

Technical Data Sheet

5mm Infrared LED, T-1 3/4

IR333/H0/L10/TR1-1(A)

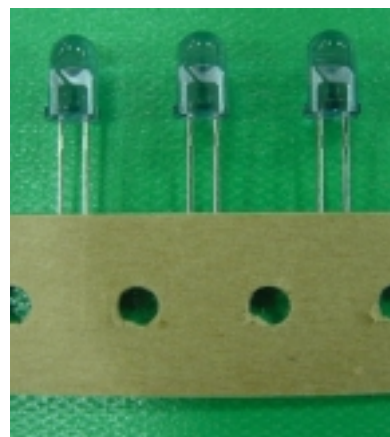
Features

- High reliability
- 2.54mm lead spacing
- Low forward voltage
- Good spectral matching to Si photodetector
- High radiant intensity

Descriptions

EVERLIGHT's infrared emitting diode (IR333/H0/L10/TR1-1(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

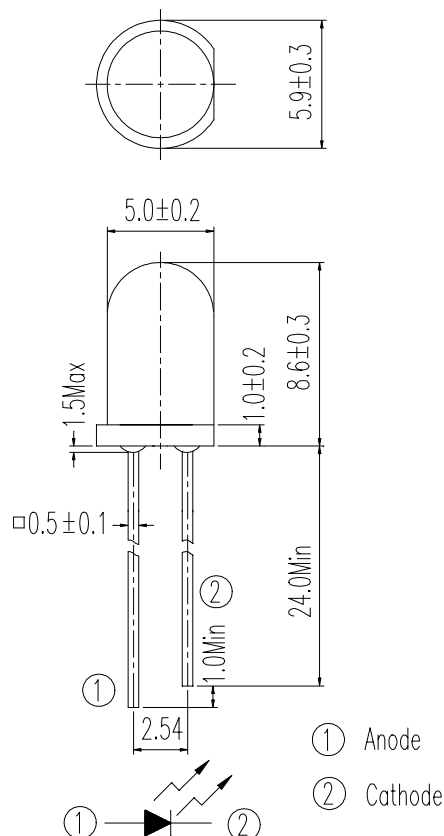
- Free air transmission system
- Optoelectronic switch
- Floppy disk drive
- Infrared applied system
- Smoke detector

Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
IR	GaAlAs	Blue

Device No:DTR-033-065

Package Dimensions



- Notes:** 1.All dimensions are in millimeters
2.Tolerances unless dimensions ± 0.25 mm

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

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

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

*2:Soldering time ≤ 5 seconds.

Device No:DTR-033-065

IR333/H0/L10/TR1-1(A)

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	E _e	I _F =20mA	11	12	--	mW/sr
		I _F =100mA	--	45	--	
		I _F =1A	--	450	--	
Peak Wavelength	λ _p	I _F =20mA	--	940	--	nm
Spectral Bandwidth	Δ λ	I _F =20mA	--	45	--	nm
Forward Voltage	V _F	I _F =20mA	--	1.2	1.5	V
		I _F =100mA	--	1.4	1.8	
		I _F =1A	--	2.6	4.0	
Reverse Current	I _R	V _R =5V	--	--	10	μ A
View Angle	2 θ 1/2	I _F =20mA	--	40	--	deg

Notes: *1:I_F Conditions--Pulse Width ≤ 100 μ s and Duty ≤ 1%.

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

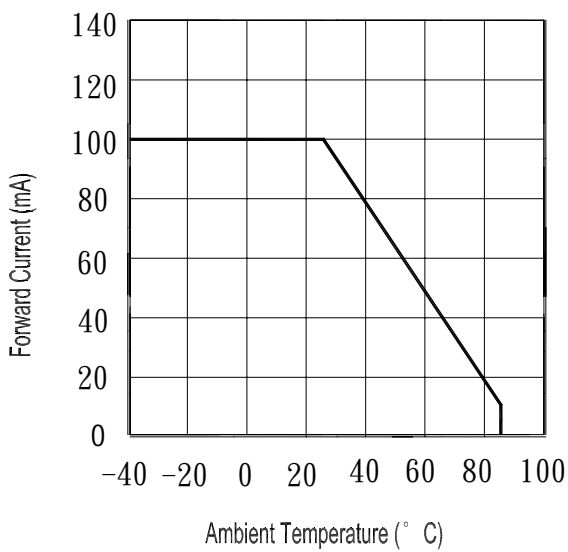


Fig.2 Spectral Distribution

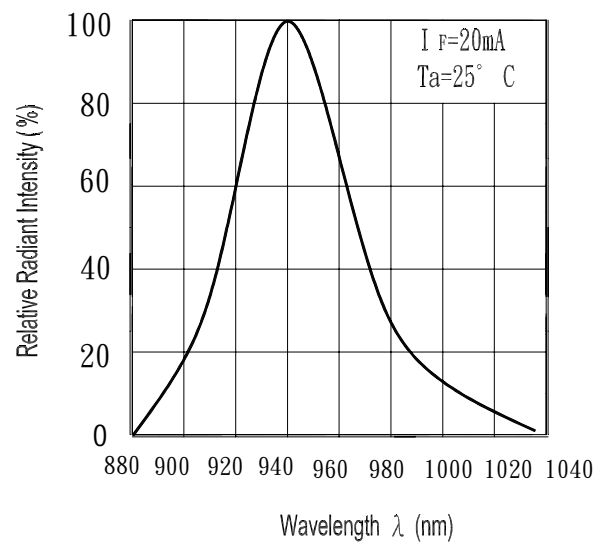


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

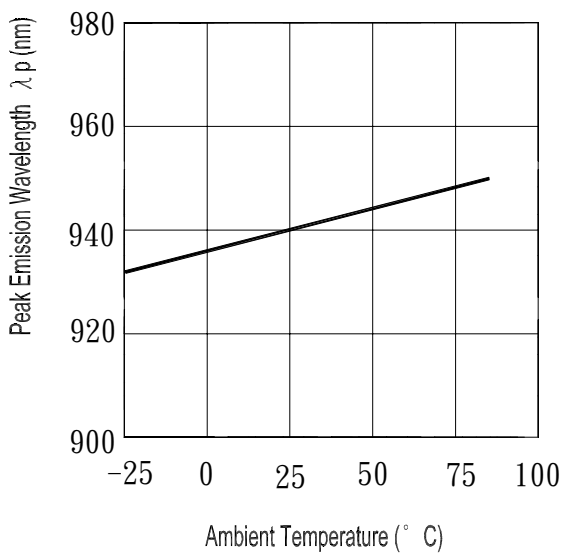
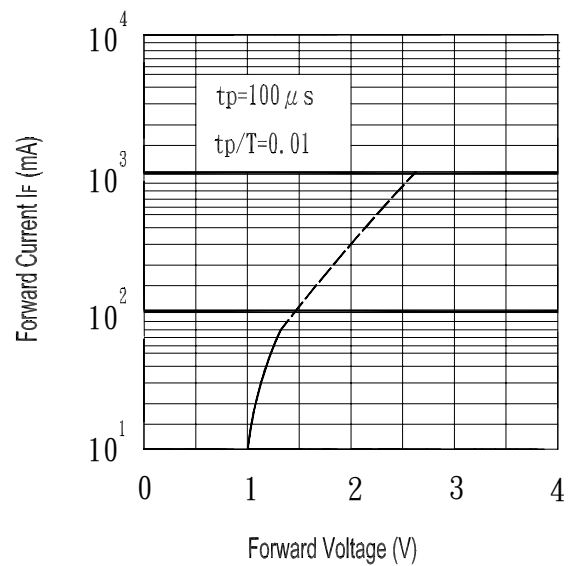


Fig.4 Forward Current vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs. Forward Current

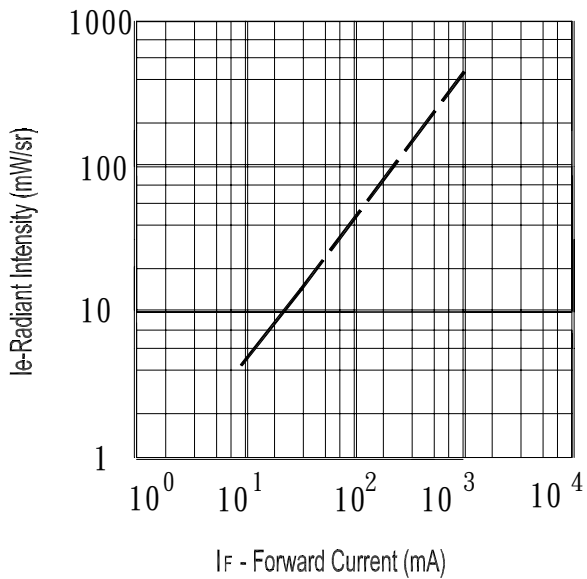


Fig.6 Relative Radiant Intensity vs. Angular Displacement

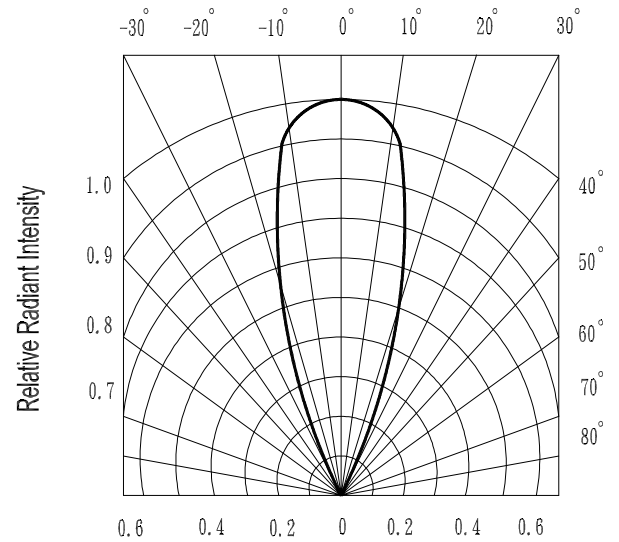


Fig.7 Relative Intensity vs. Ambient Temperature ($^\circ\text{C}$)

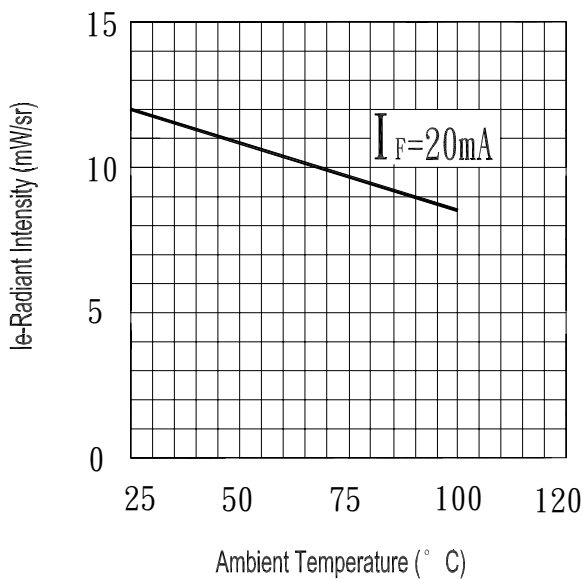
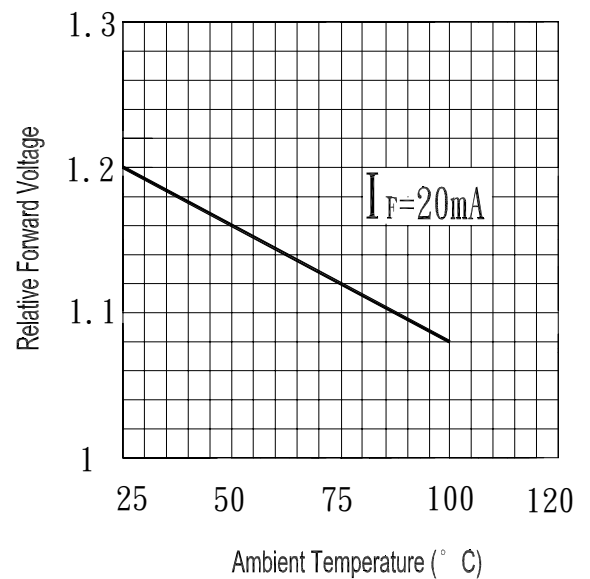
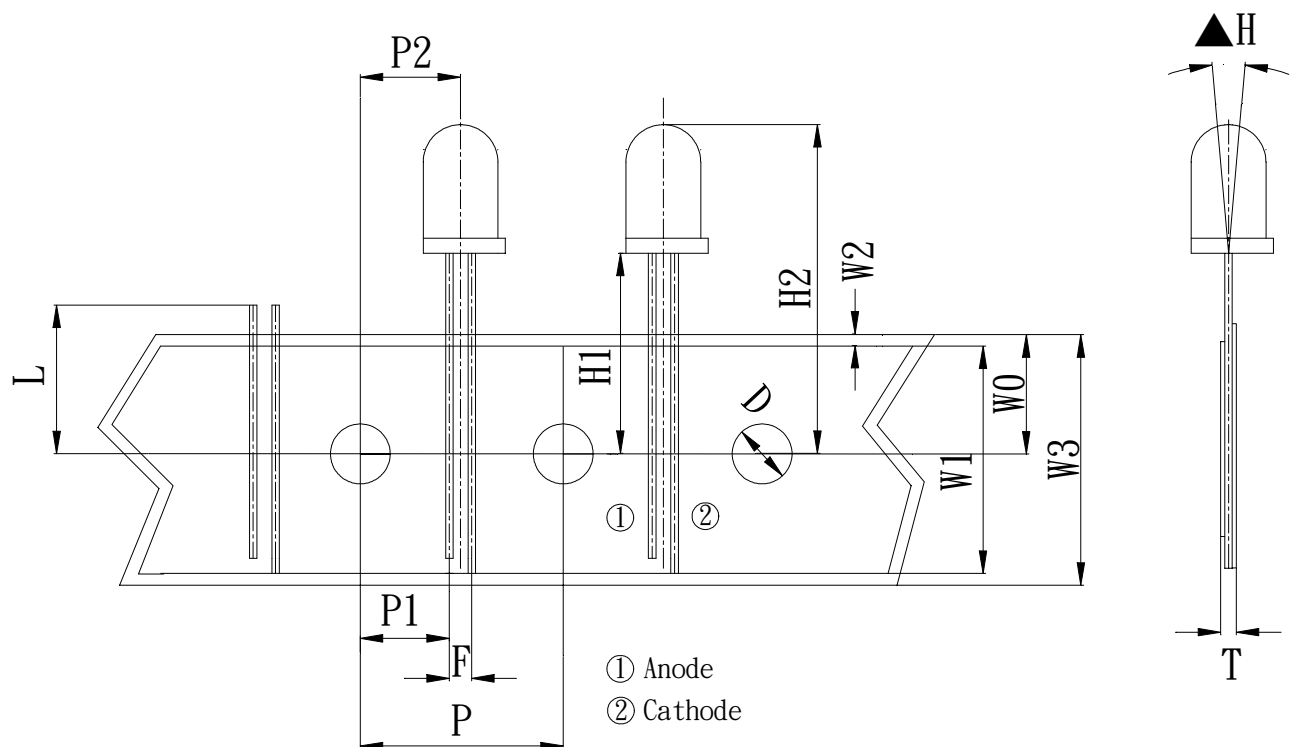


Fig.8 Forward Current vs. Ambient Temperature ($^\circ\text{C}$)



Taping Dimensions



Taping Sizes

Symbol Item	Symbols	Specifications		
		Avg		Tolerance
		mm	Inch	mm
Tape Feed Hold Diameter	D	4.0	0.158	± 0.2
Component Lead Pitch	F	2.54	0.100	± 0.5
Front-To-Rear Deflection	▲H	2.0	0.079	Max
Feed Hole To Button Of Component	H1	21.5	0.850	± 1.0
Feed Hole To Overall Component Height	H2	30.1	1.186	± 1.0
Lead Length After Component Height	L	11.0	0.433	Max
Feed Hold Pitch	P	12.7	0.500	± 0.3
Lead Location	P1	5.1	0.201	± 0.7
Center Of Component Location	P2	6.3	0.248	± 1.2
Overall Taped Package Thickness	T	1.42	0.056	Max
Feed Hold Location	W0	9.0	0.355	± 0.5
Adhesive Tape Width	W1	13.0	0.512	± 0.25
Adhesive Tape Position	W2	2.0	0.789	Max
Tape Width	W3	18.0	0.709	± 0.75

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. : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	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 : $+85^{\circ}\text{C}$ 30mins \updownarrow 5mins L : -55°C 30mins	50Cycle	22pcs		0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5mins \updownarrow 10secs L : -10°C 5mins	50Cycle	22pcs		0/1
4	High Temperature Storage	TEMP. : $+100^{\circ}\text{C}$	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

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