

LIGHT EMITTING DIODE

SE302A

GaAs INFRARED EMITTER

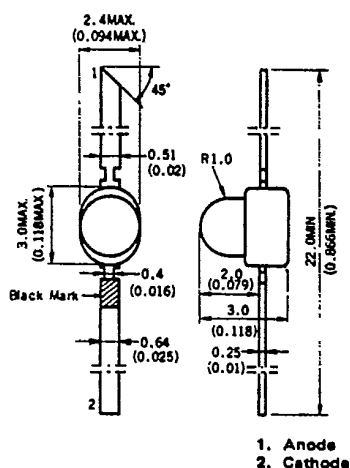
INDUSTRIAL USE

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)



* 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 ($T_a = 25^\circ\text{C}$)	P	75	mW
Maximum Forward Current ($T_a = 25^\circ\text{C}$)	I_F	50	mA
Maximum Reverse Voltage ($T_a = 25^\circ\text{C}$)	V_R	3.0	V
Maximum Temperatures			
Junction Temperature	T_j	80	$^\circ\text{C}$
Storage Temperature	T_{stg}	-30 to +80	$^\circ\text{C}$

ELECTRO-OPTICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

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

* $f = 1.0 \text{ kHz}$, duty cycle 1%

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TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)