



Technical Data Sheet

2.0mm Infrared LED, T-1 3/4

IR103C

Features

- High reliability
- High radiant intensity
- Peak wavelength $\lambda_p=850\text{nm}$
- 2.54mm Lead spacing
- Low forward voltage
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

- EVERLIGHT'S Infrared Emitting Diode(IR103C) is a high intensity diode , molded in a water clear plastic package.
- The device is spectrally matched with phototransistor , photodiode and infrared receiver module.

Applications

- Free air transmission system
- Optoelectronic switch
- Floppy disk drive
- Infrared applied system
- Smoke detector

Device Selection Guide

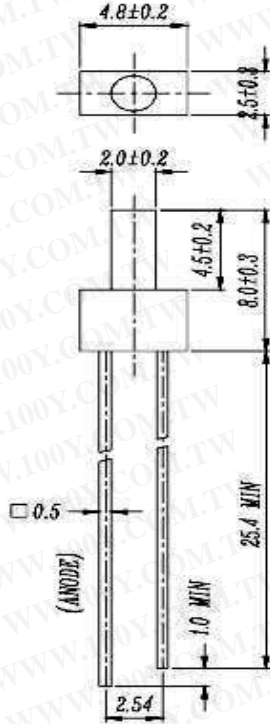
LED Part No.	Chip Material	Lens Color
IR	GaAlAs	Water clear

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



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Package Dimensions



- Notes:**
1. All dimensions are in millimeters
 2. Tolerances unless dimensions ± 0.25 mm

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

Parameter	Symbol	Rating	Units
Continuous Forward Current	I_F	100	mA
Peak Forward Current	I_{FP}	1.0	A
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	$-40 \sim +85$	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-40 \sim +85$	$^\circ\text{C}$
Soldering Temperature	T_{sol}	260	$^\circ\text{C}$
Power Dissipation at (or below) 25°C Free Air Temperature	P_d	150	mW

Notes: $_{FP}$ Conditions--Pulse Width $\leq 100\mu\text{s}$ and Duty $\leq 1\%$.

*1: I

*2: Soldering time ≤ 5 seconds.



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Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
		I _F =20mA	7.8	15	--	
		I _F =100mA Pulse Width ≤ 100μs ,Duty ≤ 1%	--	80	--	
		I _F =1A Pulse Width ≤ 100μs ,Duty ≤ 1%.	--	935	--	
Peak Wavelength	λ _p	I _F =20mA	--	940	--	nm
Spectral Bandwidth	Δλ	I _F =20mA	--	45	--	nm
		I _F =20mA		1.45	1.65	
		I _F =100mA Pulse Width ≤ 100μs ,Duty ≤ 1%	--	1.80	2.40	
		I _F =1A Pulse Width ≤ 100μs ,Duty ≤ 1%.	--	4.10	5.25	
Reverse Current	I _R	V _R =5V	--	--	10	μA
View Angle	2θ1/2	I _F =20mA	--	30	--	deg

Rank

Condition: I_F=20mA

Unit: mW/sr

Bin number	M	N	P	Q	R
Min	7.8	11.0	15.0	21.0	30.0
Max	12.5	17.6	24.0	34.0	48.0



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Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

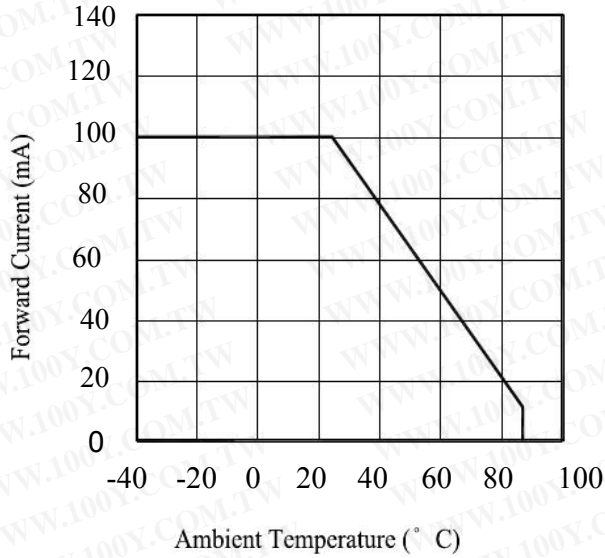


Fig.2 Spectral Distribution

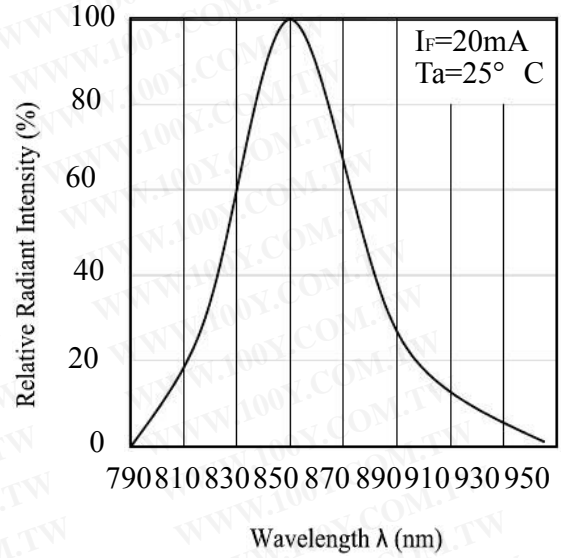


Fig.3 Peak Emission Wavelength Ambient Temperature

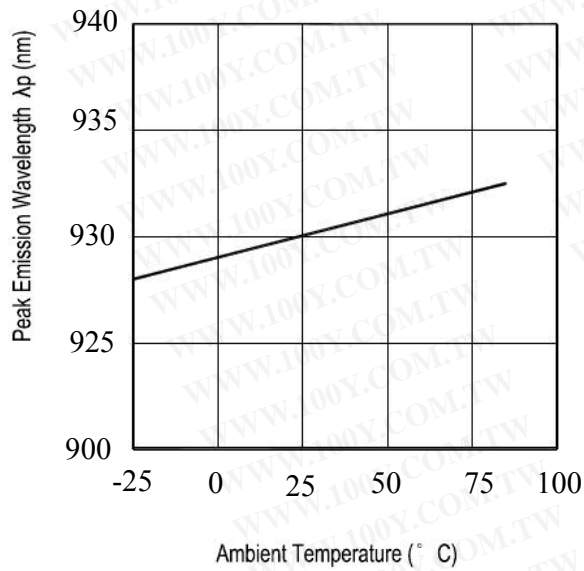
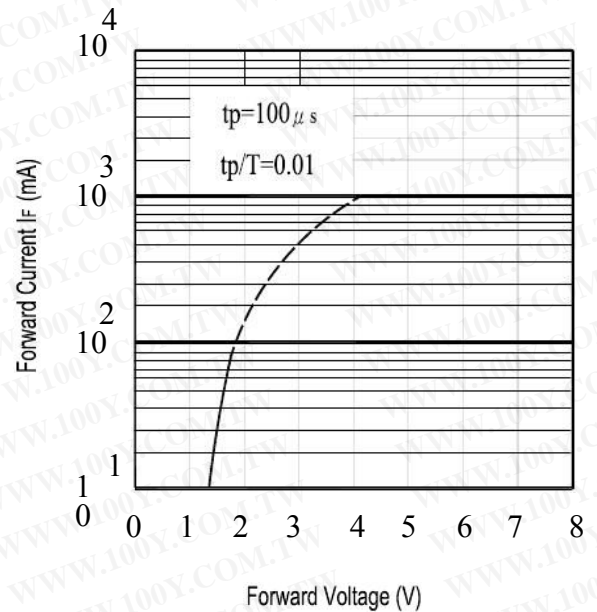


Fig.4 Forward Current vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs.

Forward Current

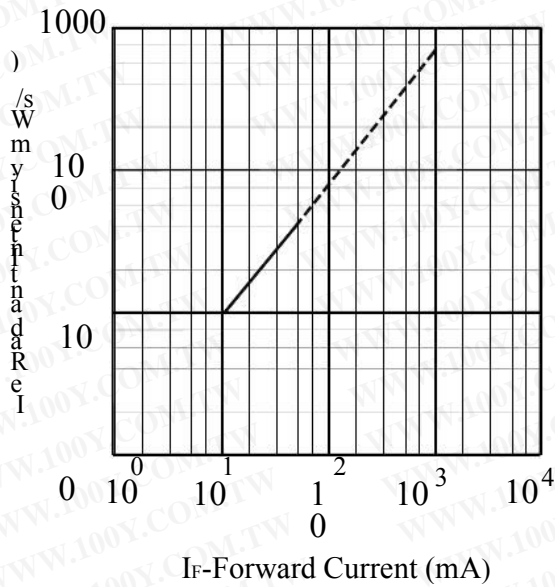


Fig.6 Relative Radiant Intensity vs.

Angular Displacement

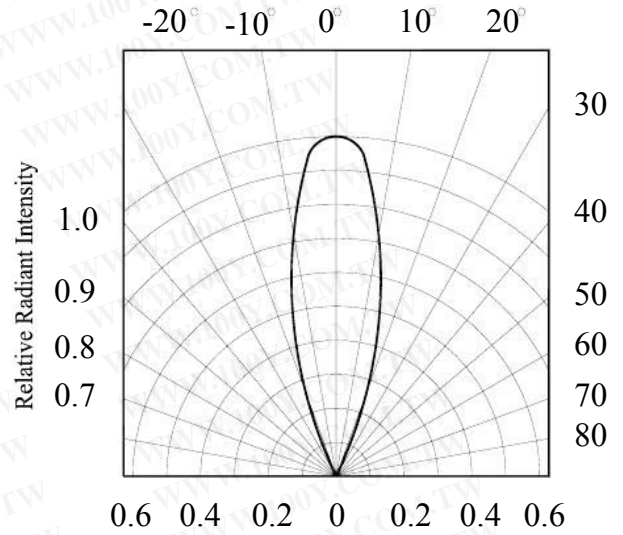


Fig.7 Relative Intensity vs.

Ambient Temperature(°C)

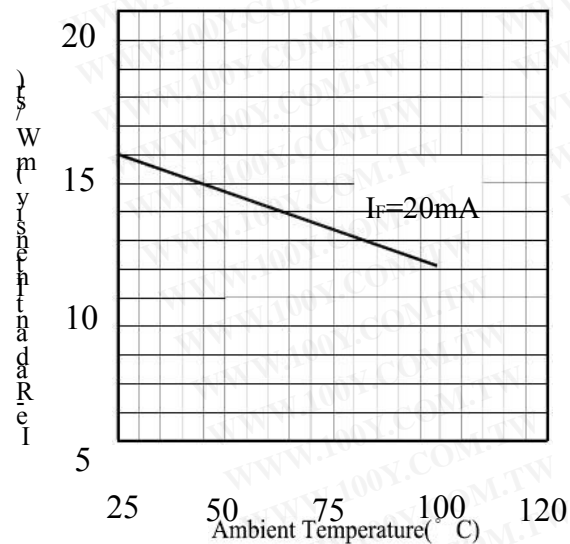
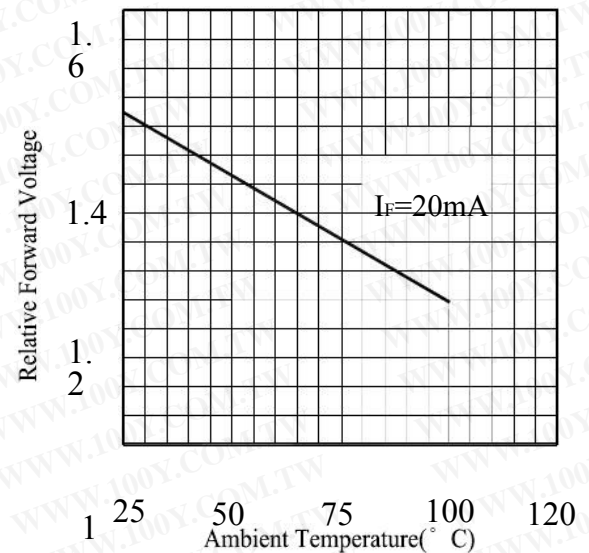


Fig.8 Forward Voltage vs.

Ambient Temperature(°C)





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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 Sizes	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP.: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	10secs	22pcs		0/1
2	Temperature Cycle	H : $+100^{\circ}\text{C}$ 15mins \updownarrow 5mins L : -40°C 15mins	300Cycles	22pcs	$I_R \cong U \times 2$ $E_e \cong L \times 0.8$ $V_F \cong U \times 1.2$	0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5mins \updownarrow 10secs L : -10°C 5mins	300Cycles	22pcs	U: Upper Specification	0/1
4	High Temperature Storage	TEMP.: $+100^{\circ}\text{C}$	1000hrs	22pcs	Limit L: Lower	0/1
5	Low Temperature Storage	TEMP.: -40°C	1000hrs	22pcs	Specification Limit	0/1
6	DC Operating Life	$I_f = 20\text{mA}$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	$85^{\circ}\text{C} / 85\% \text{ R.H}$	1000hrs	22pcs		0/1

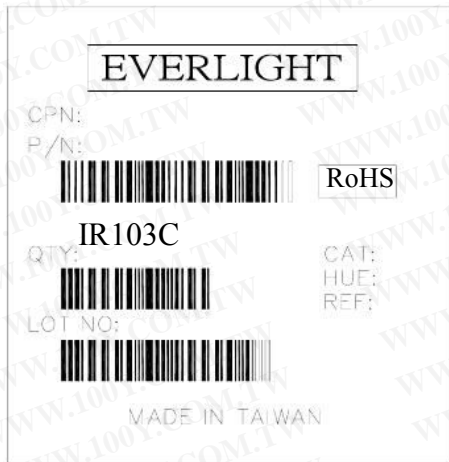


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Packing Quantity Specification

- 1.1000PCS/1Bag, 5Bags/1Box
- 2.10Boxes/1Carton

Label Form Specification



CPN: Customer's Production Num

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.
3. 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.

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