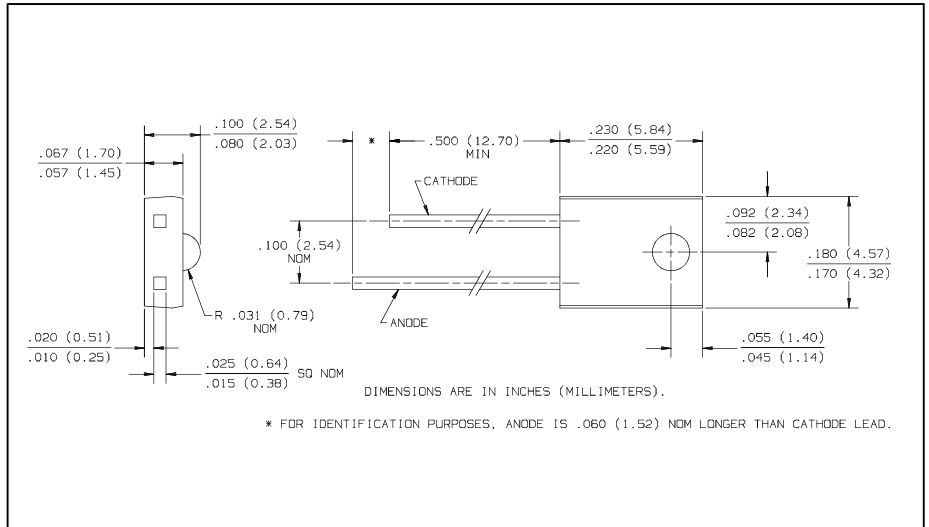


# GaAs Plastic Infrared Emitting Diodes Types OP140A, OP140B, OP140C, OP140D



## Features

- Wide irradiance pattern
- Selected to specific on-line intensity ranges
- Low cost, miniature plastic side-looking package
- Mechanically and spectrally matched to the OP550 series of phototransistors and the OP560 series of photodarlingtons

## Description

The OP140 series devices are 935nm high intensity gallium arsenide infrared emitting diodes molded in IR transmissive plastic side-looking packages. The side looking packages are for use in PC board mounted slotted switches or as an easy mount PC board interrupter.

## Replaces

OP140SL series

## Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Reverse Voltage	2.0 V
Continuous Forward Current	50 mA
Peak Forward Current (1 $\mu\text{s}$ pulse width, 300 pps)	3.0 A
Storage and Operating Temperature Range	$-40^\circ\text{C}$ to $+100^\circ\text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	$260^\circ\text{C}^{(1)}$
Power Dissipation	100 mW <sup>(2)</sup>

### Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. A max. of 20 grams force may be applied to the leads when soldering.
- (2) Derate linearly 1.33 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
- (3)  $E_{e(\text{APT})}$  is a measurement of the average apertured radiant incidence upon a sensing area 0.180" (4.57 mm) in diameter perpendicular to and centered on the mechanical axis of the lens and 0.653" (16.6 mm) from the lens tip.  $E_{e(\text{APT})}$  is not necessarily uniform within the measured area.

# Types OP140A, OP140B, OP140C, OP140D

Electrical Characteristics ( $T_A = 25^\circ \text{C}$  unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$E_{e(\text{APT})}$	Apertured Radiant Incidence OP140D	0.10			$\text{mW}/\text{cm}^2$	$I_F = 20 \text{ mA}^{(3)}$
	OP140C	0.20		0.40	$\text{mW}/\text{cm}^2$	$I_F = 20 \text{ mA}^{(3)}$
	OP140B	0.30		0.55	$\text{mW}/\text{cm}^2$	$I_F = 20 \text{ mA}^{(3)}$
	OP140A	0.40			$\text{mW}/\text{cm}^2$	$I_F = 20 \text{ mA}^{(3)}$
$V_F$	Forward Voltage			1.60	V	$I_F = 20 \text{ mA}$
$I_R$	Reverse Current			100	$\mu\text{A}$	$V_R = 2.0 \text{ V}$
$\lambda_p$	Wavelength at Peak Emission		935		nm	$I_F = 10 \text{ mA}$
B	Spectral Bandwidth Between Half Power Points		50		nm	$I_F = 10 \text{ mA}$
$\Delta\lambda_p/\Delta T$	Spectral Shift with Temperature		+0.30		$\text{nm}/^\circ\text{C}$	$I_F = \text{Constant}$
$\theta_{\text{HP}}$	Emission Angle at Half Power Points		40		Deg.	$I_F = 20 \text{ mA}$
$t_r$	Output Rise Time		1000		ns	$I_{F(\text{PK})} = 100 \text{ mA}$ , $\text{PW} = 10 \mu\text{s}$ , D.C. = 10%
$t_f$	Output Fall Time		500		ns	

INFRARED  
EMITTING  
DIODES