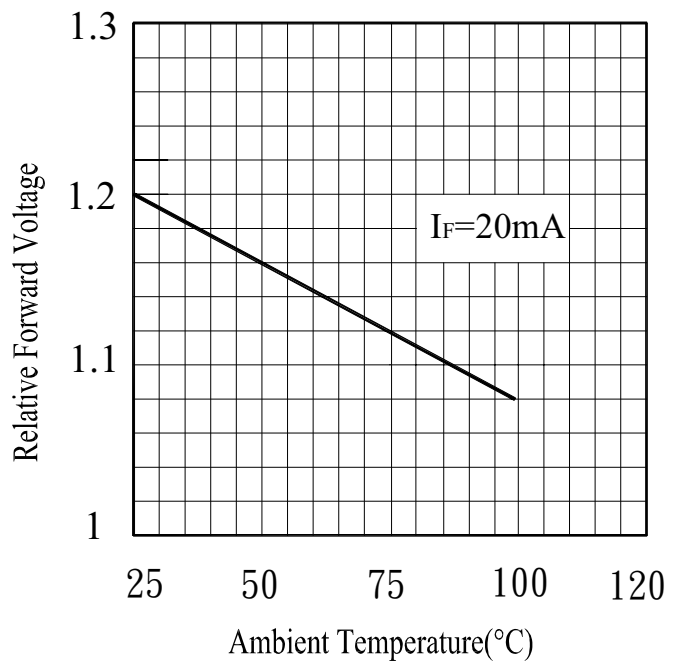


Fig.8 Forward Current vs. Ambient Temperature(° C)



**Reliability 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	10secs	22pcs	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$  U : Upper Specification  Limit L : Lower Specification Limit	0/1
2	Temperature Cycle	H : +85°C     30mins $\updownarrow$ 5mins L : -55°C     30mins	50Cycles	22pcs		0/1
3	Thermal Shock	H : +100°C     5mins $\updownarrow$ 10secs L : -10°C     5mins	50Cycles	22pcs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000hrs	22pcs		0/1
6	DC Operating Life	$I_F = 20\text{mA}$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1

**Packing Quantity**

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

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