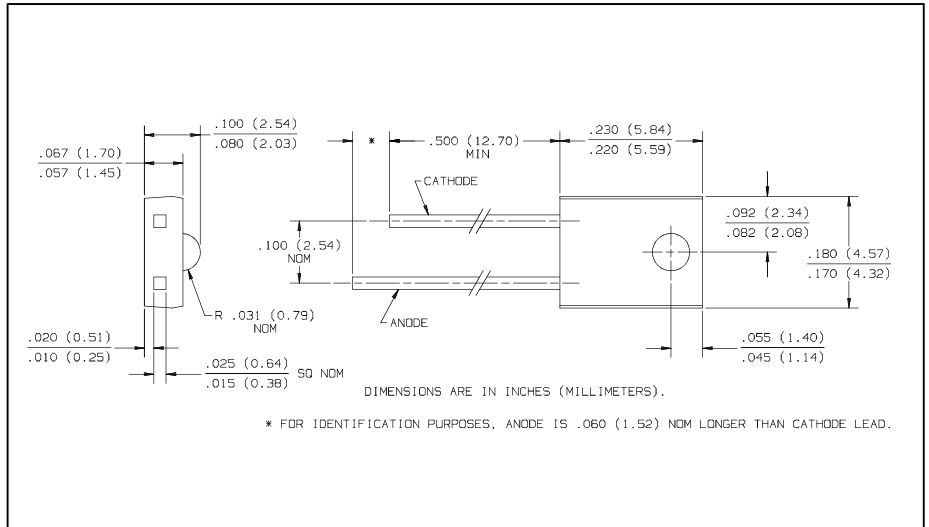


GaAs Plastic Infrared Emitting Diodes Types OP140A, OP140B, OP140C, OP140D



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 μs pulse width, 300 pps)	3.0 A
Storage and Operating Temperature Range	-40°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 ⁽²⁾

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°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			mW/cm^2	$I_F = 20 \text{ mA}^{(3)}$
	OP140C	0.20		0.40	mW/cm^2	$I_F = 20 \text{ mA}^{(3)}$
	OP140B	0.30		0.55	mW/cm^2	$I_F = 20 \text{ mA}^{(3)}$
	OP140A	0.40			mW/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	μA	$V_R = 2.0 \text{ V}$
λ_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		$\text{nm}/^\circ\text{C}$	$I_F = \text{Constant}$
θ_{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