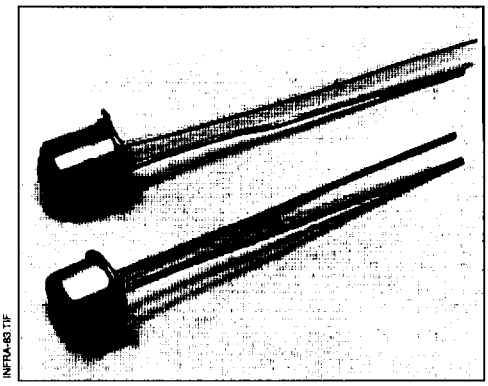
SE3450/5450

GaAs Infrared Emitting Diode

FEATURES

- TO-46 metal can package
- Choice of flat window or lensed package
- 90° or 20° (nominal) beam angle option
- 935 nm wavelength
- Wide operating temperature range (-55°C to +125°C)
- Mechanically and spectrally matched to SD3421/5421 photodiode, SD3443/5443/5491 phototransistor, SD3410/5410 photodarlington and SD5600 series Schmitt trigger



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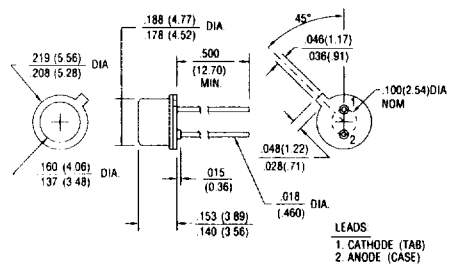
DESCRIPTION

The SE3450/5450 series consists of a gallium arsenide infrared emitting diode mounted in a TO-46 metal can package. The SE3450 series has flat window cans providing a wide beam angle, while the SE5450 series has glass lensed cans providing a narrow beam angle. The TO-46 packages offer high power dissipation capability and are ideally suited for operation in hostile environment.

OUTLINE DIMENSIONS in inches (mm)

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

SE3450



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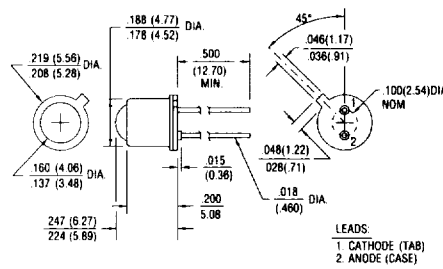
SE5450



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

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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=100 mA
SE3450-011, SE5450-011		0.30				
SE3450-012, SE5450-012		0.50				
SE3450-013, SE5450-013		1.00				
SE3450-014, SE5450-014		1.50				
Forward Voltage	V_F			1.7	V	I_F=100 mA
Reverse Breakdown Voltage	V_{BR}	3.0			V	I_R=10 µA
Peak Output Wavelength	λ_p		935		nm	
Spectral Bandwidth	$\Delta\lambda$		50		nm	
Spectral Shift With Temperature	$\Delta\lambda_p/\Delta_T$		0.3		nm/°C	
Beam Angle[2]	Ø				degr.	I_F=Constant
SE3450			90			
SE5450			20			
Radiation Rise And Fall Time	t_r, t_f		0.7		µs	

Notes
1. SE3450 measured into a 0.250(6.35) diameter aperture placed 0.33(8.4) from window surface. SE5450 measured into a 0.250(6.35) diameter aperture placed 1.20(30.5) from 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	100 mA
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

INFRA-1.9CH

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SE3450/5450

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Fig. 1 Radiant Intensity vs Angular Displacement (SE3450)

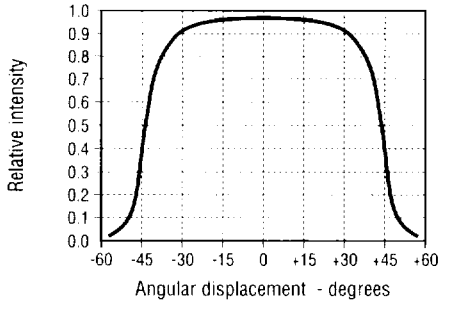


Fig. 2 Radiant Intensity vs Angular Displacement (SE5450)

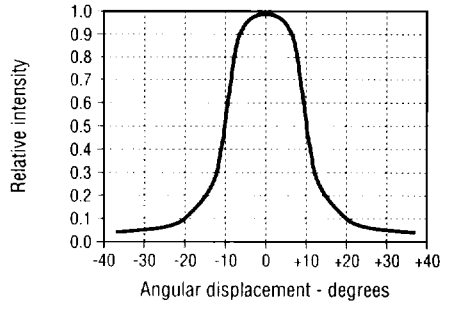


Fig. 3 Radiant Intensity vs Forward Current

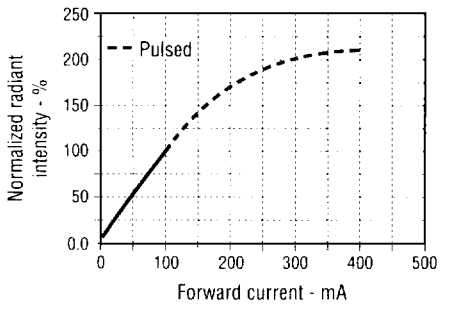


Fig. 4 Forward Voltage vs Forward Current

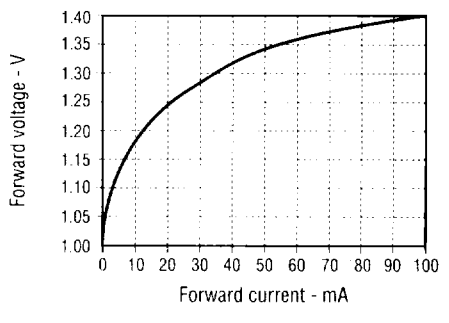


Fig. 5 Forward Voltage vs Temperature

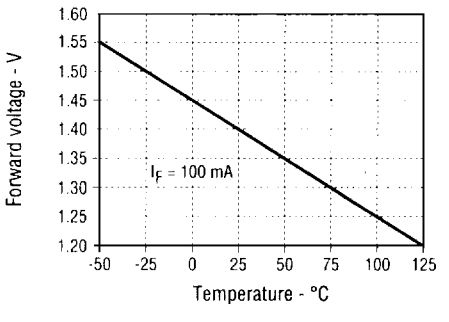
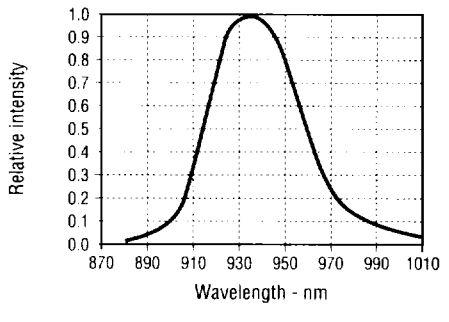


Fig. 6 Spectral Bandwidth



All Performance Curves Show Typical Values

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Fig. 7 Coupling Characteristics
SE3450 with SD3443

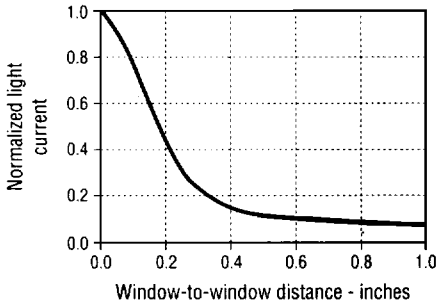


Fig. 8 Coupling Characteristics
SE5450 with SD5443

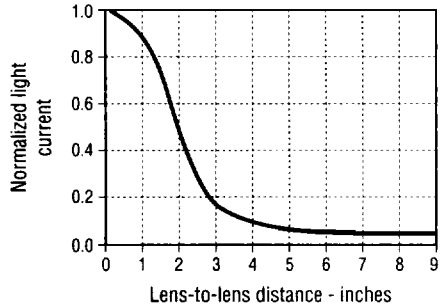
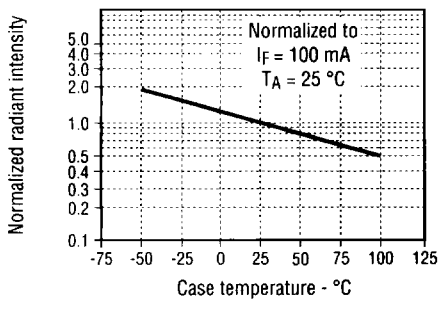


Fig. 9 Radiant Intensity vs
Case Temperature



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