

SEP8505

GaAs Infrared Emitting Diode

FEATURES

- T-1 package
- 15° (nominal) beam angle
- 935 nm wavelength
- Consistent on-axis optical properties
- Mechanically and spectrally matched to SDP8405 phototransistor and SDP8105 photodarlington



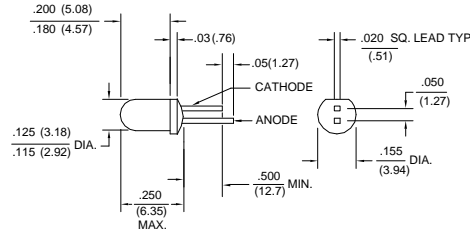
INFRA-55.TIF

DESCRIPTION

The SEP8505 is a gallium arsenide infrared emitting diode transfer molded in a T-1 red plastic package. Transfer molding of this device assures superior optical centerline performance compared to other molding processes. Lead lengths are staggered to provide a simple method of polarity identification.

OUTLINE DIMENSIONS in inches (mm)

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



DIM_101.d54

SEP8505

GaAs 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
SEP8505-001		0.5				
SEP8505-002		1.0	4.0			
SEP8505-003		2.0	4.0			
Forward Voltage	V _F			1.5	V	I _F =20 mA
Reverse Breakdown Voltage	V _{BR}	3.0			V	I _R =10 μA
Peak Output Wavelength	λ _p		935		nm	
Spectral Bandwidth	Δλ		50		nm	
Spectral Shift With Temperature	Δλ _p /ΔT		0.3		nm/°C	
Beam Angle ⁽²⁾	∅		15		degr.	I _F =Constant
Radiation Rise And Fall Time	t _r , t _f		0.7		μs	

Notes

1. Measured in mW/cm² into a 0.081(2.05) diameter aperture placed 0.40(10.16) 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	70 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 0.18 mW/°C.

SCHEMATIC



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

Honeywell

SEP8505

GaAs Infrared Emitting Diode

Fig. 1 Radiant Intensity vs Angular Displacement gra_027.ds4

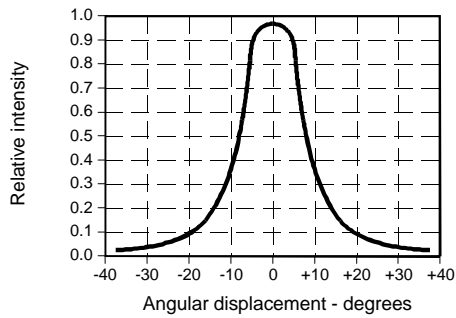


Fig. 2 Radiant Intensity vs Forward Current gra_028.ds4

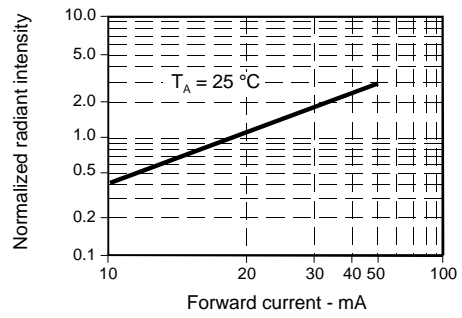


Fig. 3 Forward Voltage vs Forward Current gra_003.ds4

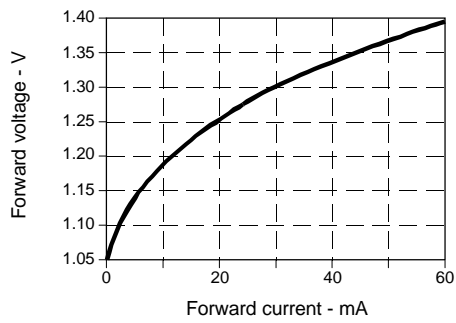


Fig. 4 Forward Voltage vs Temperature gra_207.ds4

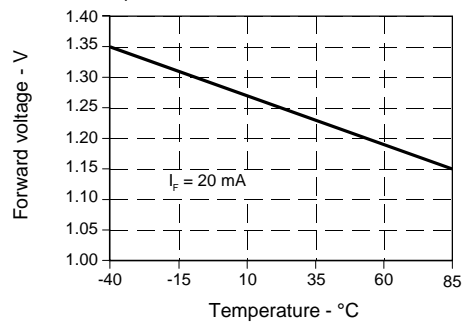


Fig. 5 Spectral Bandwidth gra_005.ds4

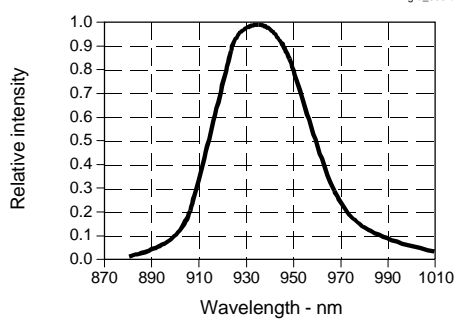
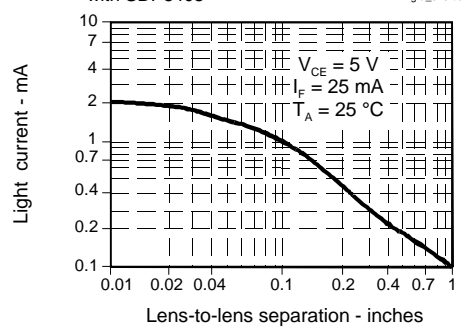
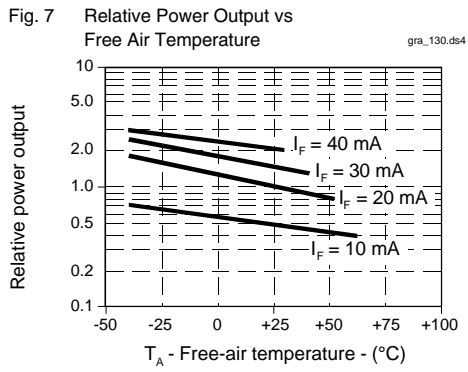


Fig. 6 Coupling Characteristics with SDP8405 gra_029.ds4



SEP8505

GaAs Infrared Emitting Diode



All Performance Curves Show Typical Values