

LIGHT EMITTING DIODE SE301A

GaAs INFRARED EMITTING DIODE INDUSTRIAL USE

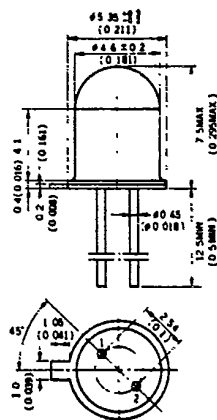
DESCRIPTION

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 open new areas of use anywhere an infrared source is desirable.

PACKAGE DIMENSIONS

In millimeters (inches)

TO-18
Header
With
Glass Lens.



(Bottom View)

1. Cathode
2. Anode (Case)

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

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.
- Photochoppers.
- High speed optoelectronic data links.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation ($T_a = 25^\circ\text{C}$)	P	150	mW
Maximum Forward Current ($T_a = 25^\circ\text{C}$)	I_F	100	mA
Maximum Pulse Forward Current ($T_a = 25^\circ\text{C}$)	I_{FP}^*	1.0	A
Maximum Reverse Voltage ($T_a = 25^\circ\text{C}$)	V_R	5.0	V
Maximum Temperatures			
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature	T_{stg}	- 65 to +125	$^\circ\text{C}$

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

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Forward Voltage	V_F		1.2	1.45	V	$I_F = 50 \text{ mA}$
Pulse Forward Voltage	V_{FP}^*		2.0	5.0	V	$I_{FP} = 1.0 \text{ A}$
Capacitance	C_t		100		pF	$V = 0, f = 1.0 \text{ MHz}$
Peak Emission Wavelength	λ_{peak}		940		nm	$I_F = 50 \text{ mA}$
Spectral Line Half Width	$\Delta\lambda$		60		nm	$I_F = 50 \text{ mA}$
Output Power	P_O	3.0			mW	$I_F = 50 \text{ mA}$
Peak Output Power	P_{peak}^*	15			mW	$I_{FP} = 1.0 \text{ A}$
Light Turn-On and Turn-Off	t_{on}, t_{off}		1		μs	

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

SE301A

T-41-11

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