

Technical Data Sheet 3mm Infrared LED, T-1

IR204-A

Features

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



Descriptions

- EVERLIGHT's Infrared Emitting Diode (IR204 –A) is a high intensity diode, molded in a blue 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	
LED Part No.	Material	Lens Color	
IR204-A	GaAlAs	Blue	

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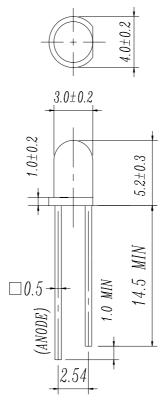
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Package Dimensions



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	$ m 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	$^{\circ}\!\mathbb{C}$
Soldering Temperature	T_{sol}	260	$^{\circ}$
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
		$I_F=20\text{mA}$	4.0	7.8		
Radiant Intensity	Ee	$I_F \!\!=\!\! 100mA$ Pulse Width $\leq 100~\mu$ s ,Duty $\leq 1\%$		38		mW/sr
		$I_F = 1A$ Pulse Width $\leq 100 \mu\text{s}$, Duty $\leq 1\%$.		450		
Peak Wavelength	λp	$I_F=20\text{mA}$		940		nm
Spectral	Δλ	$I_F=20mA$		45		nm
Bandwidth				73		
		I _F =20mA		1.2	1.5	
Forward Voltage	V_{F}	$I_F\!\!=\!\!100mA$ Pulse Width \leq 100 μ s ,Duty \leq 1%		1.4	1.8	V
		$I_F = 1A$ Pulse Width $\leq 100 \mu\text{s}$,Duty $\leq 1\%$.		2.6	4.0	
Reverse Current	I_R	$V_R=5V$			10	μ A
View Angle	2 \theta 1/2	I _F =20mA		35		deg

Rank

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

Unit: mW/sr

Bin Number	K	L	M	N
Min	4.0	5.6	7.8	11.0
Max	6.4	8.9	12.5	17.6

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Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs.

Ambient Temperature

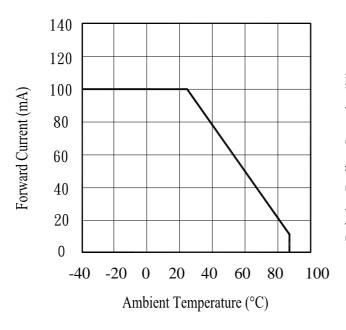


Fig.2 Spectral Distribution

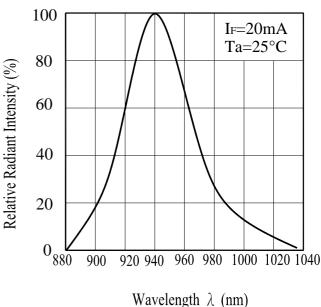


Fig.3 Peak Emission Wavelength vs.Ambient Temperature

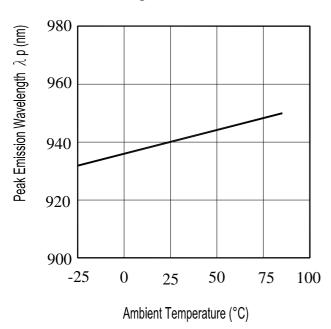
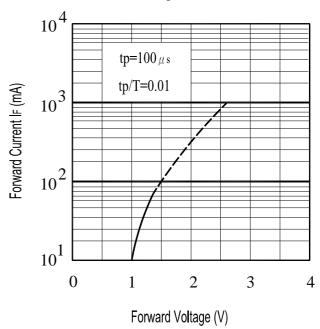


Fig.4 Forward Current vs. Forward Voltage



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Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs.

Forward Current

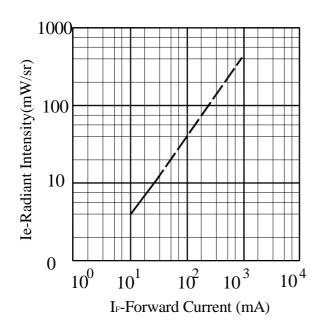


Fig.6 Relative Radiant Intensity vs.

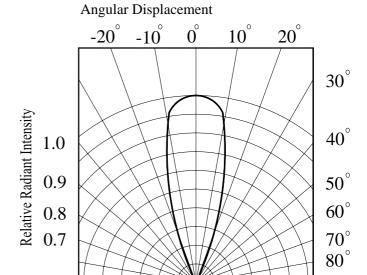


Fig.7 Relative Intensity vs.

Ambient Temperature(°C)

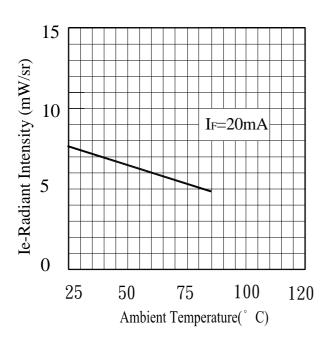


Fig.8 Forward Voltage vs.
Ambient Temperature(°C)

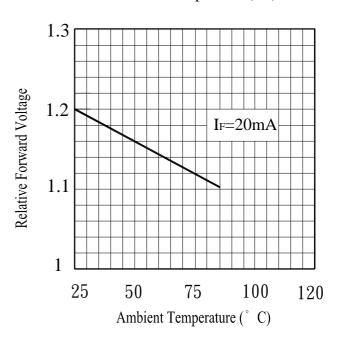
0

0.2

0.4 0.6

0.2

0.4



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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/	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		0/1
		5mins			Ee≦Lx0.8	
		L:-40°C 1 5mins			$V_F \leq U$	
3	Thermal Shock	H :+100°C ▲ 5mins	300Cycles	22pcs		0/1
		▼ 10secs			U: Upper	
		$L :-10^{\circ}C$ 5mins			Specification	
4	High Temperature	TEMP. ∶ +100°C	1000hrs	22pcs	Limit	0/1
	Storage				L: the initial test	
5	Low Temperature	TEMP. : -40°C	1000hrs	22pcs	value	0/1
	Storage					
6	DC Operating Life	I _F =20mA	1000hrs	22pcs		0/1
7	High Temperature/	85°C / 85% R.H	1000hrs	22pcs		0/1
	High Humidity					

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Packing Quantity Specification

- 1. 1000PCS/1Bag,4Bag/1Box
- 2. 10Boxes/1Carton

Label Form Specification



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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