

AlGaAs Infrared Emitting Diode

- T-1 package
- 15° (nominal) beam angle
- 880 nm wavelength
- Consistent optical properties
- Higher output power than GaAs at equivalent drive currents
- Mechanically and spectrally matched to SDP8405/8425 phototransistor and SDP8105 photodarlington



The SEP8705 is an aluminum gallium arsenide infrared emitting diode transfer molded in a T-1 smoke gray plastic package. Transfer molding of this device assures superior optical centerline performance compared to other molding processes. These devices typically exhibit 70% greater power intensity compared to GaAs devices at the same forward current. Lead lengths are staggered to provide a simple method of polarity identification.

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



SEP8705

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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
SEP8705-001		0.54				
SEP8705-002		1.4		5.6		
SEP8705-003		2.7		7.8		
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	Δλ		80		nm	
Spectral Shift With Temperature	Δλ _p /ΔT		0.2		nm/°C	
Beam Angle ⁽²⁾	Ø		15		degr.	I _F =Constant
Radiation Rise And Fall Time	t _r , t _f		0.7		μs	

- Notes
- Measured in mW/cm² into a 0.081(2.05) diameter aperture placed 0.40(10.16) from the lens tip.
 - 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
- Derate linearly from 25°C free-air temperature at the rate of 0.18 mW/°C.

SCHEMATIC



INFRA-1SCH

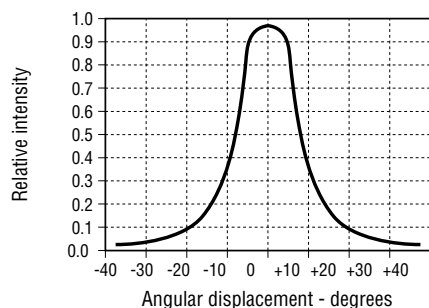
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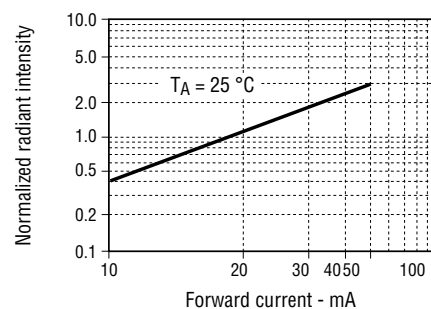
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Fig. 1 Radiant Intensity vs Angular Displacement



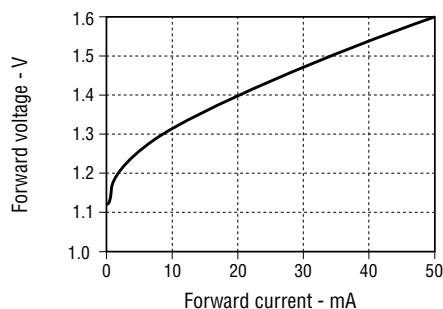
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Fig. 2 Radiant Intensity vs Forward Current



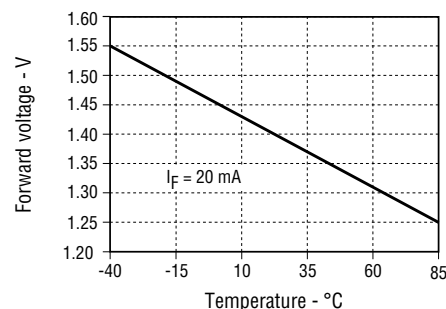
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Fig. 3 Forward Voltage vs Forward Current



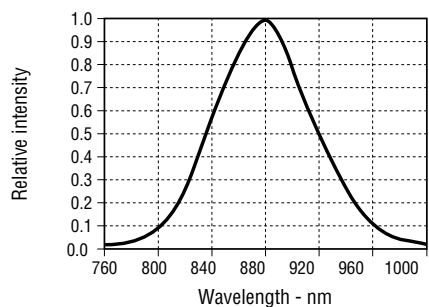
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Fig. 4 Forward Voltage vs Temperature



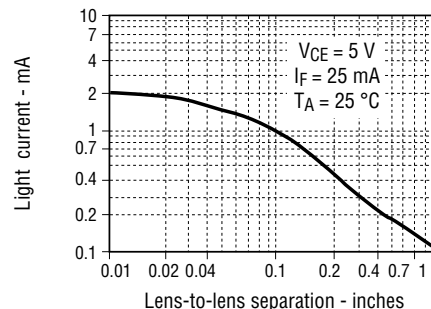
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Fig. 5 Spectral Bandwidth



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Fig. 6 Coupling Characteristics with SDP8405



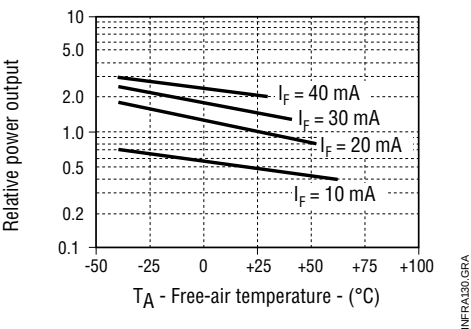
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All Performance Curves Show Typical Values

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Fig. 7 Relative Power Output vs
Free Air Temperature



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