NEC
NEC Electronics Inc.

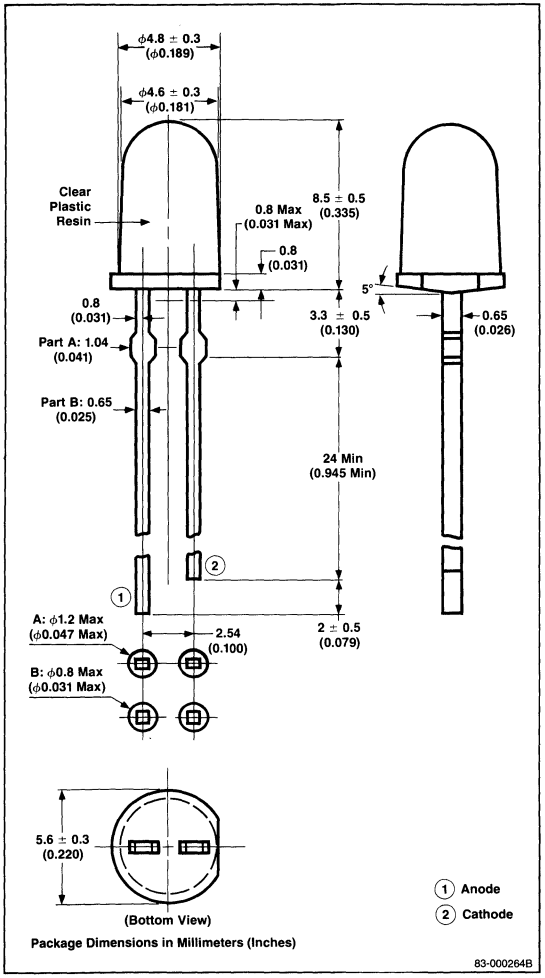
SE1003
GaAlAs on GaAs INFRARED EMITTING DIODE

NEPOC SERIES

Description

The SE1003 is a GaAlAs on GaAs Infrared Emitting Diode which is mounted on a lead frame and molded in plastic. On forward bias, it emits a spectrally narrow band of radiation peaking at 950nm.

Package Dimensions



Package Dimensions in Millimeters (Inches)

83-000264B

Features

- ☐ Economical
- ☐ High output power
- ☐ Wide half angle
- ☐ Good linearity
- ☐ Spectrally matched to silicon sensors
- ☐ Long lead

Applications

- ☐ Light source for TV remote control
- ☐ Light source for smoke detector
- ☐ Optical encoders
- ☐ Photo choppers, isolators

Absolute Maximum Ratings

$T_A = +25°C$

Power Dissipation, P_D	150mW
Forward Current, I_F	100mA
Pulse Forward Current, I_{FP1}	1.0A
Reverse Voltage, V_R	5.0V
Junction Temperature, T_J	+80°C
Storage Temperature, T_{STG}	−30°C to +80°C

Electro-Optical Characteristics

$T_A = +25°C$

Parameters	Symbol	Limits Min	Typ	Max	Unit	Test Conditions
Forward Voltage	V_F		1.27	1.45	V	I_F = 50mA
Pulse Forward Voltage	V_{FP1}		2.9	3.4	V	I_{FP} = 1.0A
Capacitance	C_T		40		pF	V = 0, f = 1.0MHz
Peak Emission Wavelength	λ_{PEAK}		950		nm	I_F = 50mA
Spectral Line Half Width	$\Delta\lambda$		50		nm	I_F = 50mA
Output Power	I_E	12	20		mW/sr	I_F = 50mA
Light Turn-On and Turn-Off	t_{ON}, t_{OFF}		1		μs	

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

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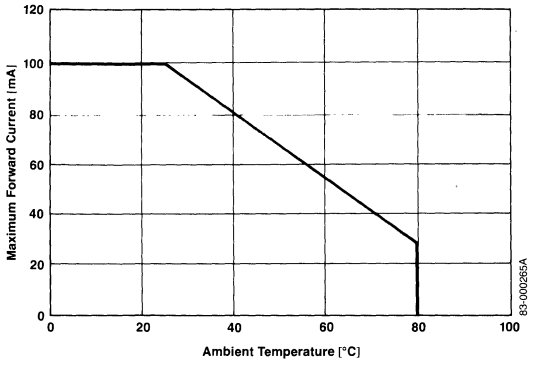
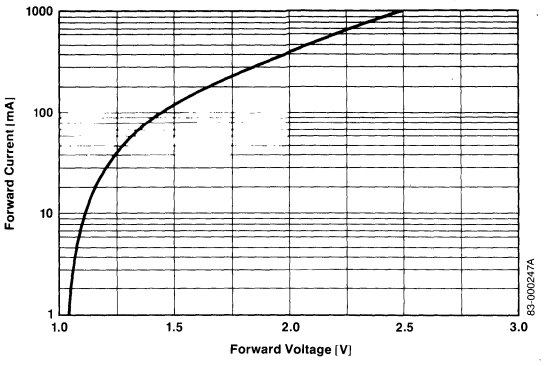
Typical Characteristics

T_A = +25°C

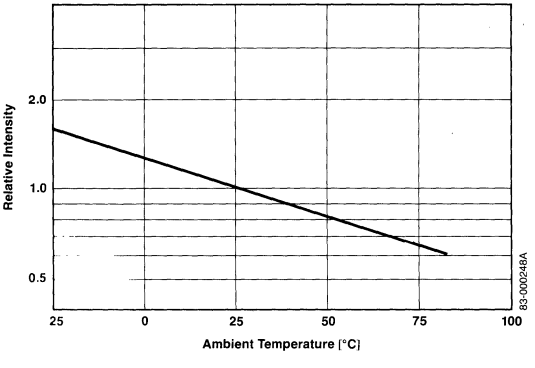
Maximum Forward Current vs Ambient Temperature



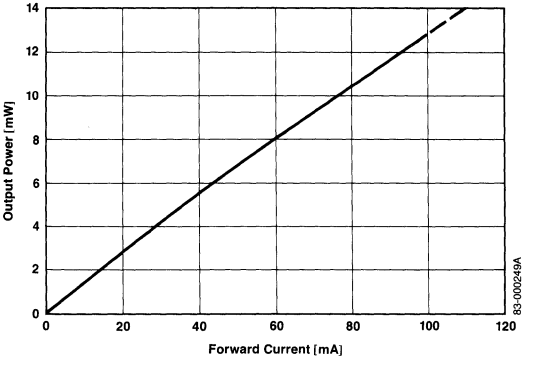
Forward Current vs Forward Voltage



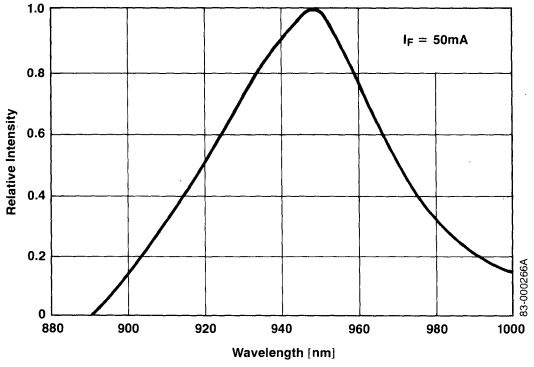
Relative Intensity vs Ambient Temperature



Output Power vs Forward Current



Spectral Distribution



Spatial Distribution