

## Technical Data Sheet

### 3mm Infrared LED , T-1 IR204C-A/TR1-4(A)



#### Features

- High reliability
- High radiant intensity
- Peak wavelength  $\lambda_p=940\text{nm}$
- 2.54mm Lead spacing
- Low forward voltage
- Pb free
- This product itself will remain within RoHS compliant version.
- Compliance with EU REACH
- Compliance Halogen Free(Br < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm)

#### Descriptions

- EVERLIGHT'S Infrared Emitting Diode (IR204C-A/TR1-4(A)) is a high intensity diode , molded in a water clear plastic package.
- The device is spectrally matched with phototransistor , photodiode and infrared receiver module.

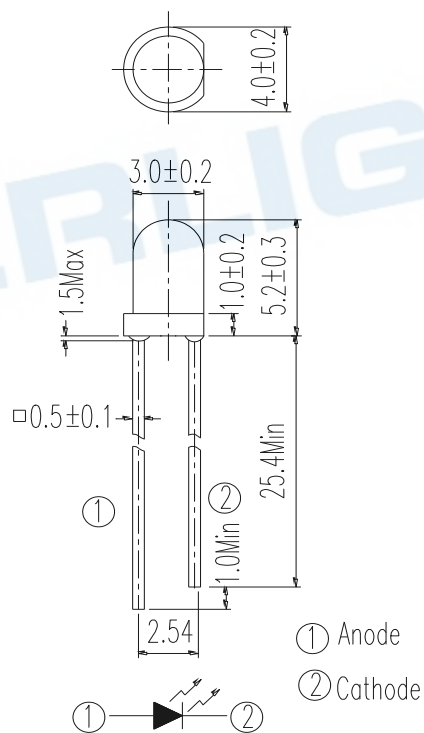
## Applications

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

## Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
IR204C-A/TR1-4(A)	GaAlAs	Clear

## Package Dimensions



- Notes:** 1.All dimensions are in millimeters  
2.Tolerances unless dimensions  $\pm 0.25\text{mm}$

**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Units
Continuous Forward Current	$I_F$	100	mA
Peak Forward Current(*1)	$I_{FP}$	1.0	A
Reverse Voltage	$V_R$	5	V
Operating Temperature	$T_{opr}$	-40 ~ +85	°C
Storage Temperature	$T_{stg}$	-40 ~ +100	°C
Soldering Temperature(*2)	$T_{sol}$	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	$P_d$	150	mW

- Notes:** \*1: $I_{FP}$  Conditions--Pulse Width  $\leq 100 \mu s$  and Duty  $\leq 1\%$ .  
\*2:Soldering time  $\leq 5$  seconds.

**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	$I_E$	$I_F=20\text{mA}$	4.0	7.8	--	mW/sr
		$I_F=100\text{mA}$ Pulse Width $\leq 100 \mu s$ , Duty $\leq 1\%$	--	35	--	
		$I_F=1\text{A}$ Pulse Width $\leq 100 \mu s$ , Duty $\leq 1\%$ .	--	390	--	
Peak Wavelength	$\lambda_p$	$I_F=20\text{mA}$	--	940	--	nm
Spectral Bandwidth	$\Delta \lambda$	$I_F=20\text{mA}$	--	45	--	nm
Forward Voltage	$V_F$	$I_F=20\text{mA}$	--	1.2	1.5	V
		$I_F=100\text{mA}$ Pulse Width $\leq 100 \mu s$ , Duty $\leq 1\%$	--	1.4	1.8	
		$I_F=1\text{A}$ Pulse Width $\leq 100 \mu s$ , Duty $\leq 1\%$ .	--	2.6	4.0	
Reverse Current	$I_R$	$V_R=5\text{V}$	--	--	10	$\mu A$
View Angle	$2 \theta_{1/2}$	$I_F=20\text{mA}$	--	40	--	deg

## Rank

Condition :  $I_F=20\text{mA}$

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

Note:

\*Measurement Uncertainty of Forward Voltage:  $\pm 0.1\text{V}$

\*Measurement Uncertainty of Luminous Intensity:  $\pm 10\%$

\*Measurement Uncertainty of Dominant Wavelength  $\pm 1.0\text{nm}$

## Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs.  
Ambient Temperature

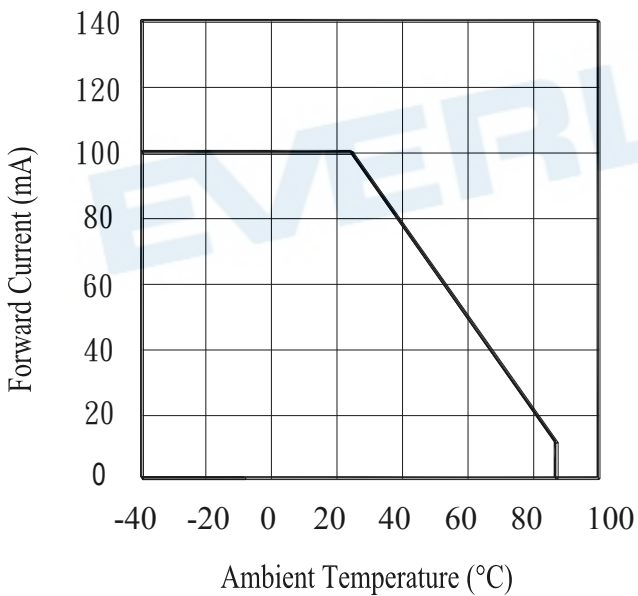


Fig.2 Spectral Distribution

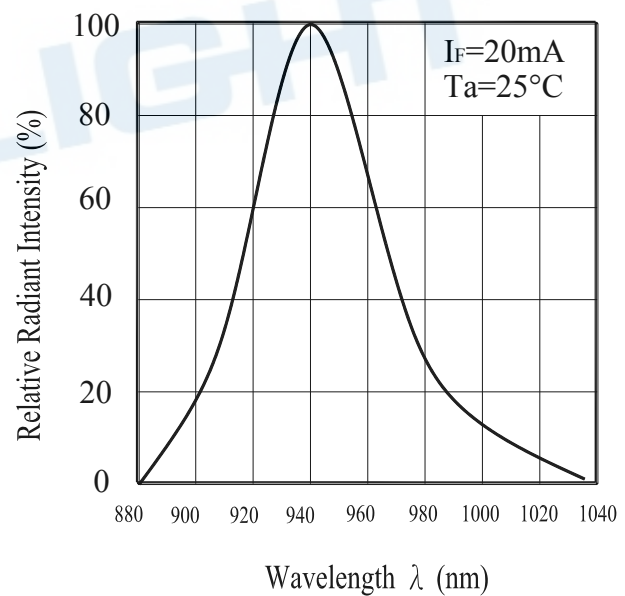


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

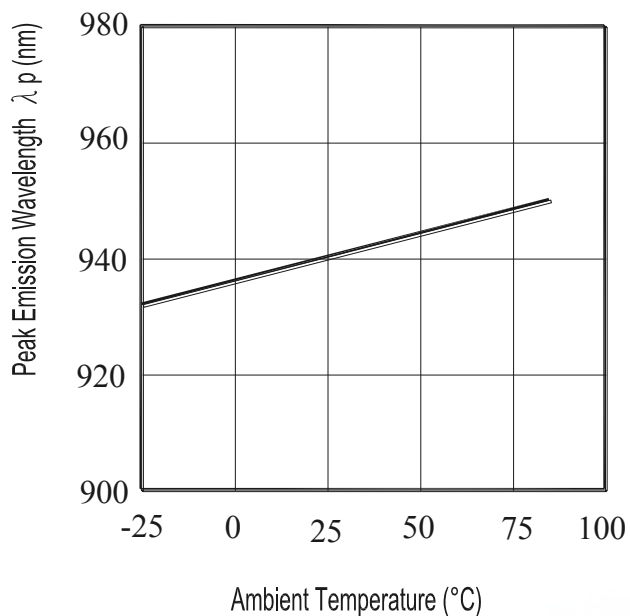
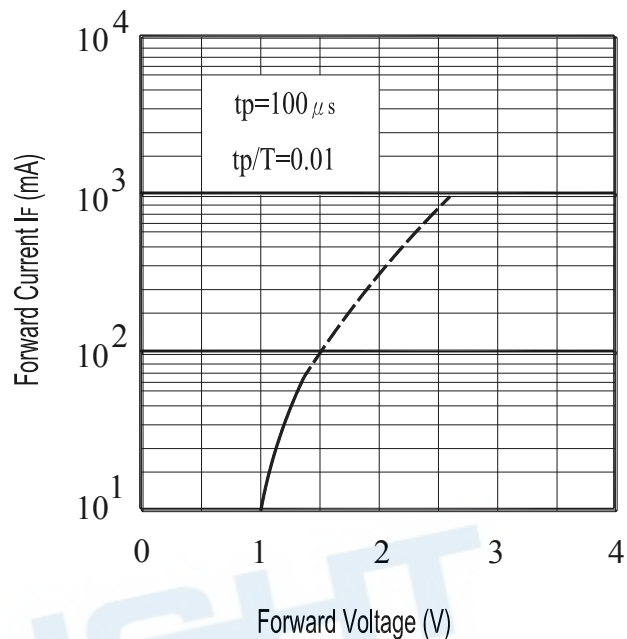


Fig.4 Forward Current vs. Forward Voltage



### Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs.

Forward Current

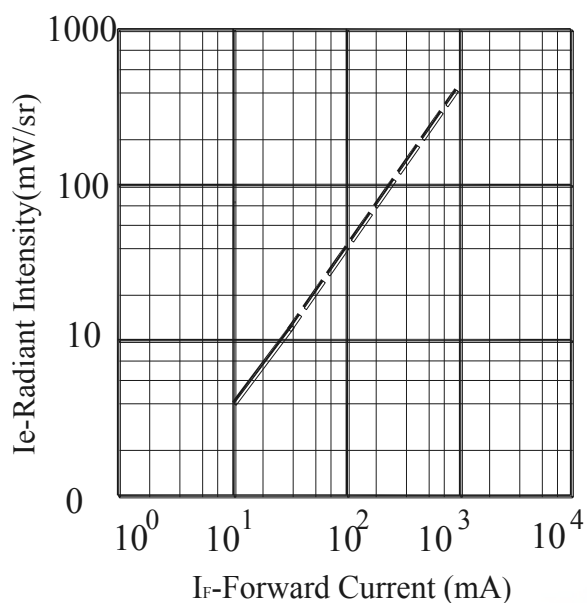


Fig.6 Relative Radiant Intensity vs.

Angular Displacement

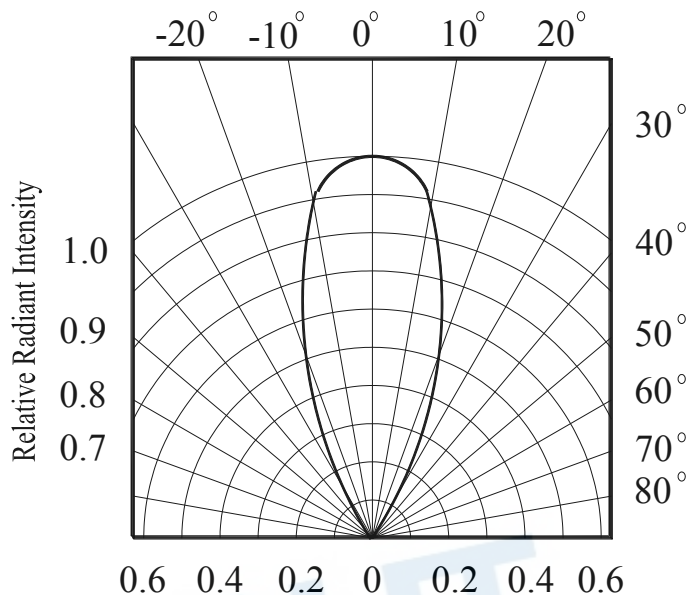


Fig.7 Relative Intensity vs.

Ambient Temperature(°C)

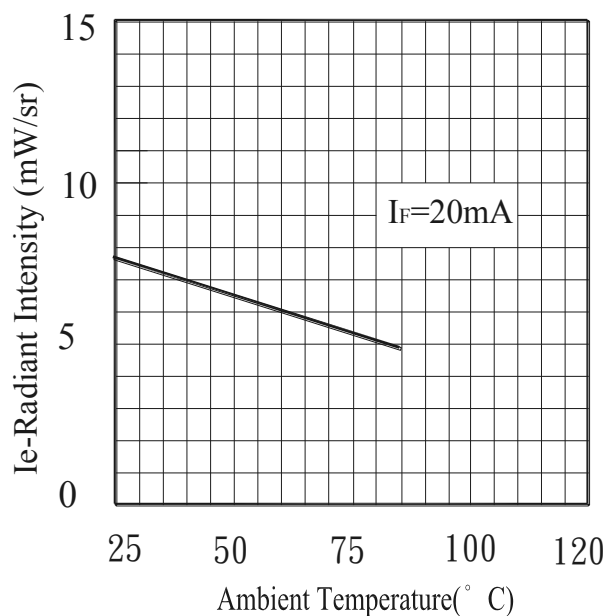
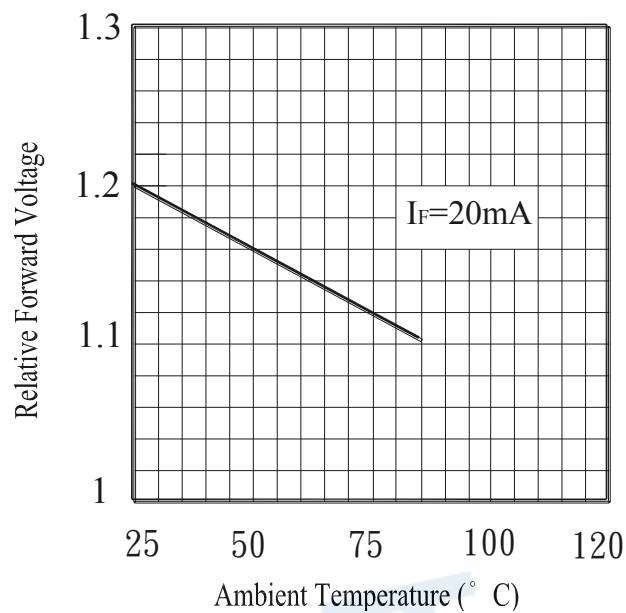


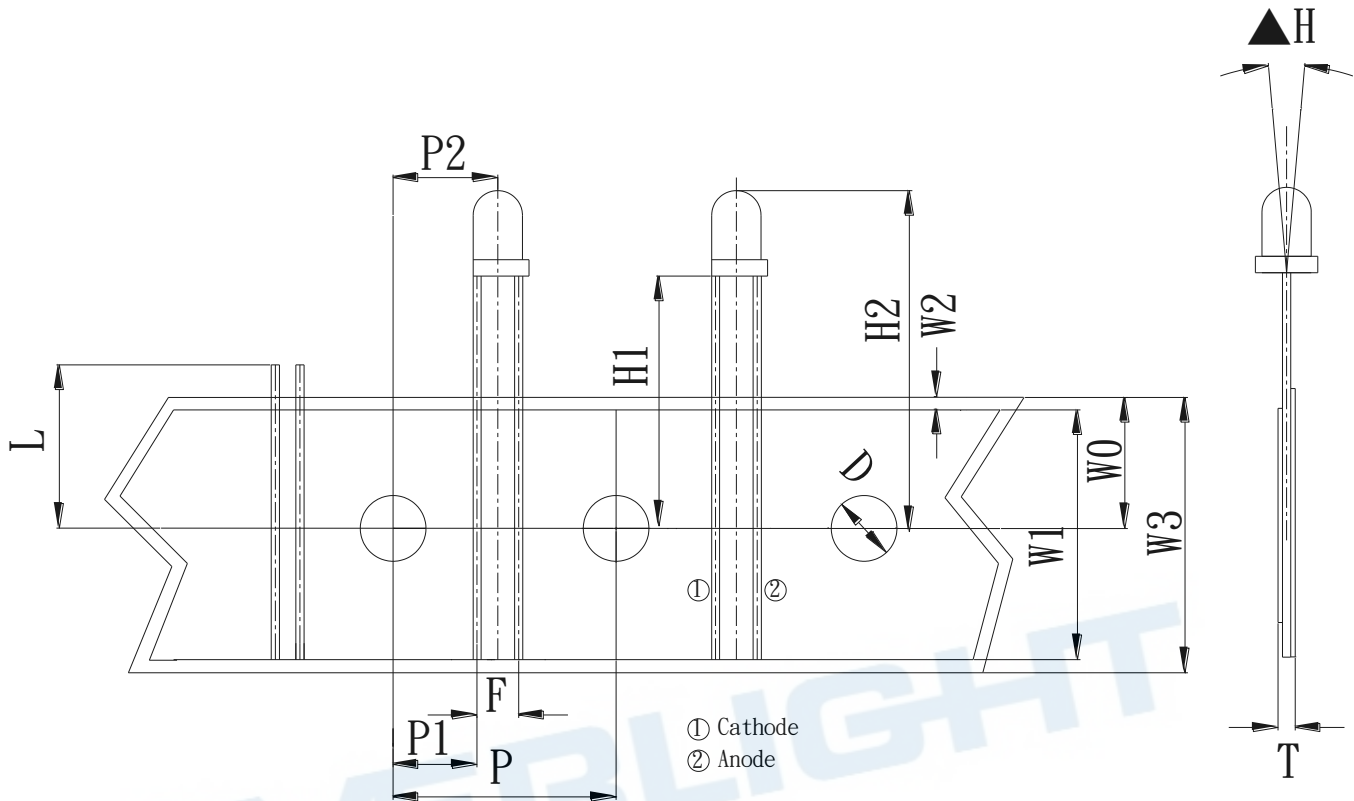
Fig.8 Forward Current vs.

Ambient Temperature(°C)



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## Taping Dimensions



## Taping Sizes

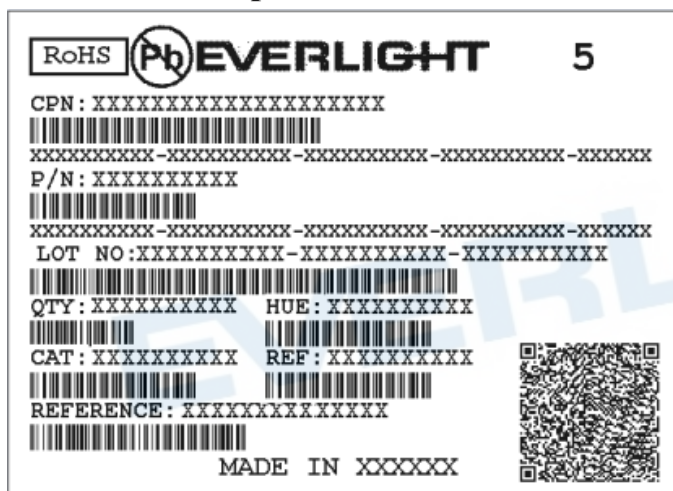
Symbol Item	Symbol	Specifications		
		Avg		Tolerance
		mm	Inch	mm
Tape Feed Hold Diameter	D	4.0	0.157	±0.2
Component Lead Pitch	F	2.54	0.1	+0.8/-0.2
Front-To-Rear Deflection	$\Delta H$	0°	0	±5°
Feed Hole To Button Of Component	H1	22.4	0.882	±1.0
Feed Hole To Overall Component Height	H2	27.6	1.087	±1.0
Lead Length After Component Height	L	11.0	0.433	Max
Feed Hold Pitch	P	12.7	0.500	±0.3
Lead Location	P1	5.08	0.200	±0.7

Center Of Component Location	P2	6.35	0.250	±1.2
Overall Taped Package Thickness	T	1.42	0.056	Max
Feed Hold Location	W0	9.0	0.354	±0.5
Adhesive Tape Width	W1	13.0	0.512	±0.5
Adhesive Tape Position	W2	2.0	0.079	Max
Tape Width	W3	18.0	0.709	±0.75

### Packing Quantity Specification

1. 2500PCS/1Box
2. 10Boxes/1outer carton

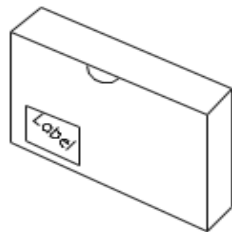
### Label Form Specification



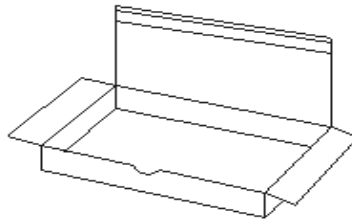
CPN: Customer's Production Number  
P/N : Production Number  
QTY: Packing Quantity  
CAT: Ranks  
HUE: Peak Wavelength  
REF: Reference  
LOT No: Lot Number

### Packing Specification

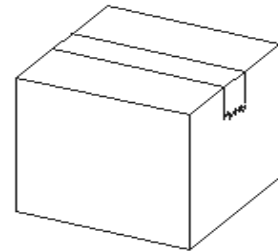
■ Tape



■ Inner Carton



■ Outside



### Packing Quantity Specification

1. 2500PCS/1Tape,
2. 10Boxes/1Carton

### DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. 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 the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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