Technical Data Sheet

Φ3.2mm Tower Infrared LED

IR3105C

Features

- Colored transparency lens type
- Lead pitch 5.0mm (0.197inch)
- Lead length 18mm(0.709inch)

Descriptions

EVERLIGHT's infrared emitting diode (IR3105C) 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

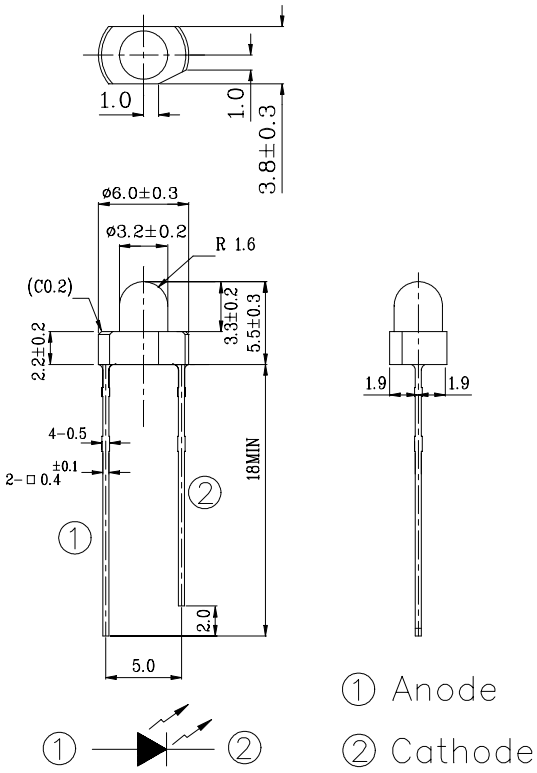
- Elevator

Device Selection Guide

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

Device No:DIR-310-212

Package Dimensions



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

Absolute Maximum Ratings (Ta=25℃)

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	℃
Storage Temperature	T_{stg}	-40 ~ +85	℃
Soldering Temperature	T_{sol}	260	℃
Power Dissipation at(or below) 25℃ Free Air Temperature	P_d	150	mW

Notes: *1:I_{FP} Conditions--Pulse Width≦100 μ s and Duty≦1%.
*2:Soldering time≦5 seconds.

Device No:DIR-310-212

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	E_e	I_F=20mA	4.0	7.0	--	mW/sr
		I_F=100mA	--	30	--	
		I_F=1A	--	300	--	
Peak Wavelength	λ p	I_F=20mA	--	940	--	nm
Spectral Bandwidth	$\Delta\lambda$	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	μA
View Angle	2θ 1/2	I_F=20mA	--	30	--	deg

Notes: *1:I_F Conditions--Pulse Width≦100 μs and Duty≦1%.

Intensity Specifications for Bin Grading

Rank	Test Condition	Min	Max	Unit
K	I_F=20mA	4.0	6.4	mW/sr
L		5.6	8.9	
M		7.8	12.5	
N		11.0	17.6	

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Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

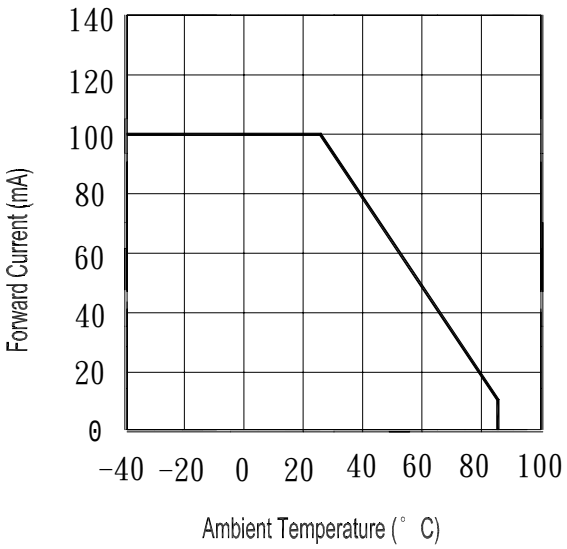


Fig.2 Spectral Distribution

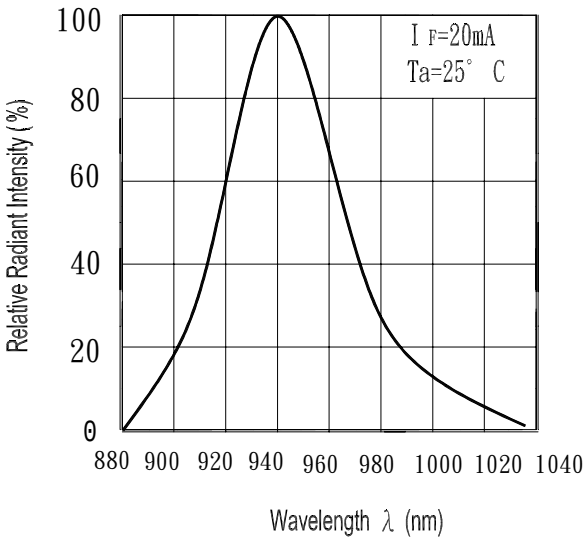


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

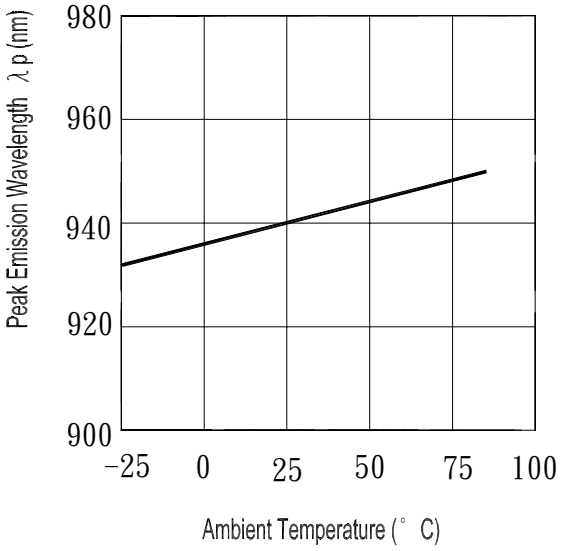
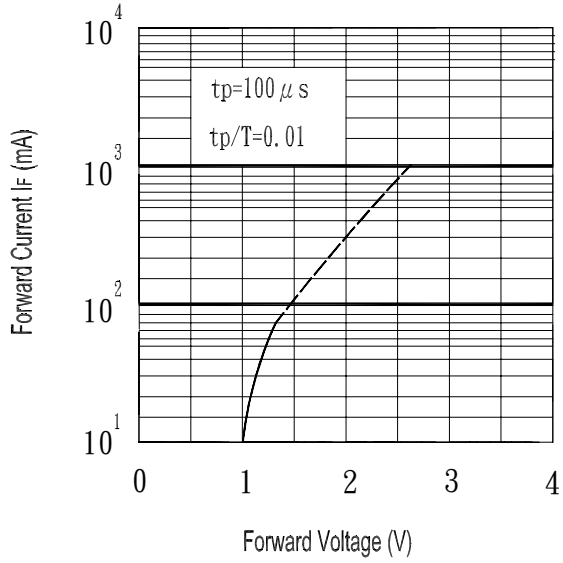


Fig.4 Forward Current vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs. Forward Current

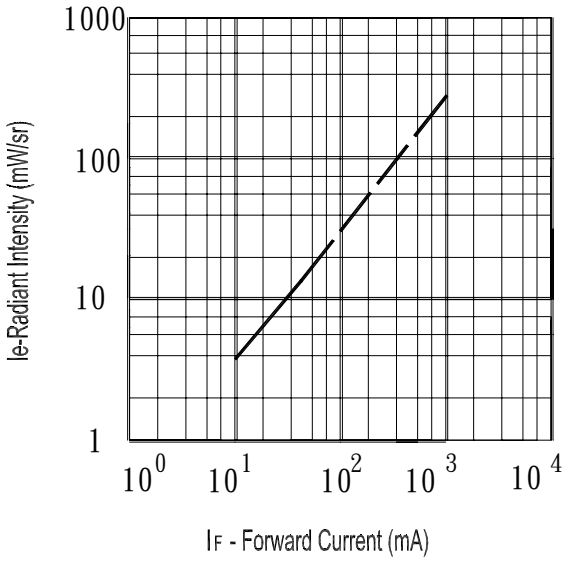


Fig.6 Relative Radiant Intensity vs. Angular Displacement

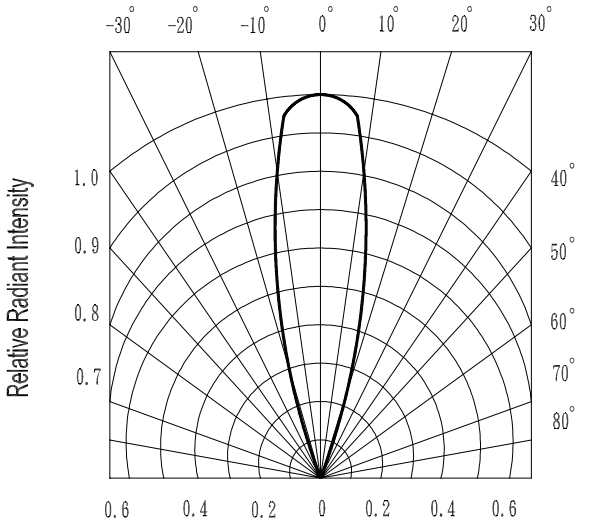


Fig.7 Relative Intensity vs. Ambient Temperature (° C)

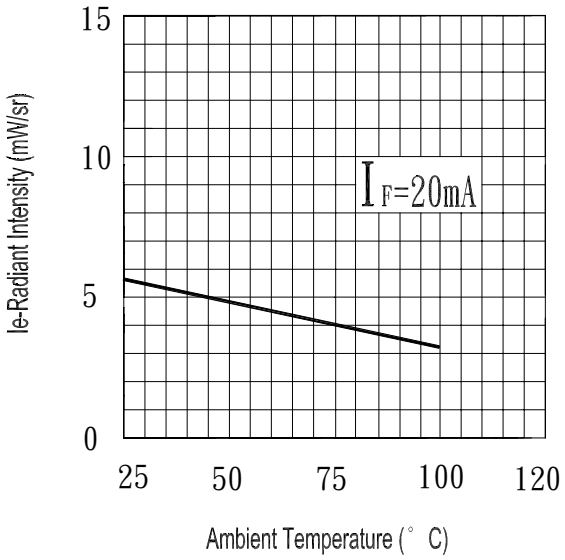
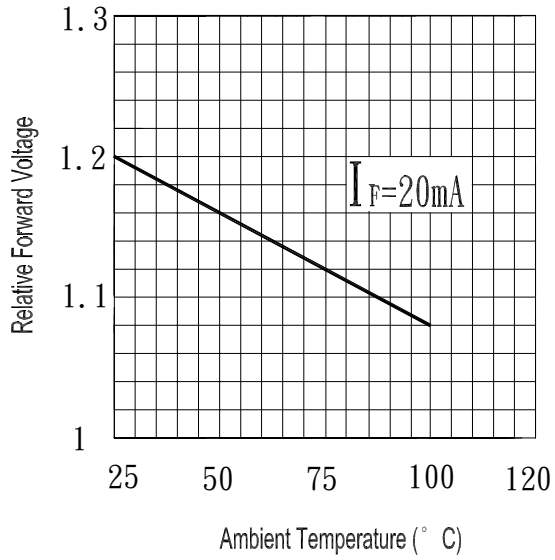


Fig.8 Forward Current vs. Ambient Temperature (° C)



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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/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP.：260℃± 5℃	10secs	22pcs	I_R≧U× 2 Ee≦L× 0.8 V_F≧U× 1.2 U：Upper Specification Limit L：Lower Specification Limit	0/1
2	Temperature Cycle	H : +85℃ 30mins ↕ 5mins L : -55℃ 30mins	50Cycle	22pcs		0/1
3	Thermal Shock	H :+100℃ 5mins ↕ 10secs L :-10℃ 5mins	50Cycle	22pcs		0/1
4	High Temperature Storage	TEMP.：+100℃	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP.：-55℃	1000hrs	22pcs		0/1
6	DC Operating Life	I_F=20mA	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85℃ / 85% R.H	1000hrs	22pcs		0/1

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