



3mm Infrared LED ,T-1

MODEL NO : SIR204-A

■ Features :

- High radiant intensity
- Peak wavelength $\lambda_p=875\text{nm}$
- View angle 30°
- High reliability
- Low forward voltage

■ Description :

- EVERLIGHT's Infrared Emitting Diode (SIR204-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
- Infrared remote control units with high power requirement
- Floppy disk drive
- Infrared source for optical counter and card reader

PART NO.	CHIP	LENS COLOR
	MATERIAL	
SIR	GaAlAs	Blue



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■ Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Rating	Unit	Notice
Continuous Forward Current	I_F	50	mA	
Peak Forward Current Pulse width=100 μ s,Duty cycle=1%	I_{FP}	1.0	A	
Reverse Voltage	V_R	5	V	
Operating Temperature	Topr	-25 ~ +85	°C	
Storage Temperature	Tstg	-40 ~ +85	°C	
Soldering Temperature	Tsol	260	°C	4mm from mold body less than 5 seconds
Power Dissipation at(or below) 25°C Free Air Temperature	Pd	100	mW	

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant Intensity	Ee	4.0	6.4	----	mW/sr	$I_F=20\text{mA}$
		----	30	----		$I_F=100\text{mA}, t_p=100 \mu\text{s}, t_p/T=0.01$
		----	300	----		$I_F=1\text{A}, t_p=100 \mu\text{s}, t_p/T=0.01$
Peak Wavelength	λ_P	----	875	----	nm	$I_F=20\text{mA}$
Spectral Bandwidth	$\Delta \lambda$	----	80	----	nm	$I_F=20\text{mA}$
Forward Voltage	V_F	----	1.3	1.6	V	$I_F=20\text{mA}$
		----	1.4	1.8		$I_F=100\text{mA}, t_p=100 \mu\text{s}, t_p/T=0.01$
		----	2.6	4.0		$I_F=1\text{A}, t_p=100 \mu\text{s}, t_p/T=0.01$
Reverse Current	I_R	----	----	10	μA	$V_R=5\text{V}$
View Angle	$2\theta_{1/2}$	----	30	----	deg	$I_F=20\text{mA}$



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■ Typical Electrical/Optical/Characteristics Curves

Fig. 5 Relative Intensity vs. Forward Current

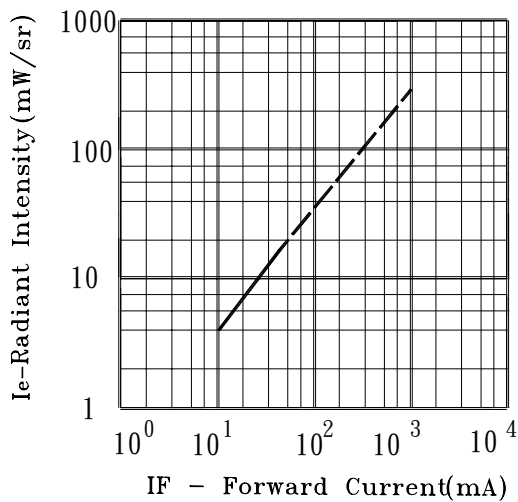


Fig. 6 Relative Radiant Intensity vs. Angular Displacement

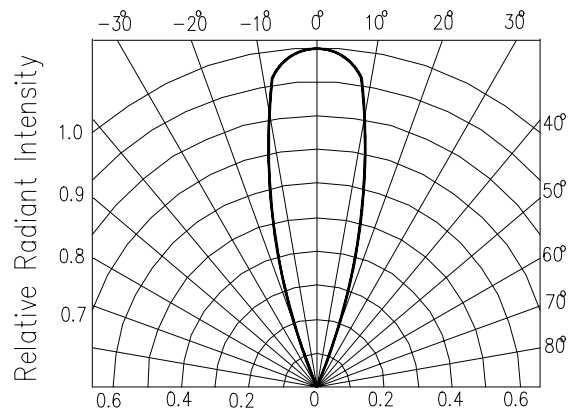


Fig. 7 Relative Intensity vs. Ambient Temperature (°C)

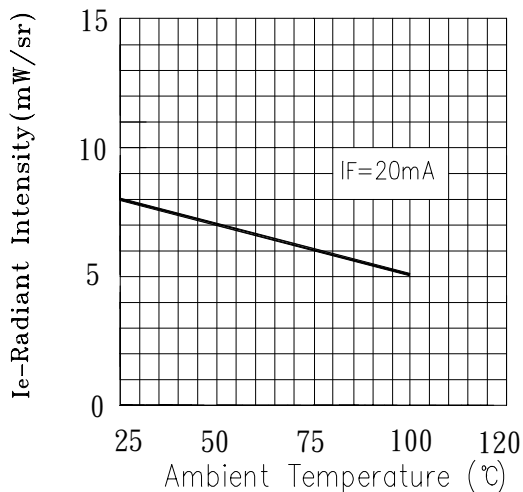
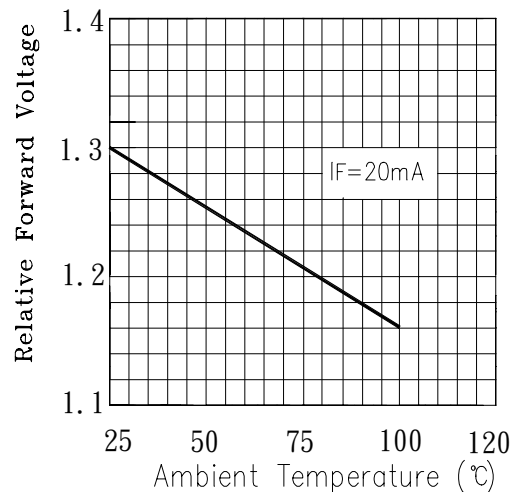


Fig. 8 Forward Current vs. Ambient Temperature (°C)





EVERLIGHT ELECTRONICS CO., LTD.

DEVICE NUMBER : DIS-020-069 REV : 1.0
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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 Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 secs	22 pcs	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$ U :Upper specification limit L :Lower specification limit	0/1
2	Temperature Cycle	H : +85°C 30 mins \updownarrow 5 mins \updownarrow L : -55°C 30 mins	50 cycles	22 pcs		0/1
3	Thermal Shock	H : +100°C 5 mins \updownarrow 10 secs \updownarrow L : -10°C 5 mins	50 cycles	22 pcs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000 hrs	22 pcs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 hrs	22 pcs		0/1
6	DC Operating Life	$I_F=20mA$	1000 hrs	22 pcs		0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 hrs	22 pcs		0/1



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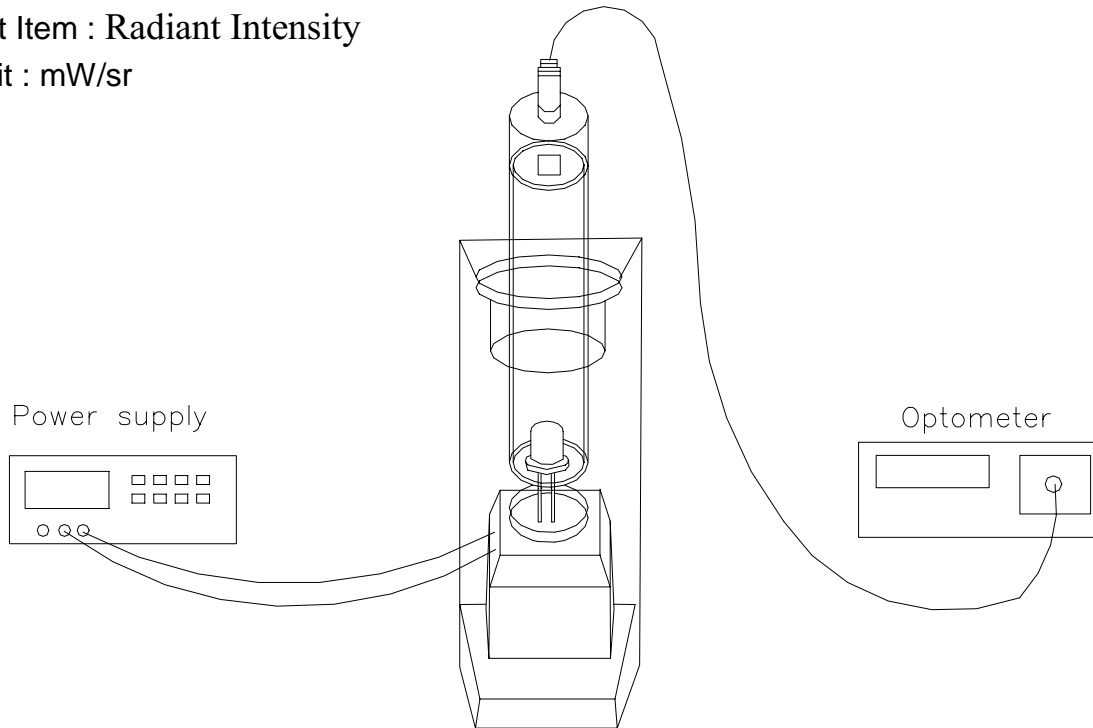
MODEL NO : SIR204-A

■ Test Method For Power :

Condition : $I_F=20$ mA

Test Item : Radiant Intensity

Unit : mW/sr



■ To Distinguish Intensity

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

Condition : $I_F=20$ 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



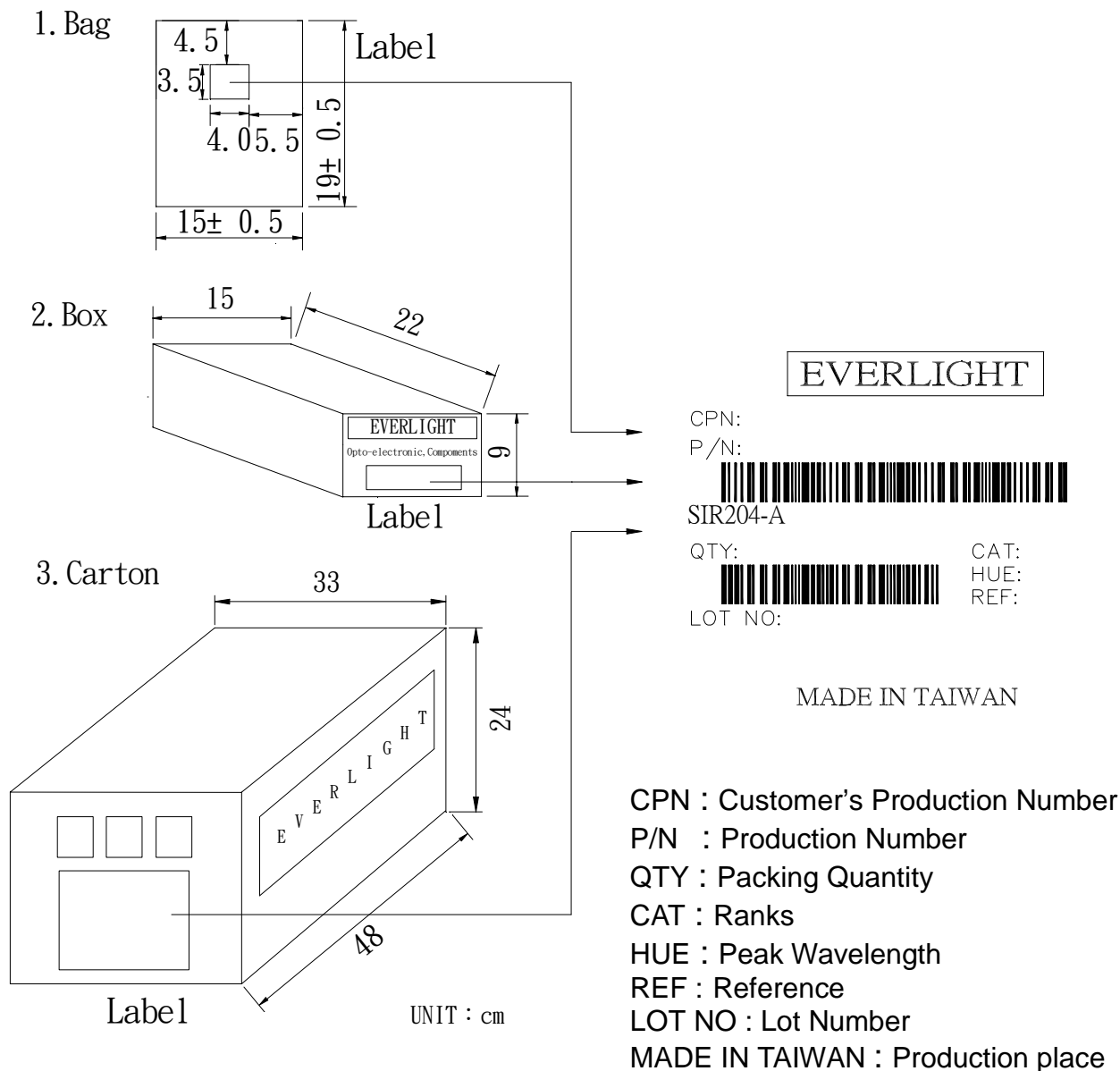
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■ Packing Specifications



■ Packing Quantity Specification

1. 1000Pcs/1Bag , 4 Bags/1Box
2. 10 Boxes/1Carton