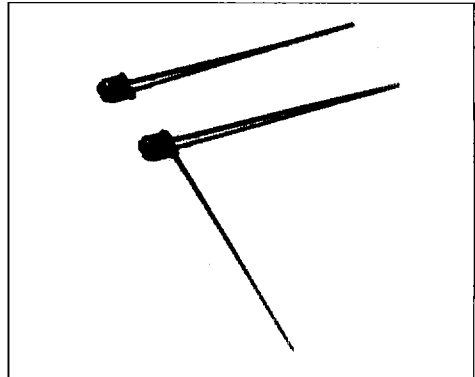


# SE1470

## 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



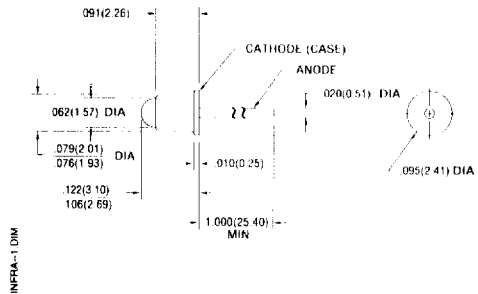
### DESCRIPTION

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.

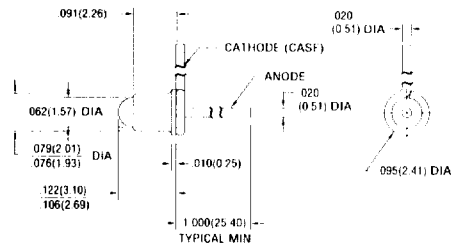
### OUTLINE DIMENSIONS in inches (mm)

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

#### SE1470-XXX



#### SE1470-XXXL



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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 <sup>(1)</sup>	H				mW/cm <sup>2</sup>	I <sub>F</sub> =20 mA
SE1470-001, SE1470-001L		0.35				
SE1470-002, SE1470-002L		0.65				
SE1470-003, SE1470-003L		1.10		4.5		
SE1470-004, SE1470-004L		1.65				
Forward Voltage	V <sub>F</sub>			1.8	V	I <sub>F</sub> =50 mA
Reverse Breakdown Voltage	V <sub>BR</sub>	3.0			V	I <sub>R</sub> =10 μA
Peak Output Wavelength	λ <sub>p</sub>		880		nm	
Spectral Bandwidth	Δλ		80		nm	
Spectral Shift With Temperature	Δλ <sub>p</sub> /ΔT		0.2		nm/°C	
Beam Angle <sup>(2)</sup>	∅		24		degr.	I <sub>F</sub> =Constant
Radiation Rise And Fall Time	t <sub>r</sub> , t <sub>f</sub>		0.7		μs	

#### Notes

1. Measured in mW/cm<sup>2</sup> 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 <sup>(1)</sup>
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



INFRA-1 SCH

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# SE1470

## AlGaAs Infrared Emitting Diode

Fig. 1 Radiant Intensity vs Angular Displacement

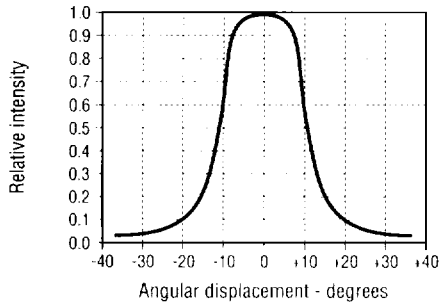


Fig. 2 Radiant Intensity vs Forward Current

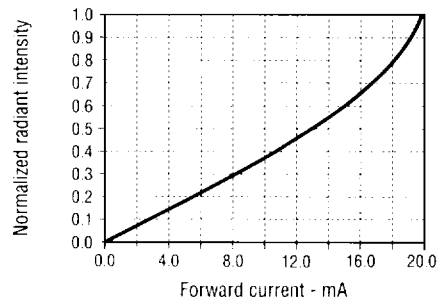


Fig. 3 Forward Voltage vs Forward Current

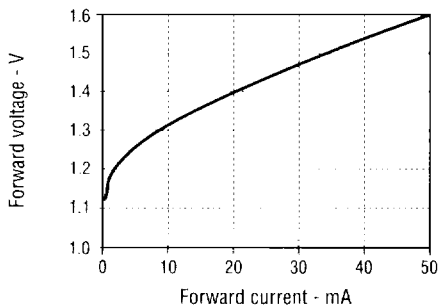


Fig. 4 Forward Voltage vs Temperature

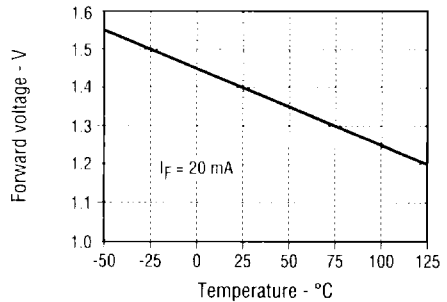


Fig. 5 Spectral Bandwidth

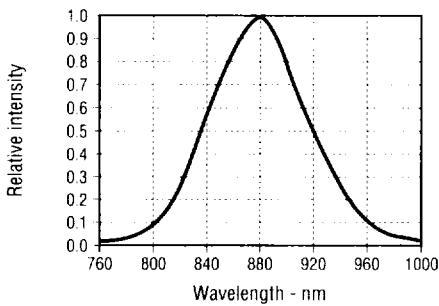
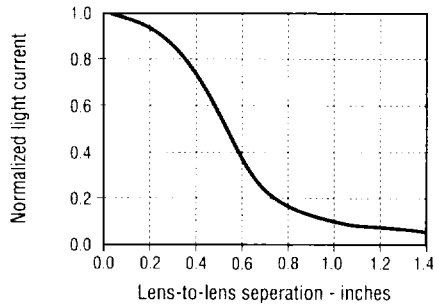


Fig. 6 Coupling Characteristics with SD1440



All Performance Curves Show Typical Values



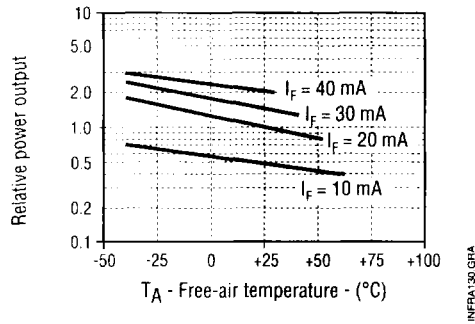
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## AlGaAs Infrared Emitting Diode

Fig. 7 Relative Power Output vs Free Air Temperature



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