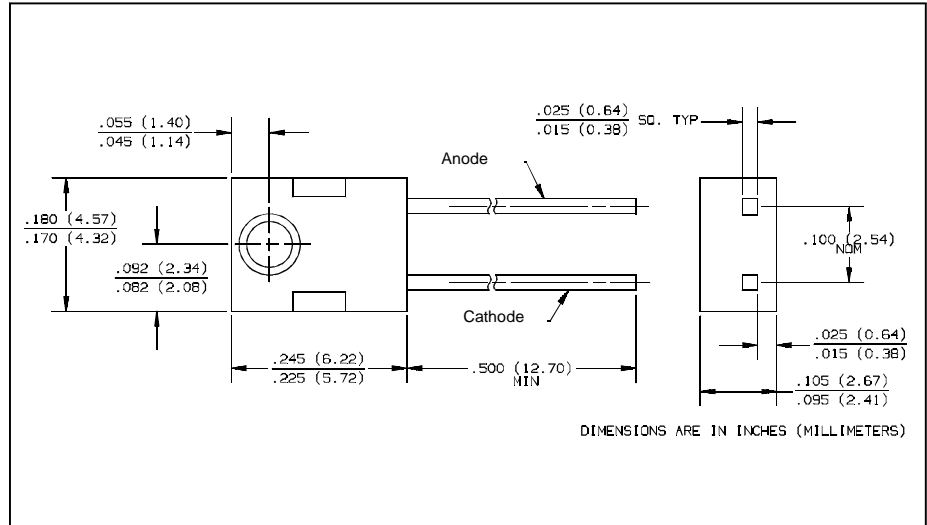


# Plastic Point Source Infrared Emitting Diode Type OP245PS



## Features

- Point source irradiance pattern
- Wavelength matched to silicon's peak response
- Fast switching speed
- Side-looking package for space limited applications

## Description

The OP245PS is an 850 nm, infrared emitting diode molded in IR transmissive amber-tinted epoxy packages. The side-looking package is for use in PC board mounted slotted switches or as easily mounted interrupt detectors.

The stable  $V_F$  vs. Temperature characteristic make them ideal for applications where voltage is limited (such as battery operation).

The low  $t_r/t_f$  make them ideal for high speed operations.

## 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 (2 $\mu\text{s}$ pulse width, 0.1% duty cycle) .....                     | 1.0 A                                       |
| Storage and Operating Temperature Range .....   | $-40^\circ\text{C}$ to $+100^\circ\text{C}$ |
| Lead Soldering Temperature [1/16 inch (1.6mm) from case for 5 sec. with soldering iron] ..... | $260^\circ\text{C}$ <sup>(1)</sup>          |
| Power Dissipation .....   | 100 mW <sup>(2)</sup>                       |

## NOTES:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering. A maximum of 20 grams force may be applied to the leads when soldering.
- (2) Derate linearly 1.33 mW/ $^\circ\text{C}$  above  $25^\circ$ .
- (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 measurement surface.  $E_{e(\text{APT})}$  is not necessarily uniform within the measured area.

# Type OP245PS

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

| SYMBOL               | PARAMETER                                    | MIN | TYP            | MAX  | UNITS                   | TEST CONDITIONS                                  |
|----------------------|--|-----|----------------|------|-------------------------|--|
| $E_{e(\text{APT})}$  | Apertured Irradiance                         | .10 |                | .90  | $\text{mW}/\text{cm}^2$ | $I_F = 20 \text{ mA}^{(3)}$                      |
| $V_F$                | Forward Voltage                              |     |                | 1.80 | V                       | $I_F = 20 \text{ mA}$                            |
| $I_R$                | Reverse Current                              |     |                | 20   | $\mu\text{A}$           | $V_R = 2 \text{ V}$                              |
| $\lambda_p$          | Wavelength at Peak Emission                  |     | 850            |      | nm                      | $I_F = 20 \text{ mA}$                            |
| B                    | Spectral Bandwidth Between Half Power Points |     | 50             |      | nm                      | $I_F = 20 \text{ mA}$                            |
| $\theta_{\text{HP}}$ | Emission Angle at Half Power                 |     | $\pm 18^\circ$ |      | Deg.                    | $I_F = 20 \text{ mA}$                            |
| $t_r$                | Rise Time                                    |     | 10             |      | ns                      | $I_{F(\text{PK})} = 20 \text{ mA}$               |
| $t_f$                | Fall Time                                    |     | 10             |      | ns                      | $\text{PW} = 10 \mu\text{s}, \text{D.C.} = 10\%$ |

INFRARED  
EMITTING  
DIODES