Technical Data Sheet

1.6×0.8mm Package Infrared LED

IR83-01C/TR8

Features

- Peak wavelength λp=940nm
- Low forward voltage
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

- IR83-01C/TR8 is an infrared emitting diode in miniature SMD package which is molded in a water clear plastic with top view lens.
- The device is spectrally matched with silicon photodiode and phototransistor.

Applications

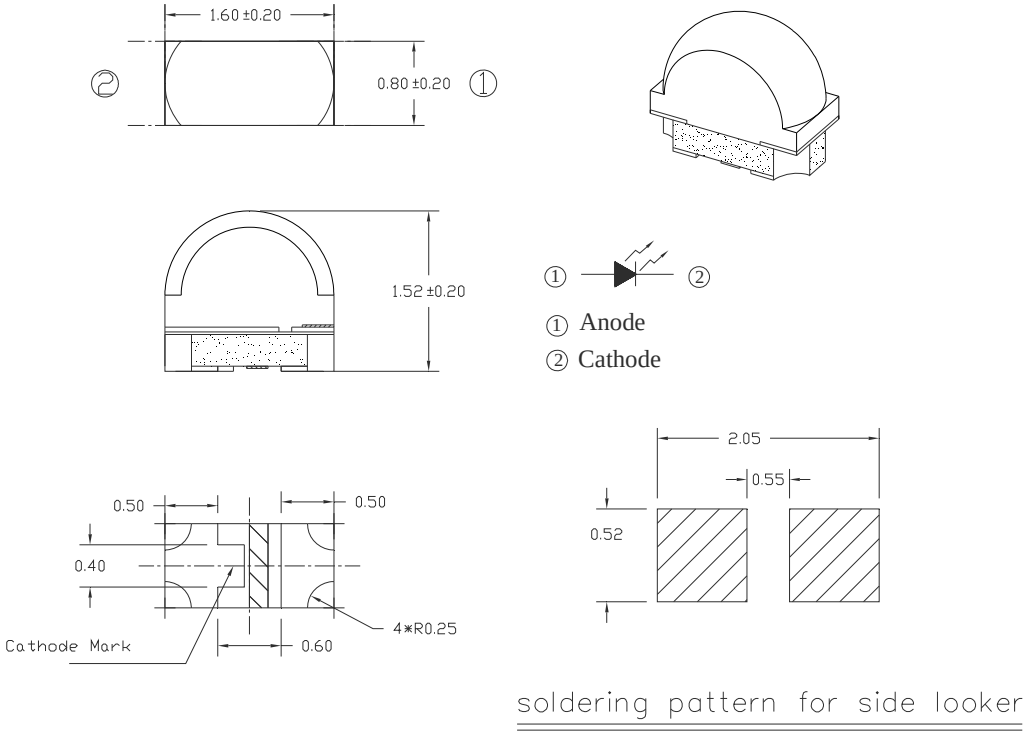
- Infrared applied system

Device Selection Guide

LED Part No.	Chip Material	Lens Color
IR83-01C/TR8	GaAlAs	Water clear

IR83-01C/TR8

Package Dimensions



Notes: 1.All dimensions are in millimeters

2.Tolerances unless dimensions ±0.1mm

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Units
Continuous Forward Current	I_F	65	mA
Peak Forward Current *1	I_{FP}	1.0	A
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-40 ~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +100	℃
Soldering Temperature *2	T_{sol}	260	℃
Power Dissipation at(or below) 25℃ Free Air Temperature	P_d	100	mW

Notes: *1:I_{FP} Conditions--Pulse Width≦100 μ s and Duty≦1%.

*2:Soldering time≦5 seconds.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	Ie	I_F=20mA	0.2	1.6	--	mW /sr
Peak Wavelength	λ p	I_F=20mA	--	940	--	nm
Spectral Bandwidth	Δ λ	I_F=20mA	--	45	--	nm
Forward Voltage	V_F	I_F=20mA	--	1.2	1.5	V
Reverse Current	I_R	V_R=5V	--	--	10	μA
View Angle	2θ 1/2	I_F =20mA (X)	--	115	--	deg
		I_F =20mA (Y)	--	55	--	

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

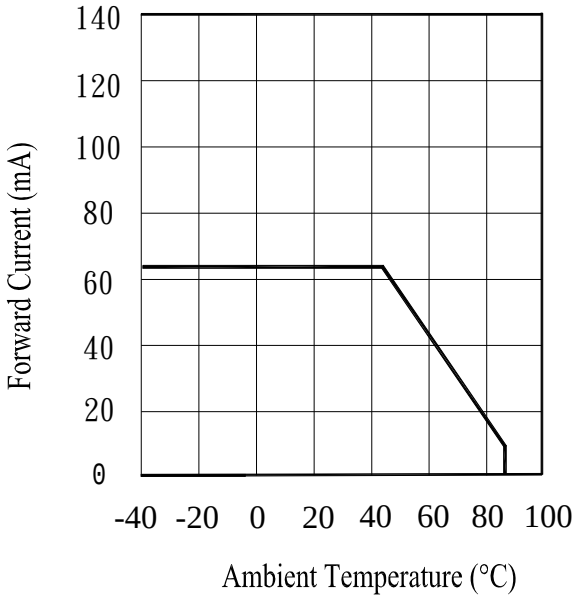


Fig.2 Spectral Distribution

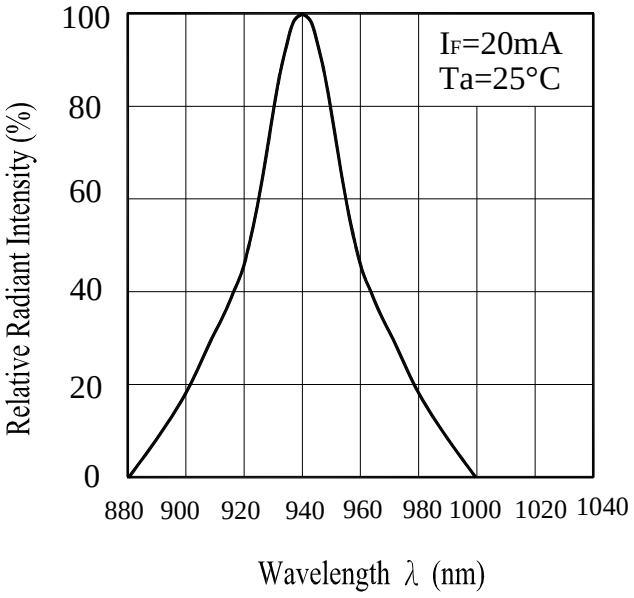


Fig.3 Radiant Intensity vs Forward Current

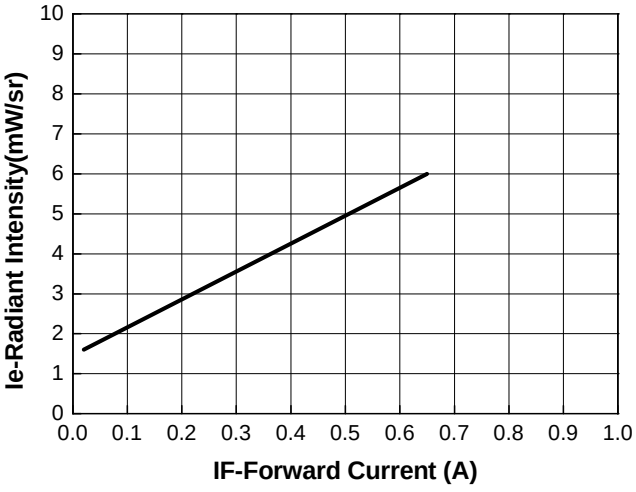
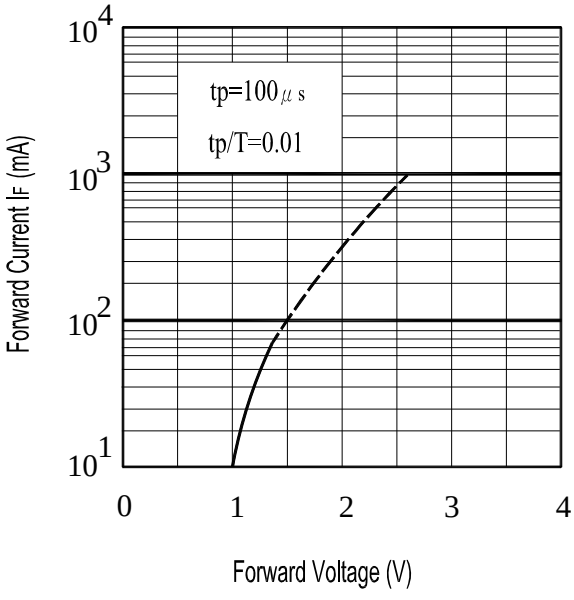


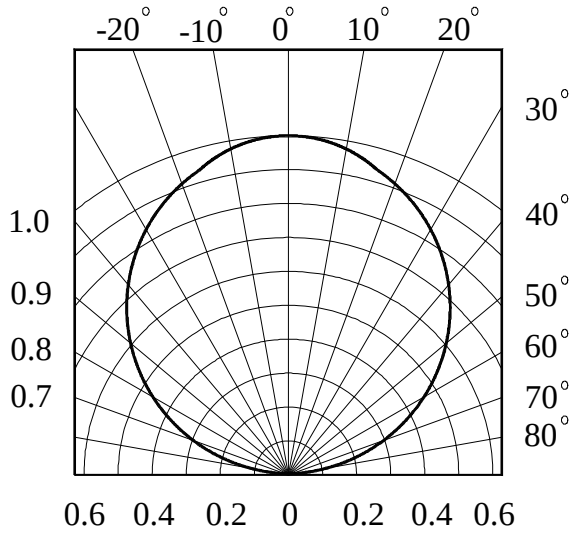
Fig.4 Forward Current vs. Forward Voltage



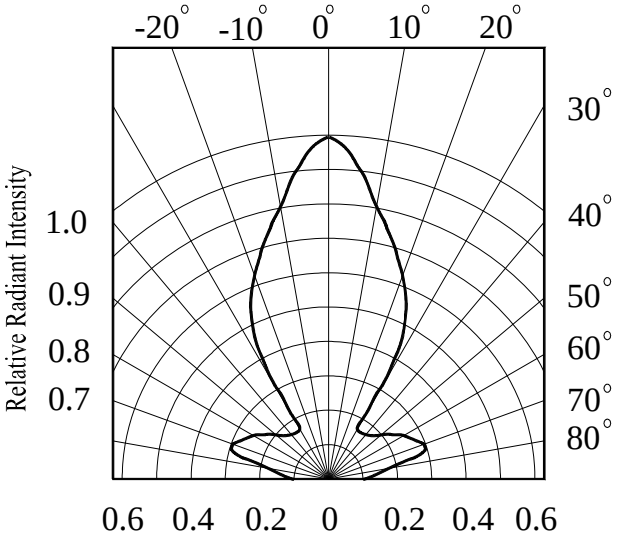
Typical Electro-Optical Characteristics Curves

Fig.5 Relative Radiant Intensity vs.
Angular Displacement

(X axle)



(Y axle)



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 devices are ready to use.

2.2 Shelf life in sealed bag from the bag seal date:
18 months at 10°C~30°C and < 90% RH.

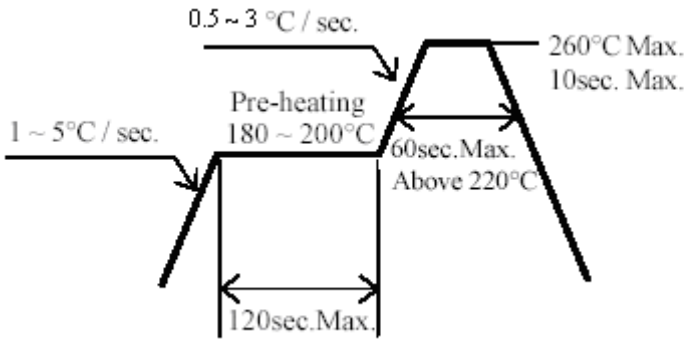
2.3 After opening the package, the devices must be stored at 10°C~30°C and ≤ 60%RH, and used within 1 year(floor life).

2.4 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.

2.5 If baking is required, refer to IPC/JEDEC J-STD-033 for bake procedure or recommend the following conditions :
192 hours at 40°C +5/–0°C and < 5 % RH (reeled/tubed/loose units) or
96 hours at 60°C ± 5°C and < 5 % RH (reeled/tubed/loose units) or
24 hours at 125°C ± 5°C, not suitable for reel or tubes

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.

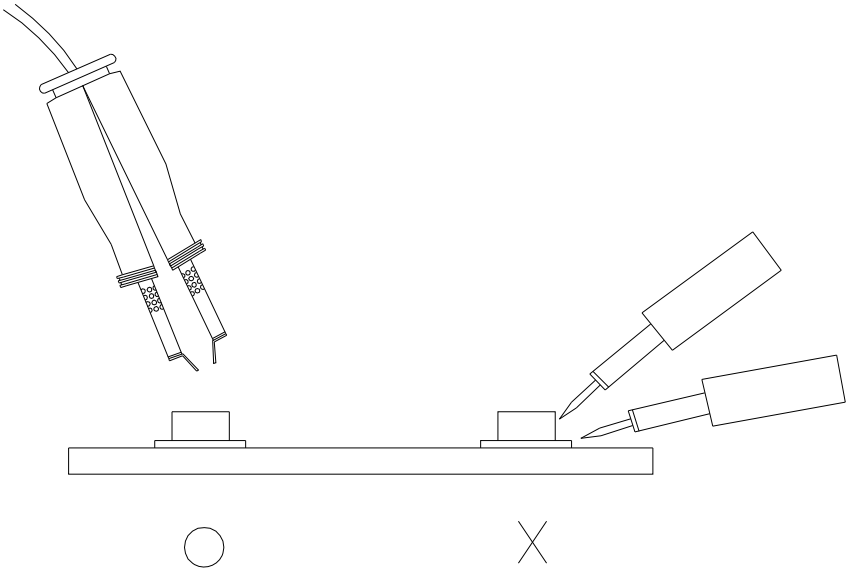
3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

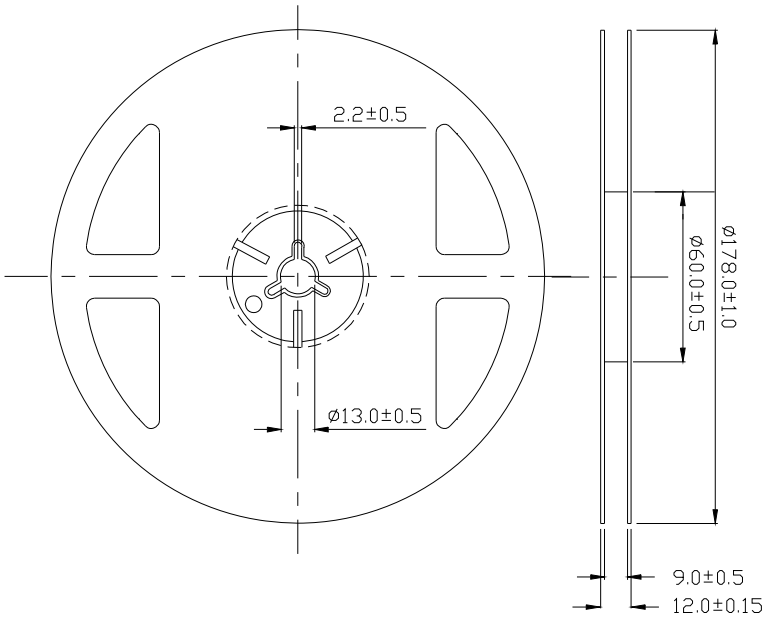
Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of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

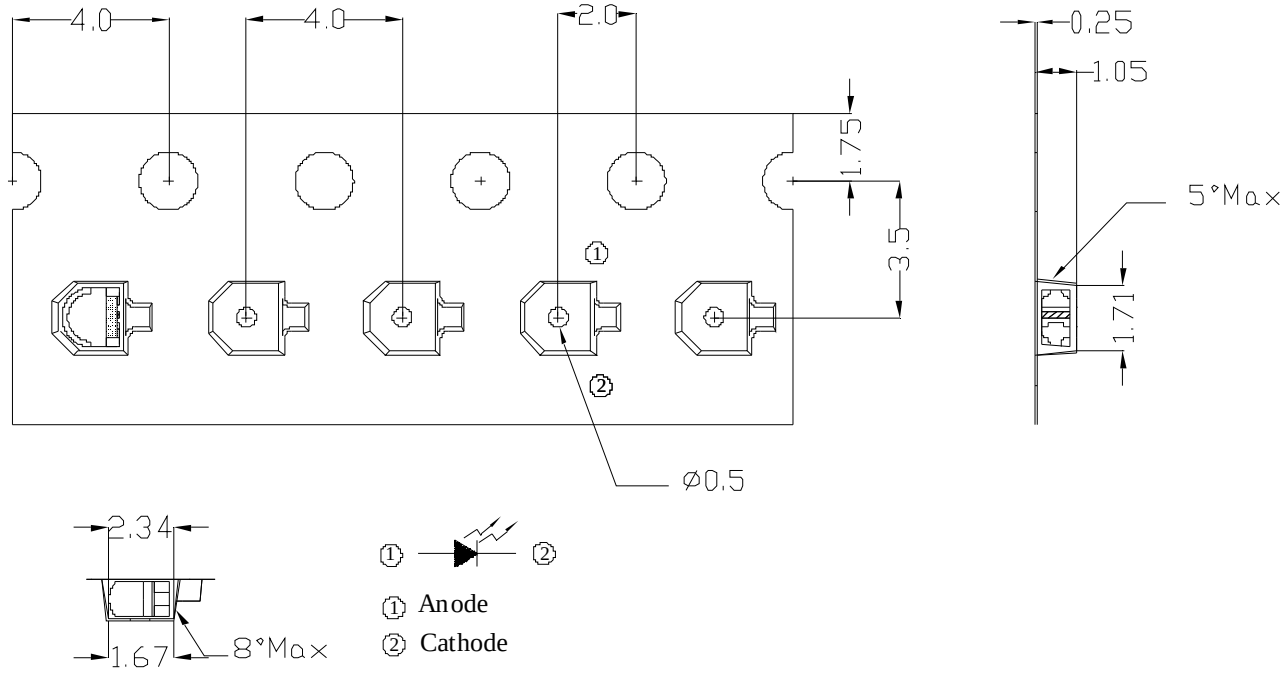


Package Dimensions



Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

2. Carrier Tape Dimensions:(Quantity: 2000pcs/reel)



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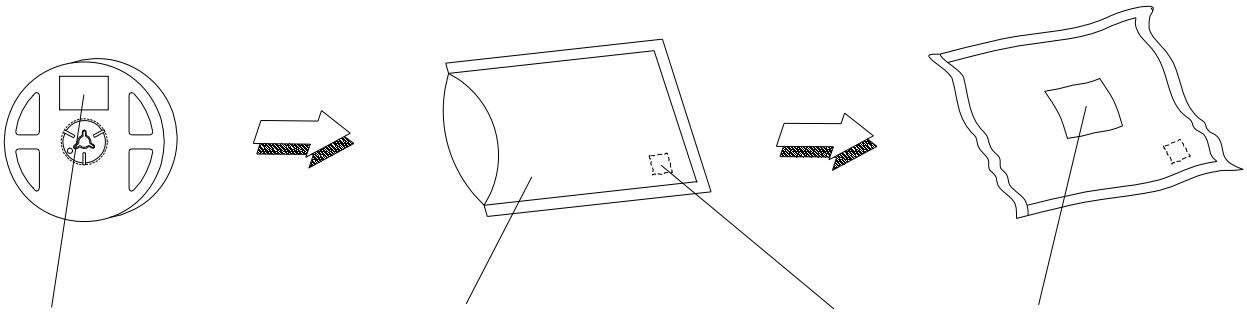
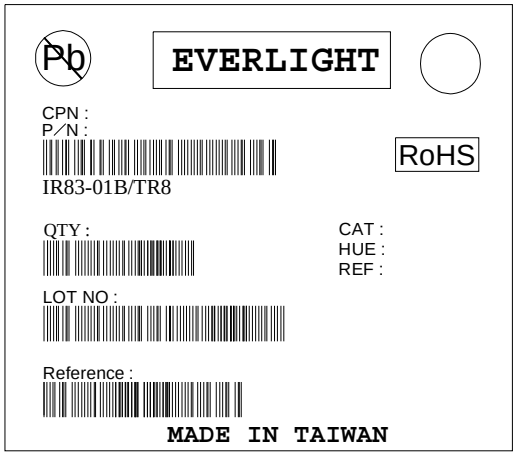
Packing Procedure



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
MADE IN TAIWAN: Production Place

Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. 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 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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