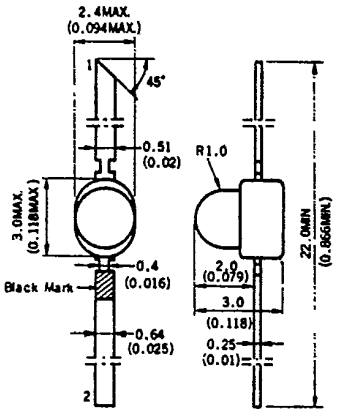
LIGHT EMITTING DIODE
SE302A

GaAs INFRARED EMITTER
INDUSTRIAL USE

DESCRIPTION

The SE302A is a GaAs (Gallium Arsenide) Infrared Light Emitting Diode which is mounted on the lead frame and molded in clear plastic 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 open new areas of use anywhere an infrared source is desirable.

PACKAGE DIMENSIONS
in millimeters (inches)



1. Anode
2. Cathode

* Soldering conditions are at 260°C or less within 5sec. at 3 mm or farther from the case.

FEATURES

- Low cost.
- High Output Power
- Fast Switching Time.
- Long Life-Solid State Reliability.
- Compact, Rugged, Lightweight.
- Spectrally Matched to Silicon Sensors.
  (Good Compatibility with darlington Photo transistor (PH101).)
- Easily assembled in linear arrays.
- Compatible with integrated circuits.

APPLICATIONS

- Electro optical switches.
- Card and tape reader sources.
- Optical Encoders.
- Photochoppers, Isolator.
- High Speed Optoelectronic Data Links.
- Photo coupler.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation (Ta = 25°C)	P	75	mW
Maximum Forward Current (Ta = 25°C)	I_F	50	mA
Maximum Reverse Voltage (Ta = 25°C)	V_R	3.0	V
Maximum Temperatures			
Junction Temperature	T_j	80	°C
Storage Temperature	T_{stg}	-30 to +80	°C

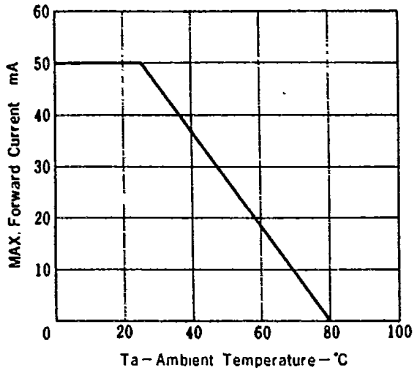
ELECTRO-OPTICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Forward Voltage	V_F		1.2	1.4	V	I_F = 30 mA
Reverse Current	I_R			50	μA	V_R = 3.0V
Capacitance	C		100		pF	V = 0, f = 1.0 MHz
Peak Emission Wavelength	λ_{peak}		940		nm	I_F = 30 mA
Spectral Line Half Width	$\Delta\lambda$		60		nm	I_F = 30 mA
Output Power	P_O	1.0	1.5		mW	I_F = 30 mA
Light Turn-On and Turn-Off	t_{on}, t_{off}		1.0		μs	I_F = 30 mA

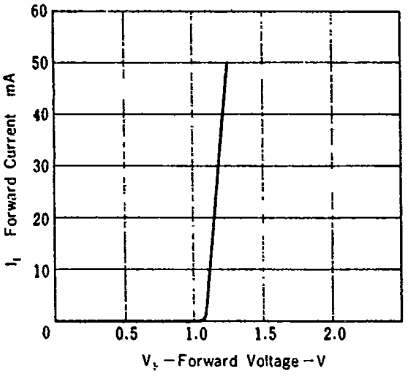
* f = 1.0 kHz, duty cycle 1%

TYPICAL CHARACTERISTICS (Ta = 25 °C)

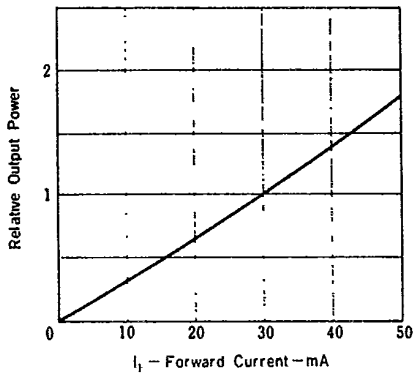
MAX. FORWARD CURRENT vs. AMBIENT TEMPERATURE



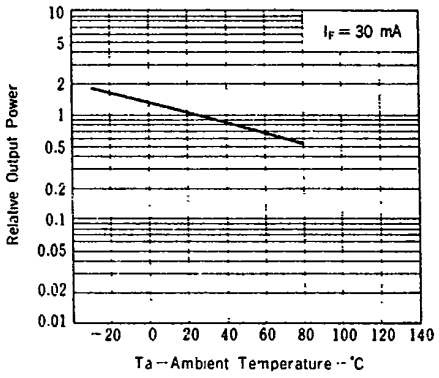
FORWARD CURRENT vs. FORWARD VOLTAGE



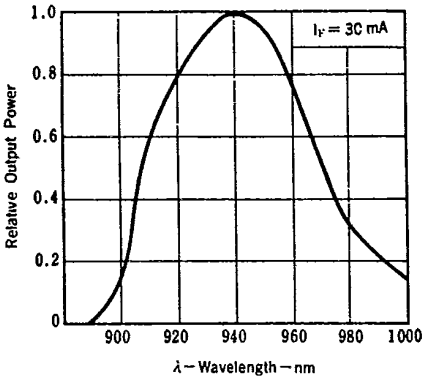
RELATIVE OUTPUT POWER vs. FORWARD CURRENT



RELATIVE OUTPUT POWER vs. AMBIENT TEMPERATURE



SPECTRAL DISTRIBUTION



SPATIAL DISTRIBUTION