

SE3455/5455

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)
- 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



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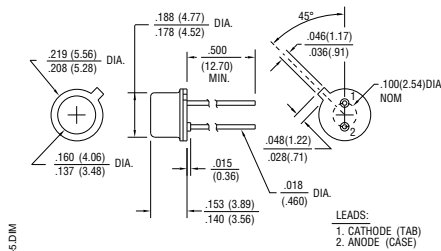
DESCRIPTION

The SE3455/5455 series consists of a gallium arsenide infrared emitting diode mounted in a TO-46 metal can package. The SE3455 series has flat window cans providing a wide beam angle, while the SE5455 series has glass lensed cans providing a narrow beam angle. These devices are constructed with dual bond wires suitable for pulsed current applications. The TO-46 packages offer high power dissipation capability and are ideally suited for operation in hostile environments.

OUTLINE DIMENSIONS in inches (mm)

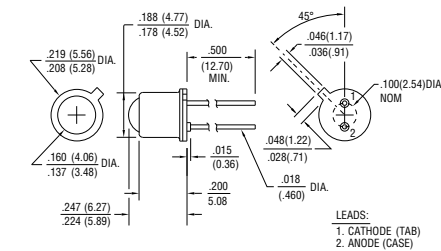
Tolerance 3 plc decimals ±0.005(0.12)
2 plc decimals ±0.020(0.51)

SE3455



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SE5455



SE3455/5455

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ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Total Power Output	P_O				mW	$I_F=100$ mA
SE3455-001, SE5455-001		2.0				
SE3455-002, SE5455-002		3.5				
SE3455-003, SE5455-003		4.8				
SE3455-004, SE5455-004		5.4				
Forward Voltage	V_F			1.7	V	$I_F=100$ mA
Reverse Breakdown Voltage	V_{BR}	3.0			V	$I_R=10$ μ A
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/ $^{\circ}$ C	
Beam Angle ⁽¹⁾	\emptyset				degr.	$I_F=$ Constant
SE3455			90			
SE5455			20			
Radiation Rise And Fall Time	t_r, t_f		0.7		μ s	

Notes

1. 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
(1 μ s 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/ $^{\circ}$ C.

SCHEMATIC



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SE3455/5455

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Fig. 1 Radiant Intensity vs Angular Displacement (SE3455)

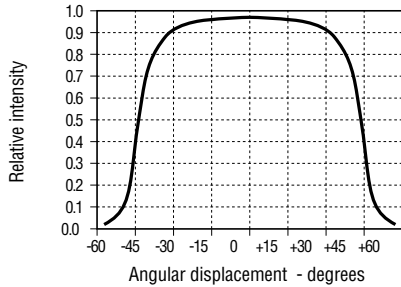


Fig. 2 Radiant Intensity vs Angular Displacement (SE5455)

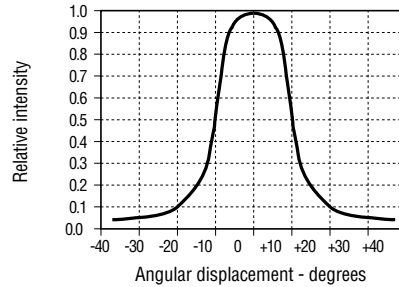


Fig. 3 Radiant Intensity vs Forward Current

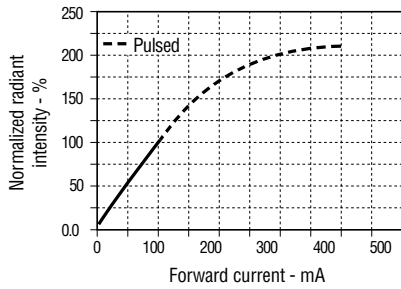


Fig. 4 Forward Voltage vs Forward Current

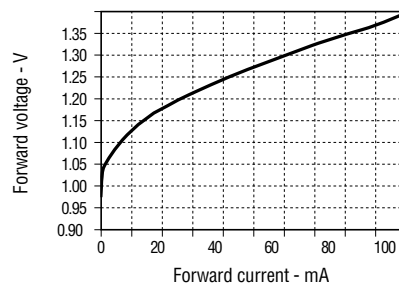


Fig. 5 Forward Voltage vs Temperature

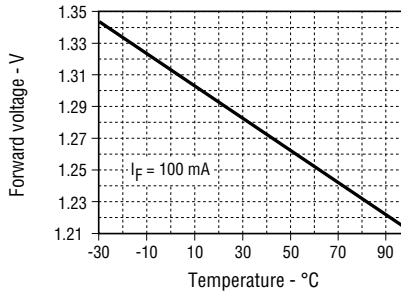
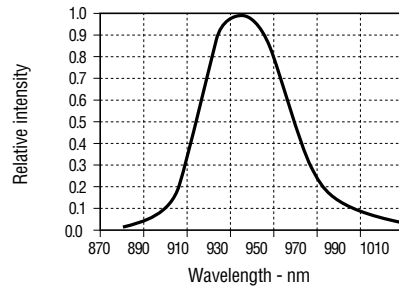


Fig. 6 Spectral Bandwidth

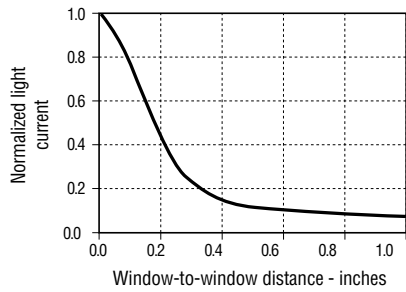


All Performance Curves Show Typical Values

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Fig. 7 Coupling Characteristics
SE3455 with SD3443



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Fig. 8 Coupling Characteristics
SE5455 with SD5443

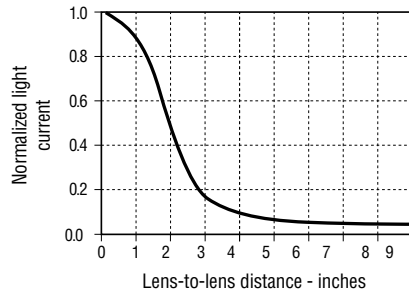
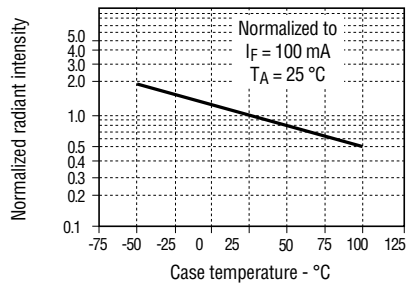


Fig. 9 Radiant Intensity vs
Case Temperature



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