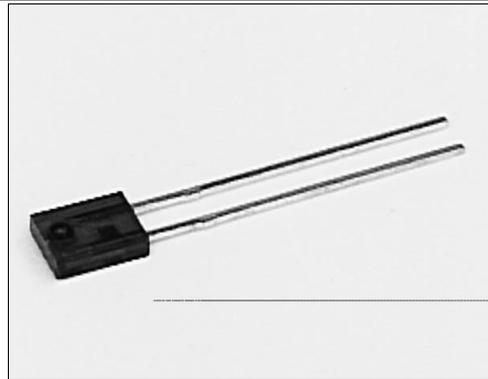


SEP8706

AlGaAs Infrared Emitting Diode

FEATURES

- Side-looking plastic package
- 50° (nominal) beam angle
- 880 nm wavelength
- Higher output power than GaAs at equivalent drive currents
- Mechanically and spectrally matched to SDP8406 phototransistor, SDP8106 photodarlington and SDP8000/8600 series Schmitt trigger



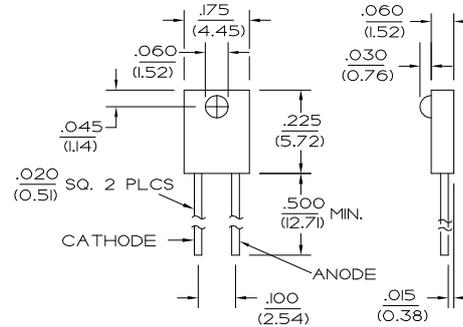
INFRA-20.TIF

DESCRIPTION

The SEP8706 is an aluminum gallium arsenide infrared emitting diode molded in a side-emitting smoke gray plastic package. The chip is positioned to emit radiation through a plastic lens from the side of the package. These devices typically exhibit 70% greater power intensity than gallium arsenide devices at the same forward current.

OUTLINE DIMENSIONS in inches (mm)

Tolerance 3 plc decimals ±0.005(0.12)
2 plc decimals ±0.020(0.51)



DIM_071.d64

SEP8706

AlGaAs Infrared Emitting Diode

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---------------------------------|---------------------------------|------|-----|-----|--------------------|--------------------------|
| Irradiance ⁽¹⁾ | H | | | | mW/cm ² | I _F =20 mA |
| SEP8706-001 | | 0.20 | | | | |
| SEP8706-002 | | 0.45 | 2.6 | | | |
| SEP8706-003 | | 0.65 | | | | |
| Forward Voltage | V _F | | | 1.7 | V | I _F =20 mA |
| Reverse Breakdown Voltage | V _{BR} | 3.0 | | | V | I _R =10 μA |
| Peak Output Wavelength | λ _p | | 880 | | nm | |
| Spectral Bandwidth | Δλ | | 80 | | nm | |
| Spectral Shift With Temperature | Δλ _p /ΔT | | 0.2 | | nm/°C | |
| Beam Angle ⁽²⁾ | ∅ | | 50 | | degr. | I _F =Constant |
| Radiation Rise And Fall Time | t _r , t _f | | 0.7 | | μs | |

Notes

1. Measured in mW/cm² into a 0.104 (2.64) diameter aperture placed 0.535(13.6) from the lens tip.
2. Beam angle is defined as the total included angle between the half intensity points.

ABSOLUTE MAXIMUM RATINGS

(25°C Free-Air Temperature unless otherwise noted)

| | |
|-------------------------------|-----------------------|
| Continuous Forward Current | 50 mA |
| Power Dissipation | 100 mW ⁽¹⁾ |
| Operating Temperature Range | -40°C to 85°C |
| Storage Temperature Range | -40°C to 85°C |
| Soldering Temperature (5 sec) | 240°C |

Notes

1. Derate linearly from 25°C free-air temperature at the rate of 0.78 mW/°C.

SCHEMATIC



Honeywell reserves the right to make changes in order to improve design and supply the best products possible.

Honeywell

SEP8706

AlGaAs Infrared Emitting Diode

Fig. 1 Radiant Intensity vs Angular Displacement gra_030.ds4

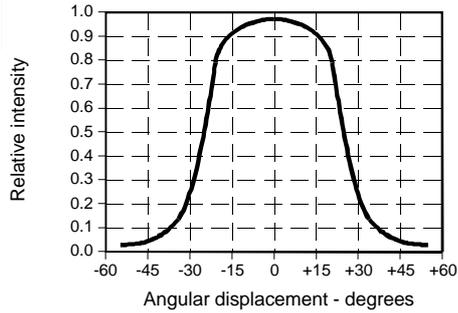


Fig. 2 Radiant Intensity vs Forward Current gra_028.ds4

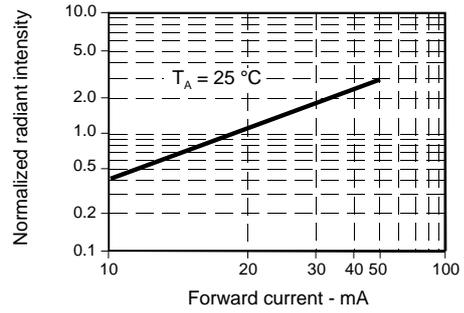


Fig. 3 Forward Voltage vs Forward Current gra_201.ds4

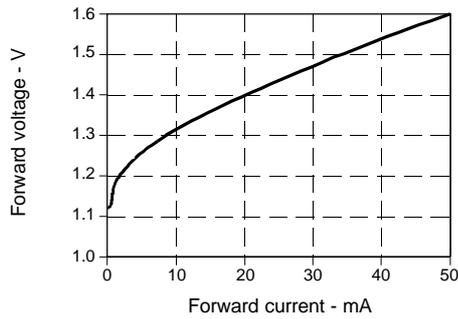


Fig. 4 Forward Voltage vs Temperature gra_208.ds4

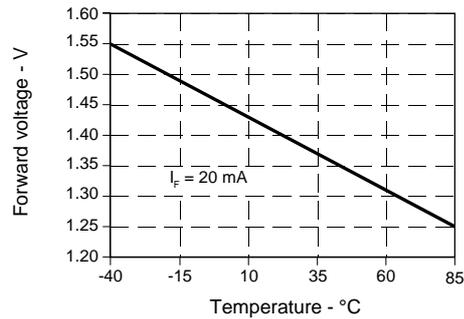


Fig. 5 Spectral Bandwidth gra_011.ds4

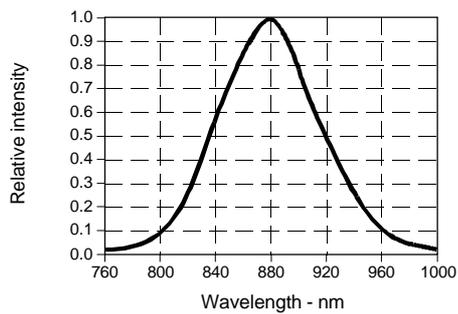
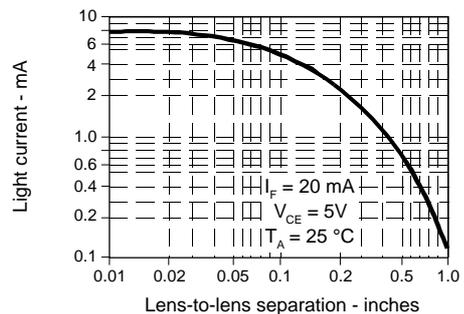
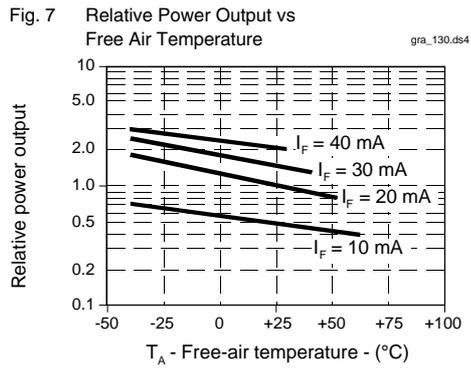


Fig. 6 Coupling Characteristics with SDP8406 gra_031.ds4



SEP8706

AlGaAs Infrared Emitting Diode



All Performance Curves Show Typical Values