



1.8mm Round Subminiature Infrared LED

MODEL NO : SIR42-21C

■ Features :

- Small double-end package
- Low forward voltage
- View angle 25°
- Peak wavelength $\lambda_p=875\text{nm}$
- High reliability

■ Description :

- SIR42-21C is an infrared emitting diode in miniature SMD package which is molded in a water clear plastic with spherical top view lens. The device is spectrally matched with silicon photodiode and phototransistor.

■ Applications :

- PCB mounted infrared sensor
- Floppy disk drive
- Smoke detector
- Optoelectronic switch
- Video

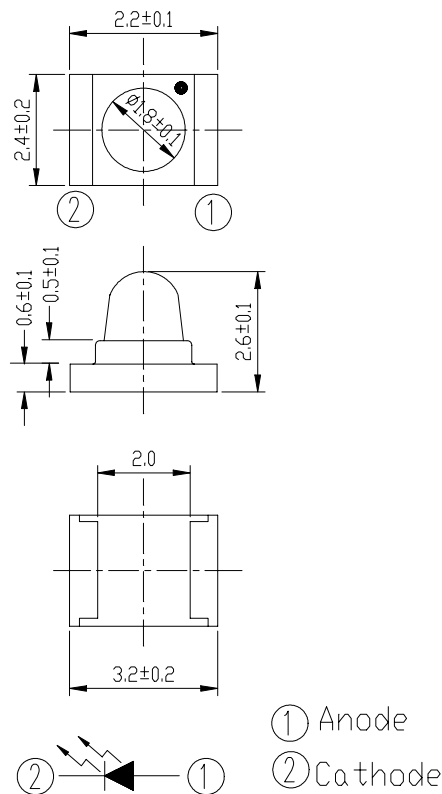
PART NO.	CHIP	LENS COLOR
	MATERIAL	
SIR	GaAlAs	Water Clear



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■ Package Dimensions :



■ Notes :

1. All dimensions are in millimeter.
2. General Tolerance: ± 0.25 mm
3. Lead spacing is measured where the lead emerge from the package .
4. Lens color : Water clear.
5. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
6. 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.
7. When using this product , please observe the absolute maximum ratings and the instructions for use 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.



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■ Absolute Maximum Ratings at T_A = 25°C

Parameter	Symbol	Rating	Unit	Notice
Continuous Forward Current	I _F	65	mA	
Peak Forward Current Pulse width=100 μs, 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	
Power Dissipation at(or below) 25°C Free Air Temperature	Pd	130	mW	

■ Electronic Optical Characteristics :

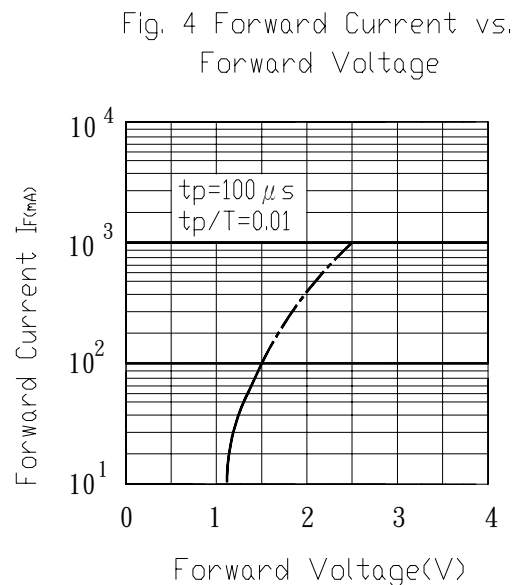
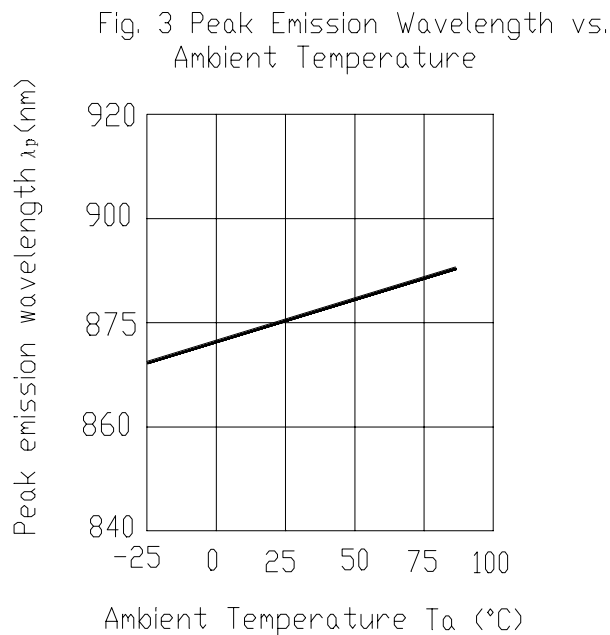
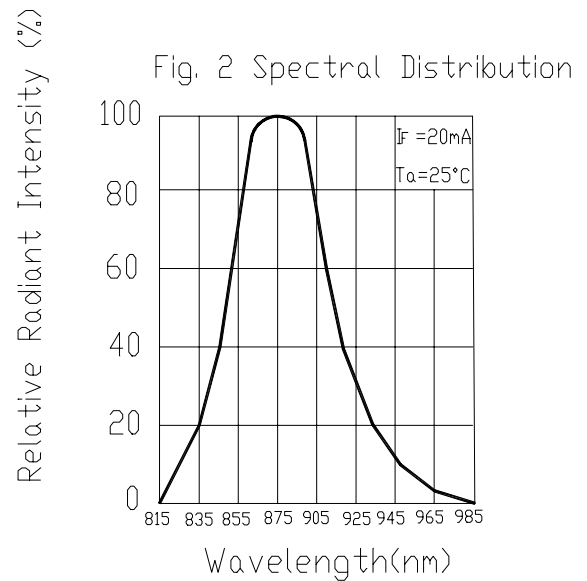
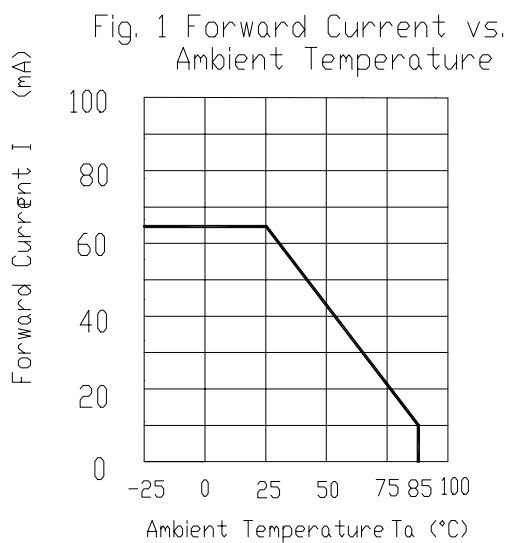
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant Intensity	Ee	1.5	4.0	----	mW/sr	I _F =20mA
		----	15	----		I _F =100mA, tp=100 μs, t _p /T=0.01
		----	160	----		I _F =1A, tp=100 μs, t _p /T=0.01
Peak Wavelength	λ _p	----	875	----	nm	I _F =20mA
Spectral Bandwidth	Δλ	----	80	----	nm	I _F =20mA
Forward Voltage	V _F	----	1.3	1.6	V	I _F =20mA
		----	1.4	1.8		I _F =100mA, tp=100 μs, t _p /T=0.01
		----	2.6	4.0		I _F =1A, tp=100 μs, t _p /T=0.01
Reverse Current	I _R	----	----	10	μA	V _R =5V
View Angle	2Θ1/2	----	25	----	deg	I _F =20mA



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■ Typical Electrical/Optical/Characteristics Curves





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Fig. 5 Relative Intensity vs. Forward Current

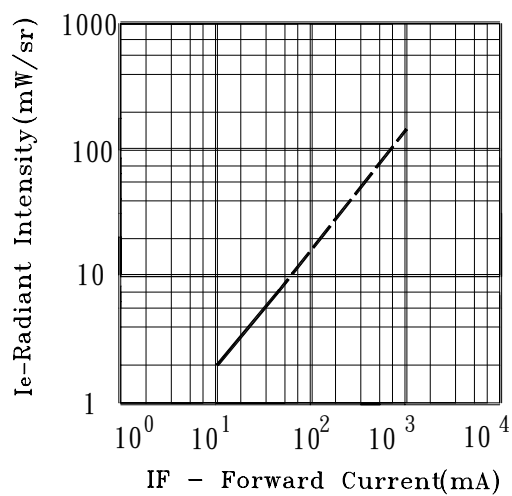


Fig. 6 Relative Radiant Intensity vs. Angular Displacement

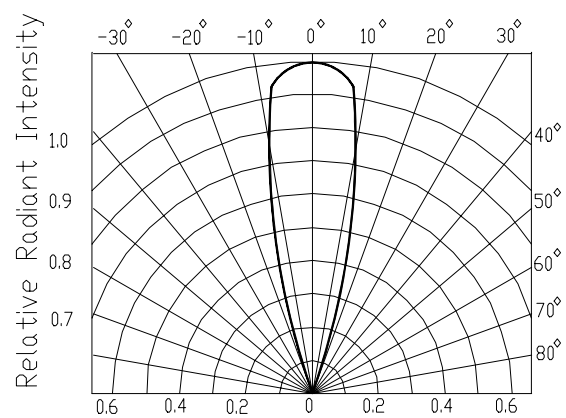


Fig. 7 Relative Intensity vs. Ambient Temperature

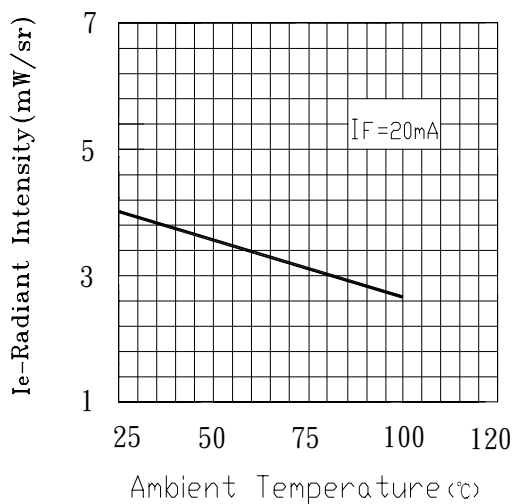
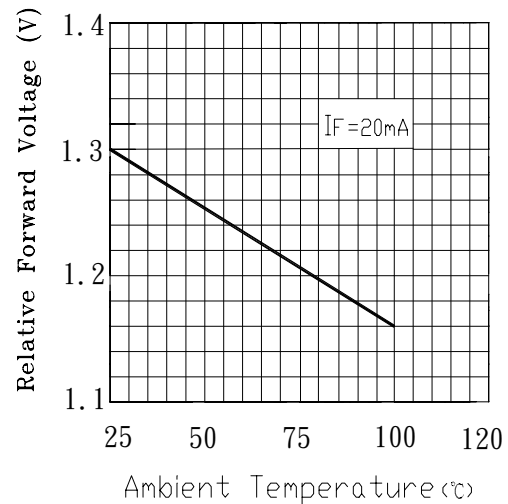


Fig. 8 Forward Current vs. Ambient Temperature





EVERLIGHT ELECTRONICS CO., LTD.

DEVICE NUMBER : DIS-042-053
ECN : _____

REV : 1.1
PAGE : 6/8

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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/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solderability	TEMP : 230°C ± 5 °C	5 sec	22 PCs	More than 90% of lead to be covered by soldering	0/1
2	Temperature Cycle	H : +85°C 30 min ↑ 5 min ↓ L : -55°C 30 min	50 cycle	22 PCs	$I_R \geq U \times 2$ $E_c \leq L \times 0.8$ $V_F \geq U \times 1.1$	0/1
3	Thermal Shock	H : +100°C 5 min ↑ 10 sec ↓ L : -10°C 30 min	50 cycle	22 PCs	U :Upper specification limit L :Lower specification limit	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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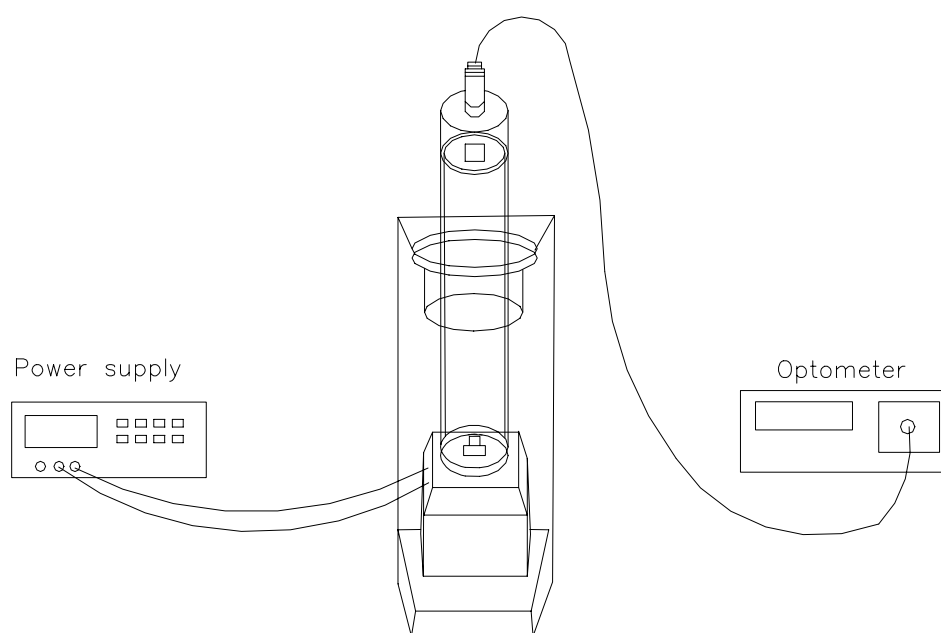
MODEL NO : SIR42-21C

■ Test Method For Power :

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

Test Item : Radiant Intensity

Unit : mW/sr





DEVICE NUMBER : DIS-042-053
ECN : _____

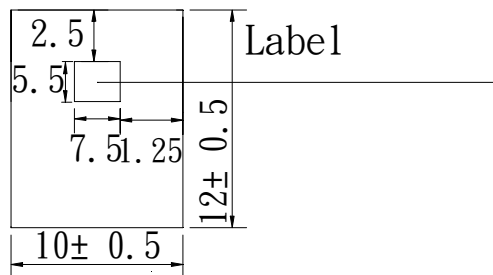
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PAGE : 8/8

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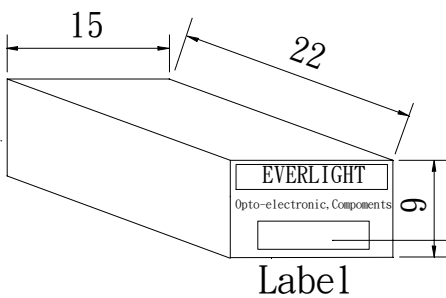
MODEL NO : SIR42-21C

■ Packing Specifications

1. Bag



2. Box



EVERLIGHT

CPN:

P/N:

SIR42-21C

QTY:

LOT NO:

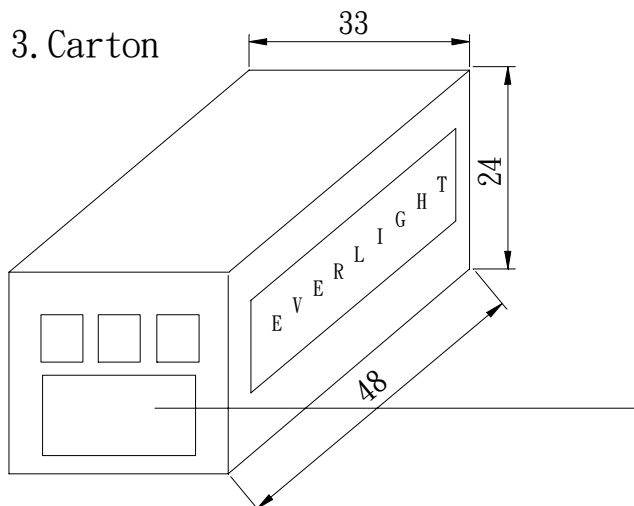
CAT:

HUE:

REF:

MADE IN TAIWAN

3. Carton



Label

UNIT : cm

CPN : Customer's Production Number

P/N : Production Number

QTY : Packing Quantity

CAT : Ranks

HUE : Peak Wavelength

REF : Reference

LOT NO : Lot Number

MADE IN TAIWAN : Production place

■ Packing Quantity Specification

1. 1000 Pcs/1Bag , 40 Bags/1Box

2. 10 Boxes/1Carton