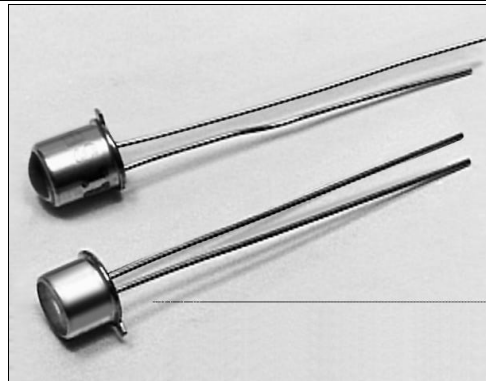


# SE3450/5450

## 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



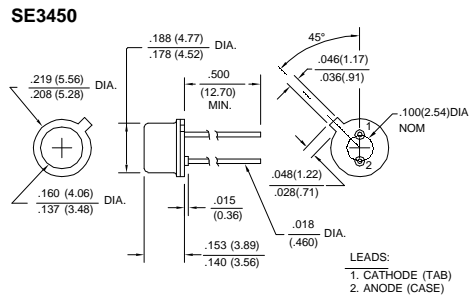
INFRA-83.TIF

### DESCRIPTION

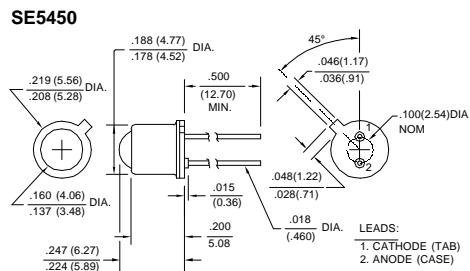
The SE3450/5450 series consists of a gallium arsenide infrared emitting diode mounted in a TO-46 metal can package. The SE3450 series has flat window cans providing a wide beam angle, while the SE5450 series has glass lensed cans providing a narrow beam angle. The TO-46 packages offer high power dissipation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



DIM\_003a.ds4



DIM\_003b.ds4

# SE3450/5450

## GaAs Infrared Emitting Diode

### 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> =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 <sub>F</sub>			1.7	V	I <sub>F</sub> =100 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>	∅				degr.	I <sub>F</sub> =Constant
SE3450			90			
SE5450			20			
Radiation Rise And Fall Time	t <sub>r</sub> , t <sub>f</sub>		0.7		μs	

#### Notes

- 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.
- 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 <sup>(1)</sup>
Operating Temperature Range	-55°C to 125°C
Storage Temperature Range	-65°C to 150°C
Soldering Temperature (10 sec)	260°C

#### Notes

- Derate linearly from 25°C free-air temperature at the rate of 1.43 mW/°C.

### SCHEMATIC



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

# Honeywell

# SE3450/5450

## GaAs Infrared Emitting Diode

Fig. 1 Radiant Intensity vs Angular Displacement (SE3450) gra\_017.ds4

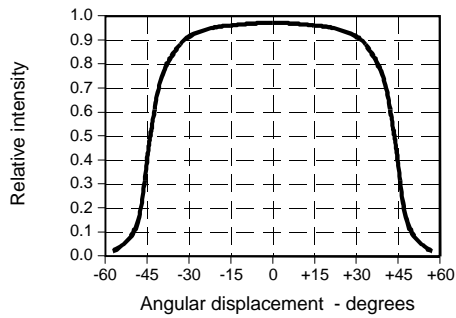


Fig. 2 Radiant Intensity vs Angular Displacement (SE5450) gra\_023.ds4

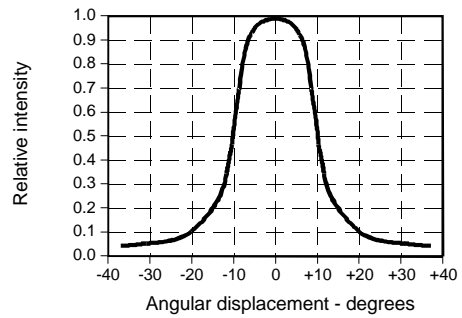


Fig. 3 Radiant Intensity vs Forward Current gra\_018.ds4

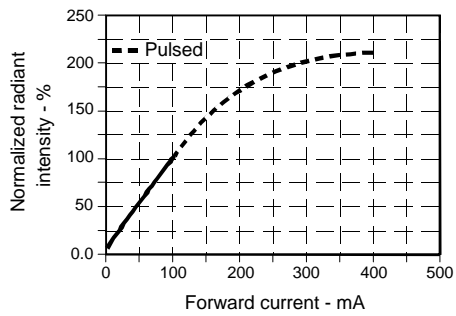


Fig. 4 Forward Voltage vs Forward Current gra\_205.ds4

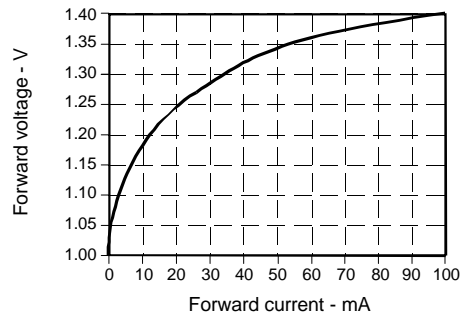


Fig. 5 Forward Voltage vs Temperature gra\_206.ds4

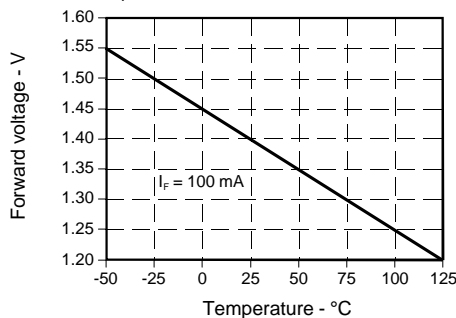
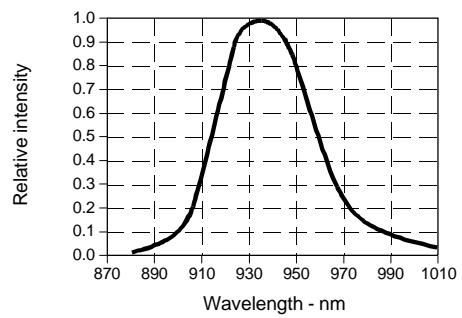


Fig. 6 Spectral Bandwidth gra\_005.ds4



# SE3450/5450

## GaAs Infrared Emitting Diode

Fig. 7 Coupling Characteristics  
SE3450 with SD3443 gra\_021.ds4

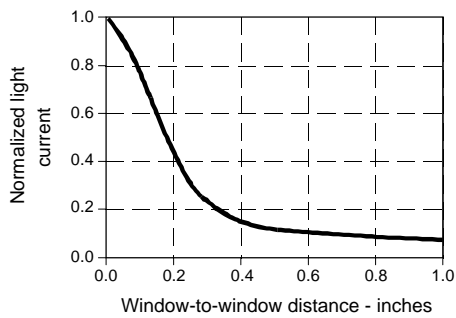


Fig. 8 Coupling Characteristics  
SE5450 with SD5443 gra\_024.ds4

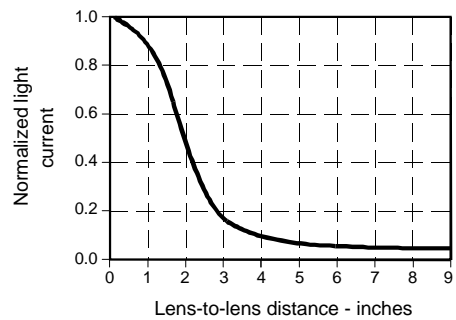
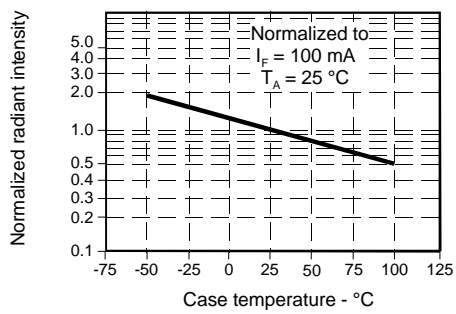


Fig. 9 Radiant Intensity vs  
Case Temperature gra\_022.ds4



All Performance Curves Show Typical Values

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