



5mm Lamp Type 940nm Infrared Emitter

Features

- High radiant intensity
- Viewing Angle = $\pm 20^\circ$
- High reliability
- Good spectral matching to Si photo detector
- RoHS compliance

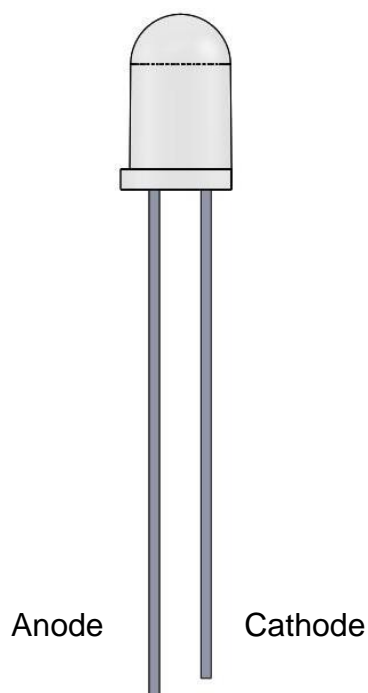
Applications

- Infrared sensor
- Remote control

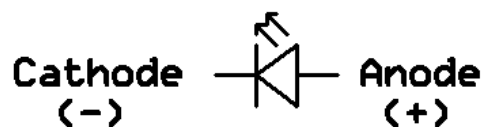
Description

The IR500N-E0 is a GaAlAs infrared LED diode. The device has a peak wavelength of 940nm LED spectrally matched with phototransistor or photodiode.

Package Outline



Schematic



**Absolute Maximum Rating at 25°C**

Symbol	Parameters	Ratings	Units	Notes
I _F	Continuous Forward Current	100	mA	
I _{FP}	Peak Forward Current	1.0	A	1
V _R	Reverse Voltage	5	V	
T _{opr}	Operating Temperature	-40 ~ +85	°C	
T _{stg}	Storage Temperature	-40 ~ +100	°C	
T _{sol}	Soldering Temperature	260	°C	2
P _D	Power Dissipation at(or below) 25°C Free Air Temperature	180	mW	

Electro-Optical Characteristics *T_A = 25°C (unless otherwise specified)***Optical Characteristics**

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _e	Radiant Intensity	I _F =20mA	6.5	10	20	mW/sr	3
		I _F =100mA	-	45	-		
λ _p	Peak Wavelength	I _F =20mA	-	940	-	nm	
Δλ	Spectral Bandwidth	I _F =20mA	-	50	-	nm	
θ _{1/2}	Angle of Half Intensity	I _F =20mA	-	±20	-	deg	

Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V _F	Forward Voltage	I _F =20mA	1.1	1.2	1.5	V	
		I _F =100mA	1.2	1.39	1.8		
I _R	Reverse Current	V _R =5V	-	-	10	μA	

Notes:

- 1 : I_{FP} Conditions--Pulse Width ≤ 100μs and Duty ≤ 1%.
- 2 : Soldering time ≤ 5 seconds.
- 3.: I_e Bin Rank :

Bin Code	H	I
Min	6.5	10
Max	13	20



Typical Characteristic Curves

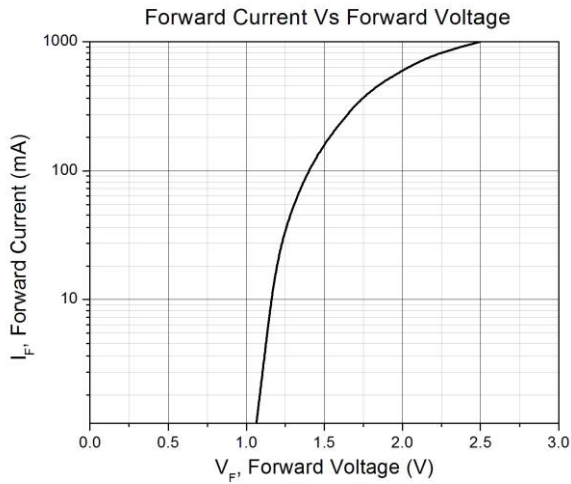


Figure 1

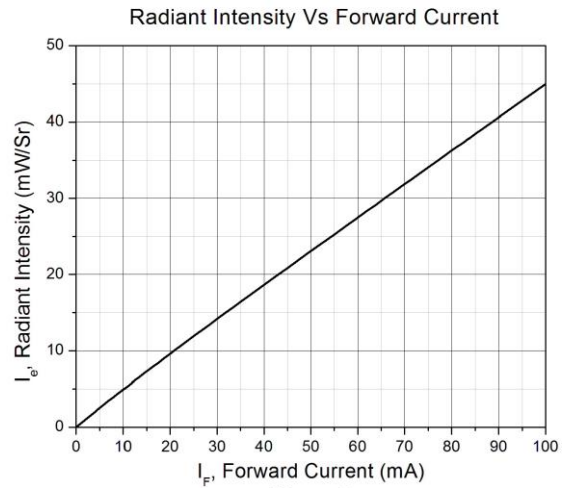


Figure 2

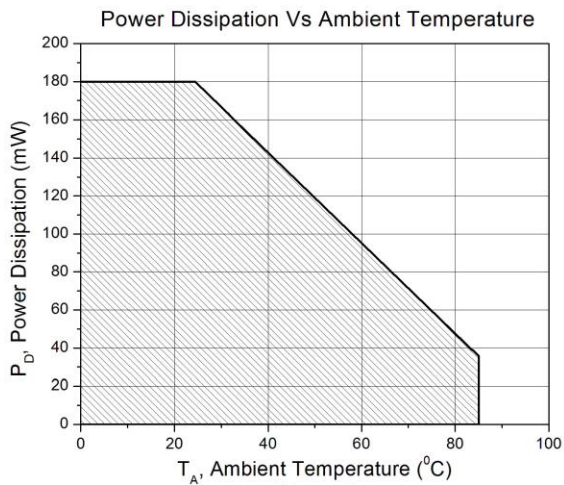


Figure 3

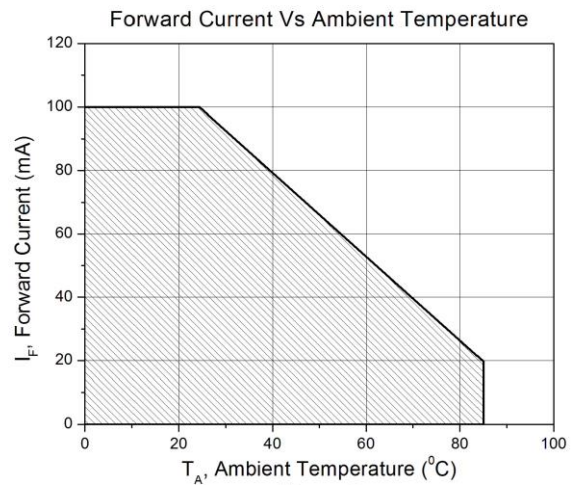


Figure 4

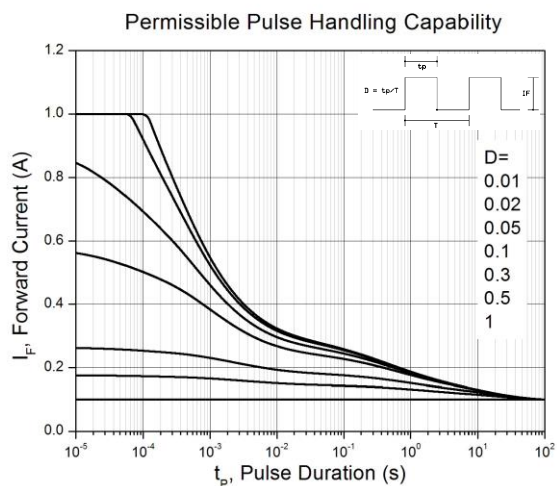


Figure 5

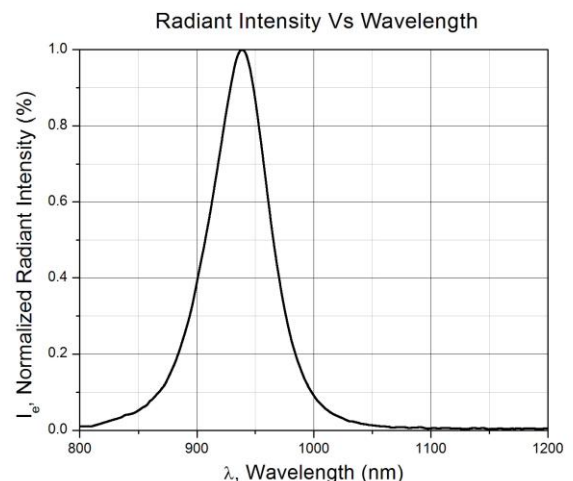


Figure 6



Typical Characteristic Curves

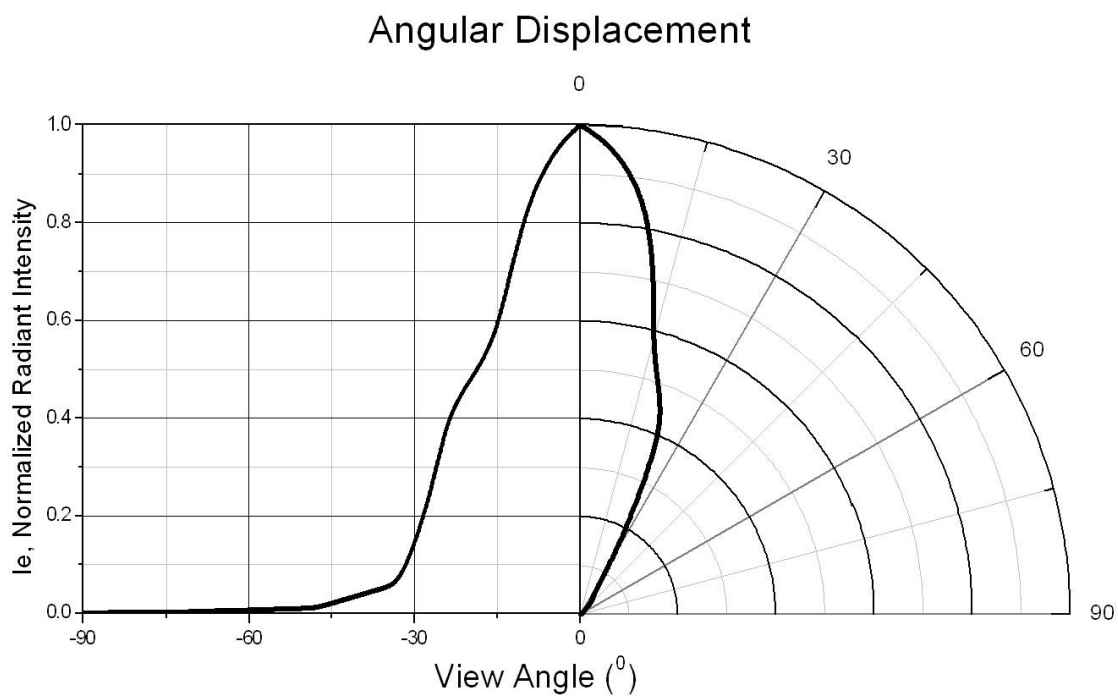


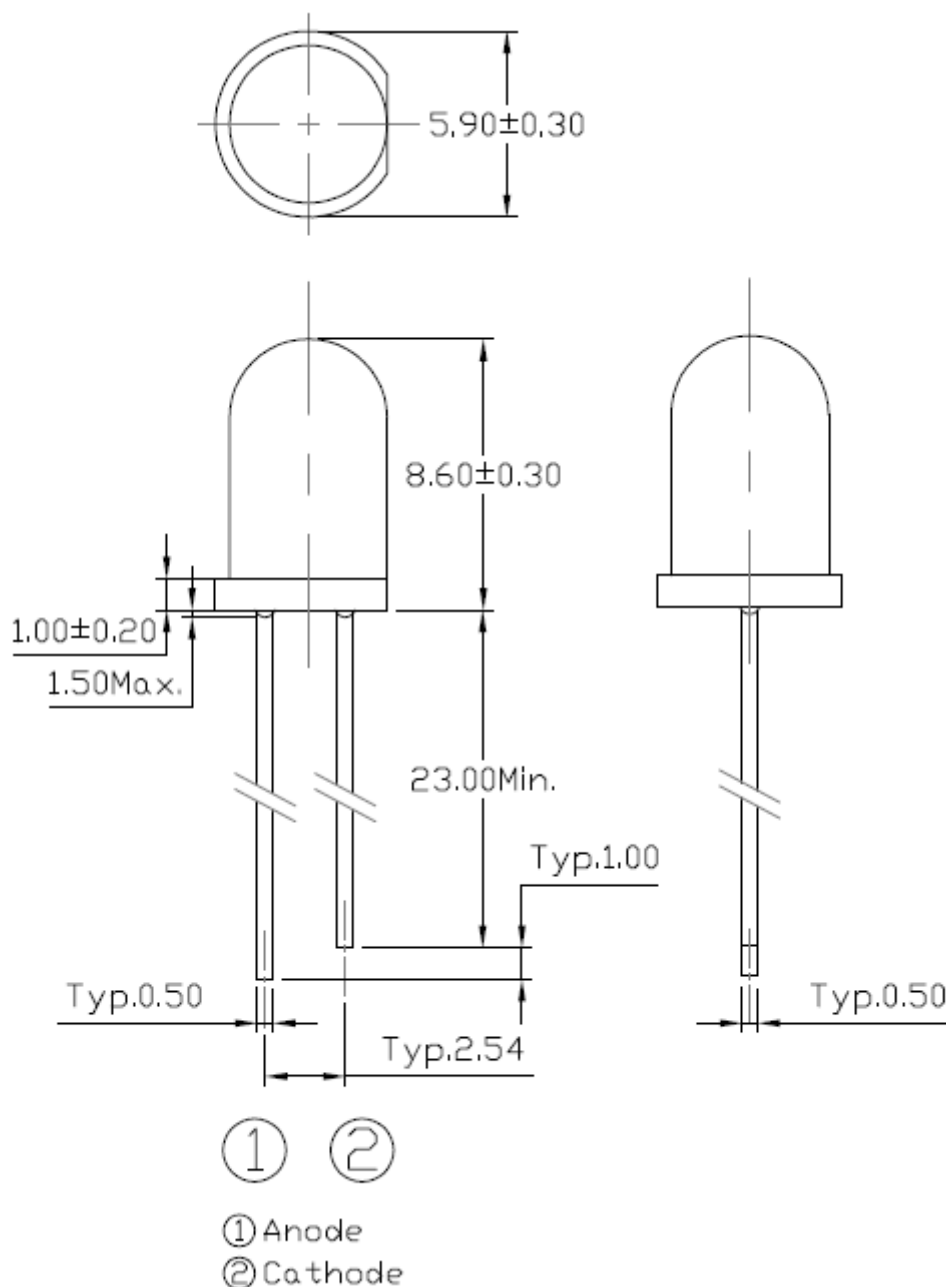
Figure 7



IR500N-E0

5mm Lamp Type 940nm Infrared Emitter

Package Dimension *All dimensions are in mm, unless otherwise stated.*





IR500N-E0

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Ordering Information

IR500N-E0/(XX)(YYY)

XX = TR – Tape & Reel / TB – Tape & Box

YYY = H; H- Refer to Tape dimension drawing (255 = 25.5mm)

Part Number	Description	Quantity
IR500N-E0	1 Bag	500 pcs
	1 Box	10 bag
	1 Carton	8 box
IR500N-E0/TR(H) Tape & Reel	1 Reel	1000 pcs
	1 Carton	8 box
IR500N-E0/TB(H) Tape & Box	1 Box	2000pcs
	1 Carton	8 box

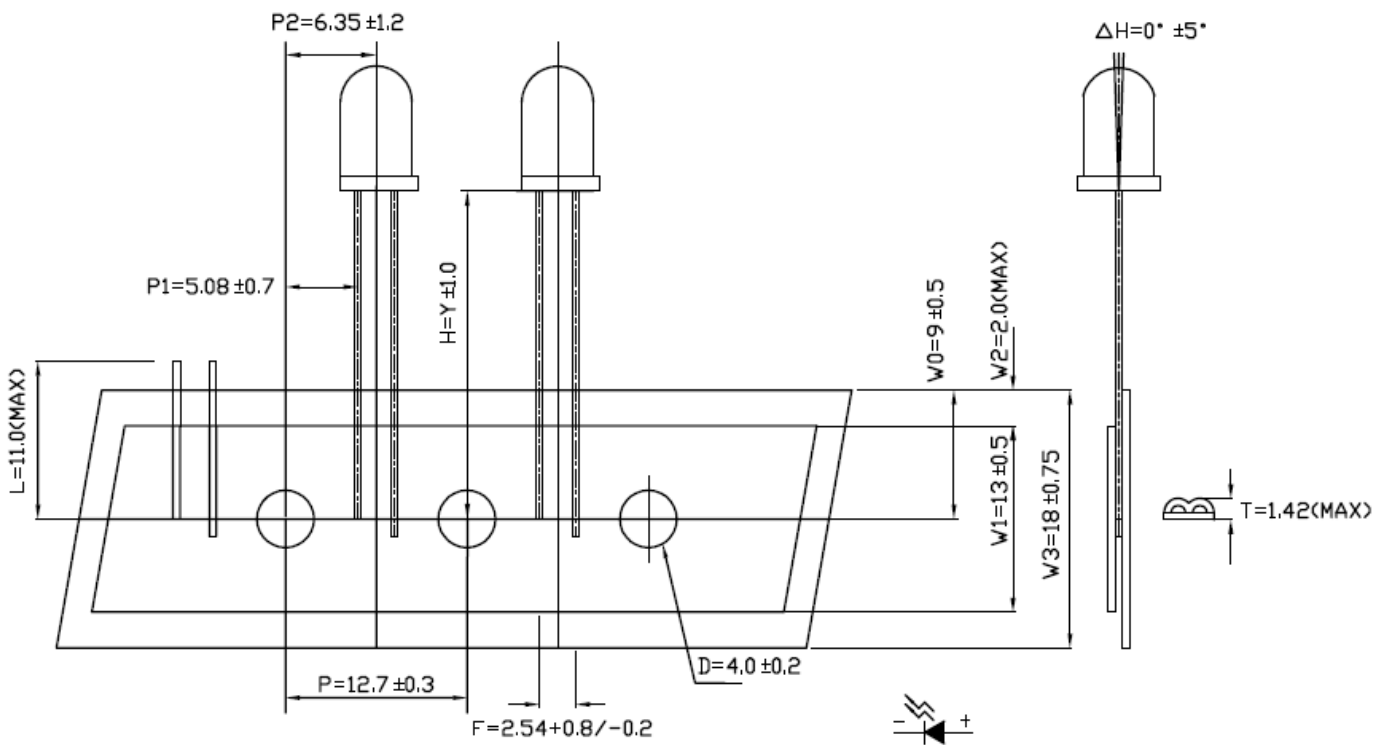


IR500N-E0

5mm Lamp Type 940nm Infrared Emitter

Tape Dimension *All dimensions are in mm, unless otherwise stated.*

Input Direction
→





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