# HE7601SG

GaAlAs Infrared Emitting Diode

HITACHI

ADE-208-996 (Z)
1st Edition
Dec. 2000

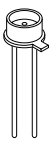
## Description

The HE7601SG is a 770 nm band GaAlAs infrared emitting diode with a double heterojunction structure. It is suitable as a light source for optical control devices and sensors.

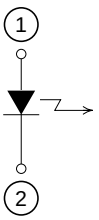
## Features

- High efficiency and high output power

Package Type
• HE7601SG: SG1



Internal Circuit

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## Absolute Maximum Ratings ($T_C$ = 25°C)

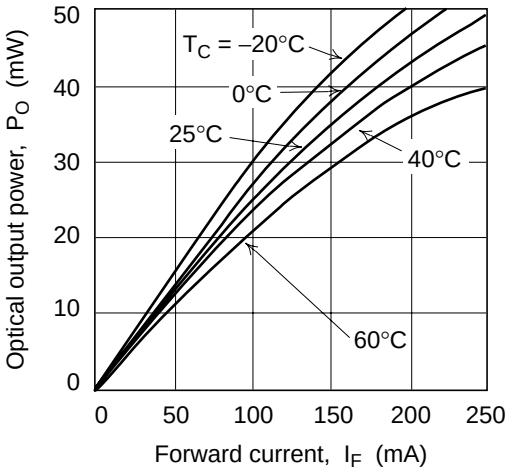
| Item | Symbol | Value | Unit |
|---|---|---|---|
| Forward current | $I_F$ | 250 | mA |
| Reverse voltage | $V_R$ | 3 | V |
| Operating temperature | Topr | –20 to +60 | °C |
| Storage temperature | Tstg | –40 to +90 | °C |

## Optical and Electrical Characteristics ($T_C$ = 25°C)

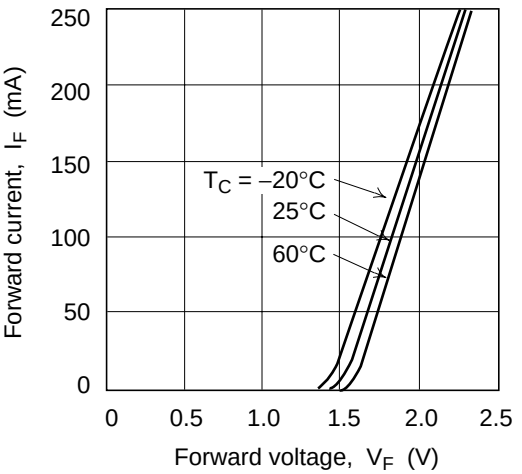
| Item | Symbol | Min | Typ | Max | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| Optical output power | $P_O$ | 30 | — | — | mW | $I_F$ = 200 mA |
| Peak wavelength | λp | 740 | 770 | 800 | nm | $I_F$ = 200 mA |
| Spectral width | Δλ | — | 50 | — | nm | $I_F$ = 200 mA |
| Forward voltage | $V_F$ | — | — | 2.5 | V | $I_F$ = 200 mA |
| Reverse current | $I_R$ | — | — | 100 | μA | $V_R$ = 3 V |
| Capacitance | Ct | — | 30 | — | pF | $V_R$ = 0 V, f = 1 MHz |
| Rise time | $t_r$ | — | 10 | — | ns | $I_F$ = 50 mA |
| Fall time | $t_f$ | — | 10 | — | ns | $I_F$ = 50 mA |

## Typical Characteristic Curves

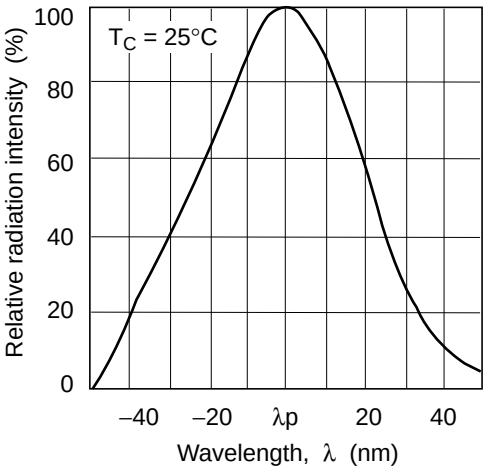
Optical Output Power vs. Forward Current



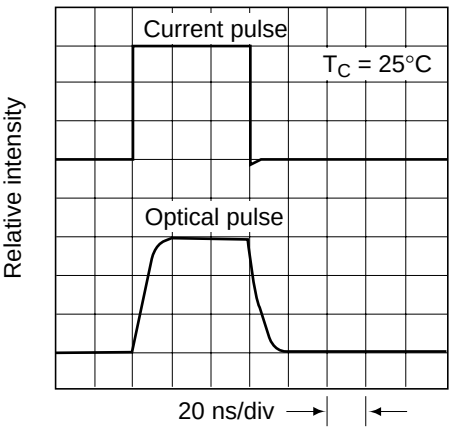

Forward Current vs. Forward Voltage



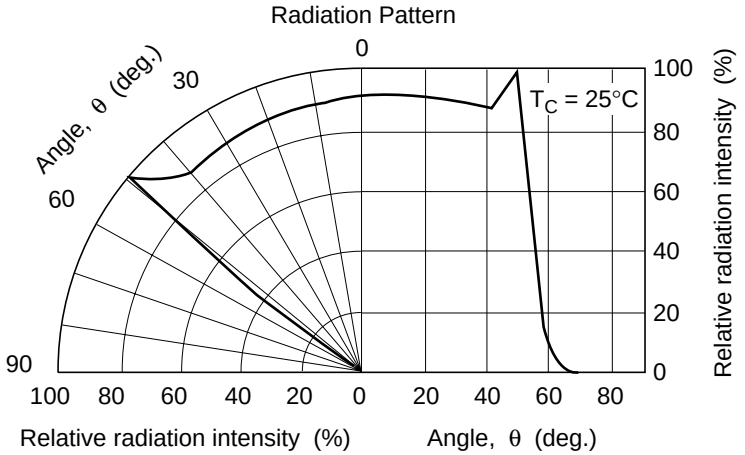

Spectral Distribution




Pulse Response

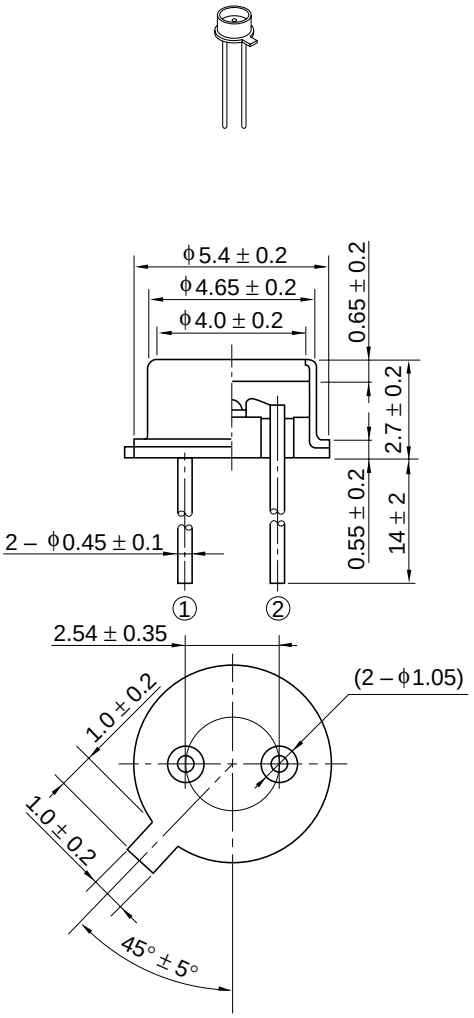


## Typical Characteristic Curves (cont)



## Package Dimensions

Unit: mm




| | |
|---|---|
| Hitachi Code | IR/SG1 |
| JEDEC | — |
| EIAJ | — |
| Mass (reference value) | 0.25 g |

## Cautions

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1. The laser light is harmful to human body especially to eye no matter what directly or indirectly. The laser beam shall be observed or adjusted through infrared camera or equivalent.

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