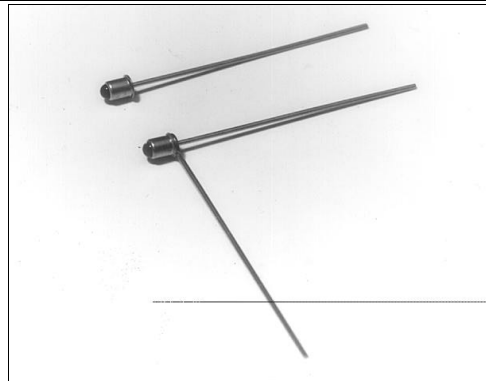


SE1470

AlGaAs Infrared Emitting Diode

FEATURES

- Compact metal can coaxial package
- 24° (nominal) beam angle
- 880 nm wavelength
- Higher output power than GaAs at equivalent drive currents
- Wide operating temperature range (-55°C to +125°C)
- Mechanically and spectrally matched to SD1420 photodiode, SD1440 phototransistor and SD1410 photodarlington



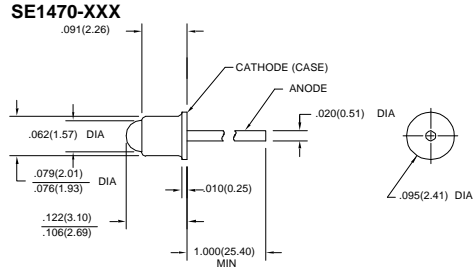
INFRA-63.TIF

DESCRIPTION

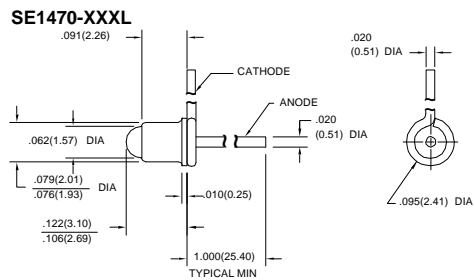
The SE1470 is a high intensity aluminum gallium arsenide infrared emitting diode mounted in a glass lensed metal can coaxial package. The package may have a tab or second lead welded to the can as an optional feature (SE1470-XXXL). Both leads are flexible and may be formed as required to fit various mounting configurations. 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_001a.ds4



DIM_001b.ds4

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SE1470

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 |
| SE1470-001, SE1470-001 L | | 0.35 | | | | |
| SE1470-002, SE1470-002 L | | 0.65 | | | | |
| SE1470-003, SE1470-003 L | | 1.10 | 4.5 | | | |
| SE1470-004, SE1470-004 L | | 1.65 | | | | |
| Forward Voltage | V _F | | | 1.8 | V | I _F =50 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⁾ | ∅ | | 24 | | 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 | 75 mW ⁽¹⁾ |
| Operating Temperature Range | -55°C to 125°C |
| Storage Temperature Range | -65°C to 150°C |
| Soldering Temperature (10 sec) | 260°C |

Notes

1. Derate linearly from 25°C free-air temperature at the rate of 0.71 mW/°C.

SCHEMATIC



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SE1470

AlGaAs Infrared Emitting Diode

Fig. 1 Radiant Intensity vs Angular Displacement gra_007.ds4

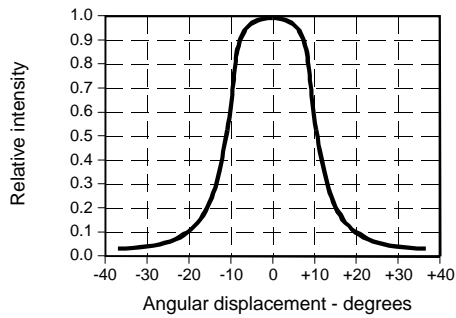


Fig. 2 Radiant Intensity vs Forward Current gra_008.ds4

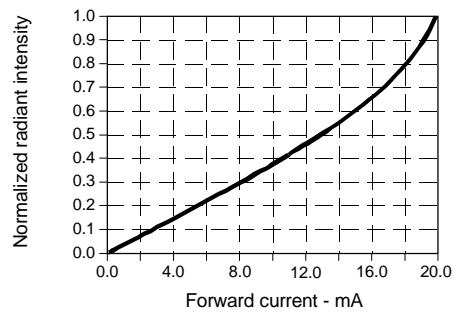


Fig. 3 Forward Voltage vs Forward Current gra_201.ds4

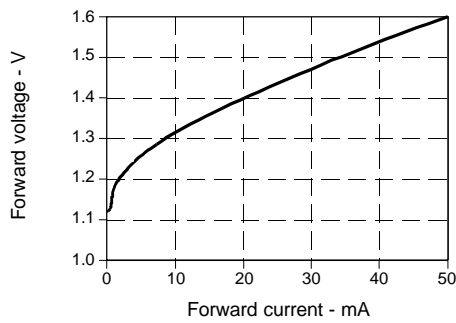


Fig. 4 Forward Voltage vs Temperature gra_202.ds4

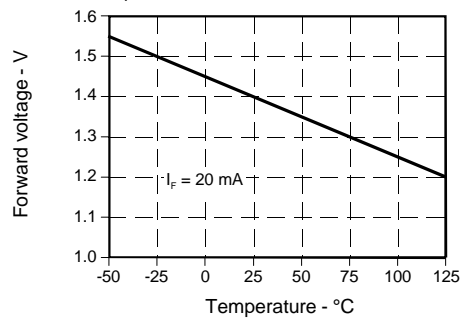


Fig. 5 Spectral Bandwidth gra_011.ds4

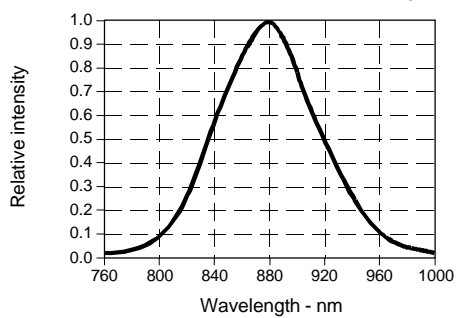
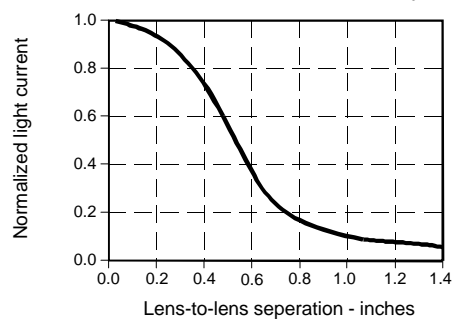


Fig. 6 Coupling Characteristics with SD1440 gra_012.ds4

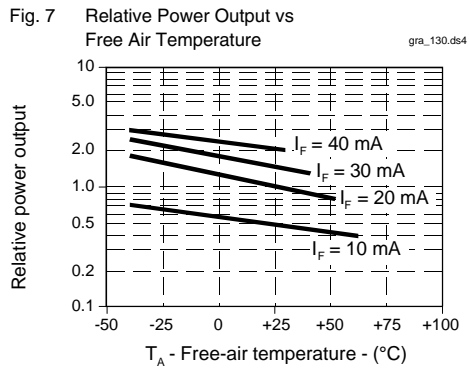


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SE1470

AlGaAs Infrared Emitting Diode



All Performance Curves Show Typical Values

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