USHIO Applying Light to Life

Data Sheet

2022.07

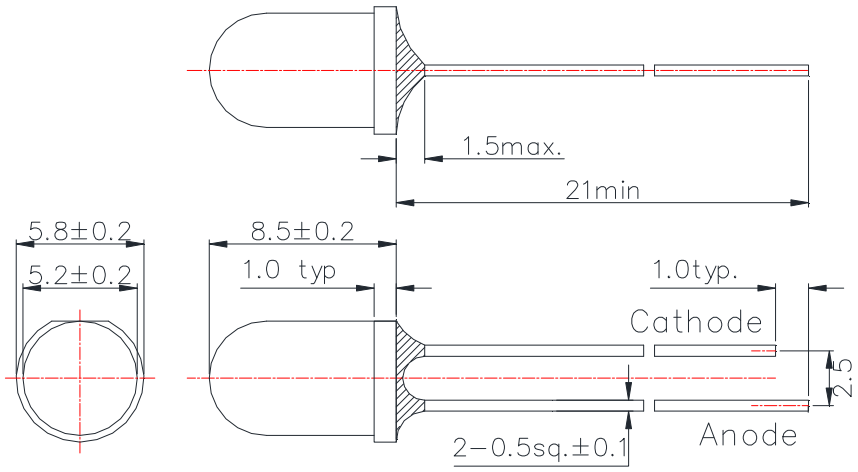
epitex

PRELIMINARY

L1050GD-02

Infrared LED Lamp

Outline and Internal Circuit



(Unit : mm)

Features

- Chip Material : GaAs
- Chip Dimension : 350um * 350um
- Number of Chips : 1pce
- Peak Wavelength : 1050nm typ.
- Package Type : ϕ5mm clear molding
- Lead Frame : Soldered (Lead Free)
- Lens : Epoxy Resin

Application

Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	160	mW
Forward Current	IF	100	mA
Pulse Forward Current	IFP	1000	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthjs	200	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-40 ~ +100	°C
Storage Temperature	Tstg	-40 ~ +100	°C

‡Pulse Forward Current condition : Duty 1% and Pulse Width=10us.

‡Soldering condition : Refer to technical support information on the website.

Optical and Electrical Characteristics (Tc=25°C)

(*: 100% testing, **: reference value)

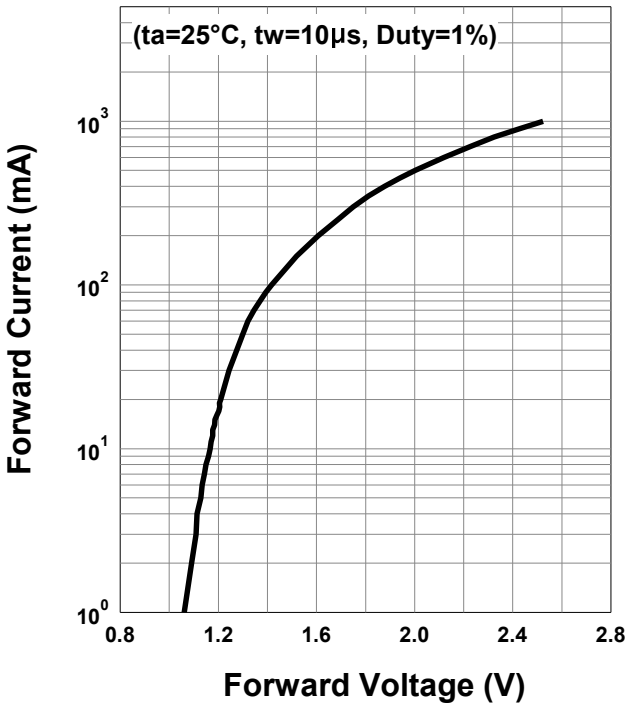
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		1.3	(1.6)	V	IF=50mA*
	VFP		2.5			IFP=1A**
Reverse Current	IR			10	uA	VR=5V*
Total Radiated Power	PO	21	30		mW	IF=50mA*
			420			IFP=1A**
Radiant Intensity	IE		920		mW/sr	IF=50mA**
			1300			IFP=1A**
Peak Wavelength	λp	1000		1100	nm	IF=50mA*
Half Width	Δλ		50		nm	IF=50mA**
Viewing Half Angle	θ1/2		±3		deg.	IF=50mA**
Rise Time	tr		10		ns	IF=50mA**
Fall Time	tf		10		ns	IF=50mA**

‡ Radiated Power is measured by G8370-85.

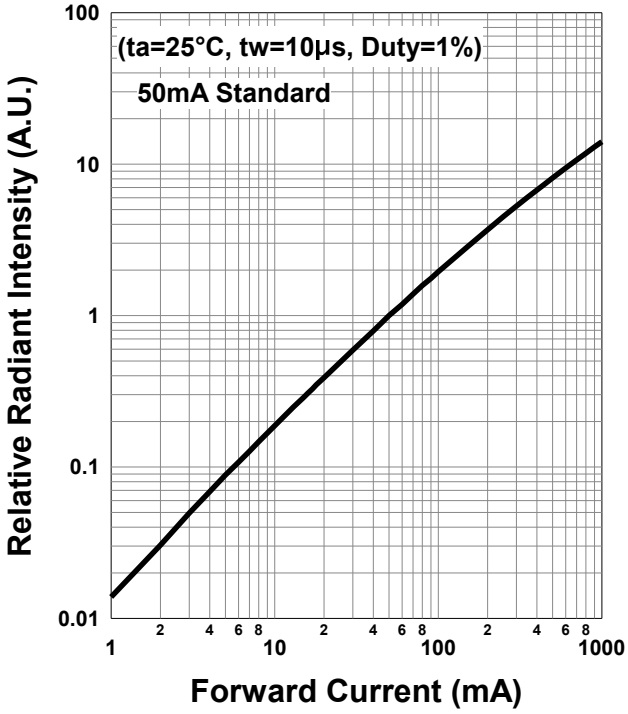
‡ Radiant Intensity is measured by Ando Optical Multi Meter AQ2140 & AQ2742.

Typical Characteristic Curves

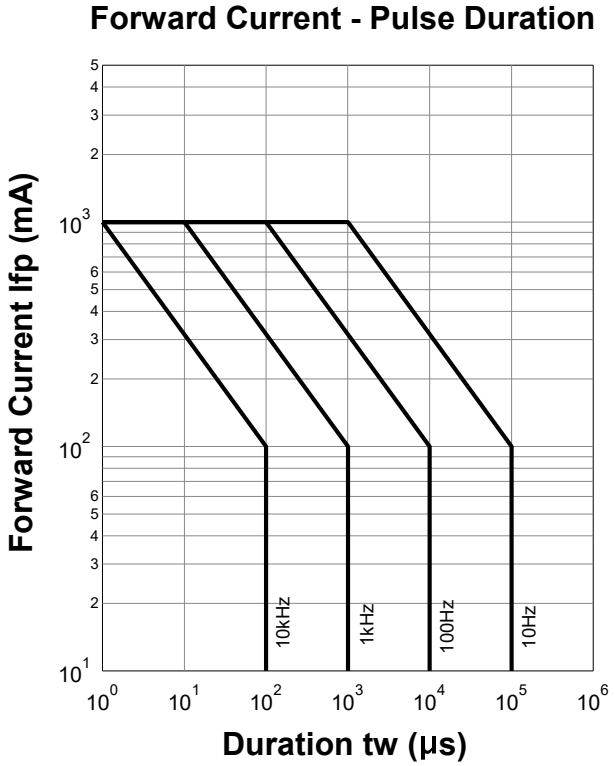
Forward Current - Forward Voltage



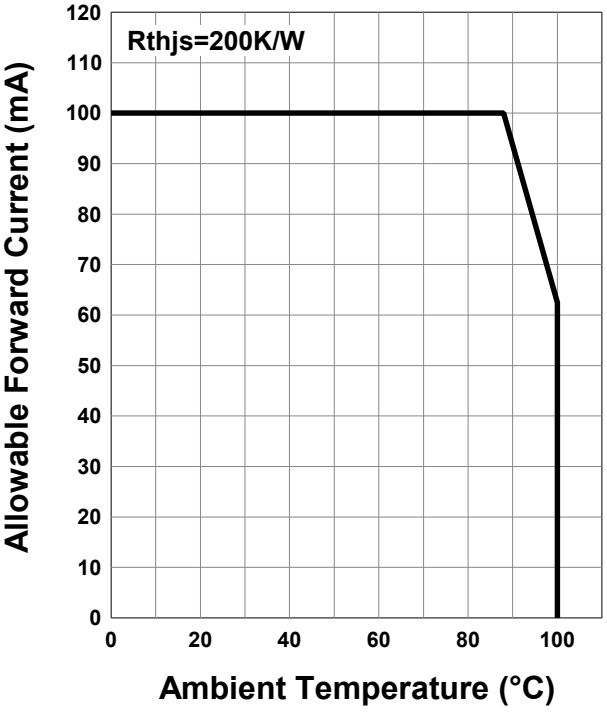
Relative Radiant Intensity - Forward Current

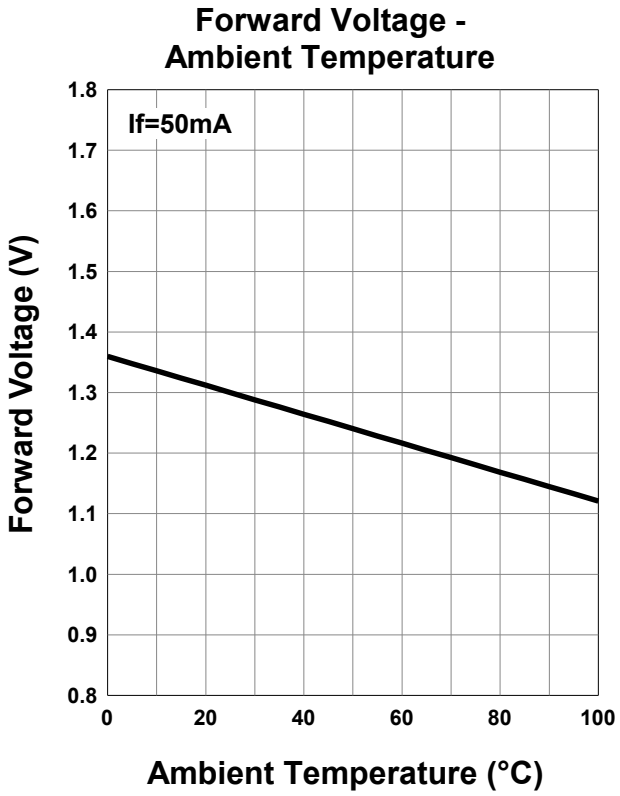


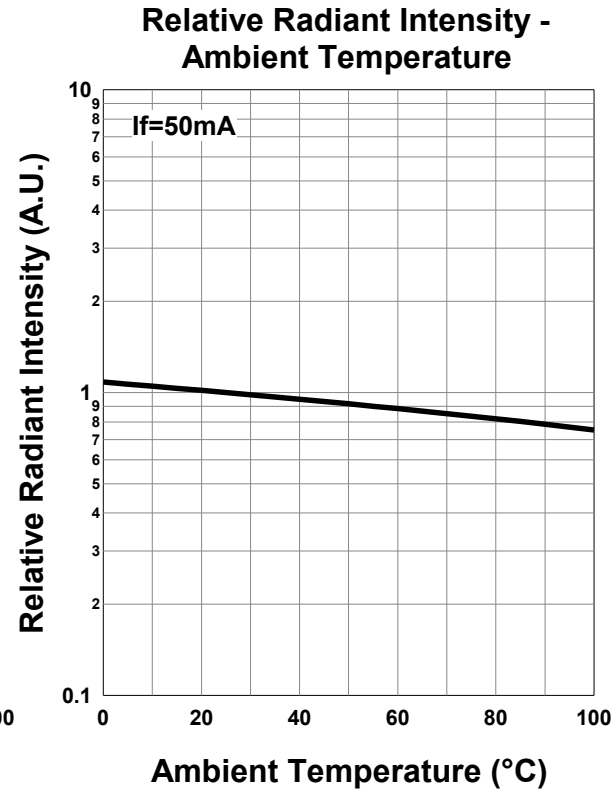
Forward Current - Pulse Duration

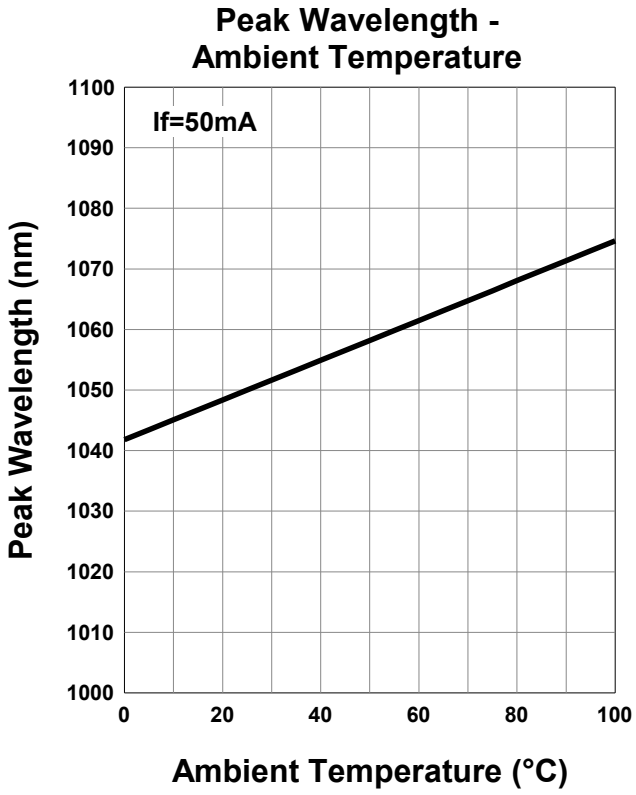


Allowable Forward Current - Ambient Temperature

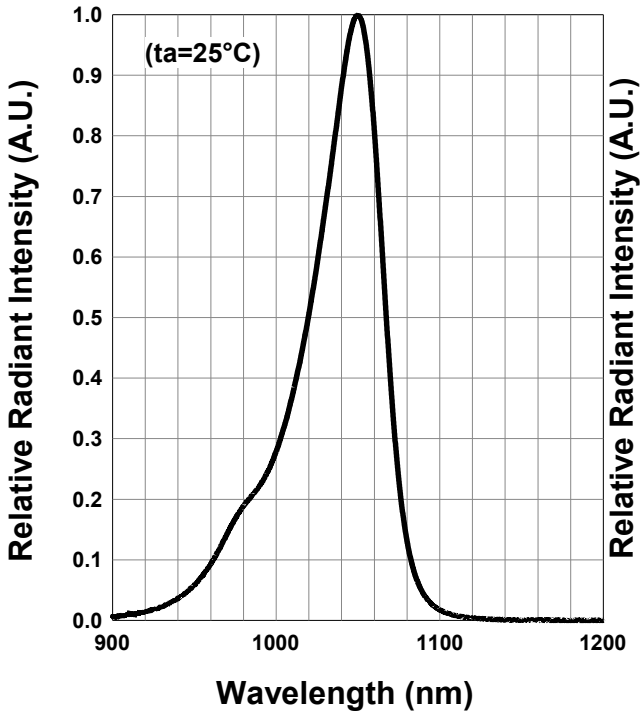



Forward Voltage -
Ambient Temperature
If=50mA
Forward Voltage (V)
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0
20
40
60
80
100
Ambient Temperature (°C)

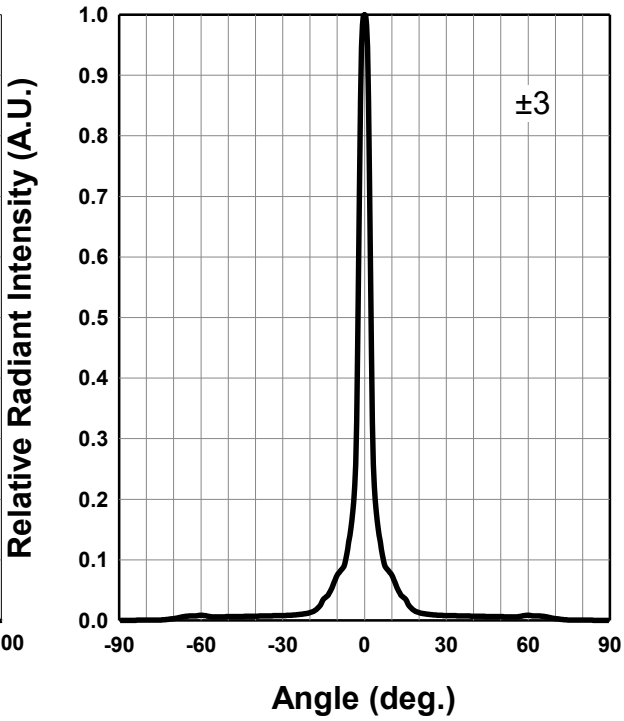

Relative Radiant Intensity -
Ambient Temperature
If=50mA
Relative Radiant Intensity (A.U.)
10
9
8
7
6
5
4
3
2
1
0.1
0
20
40
60
80
100
Ambient Temperature (°C)


Peak Wavelength -
Ambient Temperature
If=50mA
Peak Wavelength (nm)
1100
1090
1080
1070
1060
1050
1040
1030
1020
1010
1000
0
20
40
60
80
100
Ambient Temperature (°C)

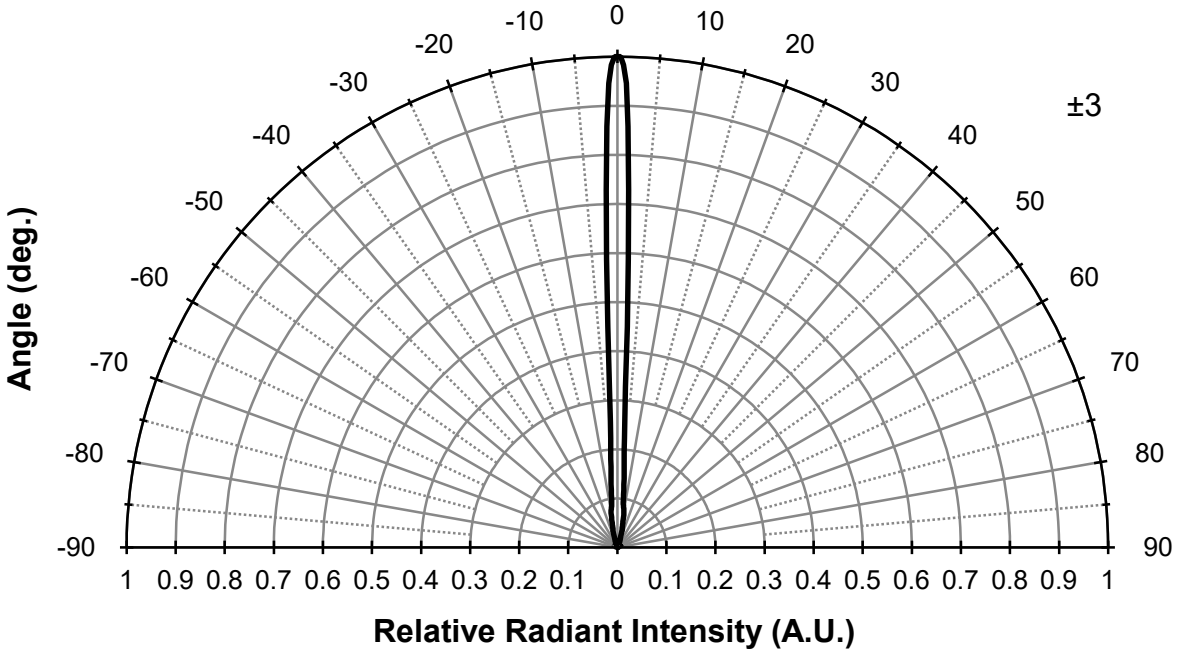
Relative Spectral Emission



Radiation Characteristics



Radiation Characteristics



Disclaimer

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Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements. Product data and parameters may vary by user application and over time.

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Technical Support Information

https://www.ushio.co.jp/en/led/technology/index.html

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