Sidelooker Infrared LED

GL480E

Features

▪Side view emission type

▪Plastic mold with resin lens

▪Medium directivity angle (Δθ: ±13° TYP.)

▪Peak emission wavelength: 950 nm TYP.

▪Radiant flux ϕe: 0.7 mW MIN.

▪Lead free and RoHS directive component

Application

▪Mouse

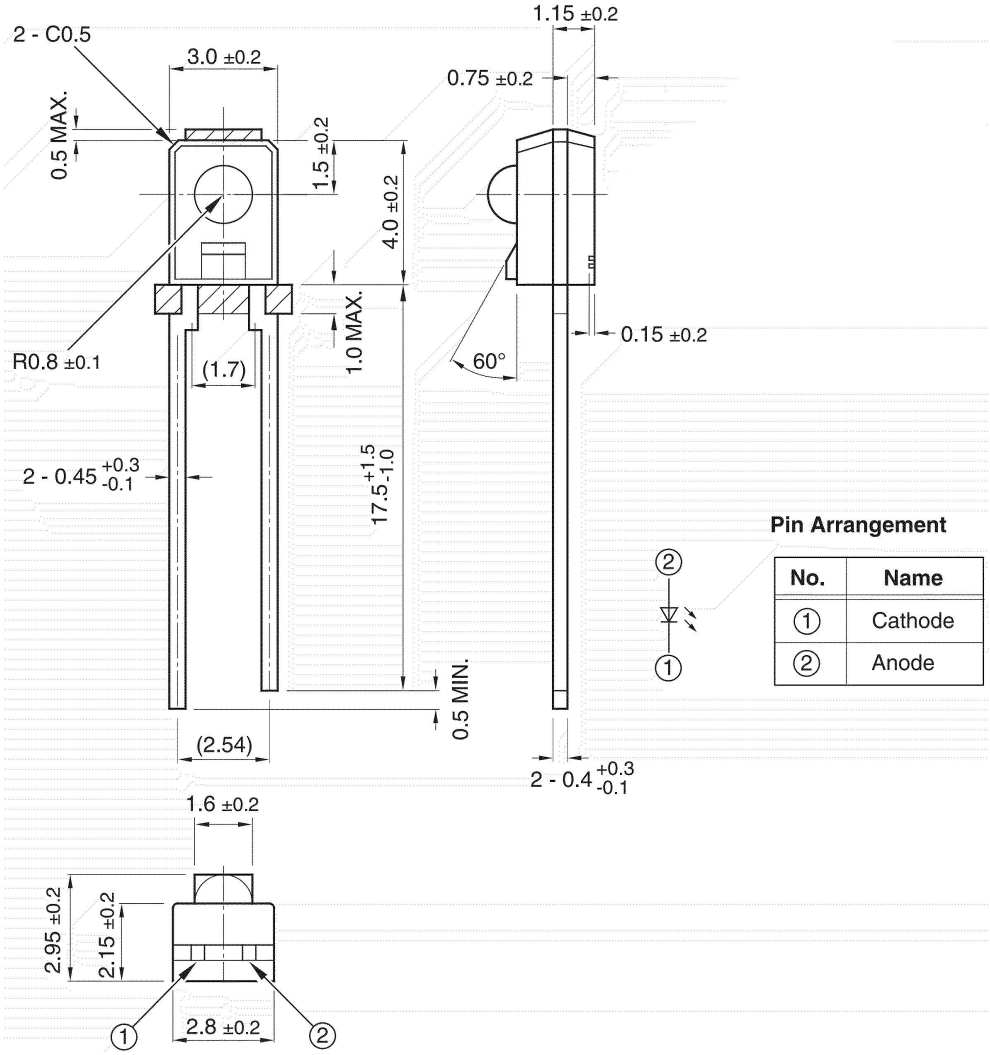
▪Optoelectronic switch

▪Infrared applied system

Description

SIVAGO's Infrared emitting diode GL480E is a high intensity diode, molded in a plastic package.The miniature side-facing device has a chip,that emits radiation from the side of the clear package.

PACKAGE DIMENSIONS



Pin Arrangement

No.	Name
①	Cathode
②	Anode

NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm(.010") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.

■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	Rating	Unit
Forward current	I_F	50	mA
Peak forward current *1	I_{FM}	1	A
Reverse voltage	V_R	6	V
Power dissipation	P	75	mW
Operating temperature	Topr	-25 to +85	°C
Storage temperature	Tstg	-40 to +85	°C
Soldering temperature *2	Tsol	260	°C

*1 Pulse width: 100 μs, Duty ratio: 0.01
*2 5 s (MAX.) positioned 1.4 mm from the resin edge. See Figure 11.

■ Electro-optical Charactertistics

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	I_F = 20 mA	–	1.2	1.4	V
Peak forward voltage	V_{FM}	I_{FM} = 0.5 A	–	3.0	4.0	V
Reverse current	I_R	V_R = 3 V	–	–	10	μA
Radiant flux	Φ_e	I_F = 20 mA	0.7	–	3.0	mW
Peak emission wavelength	λp	I_F = 5 mA	–	950	–	nm
Half intensity wavelength	Δλ	I_F = 5 mA	–	45	–	nm
Terminal capacitance	C_t	V_R = 0, f = 1 MHz	–	50	–	pF
Response frequency	f_C	–	–	300	–	kHz
Angle of half intensity	Δθ	I_F = 20 mA	–	±13	–	degrees

Fig. 1 Forward Current vs. Ambient Temperature

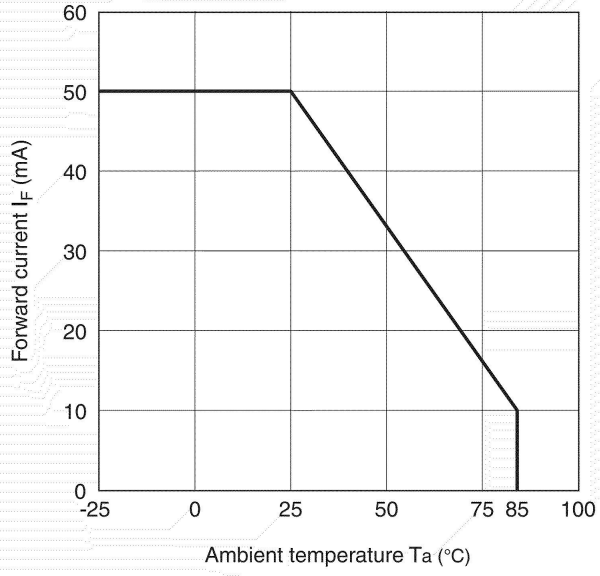


Fig. 2 Peak Forward Current vs. Duty Ratio

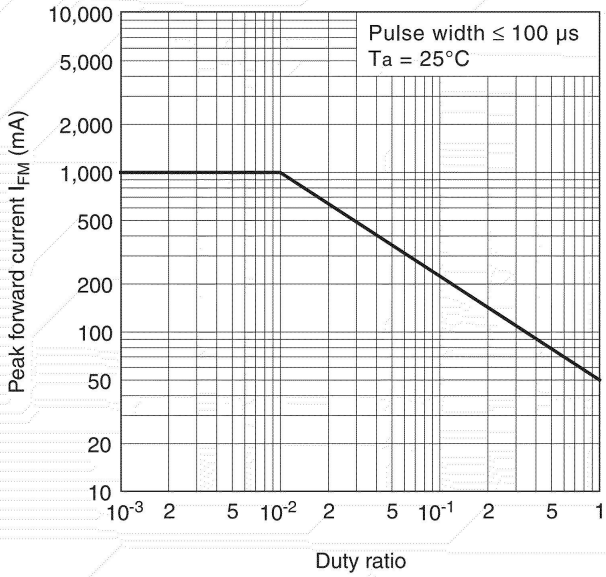


Fig. 3 Spectral Distribution

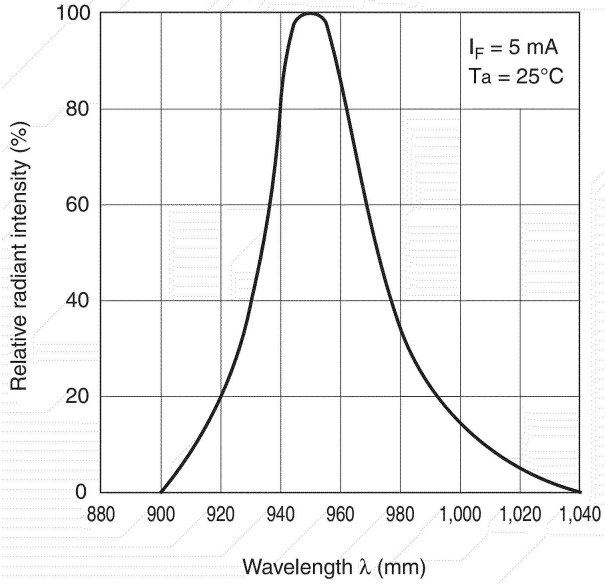


Fig. 5 Forward Current vs. Forward Voltage

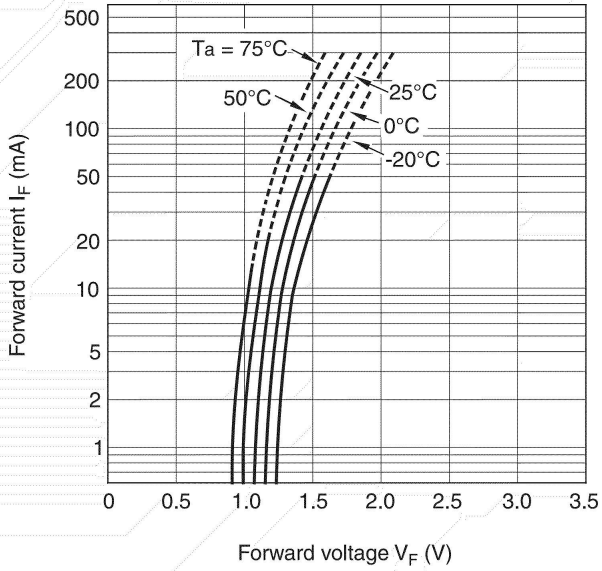


Fig. 4 Peak Emission Wavelength vs. Ambient Temperature

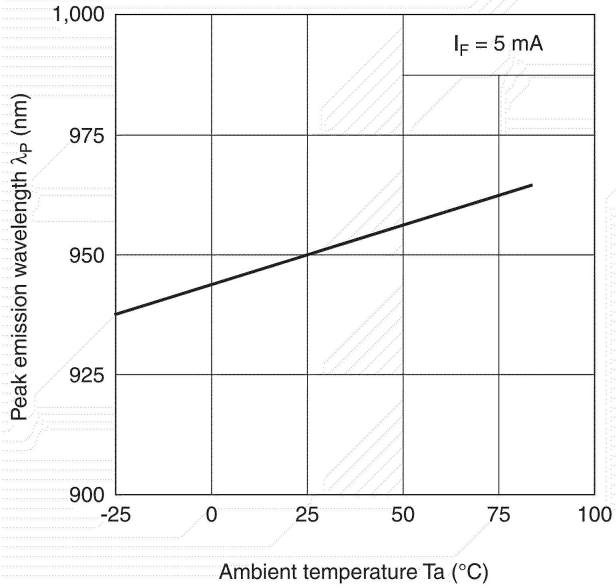


Fig. 6 Relative Radiant Flux vs. Ambient Temperature

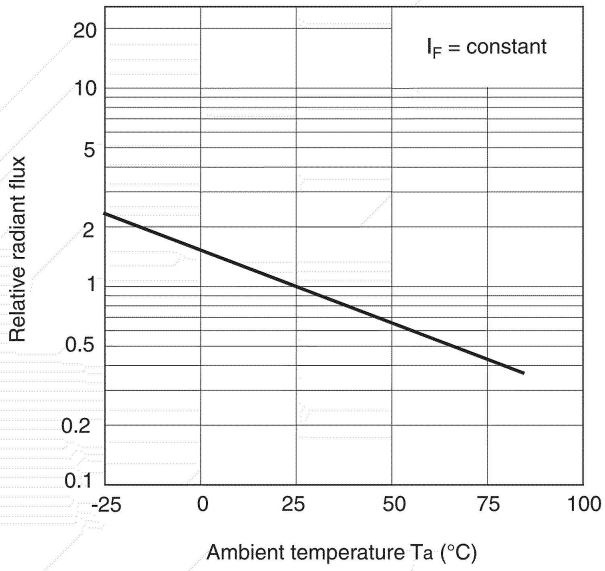


Fig. 7 Radiant Flux vs. Foward Current

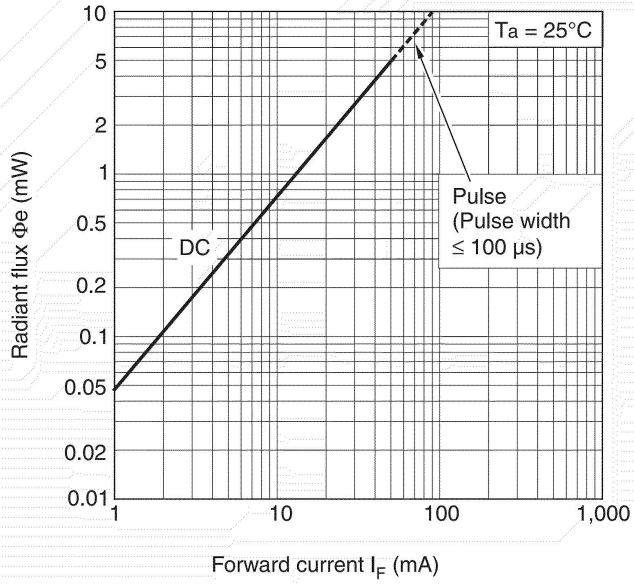


Fig. 9 Relative Collector Current vs. Distance

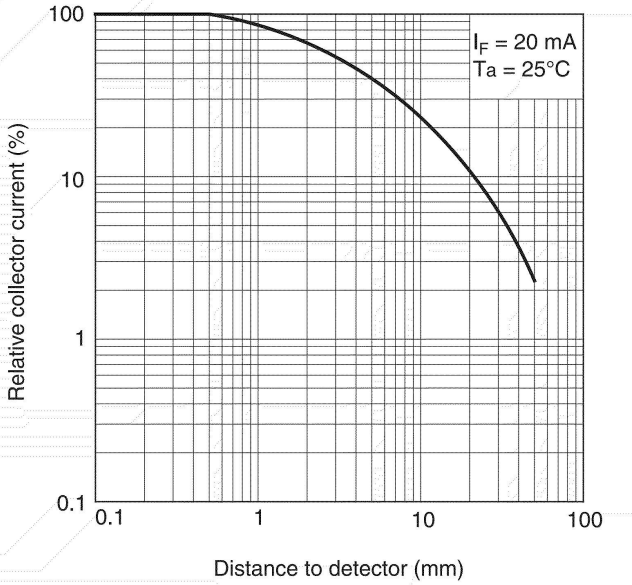


Fig. 8 Relative Radiant Intensity vs. Distance

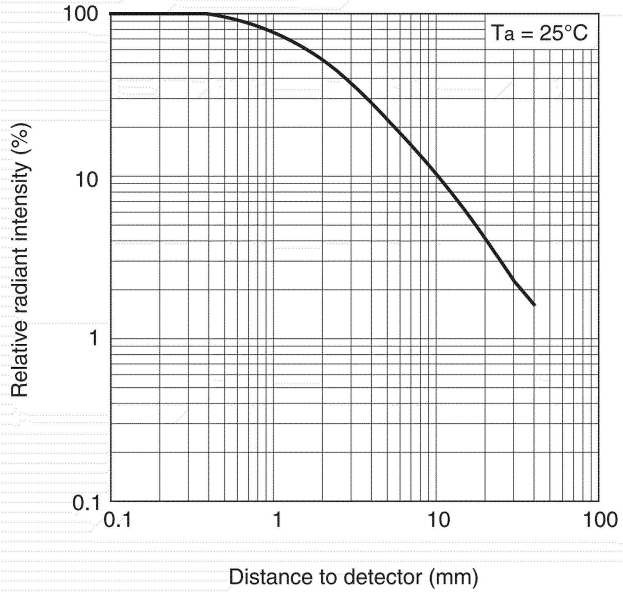
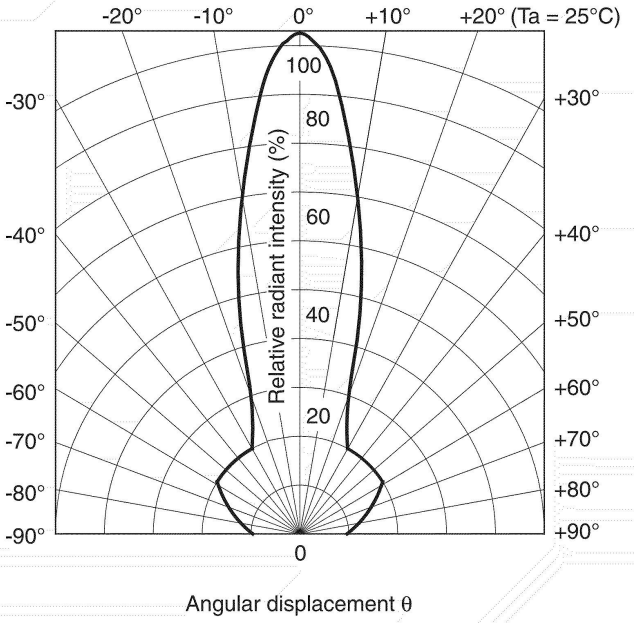


Fig. 10 Radiation Diagram



Packing Quantity Specification

1. 1000Pcs/1Bag, 20 Bag/1Box

2. 4Boxes/1Carton

Label Form Specification

- PRODUCT: Part Number
- CODE NO.: Product Serial Number
- QTY: Packing Quantity
- LOT No: Lot Number
- REMARKS:Remarks

Notes

Lead Forming

1.During lead formation, the leads should be bent at a point at least 3mm from the base of the epoxy bulb.

2.Lead forming should be done before soldering.

3.Avoid stressing the LED package during leads forming. The stress to the base may damage the LED's characteristics or it may break the LEDs.

4.Cut the LED lead frames at room temperature. Cutting the lead frames at high temperatures may cause failure of the LEDs.

5.When mounting the LEDs onto a PCB, the PCB holes must be aligned exactly with the lead position of the LED. If the LEDs are mounted with stress at the leads, it causes deterioration of the epoxy resin and this will degrade the LEDs.

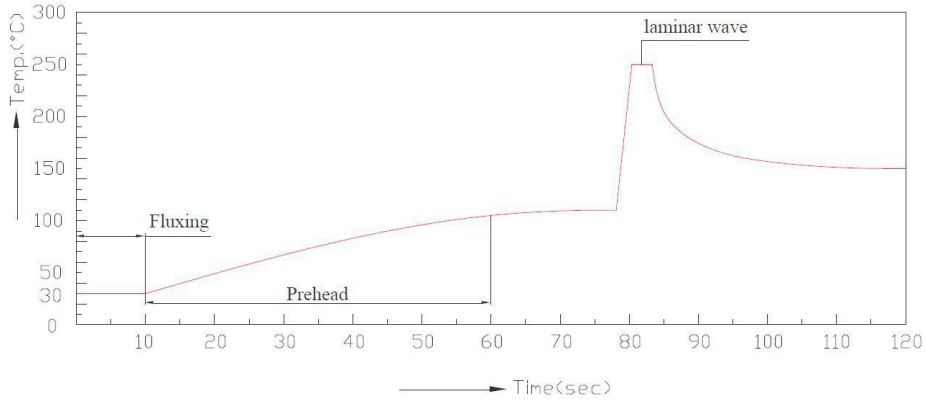
Soldering

1. Careful attention should be paid during soldering. When soldering, leave more than 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.

2. Recommended soldering conditions:

Hand Soldering		DIP Soldering	
Temp. at tip of iron	300℃ Max. (30W Max.)	Preheat temp.	100℃ Max. (60 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	3mm Min.(From solder joint to epoxy bulb)	Distance	3mm Min. (From solder joint to epoxy bulb)

3. Recommended soldering profile



4.Avoiding applying any stress to the lead frame while the LEDs are at high temperature particularly when soldering.

5.Dip and hand soldering should not be done more than one time

6.After soldering the LEDs, the epoxy bulb should be protected from mechanical shock or vibration until the LEDs return to room temperature.

7.A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.

8.Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the LEDs.

9.Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

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