

1.9mm Round Subminiature Axial Infrared LED SIR91-21C/TR7



Features

- Good spectral matching to Si photodetector
- Low forward voltage
- Peak wavelength $\lambda_p=875\text{nm}$
- Pb free
- The product itself will remain within RoHS compliant version
- Compliance with EU REACH
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm).

Descriptions

- SIR91-21C/TR7 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

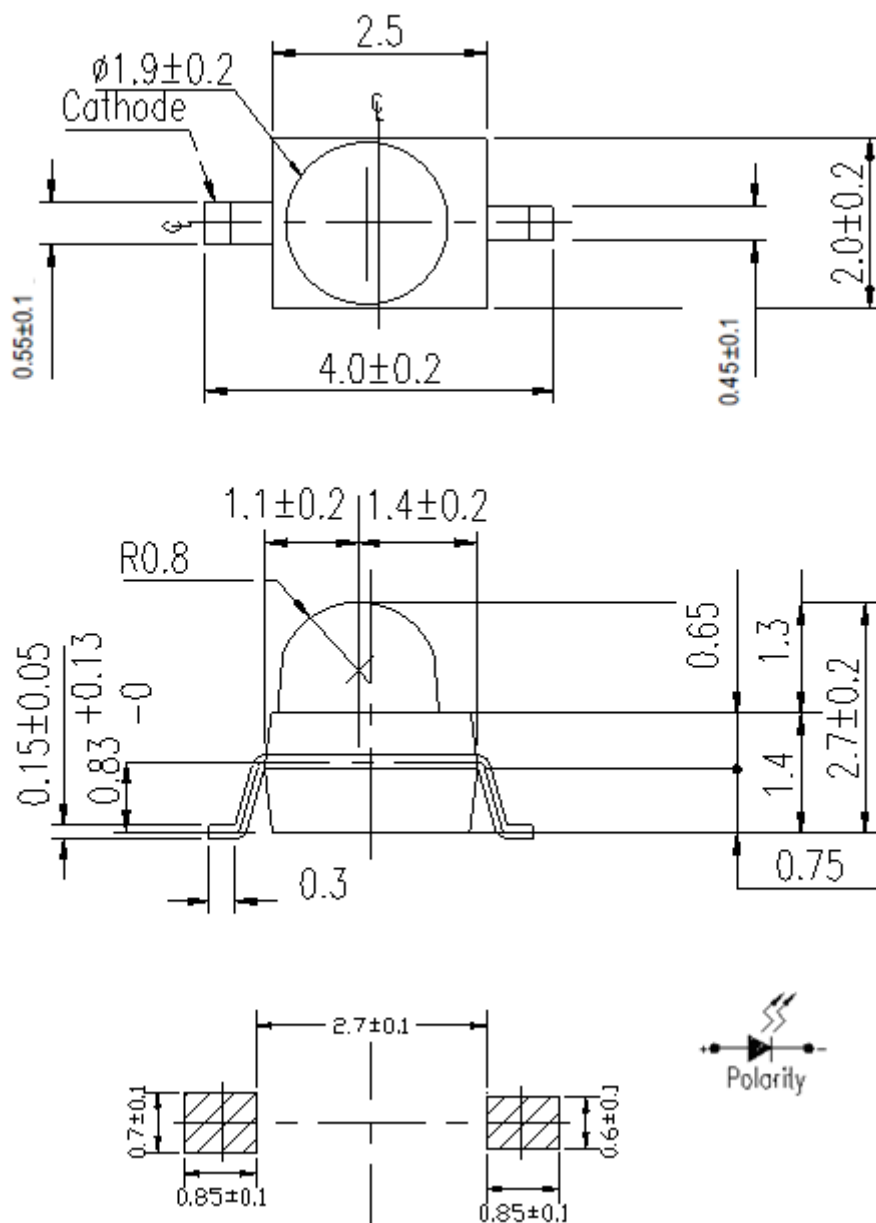
Applications

- PCB mounted infrared sensor
- Infrared remote control units with high power requirement
- Scanner
- Infrared applied system

Device Selection Guide

Part Category	Chip Material	Resin Color
SIR	GaAlAs	Water clear

Package Dimensions



- Notes:**
- 1.All dimensions are in millimeters
 - 2.Tolerances unless dimensions ± 0.1 mm

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Units
Continuous Forward Current	I_F	65	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-40~ +85	°C
Storage Temperature	T_{stg}	-40~ +85	°C
Soldering Temperature *1	T_{sol}	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	P_d	110	mW

Notes: * Soldering time \leq 5 seconds.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	I_e	$I_F=20mA$	3.0	5.0	--	mW /sr
		$I_F=100mA$ Pulse Width $\leq 100 \mu s$, Duty $\leq 1\%$	--	20	--	
Peak Wavelength	λ_p	$I_F=20mA$	--	875	--	nm
Spectral Bandwidth	$\Delta \lambda$	$I_F=20mA$	--	80	--	nm
Forward Voltage	V_F	$I_F=20mA$	--	1.3	1.6	V
		$I_F=100mA$ Pulse Width $\leq 100 \mu s$, Duty $\leq 1\%$	--	1.4	1.8	
Reverse Current	I_R	$V_R=5V$	--	--	10	μA
View Angle	$2 \theta_{1/2}$	$I_F=20mA$	--	20	--	deg

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

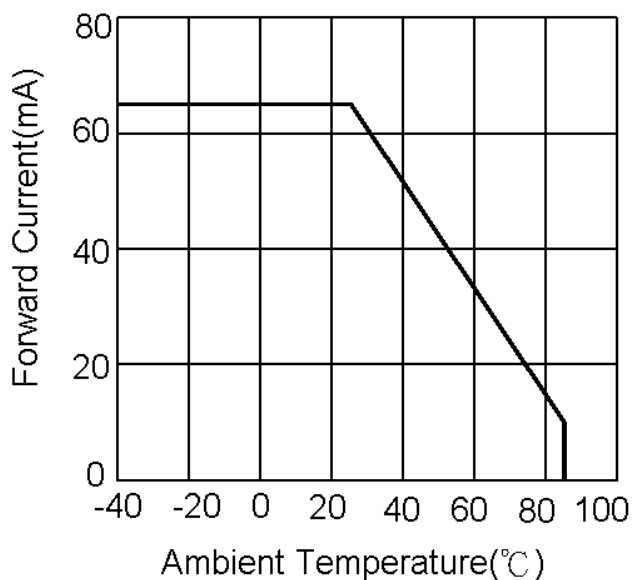


Fig.2 Spectral Distribution

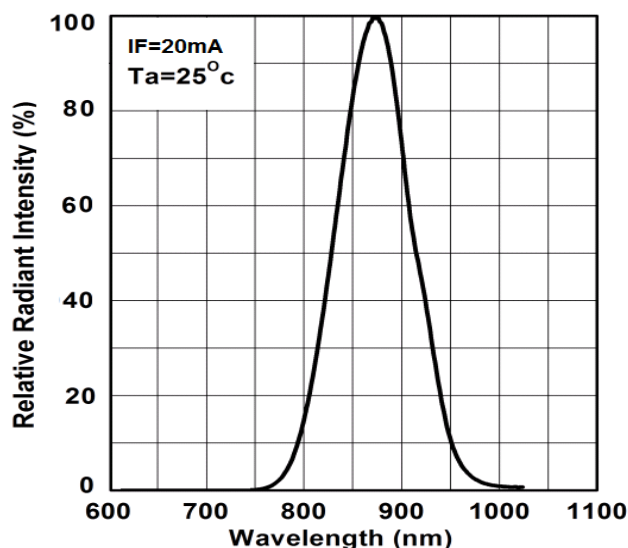


Fig.3 Forward Current vs. Forward Voltage

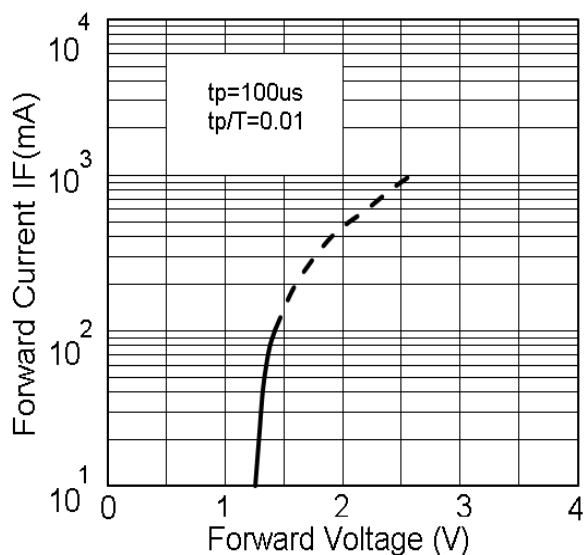
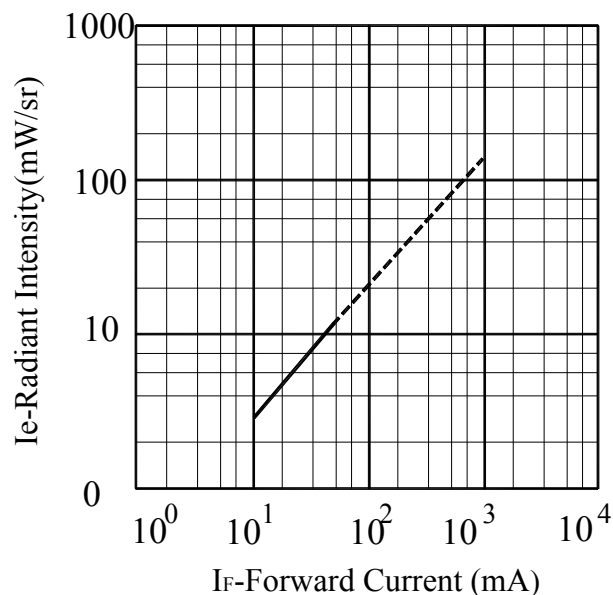
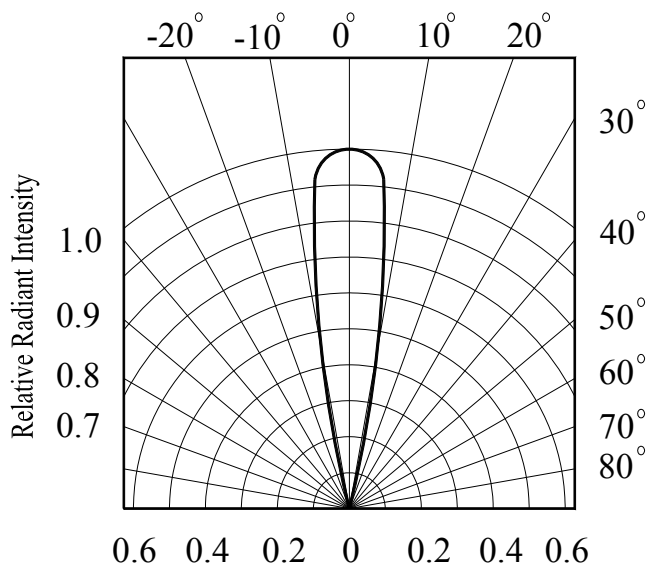


Fig.4 Relative Intensity vs. Forward Current



Typical Electro-Optical Characteristics Curves

Fig.6 Relative Radiant Intensity vs. Angular Displacement



Precautions For Use

1. Over-current-proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package, the LEDs should be kept at 10°C~30°C and 90%RH or less.

2.3 The LEDs suggested be used within one year.

2.4 After opening the package, the devices must be stored at 10°C~30°C and $\leq 60\%RH$, and used within 168 hours (floor life). If unused LEDs remain, it should be stored in moisture proof packages.

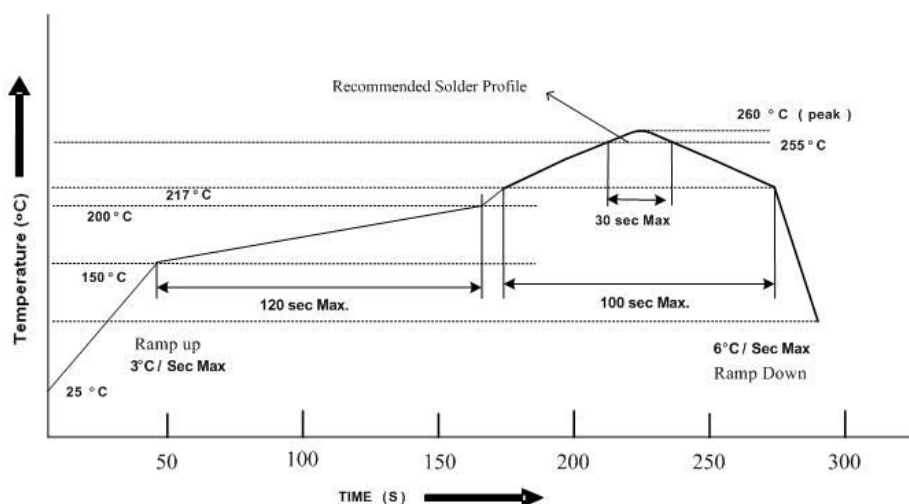
2.5 If the moisture absorbent material (desiccant material) has faded or unopened bag has exceeded the shelf life or devices (out of bag) have exceeded the floor life, baking treatment is required.

2.6 If baking is required, refer to IPC/JEDEC J-STD-033 for bake procedure or recommend the following conditions:

96 hours at 60°C \pm 5°C and < 5 % RH (reeled/tubed/loose units)

3. Soldering Condition

3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

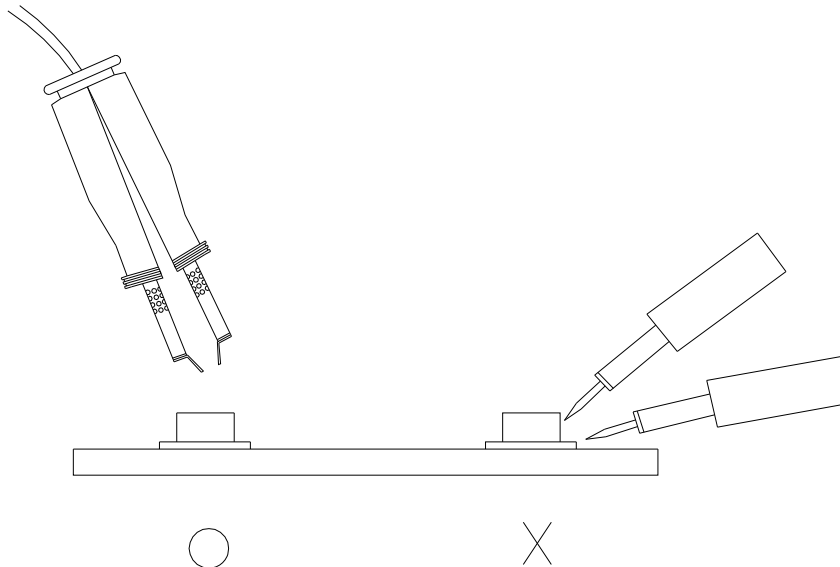
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

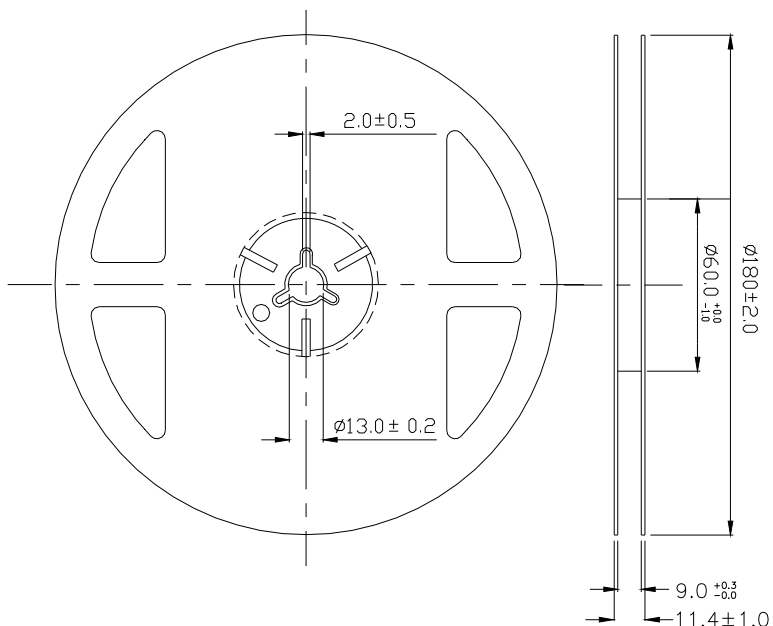
Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

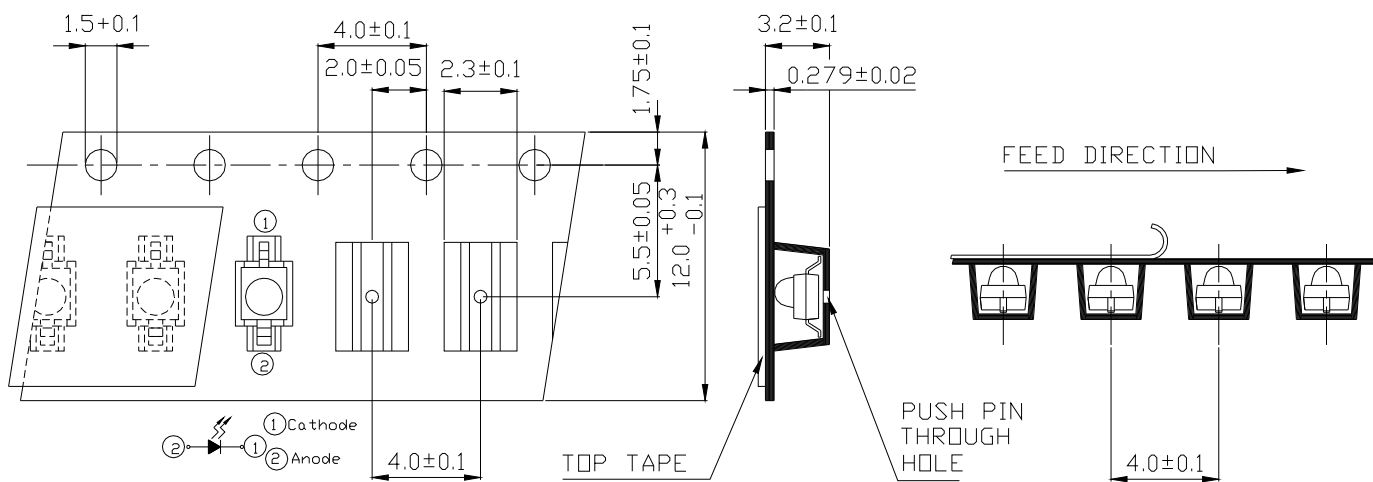
Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



Package Dimensions



Loaded Quantity Per Reel 1000PCS/Reel



Unit :mm

Packing Quantity Specification

1000Pcs/1Bag

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

DISCLAIMER

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