

SE3470/5470

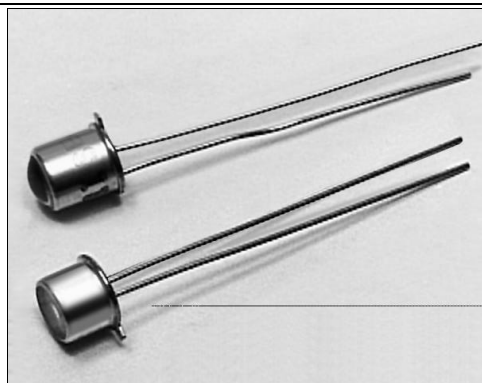
AlGaAs Infrared Emitting Diode

FEATURES

- TO-46 metal can package
- Choice of flat window or lensed package
- 90° or 20° (nominal) beam angle option
- 880 nm wavelength
- Higher output power than GaAs at equivalent drive currents
- Wide operating temperature range (- 55°C to +125°C)
- Ideal for high pulsed current applications
- Mechanically and spectrally matched to SD3421/5421 photodiode, SD3443/5443/5491 phototransistor, SD3410/5410 photodarlington and SD5600 series Schmitt trigger

DESCRIPTION

The SE3470/5470 series consists of aluminum gallium arsenide infrared emitting diode mounted in a TO-46 metal can package. The SE3470 series has flat window cans providing a wide beam angle, while the SE5470 series has glass lensed cans providing a narrow beam angle. These devices typically exhibit 70% greater power output than gallium arsenide devices at the same forward current. The TO-46 packages offer high power dissipation capability and are ideally suited for operation in hostile environments.

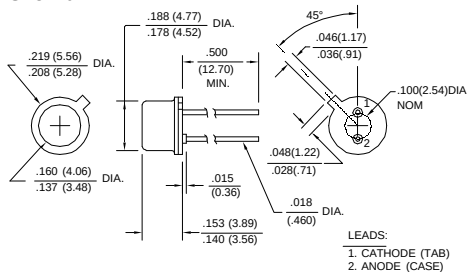


INFRA-83.TIF

OUTLINE DIMENSIONS in inches (mm)

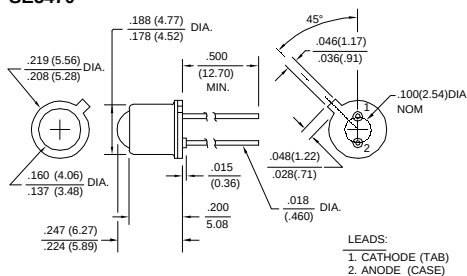
Tolerance	3 plc decimals	±0.005(0.12)
	2 plc decimals	±0.020(0.51)

SE3470



DIM_005a.ds4

SE5470



DIM_005b.ds4

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ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Total Power Output ⁽¹⁾ SE3470-001 SE3470-002 SE3470-003 SE5470-001	P _O	7.0 9.0 10.5 7.0			mW	I _F =100 mA
Irradiance ⁽²⁾ SE5470-002 SE5470-003 SE5470-004	H	1.5 2.6 3.5		5.9	mW/cm ²	I _F =100 mA
Forward Voltage	V _F			1.9	V	I _F =100 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 ⁽³⁾ SE3470 SE5470	Ø		90 20		degr.	I _F =Constant
Radiation Rise And Fall Time	t _r , t _f		0.7		μs	

Notes

1. Total power emitted from the package in mW.
2. Measured into a 0.25 (6.35) aperture placed at 1.20(30.5) from lens tip.
3. 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	100 mA
Peak Forward Current	3 A
(1μs pulse width, 300 pps)	
Power Dissipation	150 mW ⁽¹⁾
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 1.43 mW/°C.

SCHEMATIC

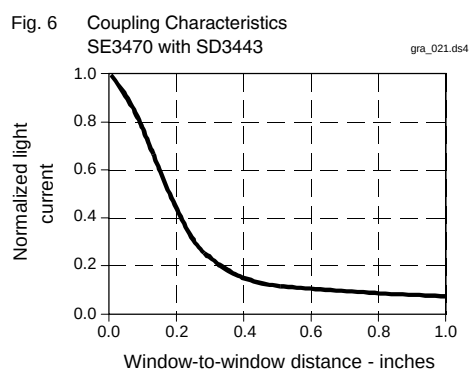
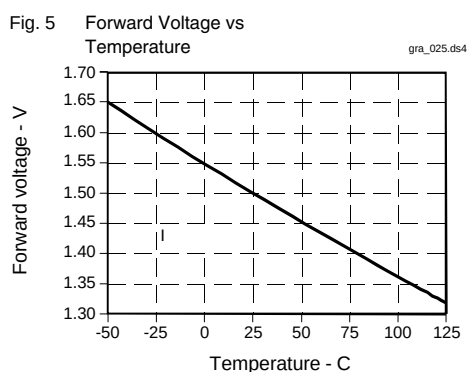
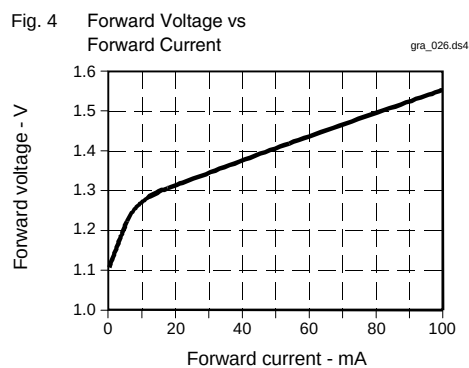
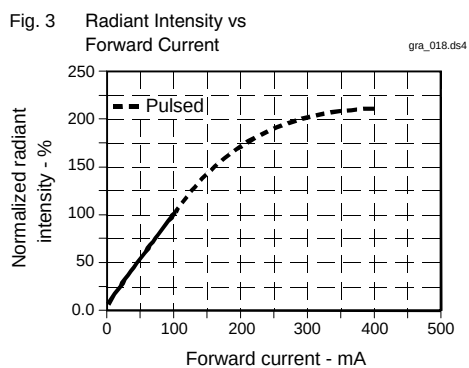
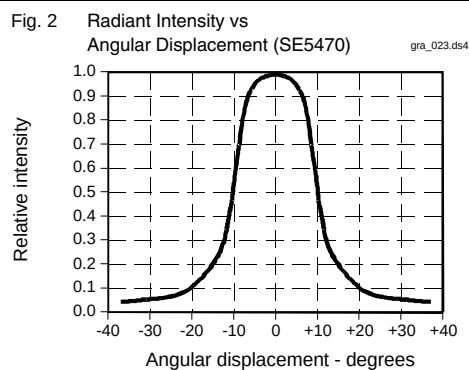
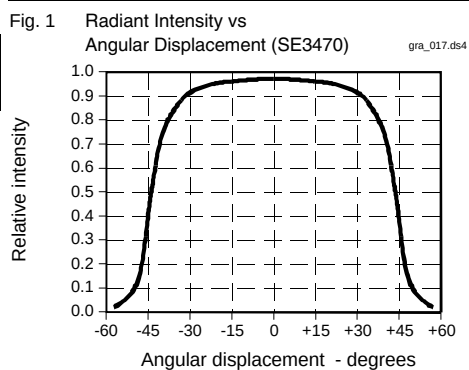


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Fig. 7 Spectral Bandwidth

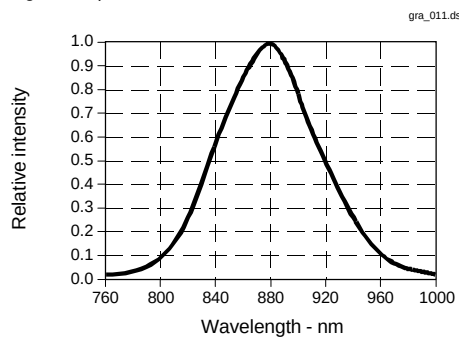


Fig. 8 Radiant Intensity vs Case Temperature

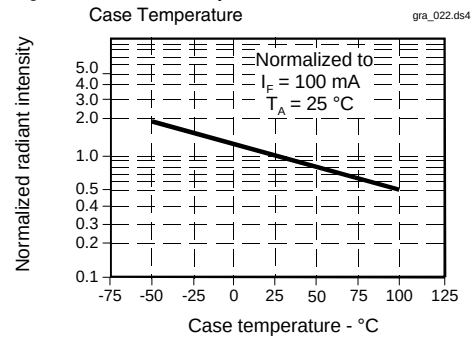
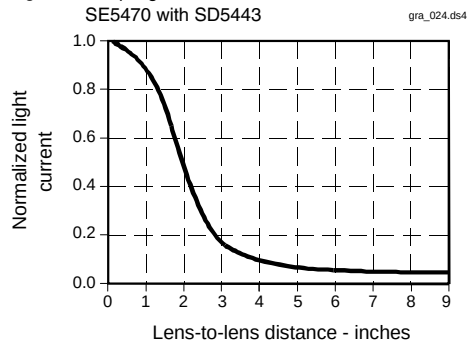


Fig. 9 Coupling Characteristics
SE5470 with SD5443



All Performance Curves Show Typical Values