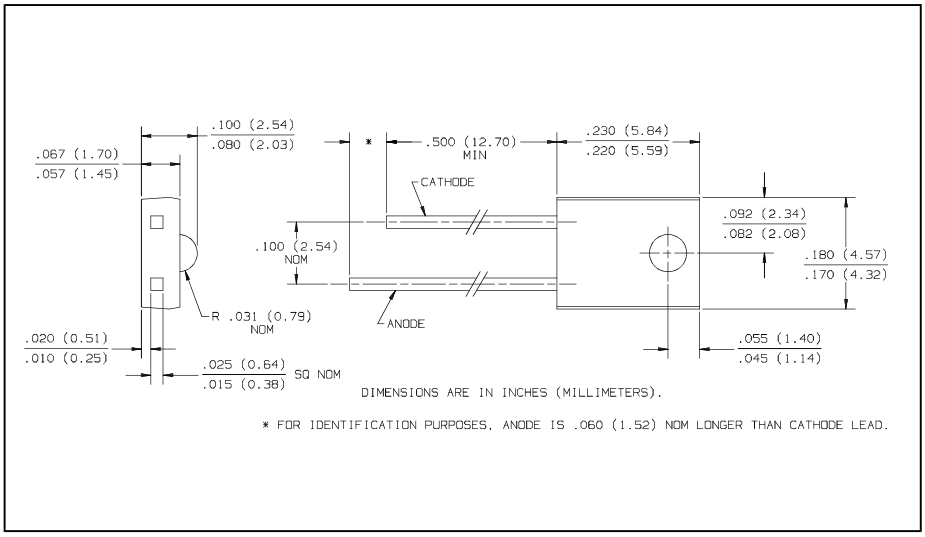
GaAs Plastic Infrared Emitting Diodes
Types OP140A, OP140B, OP140C, OP140D



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° 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° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	260° 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/° C above 25° C.
(3) $E_{e(APT)}$ 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. $E_{e(APT)}$ is not necessarily uniform within the measured area.

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Electrical Characteristics (T_A = 25° C unless otherwise noted)

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