

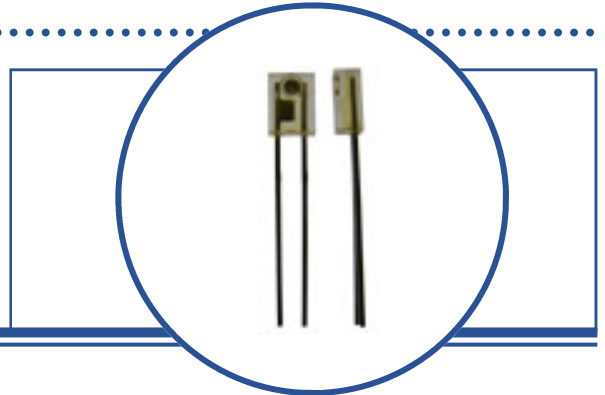
# Plastic Point Source Infrared Emitting Diode

## OP245PS



### Features:

- Point source irradiance pattern
- Side-looking package for space-limited applications
- Wavelength matched to silicon's peak response
- Higher power output than GaAs at equivalent drive currents
- Fast switching speed



### Description:

Each **OP245PS** device is an infrared emitting diode with a 850 nm GaAlAs chip, molded in a clear IR-transmissive side-looking epoxy package. This package makes these devices ideal for PCBoard mounted slotted switches and for mounted interrupt detectors.

The stable forward  $V_F$  vs  $T_A$  characteristic make them suitable for applications that have limited voltage, such as battery operation; whereas, the low  $T_R/T_F$  makes them ideal for high-speed operations.

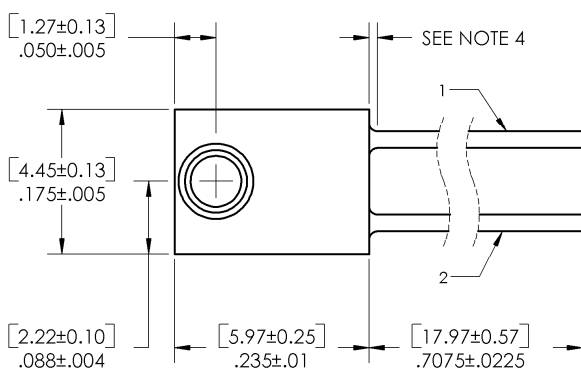
*Please refer to Application Bulletins 208 and 210 for additional design information and reliability (degradation) data.*

### Applications:

- Space-limited applications
- Mounted interrupt detector
- PCBoard mounted slotted switch
- High-speed applications

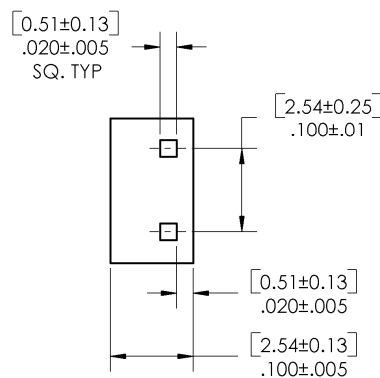
### Ordering Information

Part Number	LED Peak Wavelength	Lens Type	Total Beam Angle	Lead Length (min.)
OP245PS	850 nm	Flat	$\pm 18^\circ$	0.5" / 12.7 mm

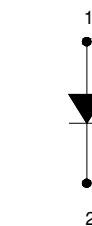


#### NOTES:

1. OUTSIDE DISCRETE SHELL IS POLYSULFONE P1700-11 CLEAR.
2. THIS LED IS BUILT WITH A 0.011" X 0.011" GaAlAs CHIP.
3. MAX ALLOWABLE EPOXY MENSUS IS 0.010".



1 ANODE 2 CATHODE  
DIMENSIONS ARE IN: [MILLIMETERS]  
INCHES



Pin #	LED
1	Anode
2	Cathode



RoHS

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

**CONTAINS POLYSULFONE**  
To avoid stress cracking, we suggest using ND Industries' **Vibra-Tite** for thread-locking. **Vibra-Tite** evaporates fast without causing structural failure in OPTEK'S molded plastics.

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

Storage and Operating Temperature Range	-40° C to +100° C
Reverse Voltage	2.0 V
Continuous Forward Current	50 mA
Peak Forward Current	1.0 A
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	260° C <sup>(1)</sup>
Power Dissipation	100 mW <sup>(2)</sup>

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
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#### Input Diode

$E_{E(APT)}$	Apertured Radiant Incidence	0.12	-	0.8	mW/cm <sup>2</sup>	$I_F = 20\text{ mA}^{(3)}$
$V_F$	Forward Voltage	1.2	-	1.7	V	$I_F = 20\text{ mA}$
$I_R$	Reverse Current	-	10	-	$\mu\text{A}$	$V_R = 2\text{ V}$
$\lambda_P$	Wavelength at Peak Emission	-	850	-	nm	$I_F = 20\text{ mA}$
B	Spectral Bandwidth between Half Power Points	-	50	-	nm	$I_F = 20\text{ mA}$
$\theta_{HP}$	Emission Angle at Half Power Points	-	$\pm 18^\circ$	-	Degree	$I_F = 20\text{ mA}$
$t_r$	Output Rise Time	-	10	-	ns	$I_{F(PK)} = 20\text{ mA}, PW = 10\ \mu\text{s}, D.C. = 10\%$
$t_f$	Output Fall Time	-	10	-	ns	

#### 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/°C above 25° C.
3.  $E_{E(APT)}$  is a measurement of the average apertured radiant energy incident 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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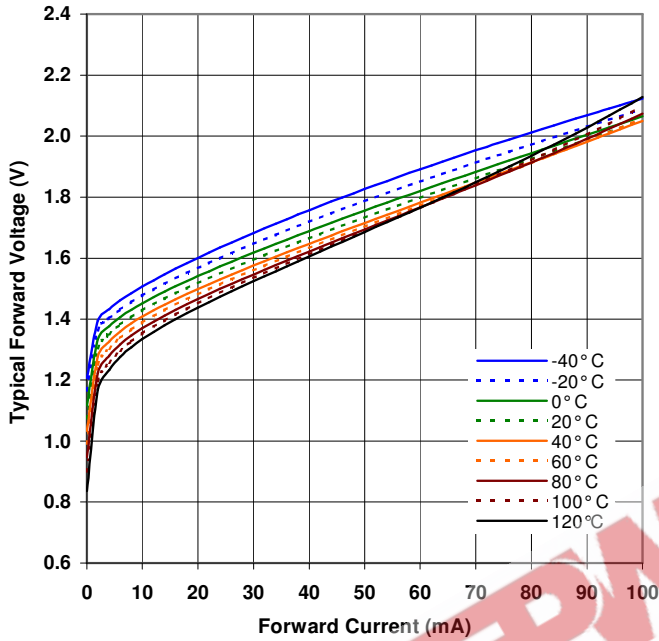
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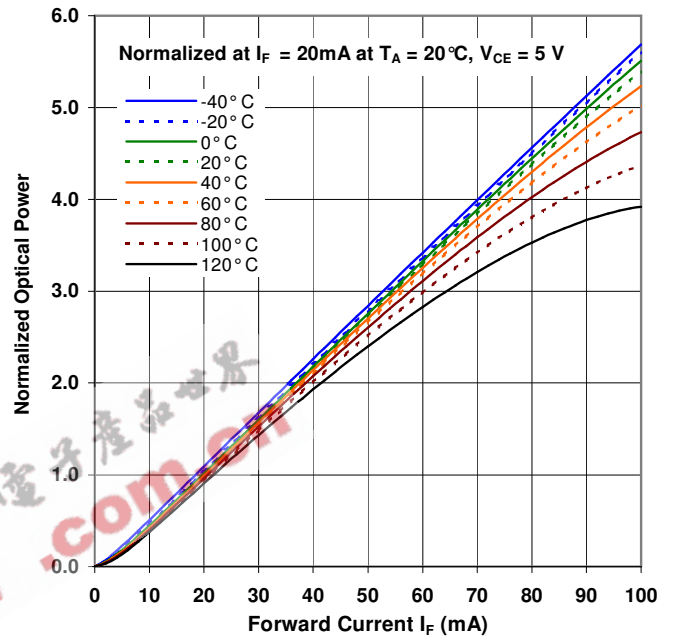


### OP245PS

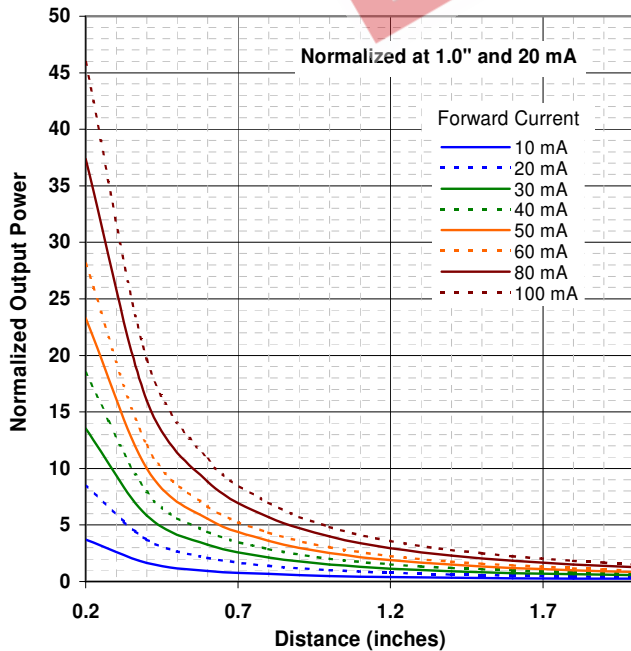
Forward Voltage vs Forward Current vs Temperature



Optical Power vs Forward Current vs Temperature



Distance vs Power vs Forward Current



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