



1.9mm Round Subminiature Infrared LED

MODEL NO : SIR91-21C/TR10

■ Features :

- Small double-end package
- Low forward voltage
- View angle 20°
- Peak wavelength $\lambda_p=875\text{nm}$
- High reliability

■ Description :

- SIR91-21C is an infrared emitting diode in miniature SMD package witch is molded in a water clear plastic with spherical top view lens. The spectrally device is matched with silicon photodiode and phototransistor.

■ Applications :

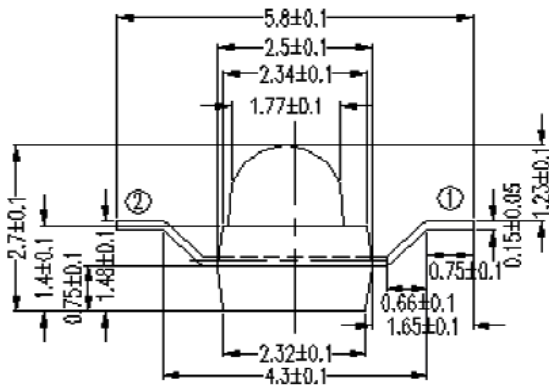
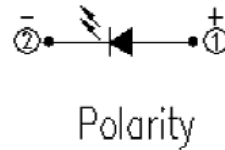
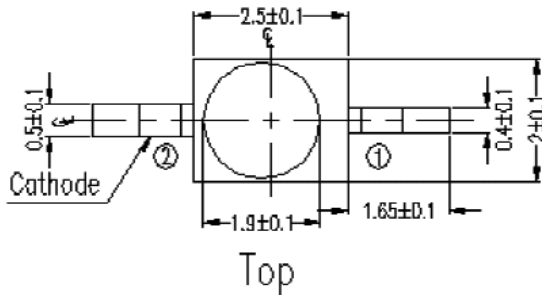
- Floppy disk drive
- Optoelectronic switch
- Smoke detector
- Camera
- VCR
- Video

PART NO.	CHIP	LENS COLOR
	MATERIAL	
SIR	GaAlAs	Water Clear

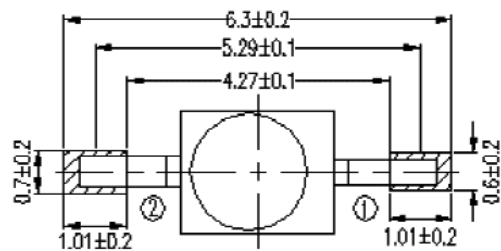
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■ Package Dimensions :



Recommend Soldering Pad



■ Note s s

12All d2me2s2o2s are 22 m2l2meter2

2 2Ge2eral Tolera2ce: ± 021mm

32Le2s color : Water clear2

42Above spec2f2cat2o2 may be cha2ged w2thout 2ot2ce2 EVERLIGHT w2ll reserve author2ty o2 mater 2l cha 2ge for above spec2f2cat2o22

52These spec2f2cat2o2 sheets 22clude mater2als protected u2der copyr2ght of EVERLIGHT corporat 2 2P2lease do 2 reproduce or cause a 2o2e to reproduce them w2thout EVERLIGHT's co 2se 2 2

62Whe2 us2g th2s product , please observe the absolute max2mum rat22gs a2d the 22struct2o2s for use outl 2 2d 2 2these spec 22at 2 sheets 2EVERLIGHT assumes 2 respo 2 2 22ty for a2y damage result22g from use of the product wh2ch does 2ot comply w2th the absolute max2mum rat 2 2gs a2d the 22struct2o2s 22cluded 22 these spec2f2cat2o2 sheets2



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■ Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Rating	Unit	Notice
Continuous Forward Current	I_F	65	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	
Power Dissipation at(or below) 25°C Free Air Temperature	Pd	130	mW	

■ Electronic Optical Characteristics :

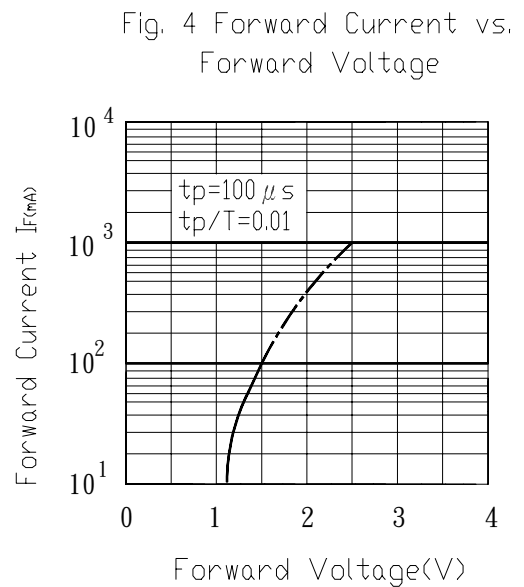
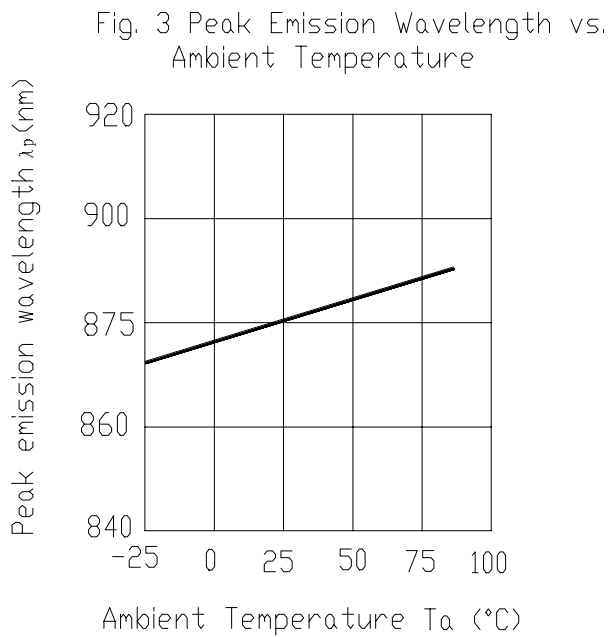
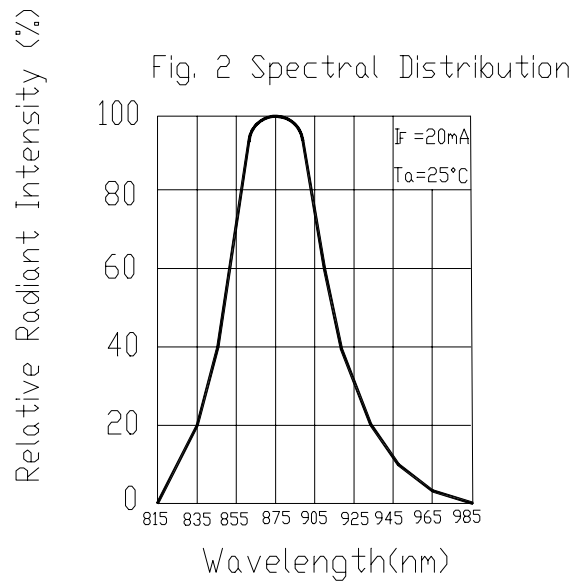
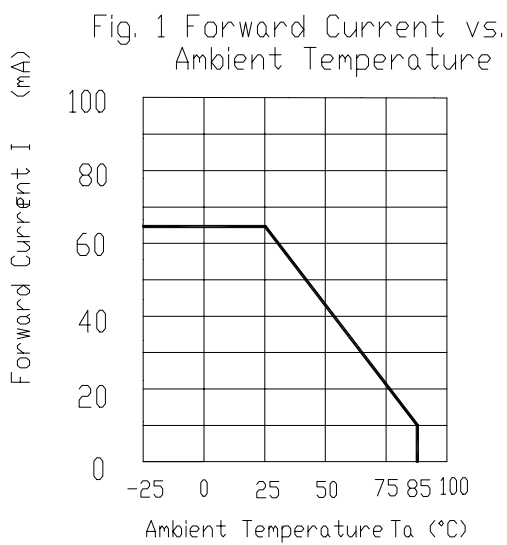
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant Intensity	Ee	3.0	6.0	----	mW/sr	$I_F=20\text{mA}$
		----	20	----		$I_F=100\text{mA}, t_p=100 \mu\text{s}, t_p/T=0.01$
		----	200	----		$I_F=1\text{A}, t_p=100 \mu\text{s}, t_p/T=0.01$
Peak Wavelength	λ_p	----	875	----	nm	$I_F=20\text{mA}$
Spectral 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	$2\theta_{1/2}$	----	20	----	deg	$I_F=20\text{mA}$



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■ Typical Electrical/Optical/Characteristics Curves





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Fig. 5 Relative Intensity vs. Forward Current

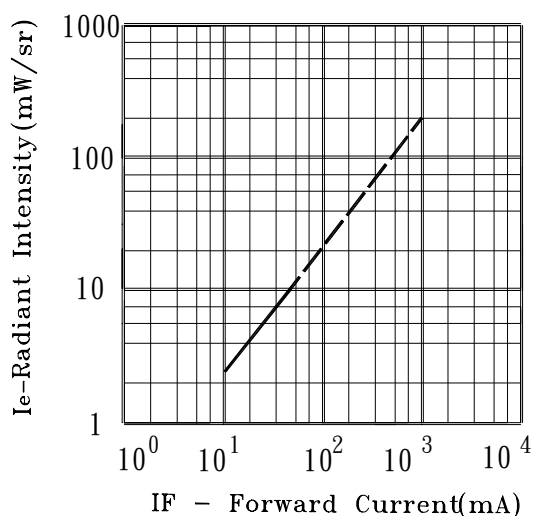


Fig. 6 Relative Radiant Intensity vs. Angular Displacement

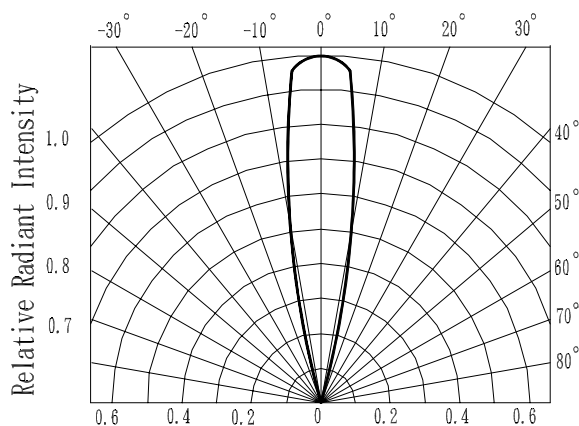


Fig. 7 Relative Intensity vs. Ambient Temperature (°C)

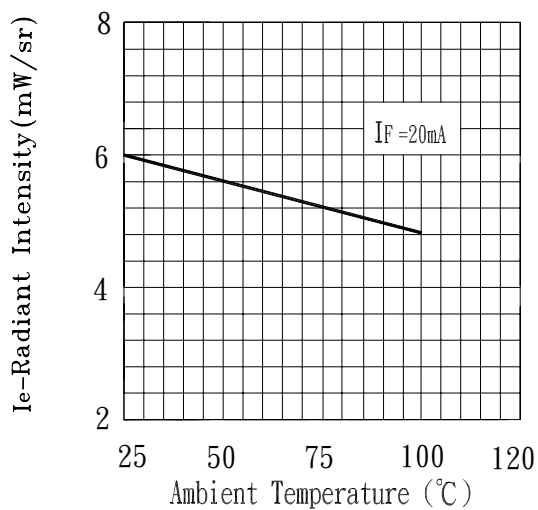
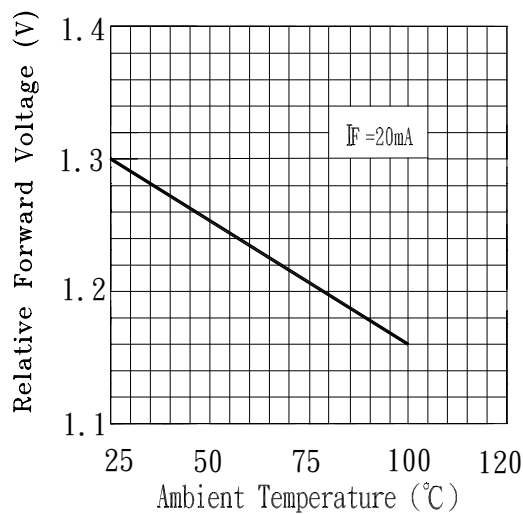


Fig. 8 Forward Current vs. Ambient Temperature (°C)





EVERLIGHT ELECTRONICS CO., LTD.



DEVICE NUMBER : DIS-091-008 REV : 1.3
 ECN : _____ 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/ Cycles	Sample Size	Failure Judgement Criteria	Ac/Re
1	REFLOW	TEMP : 240°C ± 5 °C 5 secs	6 Mins	22 pcs	More than 90% of lead to be covered by soldering	0/1
2	Temperature Cycle	H : +85°C 30 mins  L : -55°C 30 mins	50 cycles	22 pcs	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$	0/1
3	Thermal Shock	H : +100°C 5 mins  L : -10°C 5 mins	50 cycles	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	$I_F = 20\text{mA}$	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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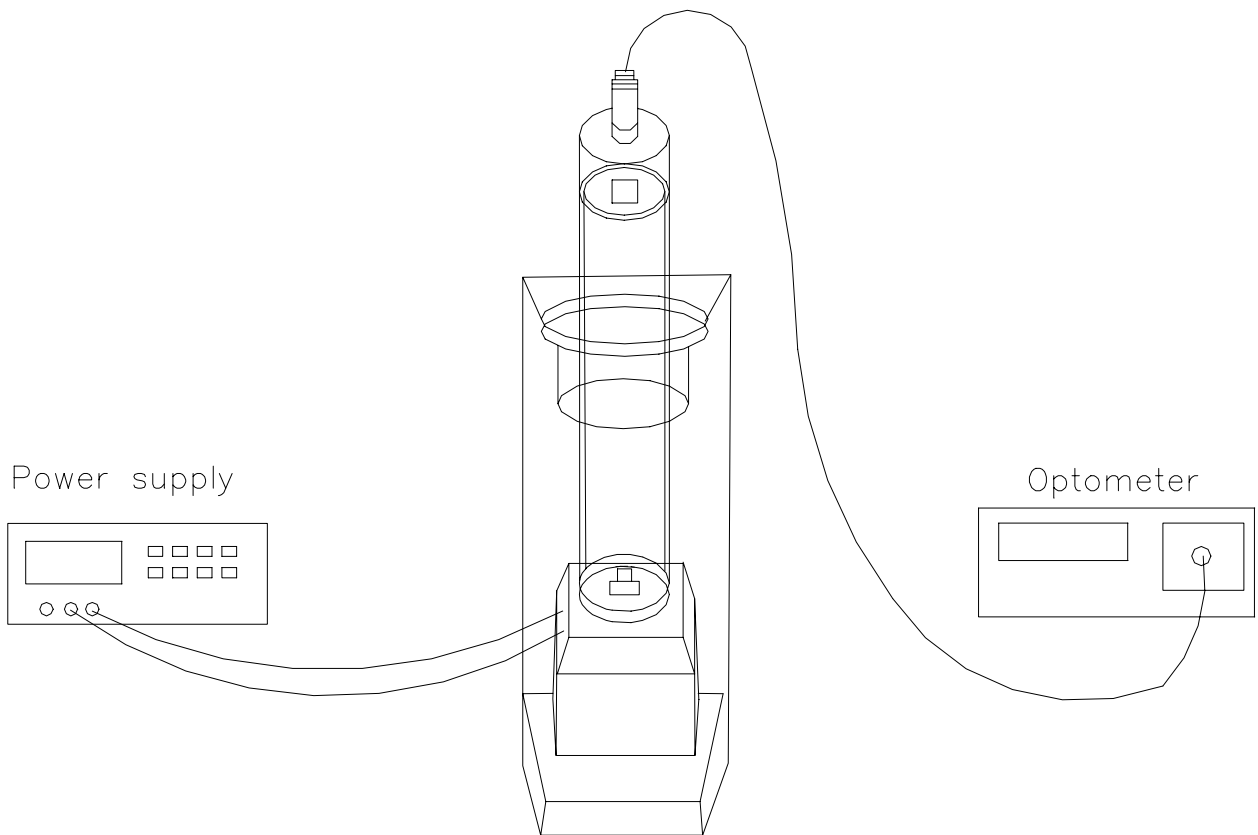
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■ Test Method For Power :

Condition : $I_F=20$ mA

Test Item : Radiant Intensity

Unit : mW/sr



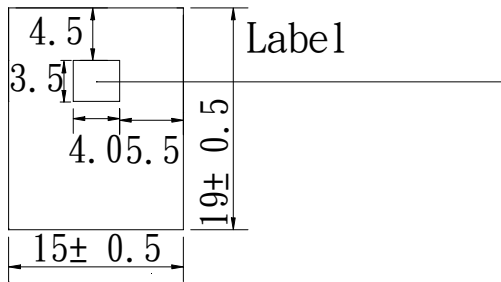


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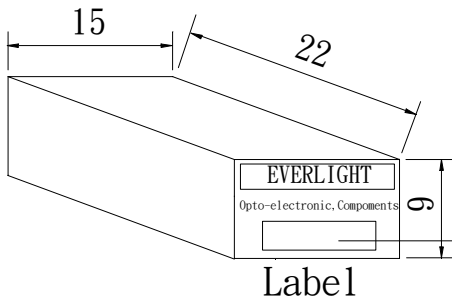
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■ Packing Specifications

1. Bag



2. Box



CPN:
P/N:



QTY:

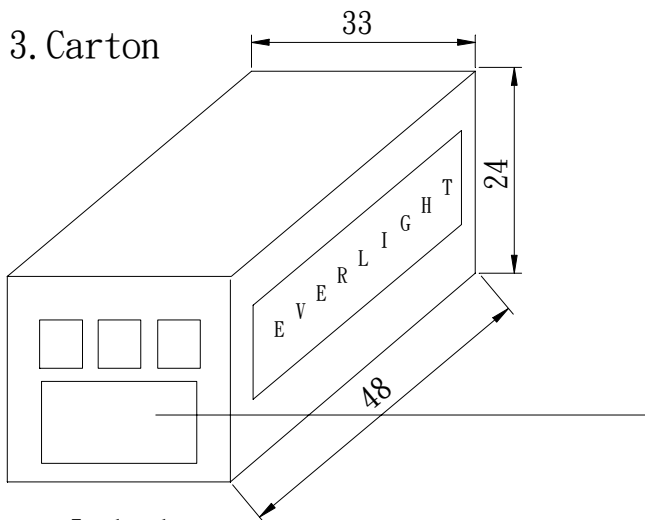
CAT:
HUE:
REF:



LOT NO:

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