SE301A
GaAs INFRARED EMITTING DIODE INDUSTRIAL USE

NEPCO SERIES

Description

The SE301A is a GaAs (Gallium Arsenide) infrared emitting diode which is mounted on a TO-18 hermetically sealed header with a glass lens. On forward bias, it emits a spectrally narrow band of radiation peaking at 940nm. The close wavelength match of this device to silicon sensors makes it ideally suited for all source-sense applications. Its low cost and volume producibility opens new areas of use anywhere an infrared source is desirable.

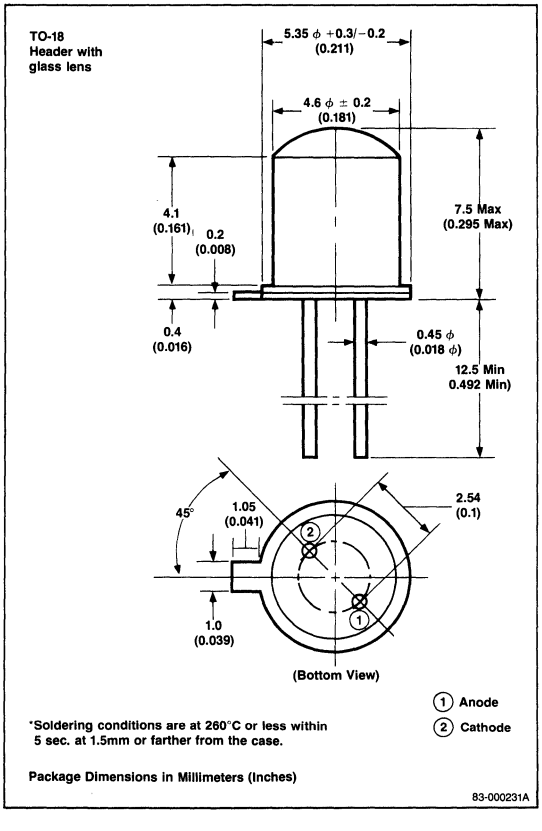
Features

- ☐ Low cost
- ☐ High output power — 3mW min
- ☐ Fast switching time
- ☐ Long life-solid state reliability
- ☐ Compact, rugged, lightweight
- ☐ Spectrally matched to silicon sensors

Applications

- ☐ Paper tape and punch card readers
- ☐ Optical encoders
- ☐ Photo choppers
- ☐ High speed optoelectronic data links

Package Dimensions



*Soldering conditions are at 260°C or less within 5 sec. at 1.5mm or farther from the case.

Package Dimensions in Millimeters (Inches)

83-000231A

Absolute Maximum Ratings

T_A = +25°C

Power Dissipation, P_D	150mW
Forward Current, I_F	100mA
Peak Forward Current, I_{PEAK}[1]	1000mA
Reverse Voltage, V_R	5.0V
Junction Temperature, T_J	+125°C
Storage Temperature, T_{STG}	−65°C ~ +125°C

Electro-Optical Characteristics

T_A = +25°C

Parameters	Symbol	Limits Min	Typ	Max	Unit	Test Conditions
Forward Voltage	V_F			1.45	V	I_F = 50mA
Pulse Forward Voltage	V_F			5.0	V	I_F = 1.0A
Capacitance	C		100		pF	V = 0, f = 1.0MHz
Peak Emission Wavelength	λ_{PEAK}		940		nm	I_F = 50mA
Spectral Line Half Width	$\Delta\lambda$		60		nm	I_F = 50mA
Output Power	P_O	3.0			mW	I_F = 50mA
Peak Output Power	P_{PEAK}[1]	15			mW	I_F = 1.0mA
Light Turn-On and Turn-Off	t_{ON}, t_{OFF}		1		μs	

Note: 1. f = 1.0kHz, duty cycle 1%.

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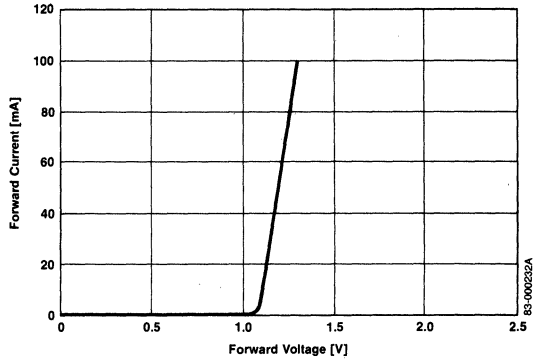
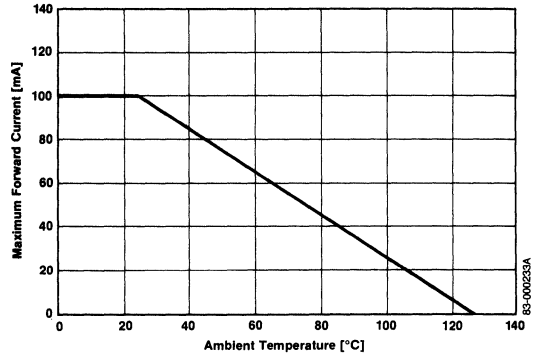
Typical Characteristics (cont)

T_A = +25°C

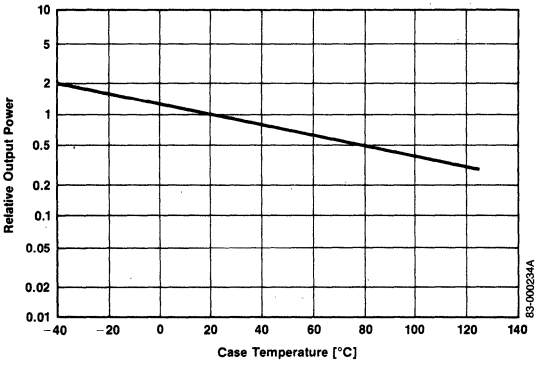
Forward Current vs Forward Voltage



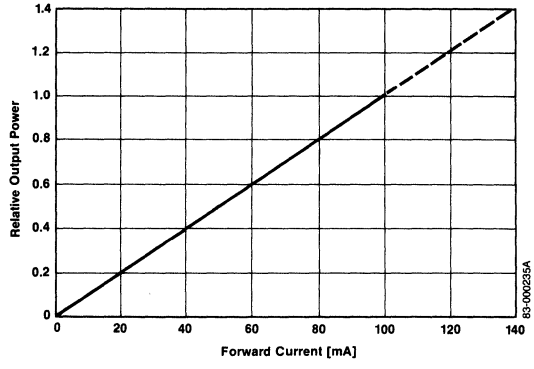
Maximum Forward Current vs Ambient Temperature



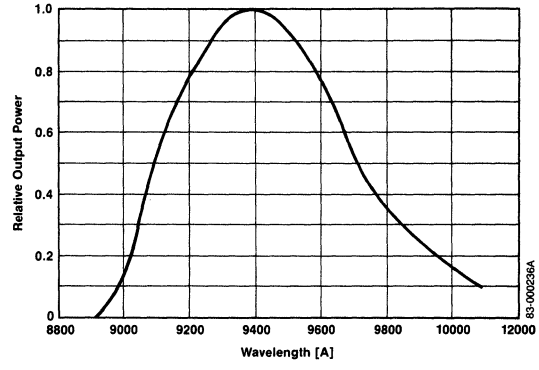
Relative Output Power vs Case Temperature



Relative Output Power vs Forward Current



Spectral Distribution



Spatial Distribution