

# LIGHT EMITTING DIODE

## SE308

### GaAs INFRARED EMITTING DIODE

#### DESCRIPTION

The SE308 is a GaAs (Gallium Arsenide) Infrared Emitting Diode which is mounted on the lead frames and molded in plastic. On forward bias, it emits a spectrally narrow band of radiation peaking at 940 nm. It is suitable for a photointerrupter with combination of the PH108.

#### FEATURES

- Small size plastic molded package.
- High output power.
- Long Life.
- Good linearity.
- Spectrally matched to silicon sensors.

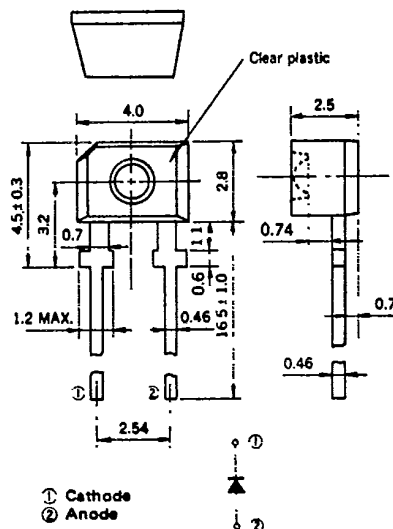
#### APPLICATIONS

- Light Source for Photointerrupter.
- Paper Tape and Punch Card Readers.
- Optical encoders.
- Photochoppers, Isolator.
- High speed Optoelectronic Data Links.

#### ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation ( $T_a = 25^\circ\text{C}$ )	P	100	mW
Maximum Forward Current ( $T_a = 25^\circ\text{C}$ )	$I_F$	50	mA
Maximum Reverse Voltage ( $T_a = 25^\circ\text{C}$ )	$V_R$	5.0	V
Maximum Temperatures			
Junction Temperature	$T_j$	100	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 to +100	$^\circ\text{C}$

#### PACKAGE DIMENSIONS in millimeters

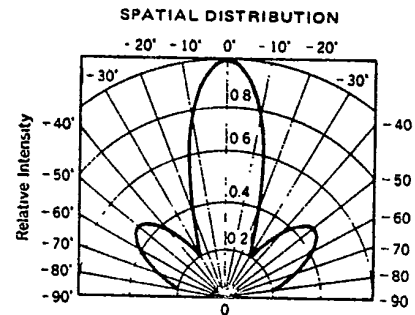
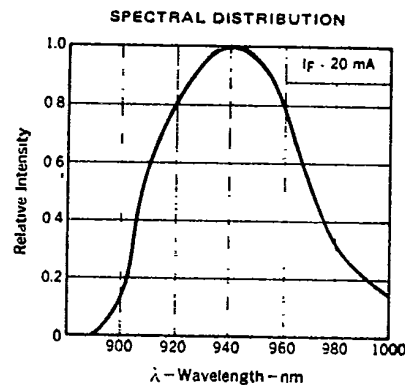
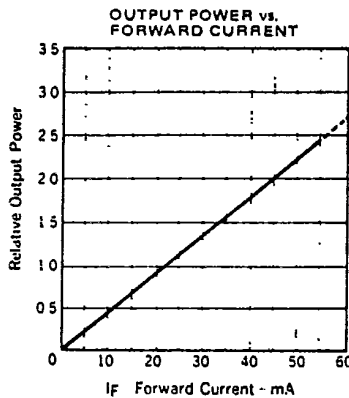
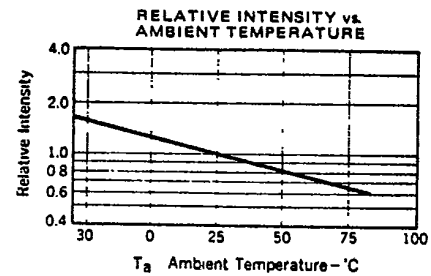
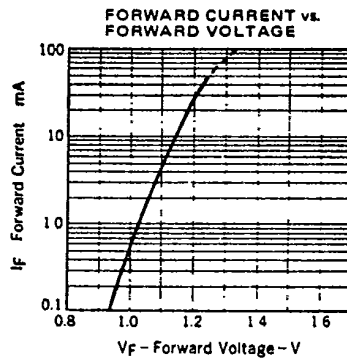
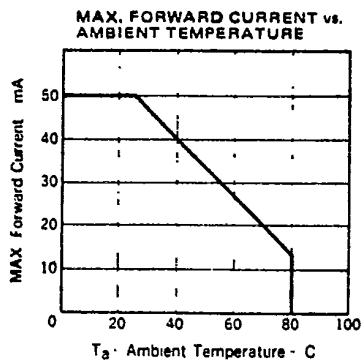


#### ELECTRO-OPTICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Forward Voltage	$V_F$		1.1	1.4	V	$I_F = 20\text{ mA}$
Reverse Current	$I_R$		0.01	5	$\mu\text{A}$	$V_R = 5\text{ V}$
Peak Emission Wavelength	$\lambda_{peak}$		940		nm	$I_F = 20\text{ mA}$
Spectral Line Half Width	$\Delta\lambda$		60		nm	$I_F = 20\text{ mA}$
Output Power	$I_e$	0.5	0.85		mW/sr	$I_F = 20\text{ mA}$
Light Turn-On and Turn-Off	$t_{on}, t_{off}$		1		$\mu\text{s}$	

## SE308

T-41-11

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

## HANDLING PRECAUTIONS:

1. The full resin-molded LED lamps have generally a little less mechanical and thermal strength than other resin-molded semiconductor devices as they have less additives. Therefore please note on the following points.
  - (a) Soldering of leads should be made at the point 5 mm or more from the root of the leads at  $260^\circ\text{C}$  and within 5 s.
  - (b) If the temperature of the molded portion rises in addition to the residual stress between the leads, the possibility that open or short circuit occurs due to the deformation or destruction of the resin will increase.
2. On cleaning the device:
  - (a) Cleaning with unsuitable solvent may impair the resin of the package and the following solvents should be used at the temperature of less than  $45^\circ\text{C}$  and for less than 3 minutes of immersion time.
 

Ethanol, Methanol  
Isopropyl-alcohol
  - (b) Ultrasonic cleaning will add some stress on devices. The degree of the stress differs depending on the oscillation output power, the size of the PCB and the mounting methods of the devices, therefore it should be confirmed by making an experiment at actual conditions that the cleaning does not have any problem on the devices.

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