

LIGHT EMITTING DIODE SE301A

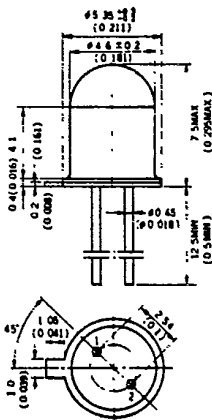
GaAs INFRARED EMITTING DIODE INDUSTRIAL USE

DESCRIPTION

The SE301A is a GaAs (Gallium Arsenide) Infrared Emitting Diode which is mounted on a TO-18 hermetically sealed header with a glass lens. On forward bias, it emits a spectrally narrow band of radiation peaking at 940nm. The close wavelength match of this device to silicon sensors makes it ideally suited for all source-sense applications. Its low cost and volume producibility open new areas of use anywhere an infrared source is desirable.

PACKAGE DIMENSIONS in millimeters (inches)

TO-18
Header
With
Glass Lens.



(Bottom View)

1. Cathode
2. Anode(Case)

* Soldering conditions are at 260°C or less within 5sec. at 1.5 mm or farther from the case.

FEATURES

- Low cost.
- High output power - 3mW MIN.
- Fast switching time.
- Long life-solid state reliability.
- Compact, rugged, lightweight.
- Spectrally matched to silicon sensors.

APPLICATIONS

- Paper tape and punch card readers.
- Optical encoders.
- Photochoppers.
- High speed optoelectronic data links.

ABSOLUTE MAXIMUM RATINGS

| | | | |
|---|------|--------------|----|
| Maximum Power Dissipation (Ta = 25°C) | P | 150 | mW |
| Maximum Forward Current (Ta = 25°C) | IF | 100 | mA |
| Maximum Pulse Forward Current (Ta = 25°C) | IFP* | 1.0 | A |
| Maximum Reverse Voltage (Ta = 25°C) | VR | 5.0 | V |
| Maximum Temperatures | | | |
| Junction Temperature | Tj | 125 | °C |
| Storage Temperature | Tstg | - 65 to +125 | °C |

ELECTRO-OPTICAL CHARACTERISTICS (Ta = 25°C)

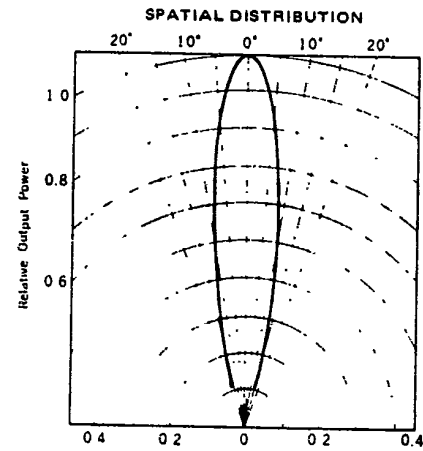
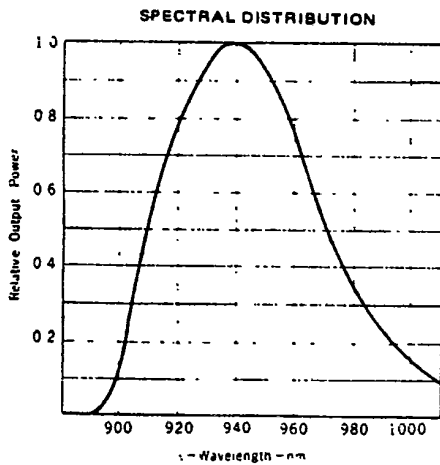
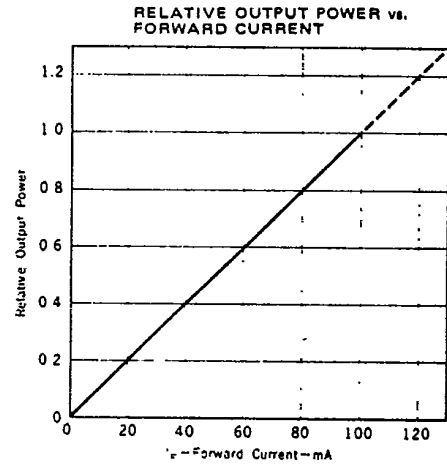
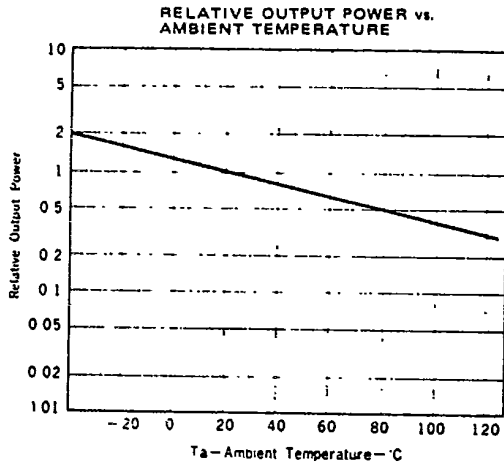
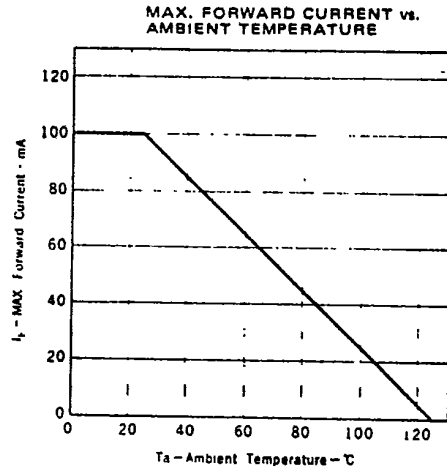
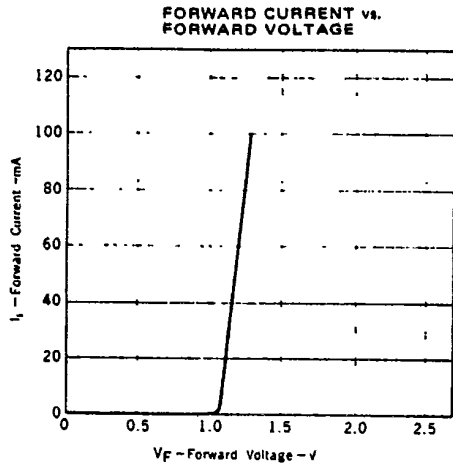
| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|----------------------------|-----------|------|------|------|------|--------------------|
| Forward Voltage | VF | | 1.2 | 1.45 | V | IF = 50 mA |
| Pulse Forward Voltage | VFp* | | 2.0 | 5.0 | V | IFp = 1.0A |
| Capacitance | Ct | | 100 | | pF | V = 0, f = 1.0 MHz |
| Peak Emission Wavelength | λpeak | | 940 | | nm | IF = 50 mA |
| Spectral Line Half Width | Δλ | | 60 | | nm | IF = 50 mA |
| Output Power | PO | 3.0 | | | mW | IF = 50 mA |
| Peak Output Power | Ppeak* | 15 | | | mW | IFp = 1.0A |
| Light Turn-On and Turn-Off | ton, toff | | 1 | | μs | |

* f = 1.0 kHz, duty cycle 1%

SE301A

T-41-11

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



2.