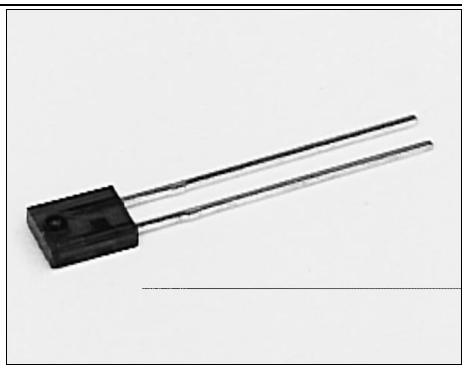
SEP8706

AlGaAs Infrared Emitting Diode

FEATURES

- Side-looking plastic package
- 50° (nominal) beam angle
- 880 nm wavelength
- Higher output power than GaAs at equivalent drive currents
- Mechanically and spectrally matched to SDP8406 phototransistor, SDP8106 photodarlington and SDP8000/8600 series Schmitt trigger



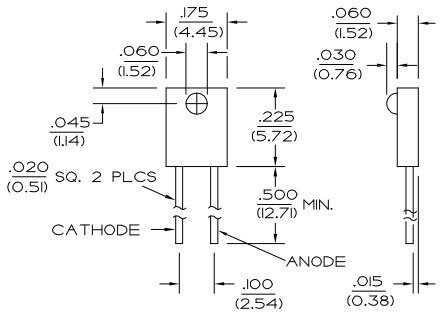
INFRA-20.TIF

DESCRIPTION

The SEP8706 is an aluminum gallium arsenide infrared emitting diode molded in a side-emitting smoke gray plastic package. The chip is positioned to emit radiation through a plastic lens from the side of the package. 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)



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ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Irradiance (1)	H				mW/cm²	I_F=20 mA
SEP8706-001		0.20				
SEP8706-002		0.45		2.6		
SEP8706-003		0.65				
Forward Voltage	V_F			1.7	V	I_F=20 mA
Reverse Breakdown Voltage	V_{BR}	3.0			V	I_R=10 µA
Peak Output Wavelength	λ_P		880		nm	
Spectral Bandwidth	$\Delta\lambda$		80		nm	
Spectral Shift With Temperature	$\Delta\lambda_P/\Delta_T$		0.2		nm/°C	
Beam Angle (2)	Ø		50		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	100 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 0.78 mW/°C.

SCHEMATIC

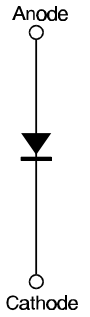

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Fig. 1 Radiant Intensity vs Angular Displacement

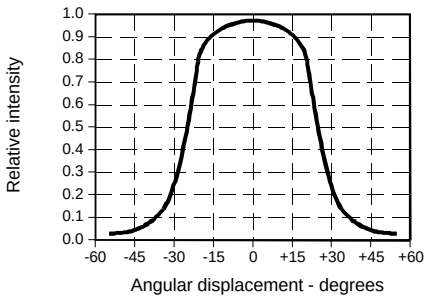

Fig. 2 Radiant Intensity vs Forward Current

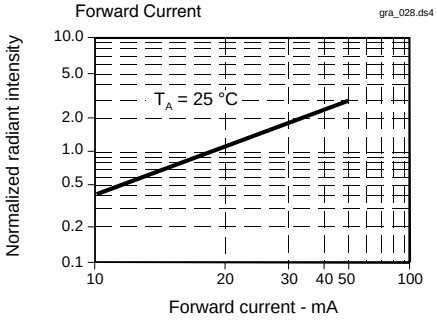

Fig. 3 Forward Voltage vs Forward Current

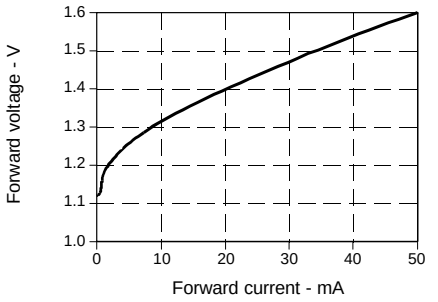

Fig. 4 Forward Voltage vs Temperature

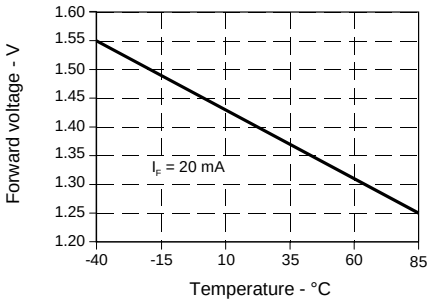

Fig. 5 Spectral Bandwidth

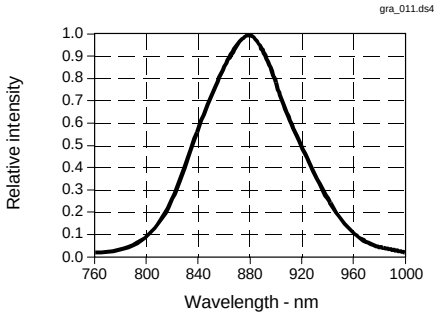

Fig. 6 Coupling Characteristics with SDP8406

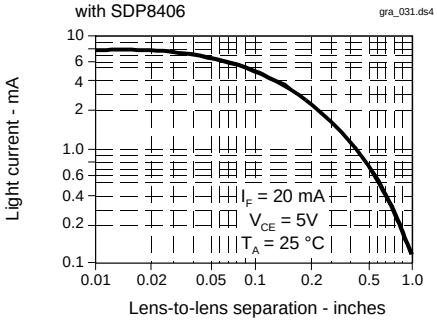

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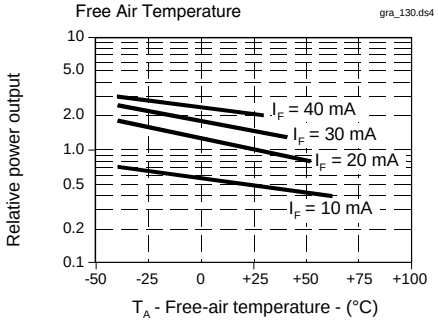
Fig. 7 Relative Power Output vs Free Air Temperature



All Performance Curves Show Typical Values