

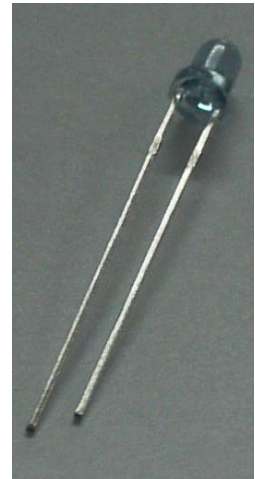
Technical Data Sheet

3mm Infrared LED , T-1

IR204-A

Features

- High reliability
- High radiant intensity
- Peak wavelength $\lambda_p=940\text{nm}$
- 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.

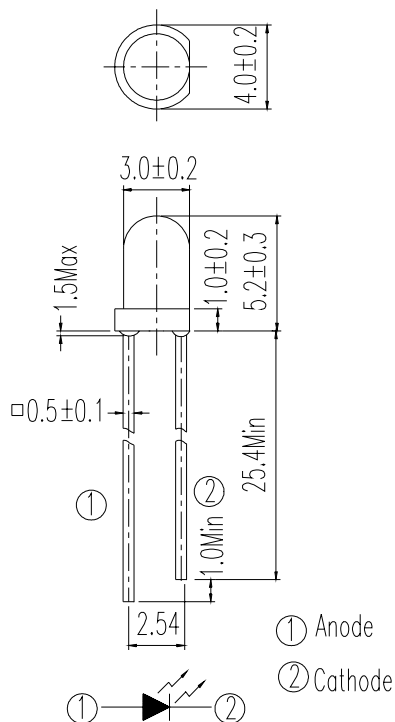
Applications

- 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
	Material	
IR204-A	GaAlAs	Blue



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}	$-40 \sim +85$	$^\circ\text{C}$
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	mW

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

*2:Soldering time ≤ 5 seconds.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	Ee	I _F =20mA	4.0	5.6	--	mW/sr
		I _F =100mA Pulse Width ≤ 100 μs ,Duty ≤ 1%	--	38	--	
		I _F =1A Pulse Width ≤ 100 μs ,Duty ≤ 1%.	--	450	--	
Peak Wavelength	λ _p	I _F =20mA	--	940	--	nm
Spectral Bandwidth	Δλ	I _F =20mA	--	45	--	nm
Forward Voltage	V _F	I _F =20mA	--	1.2	1.5	V
		I _F =100mA Pulse Width ≤ 100 μs ,Duty ≤ 1%	--	1.4	1.8	
		I _F =1A Pulse Width ≤ 100 μs ,Duty ≤ 1%.	--	2.6	4.0	
Reverse Current	I _R	V _R =5V	--	--	10	μA
View Angle	2θ _{1/2}	I _F =20mA	--	35	--	deg

RankCondition : 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

Typical Electro-Optical Characteristics Curves

**Fig.1 Forward Current vs.
Ambient Temperature**

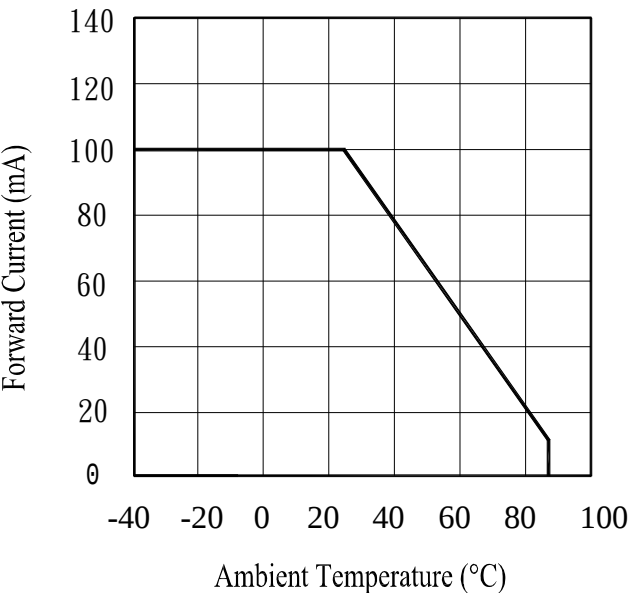
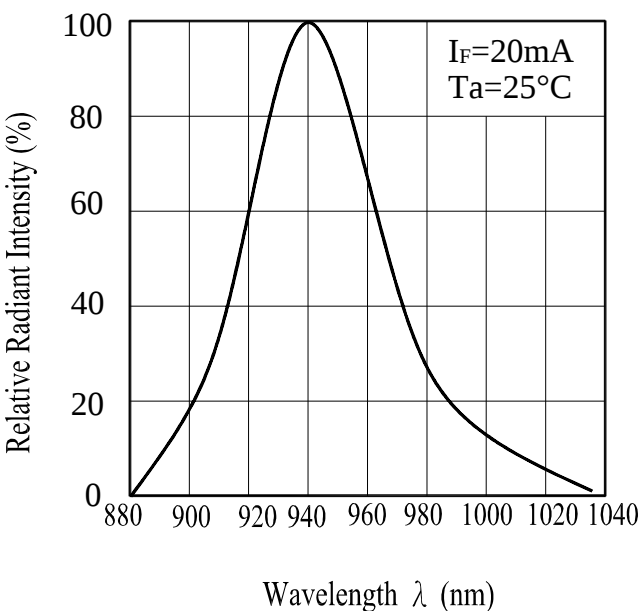
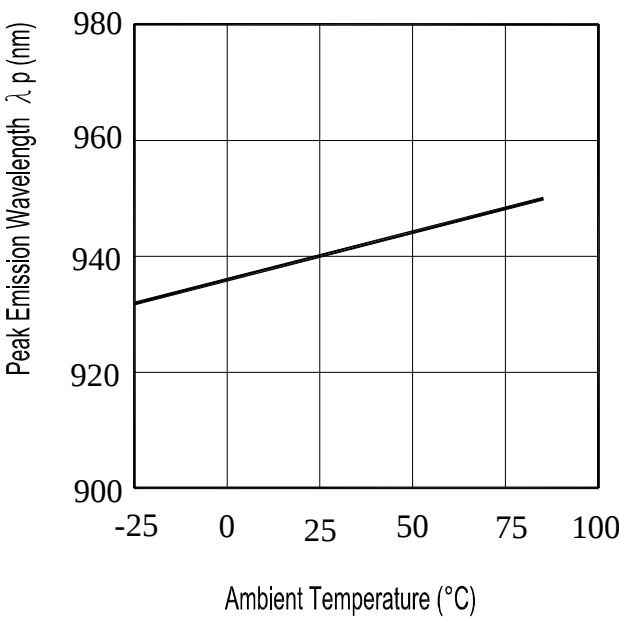


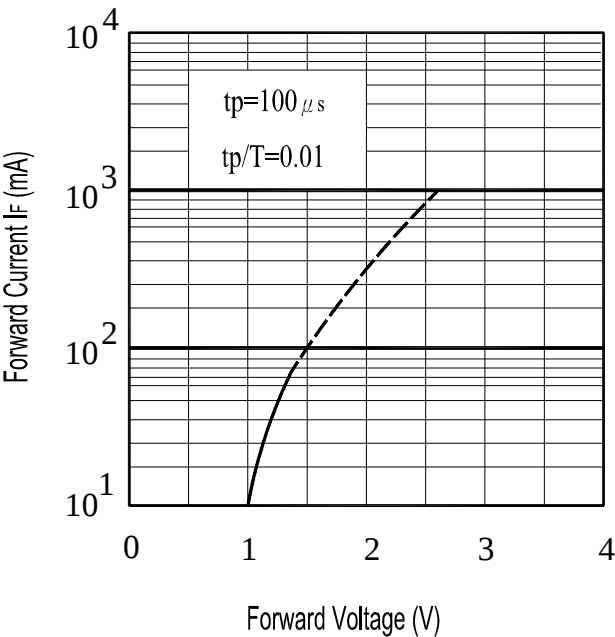
Fig.2 Spectral Distribution



**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.

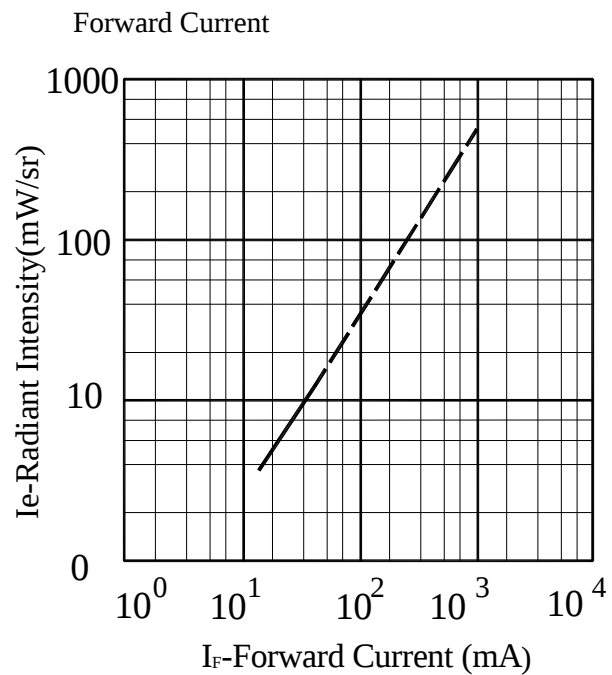


Fig.6 Relative Radiant Intensity vs.

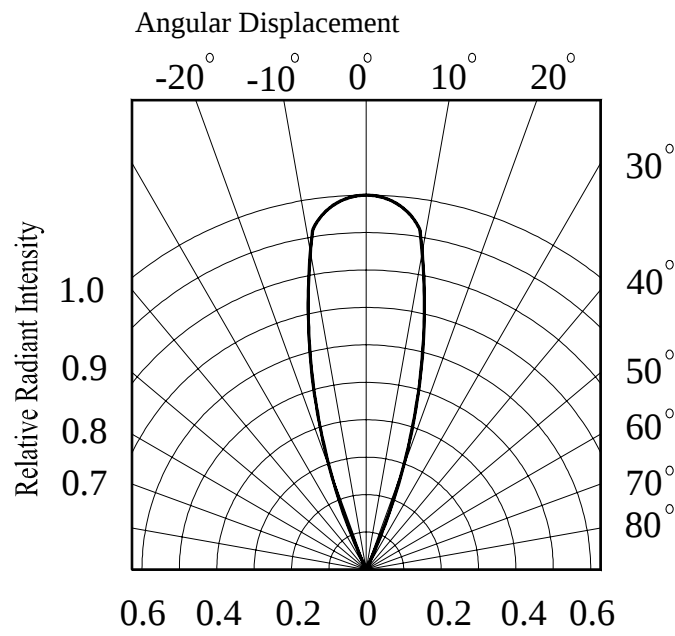


Fig.7 Relative Intensity vs.

Ambient Temperature(°C)

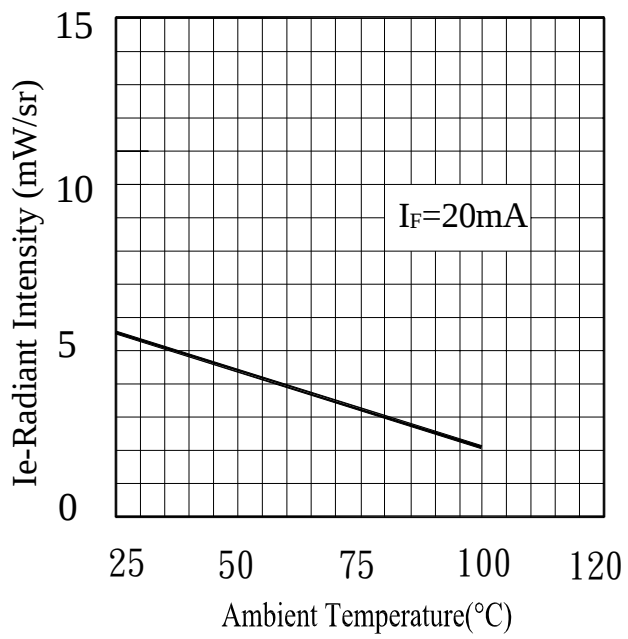
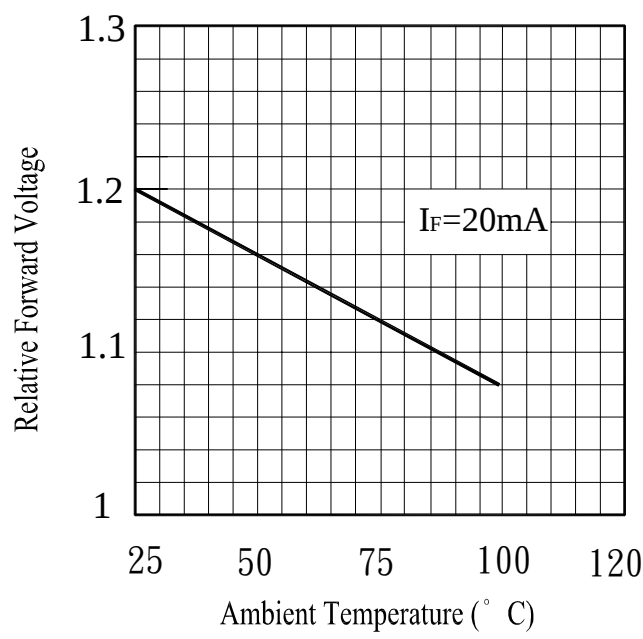


Fig.8 Forward Voltage vs.

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. : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	10secs	22pcs	$E_e \leq L \times 0.8$ $V_F \leq U$ U : Upper Specification Limit L : the initial test value	0/1
2	Temperature Cycle	H : $+100^{\circ}\text{C}$ 15mins ↓ 5mins L : -40°C 15mins	300Cycles	22pcs		0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5mins ↓ 10secs L : -10°C 5mins	300Cycles	22pcs		0/1
4	High Temperature Storage	TEMP. : $+100^{\circ}\text{C}$	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -40°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 Specification

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

Label Form Specification

EVERLIGHT

CPN:
P/N:

IR204-A
QTY:

LOT NO: EL

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