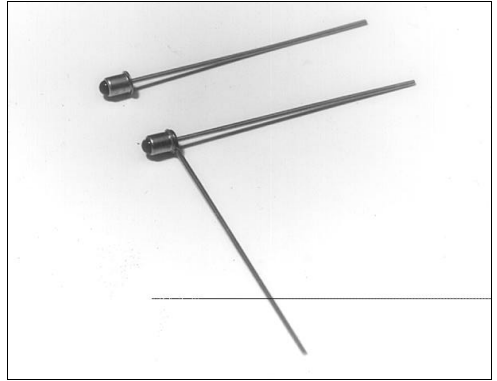


# SE1450

## GaAs Infrared Emitting Diode

### FEATURES

- Compact, metal can coaxial package
- 24° (nominal) beam angle
- 935 nm wavelength
- Wide operating temperature range (-55°C to +125°C)
- Mechanically and spectrally matched to SD1420 photodiode, SD1440 phototransistor and SD1410 photodarlington



INFRA-63.TIF

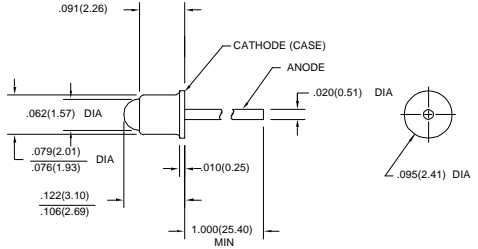
### DESCRIPTION

The SE1450 is a 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 (SE1450-XXXL). Both leads are flexible and may be formed as required to fit various mounting configurations.

### OUTLINE DIMENSIONS in inches (mm)

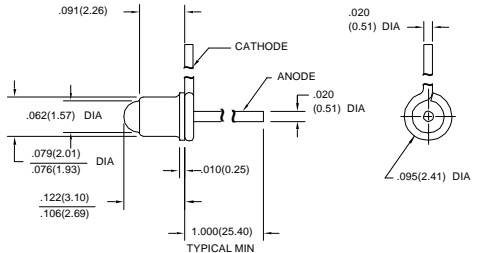
Tolerance 3 plc decimals  $\pm 0.005(0.12)$   
2 plc decimals  $\pm 0.020(0.51)$

### SE1450-XXX



DIM\_001a.ds4

### SE1450-XXXL



DIM\_001b.ds4

# SE1450

## GaAs Infrared Emitting Diode

### ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Total Power Output	$P_o$				mW	$I_F=50$ mA
SE1450-001, SE1450-001 L		0.20				
SE1450-002, SE1450-002 L		0.35				
SE1450-003, SE1450-003 L		0.70				
SE1450-004, SE1450-004 L		1.00				
Forward Voltage	$V_F$			1.6	V	$I_F=50$ mA
Reverse Breakdown Voltage	$V_{BR}$	3.0			V	$I_R=10$ $\mu$ A
Peak Output Wavelength	$\lambda_p$		935		nm	
Spectral Bandwidth	$\Delta\lambda$		50		nm	
Spectral Shift With Temperature	$\Delta\lambda_p/\Delta T$		0.3		nm/°C	
Beam Angle <sup>(1)</sup>	$\emptyset$		24		degr.	$I_F=$ Constant
Radiation Rise And Fall Time	$t_r, t_f$		0.7		$\mu$ s	

#### Notes

1. 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

Anode



Cathode

# SE1450

## GaAs Infrared Emitting Diode

Fig. 1 Radiant Intensity vs Angular Displacement

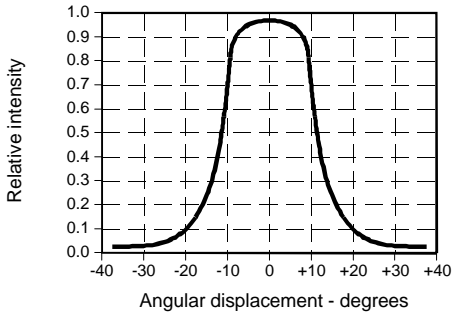


Fig. 2 Radiant Intensity vs Forward Current

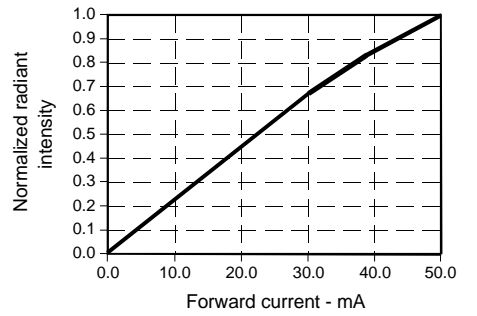


Fig. 3 Forward Voltage vs Forward Current

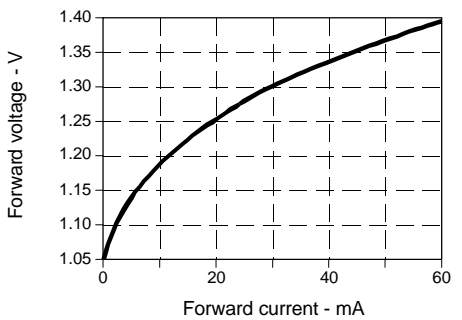


Fig. 4 Forward Voltage vs Temperature

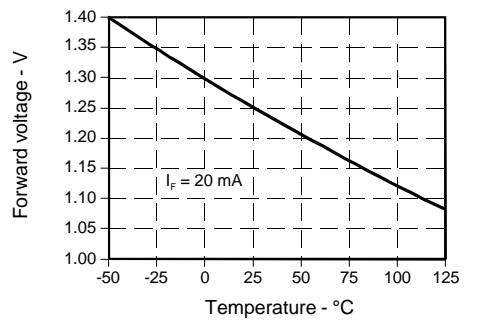


Fig. 5 Spectral Bandwidth

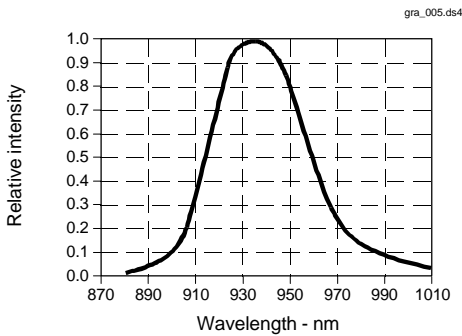
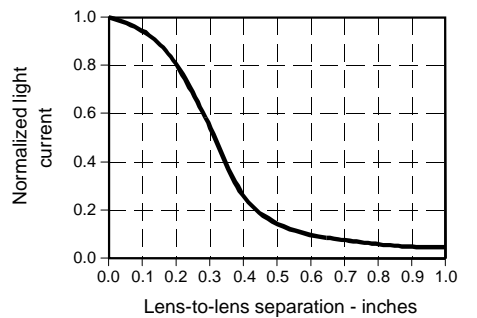


Fig. 6 Coupling Characteristics with SD1440

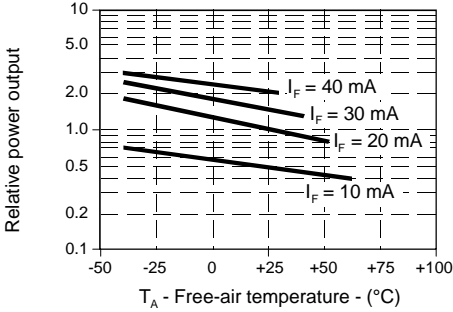


# SE1450

## GaAs Infrared Emitting Diode

Fig. 7 Relative Power Output vs  
Free Air Temperature

gra\_130.ds4



All Performance Curves Show Typical Values