GL480E00000F

Infrared Emitting Diode

■ Features

1. Side view emission type
2. Plastic mold with resin lens
3. Medium directivity angle (Δθ: ±13° TYP.)
   Peak emission wavelength: 950 nm TYP.
4. Radiant flux ϕe: 0.7 mW MIN.
5. Lead free and RoHS directive component

■ Agency Approvals/Compliance

1. Compliant with RoHS directive (2002/95/EC)
2. Content information about the six substances specified in “Management Methods for Control of Pollution Caused by Electronic Information Products Regulation” (popular name: China RoHS) (Chinese: 电子信息产品污染控制管理办法); refer to page 7

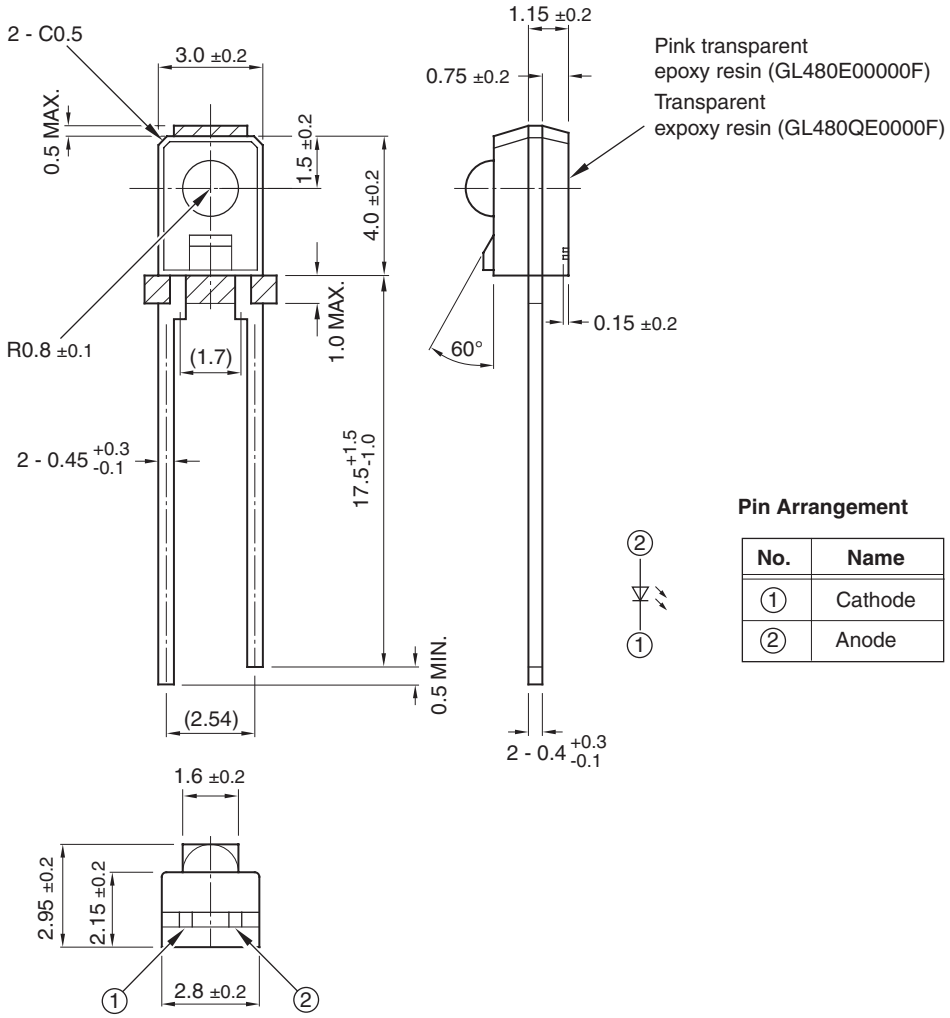
■ Applications

1. Office automation equipment
2. Audio visual equipment
3. Home appliances
4. Telecommunication equipment
5. Measuring equipment
6. Tooling machines
7. Computers

Sheet No.: D1-A01101EN
Date: March 30, 2007

■ Outline Dimensions

GL480E00000F/GL480QE0000F



Pin Arrangement

No.	Name
①	Cathode
②	Anode

NOTES:
1. Units: mm
2. ( ): Reference dimensions

■ 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

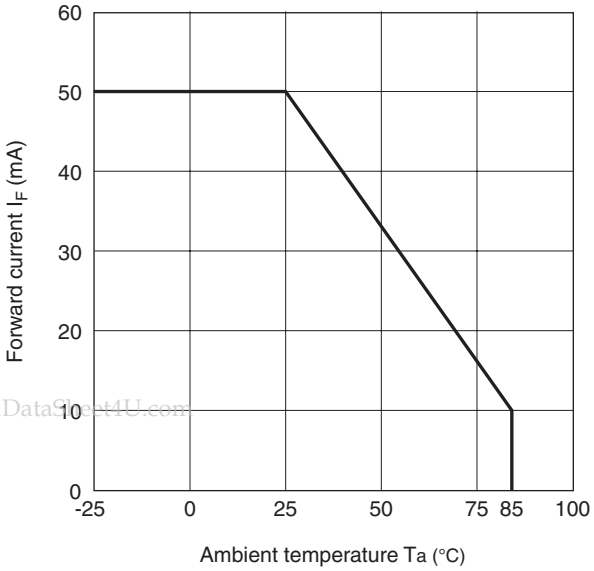


Fig. 2 Peak Forward Current vs. Duty Ratio

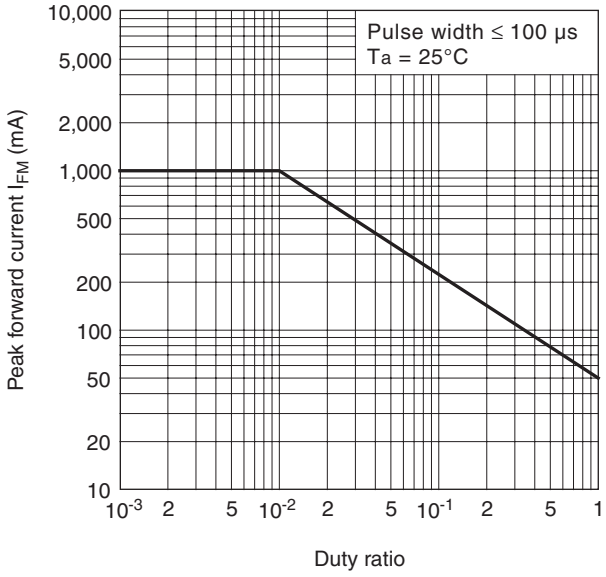


Fig. 3 Spectral Distribution

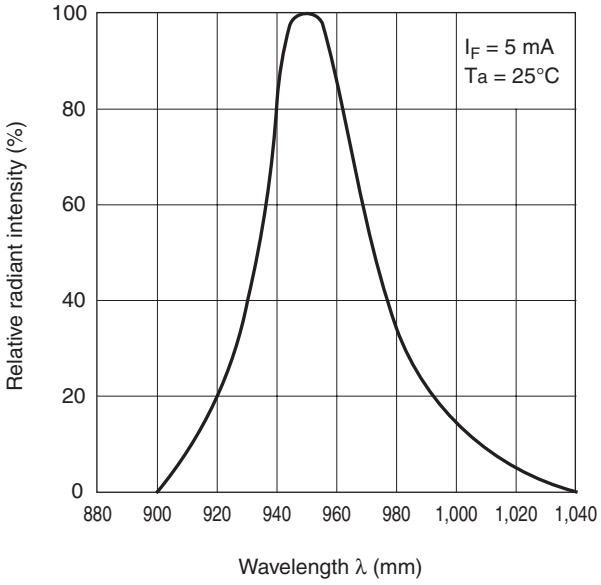


Fig. 4 Peak Emission Wavelength vs. Ambient Temperature

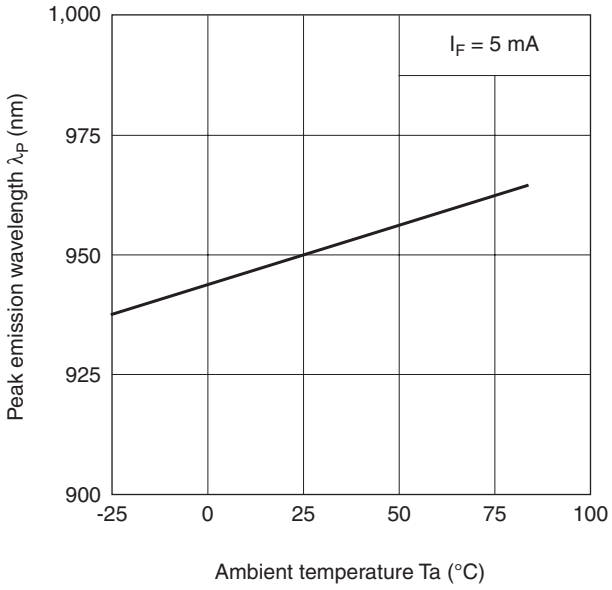


Fig. 5 Forward Current vs. Forward Voltage

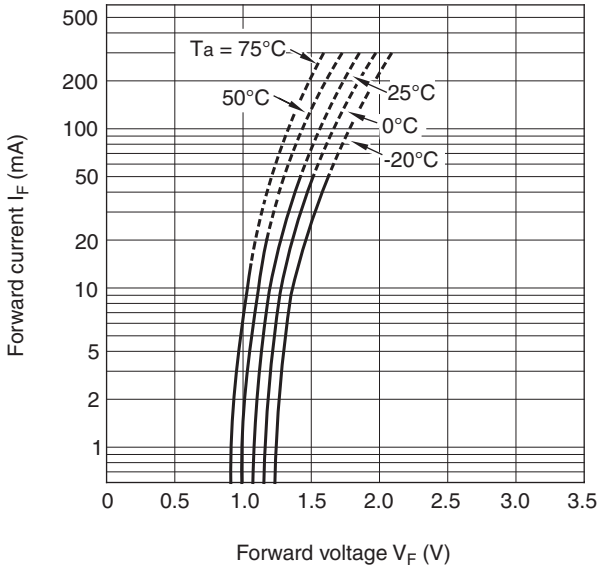


Fig. 6 Relative Radiant Flux vs. Ambient Temperature

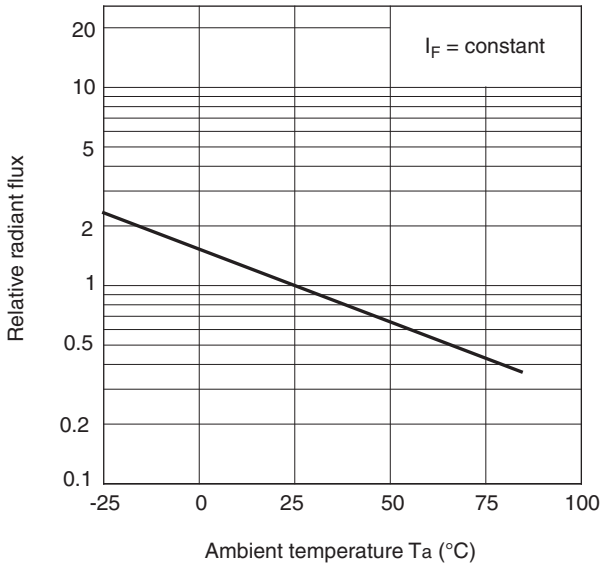


Fig. 7 Radiant Flux vs. Foward Current

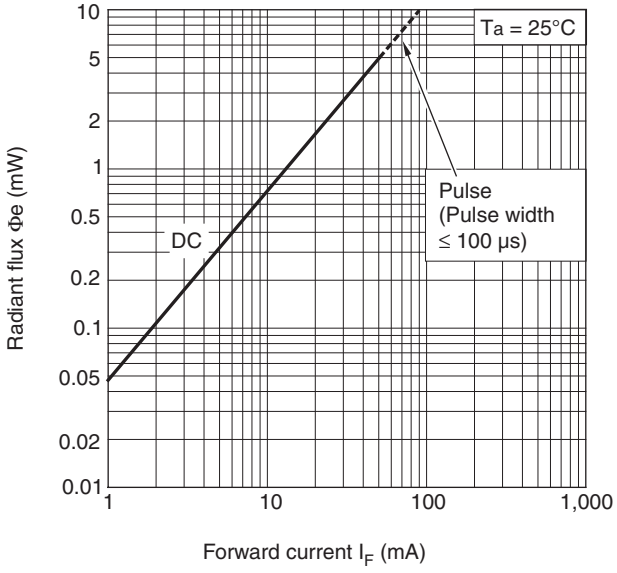


Fig. 8 Relative Radiant Intensity vs. Distance

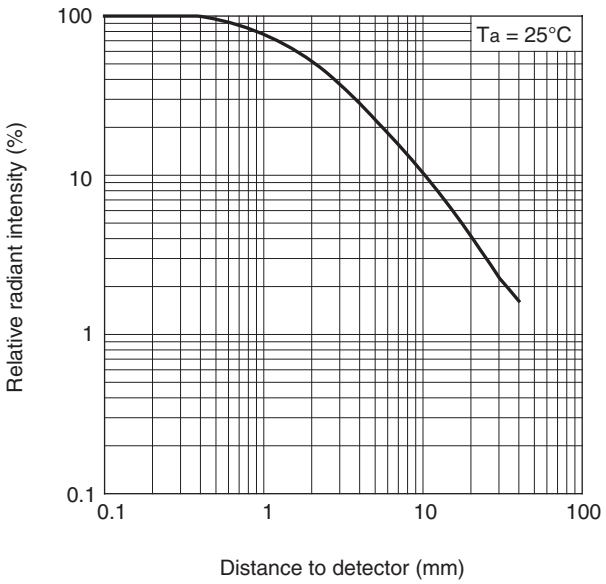


Fig. 9 Relative Collector Current vs. Distance

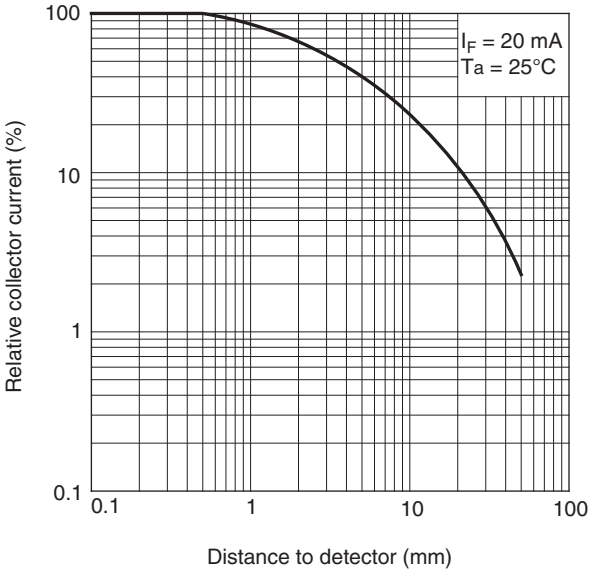
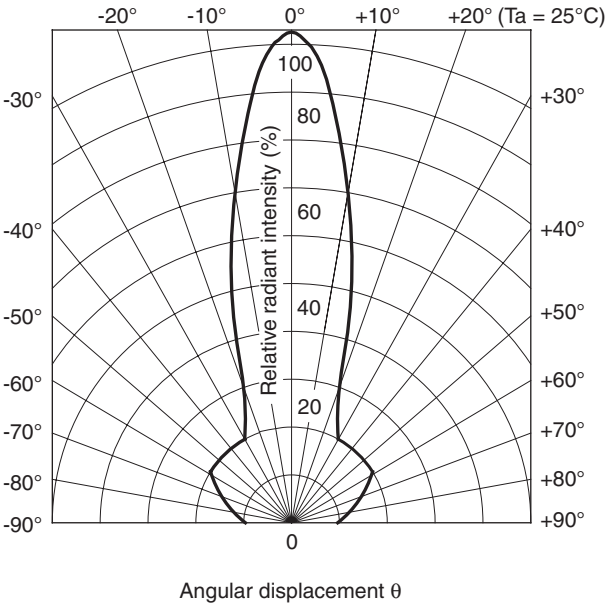


Fig. 10 Radiation Diagram



■ Design Considerations

Design Guidelines

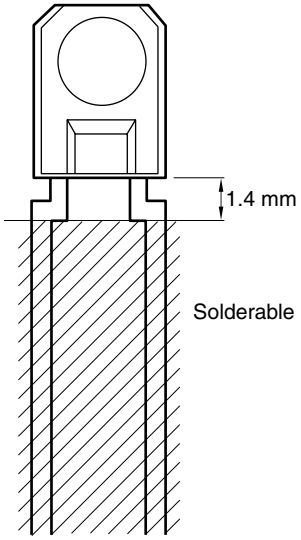
1. Allow for natural degradation of the LED as a result of long continuous operation. This part will have 50% degradation in output after 5 years of continuous use.
2. This product is not designed to be electromagnetic- and ionized-particle-radiation resistant.

■ Manufacturing Guidelines

Cleaning Instructions

1. Confirm this device's resistance to process chemicals before use, as certain process chemicals may affect the optical characteristics.
2. Solvent cleaning: Solvent temperature should be 45°C or below. Immersion time should be 3 minutes or less.
3. Ultrasonic cleaning: The effect upon devices varies due to cleaning bath size, ultrasonic power output, cleaning time, PCB size and device mounting circumstances. Sharp recommends testing using actual production conditions to confirm the harmlessness of the ultrasonic cleaning methods.
4. Recommended solvent materials: Ethyl alcohol, Methyl alcohol, and Isopropyl alcohol.

Fig. 11 Soldering Area



■ Packing Specifications

1. Parts are packed in a vinyl bag, at an average quantity of 1,000 pieces per bag.
2. Bags are secured in a box as shown in illustration on page 8.
3. Product mass: 0.09 g (approx.)

■ Presence of ODCs (RoHS Compliance)

This product shall not contain the following materials, and they are not used in the production process for this product:

- Regulated substances: CFCs, Halon, Carbon tetrachloride, 1,1,1-Trichloroethane (Methylchloroform). Specific brominated flame retardants such as the PBBOs and PBBs are not used in this product at all.

This product shall not contain the following materials banned in the RoHS Directive (2002/95/EC).

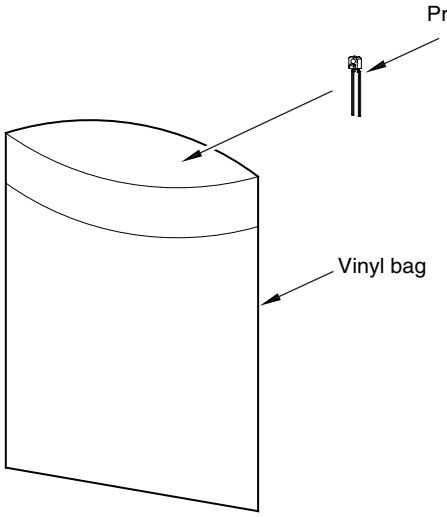
- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE).
- Content information about the six substances specified in “Management Methods for Control of Pollution Caused by Electronic Information Products Regulation” (Chinese: 电子信息产品污染控制管理办法)

Category	Toxic and Hazdardous Substances					
	Lead (Pb)	mercury (Hg)	Cadmium (Cd)	Hexavalent chromiun (Cr^{6+})	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Infrared Emitting Diode	✓	✓	✓	✓	✓	✓

NOTE: ✓ indicates that the content of the toxic and hazardous substance in all the homogeneous materials of the part is below the concentration limit requirement as described in SJ/T 11363-2006 standard.

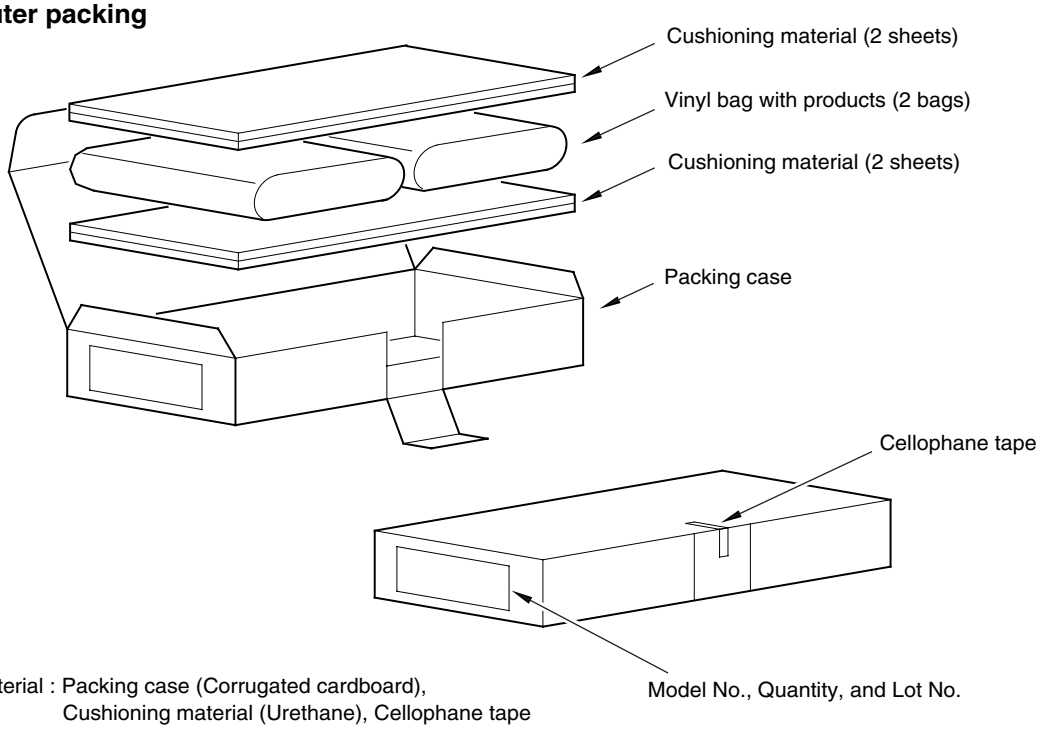
■ Package Specification

Inner packing



NOTES:
1. Inner packing material: Vinyl bag (Polyethylene)
2. Quantity: 1,000 pieces/bag

Outer packing



NOTES:
1. Outer material : Packing case (Corrugated cardboard),
   Cushioning material (Urethane), Cellophane tape
2. Quantity: 2,000 pieces/box
3. Regular packaged mass: Approximately 270 g
4. Label: Model No., Quantity, and Lot No.

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--- Office automation equipment
--- Telecommunication equipment (terminal)
--- Test and measurement equipment
--- Industrial control
--- Audio visual equipment
--- Consumer electronics

(ii) Measures such as fail-safe function and redundant design should be taken to ensure reliability and safety when SHARP devices are used for or in connection with equipment that requires higher reliabilty such as:
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--- Traffic signals
--- Gas leakage sensor breakers
--- Alarm equipment
--- Various safety devices, etc.

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