

# SEP8506

## GaAs Infrared Emitting Diode

### FEATURES

- Side-emitting plastic package
- 50° (nominal) beam angle
- 935 nm wavelength
- Mechanically and spectrally matched to SDP8406/8426 phototransistor, SDP8106 photodarlington and SDP8000/8600 series Schmitt trigger

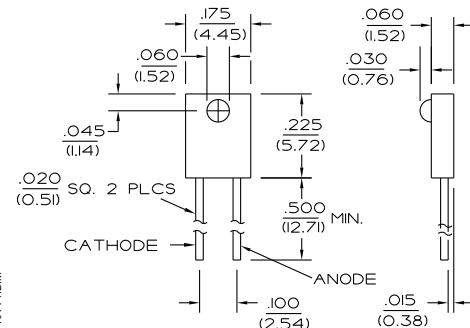


### DESCRIPTION

The SEP8506 is a gallium arsenide infrared emitting diode molded in a side-emitting red plastic package. The chip is positioned to emit radiation through a plastic lens from the side of the package.

### OUTLINE DIMENSIONS in inches (mm)

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



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### 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
SEP8506-001		0.05	0.36			
SEP8506-002		0.33	0.52			
SEP8506-003		0.45	0.90			
Forward Voltage	V <sub>F</sub>			1.5	V	I <sub>F</sub> =20 mA
Reverse Breakdown Voltage	V <sub>BR</sub>	3.0			V	I <sub>R</sub> =10 μA
Peak Output Wavelength	λ <sub>P</sub>	935			nm	
Spectral Bandwidth	Δλ	50			nm	
Spectral Shift With Temperature	Δλ <sub>P</sub> /ΔT	0.3			nm/°C	
Beam Angle <sup>(2)</sup>	Ø	50			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)

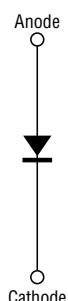
Continuous Forward Current	50 mA
Power Dissipation	100 mW <sup>(1)</sup>
Operating Temperature Range	-40°C to 85°C
Storage Temperature Range	-40°C to 85°C
Soldering Temperature (5 sec)	240°C

Notes

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

### SCHEMATIC

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Fig. 1 Radiant Intensity vs Angular Displacement

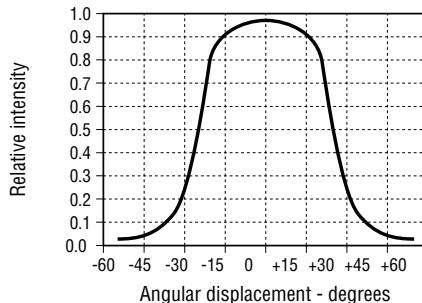


Fig. 2 Radiant Intensity vs Forward Current

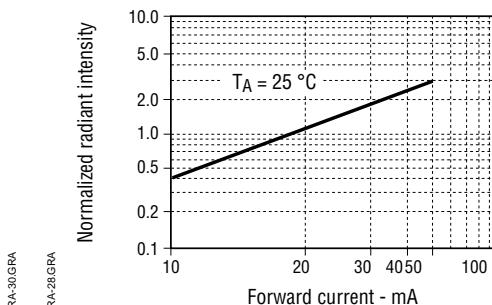


Fig. 3 Forward Voltage vs Forward Current

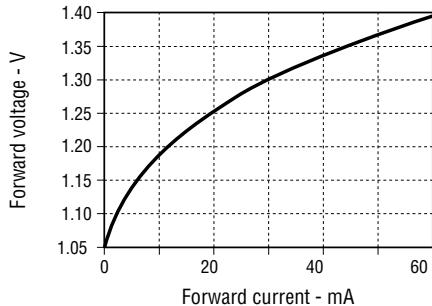


Fig. 4 Forward Voltage vs Temperature

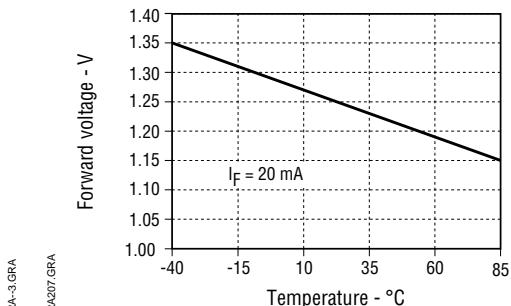


Fig. 5 Spectral Bandwidth

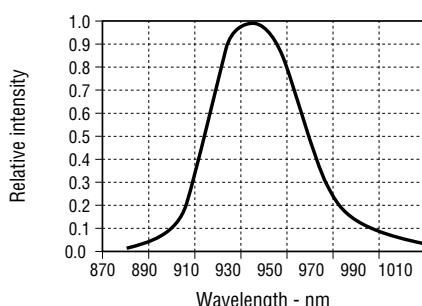
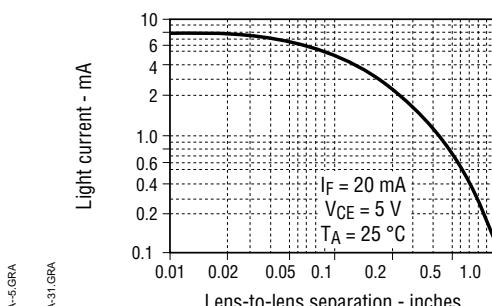


Fig. 6 Coupling Characteristics with SDP8406

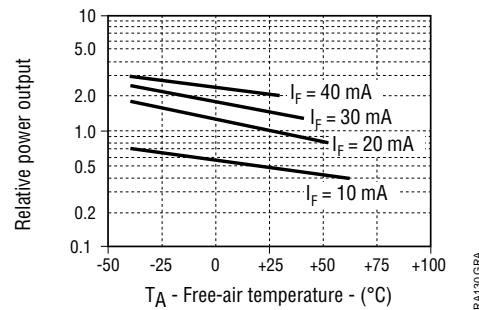


All Performance Curves Show Typical Values

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Fig. 7 Relative Power Output vs Free Air Temperature



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