

Technical Data Sheet 5mm Infrared LED , T-1

Features

- High reliability
- High radiant intensity
- Peak wavelength λ p=940nm
- 2.54mm Lead spacing
- Low forward voltage
- Pb Free
- This product itself will remain within RoHS compliant version.

IR333C

Descriptions

- EVERLIGHT's Infrared Emitting Diode (IR333C) 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

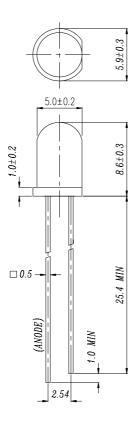
Device Selection Guide

I ED Dowt No	Chip	Lens Color	
LED Part No.	Material		
IR333C	GaAlAs	Water clear	

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Device No: CDIR-033-036 Prepared date:2005/11/7 Prepared by: zhouhong

Package Dimensions



Notes: 1.All dimensions are in millimeters

2. Tolerances unless dimensions ±0.25mm

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	$^{\circ}\!\mathbb{C}$
Storage Temperature	T_{stg}	-40 ~ +85	$^{\circ}\! C$
Soldering Temperature	T_{sol}	260	$^{\circ}\! \mathbb{C}$
Power Dissipation at(or below)	P_d	150	mW
25°C Free Air Temperature			

Notes: *1: I_{FP} Conditions--Pulse Width \leq 100 μ s and Duty \leq 1%.

*2:Soldering time ≤ 5 seconds.

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Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units	
		$I_F=20\text{mA}$	7.8	15			
Radiant Intensity	Ee	$I_F = 100 mA$ Pulse Width $\leq 100 \mus$,Duty $\leq 1\%$		60		mW/sr	
		$I_F=1A$ Pulse Width $\leq 100 \mu\mathrm{s}$, Duty $\leq 1\%$		450			
Peak Wavelength	λр	$I_F=20\text{mA}$		940		nm	
Spectral	Δλ	I _F =20mA		45		nm	
Bandwidth							
		I _F =20mA		1.2	1.5		
Forward Voltage	V_{F}	$I_F \!\!=\!\! 100mA$ Pulse Width $\leq 100~\mu$ s ,Duty $\leq 1\%$		1.4	1.85	V	
Reverse Current	I_R	$V_R=5V$			10	μ A	
View Angle	2 \theta 1/2	$I_F=20\text{mA}$		20		deg	

Rank

 $Condition : I_F\!\!=\!\!20mA$

Unit: mW/sr

Bin Number	M	N	P	Q
Min	7.8	11.0	15.0	21.0
Max	12.5	17.6	24.0	34.0

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Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs.

Ambient Temperature

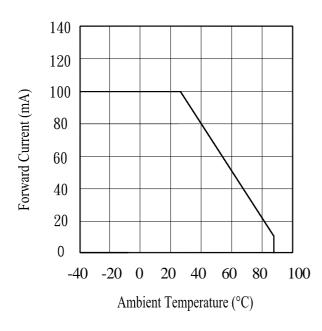


Fig.2 Spectral Distribution

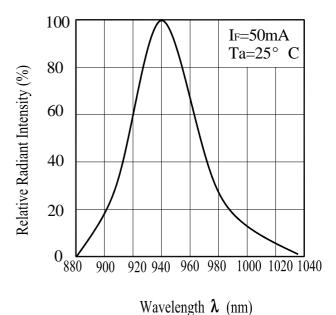


Fig.3 Peak Emission Wavelength Ambient Temperature

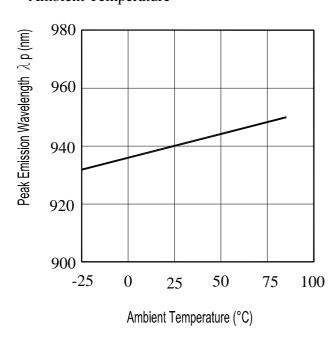
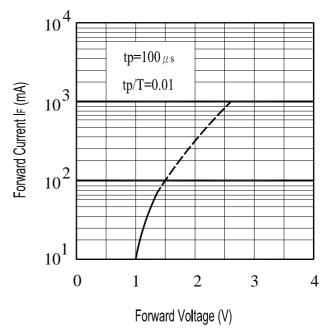


Fig.4 Forward Current vs. Forward Voltage



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Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs.

Forward Current

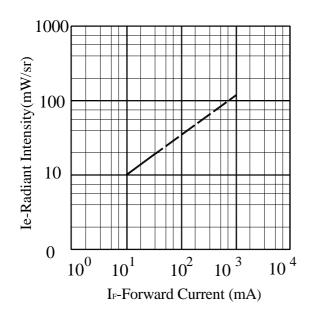


Fig.6 Relative Radiant Intensity vs.

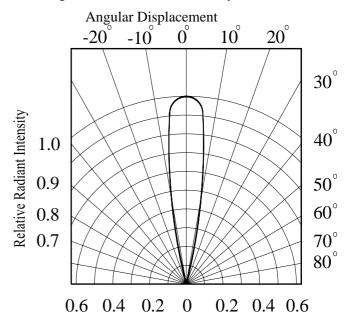


Fig.7 Relative Intensity vs.

Ambient Temperature(°C)

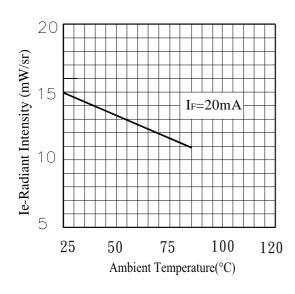
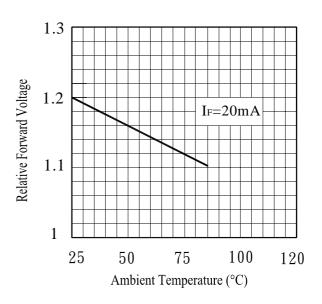


Fig.8 Forward Current vs.
Ambient Temperature(°C)



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<u>IR333C</u>

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/	Sample	Failure	Ac/Re
			Cycles	Sizes	Judgement	
					Criteria	
1	Solder Heat	TEMP. : 260°C±5°C	10secs	22pcs		0/1
2	Temperature Cycle	$H: +100^{\circ}C$ 15mins	300Cycles	22pcs	$I_R \ge U \times 2$	0/1
		5mins			$Ee \leq L \times 0.8$	
		L:-40°C 15mins			$V_F \ge U \times 1.2$	
3	Thermal Shock	H :+100°C ▲ 5mins	300Cycles	22pcs		0/1
		▼ 10secs			U: Upper	
		L:- 10° C 5mins			Specification	
4	High Temperature	TEMP. : +100°C	1000hrs	22pcs	Limit	0/1
	Storage				L: Lower	
5	Low Temperature	TEMP. : -40°C	1000hrs	22pcs	Specification	0/1
	Storage				Limit	
6	DC Operating Life	I _F =20mA	1000hrs	22pcs		0/1
7	High Temperature/	85℃ / 85% R.H	1000hrs	22pcs		0/1
	High Humidity					

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Packing Quantity Specification

- 1. 500PCS/1Bag,5Bag/1Box
- 2. 10Boxes/1Carton

Label Form Specification



CPN:

P/N:

QTY: IR333C

CAT: HUE: REF:



CPN: Customer's Production Number

 $P/N: Production \ Number$

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

Notes

- 1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
- 2. When using this product, please observe the absolute maximum ratings and the instructions for using 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.
- 3. 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.

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