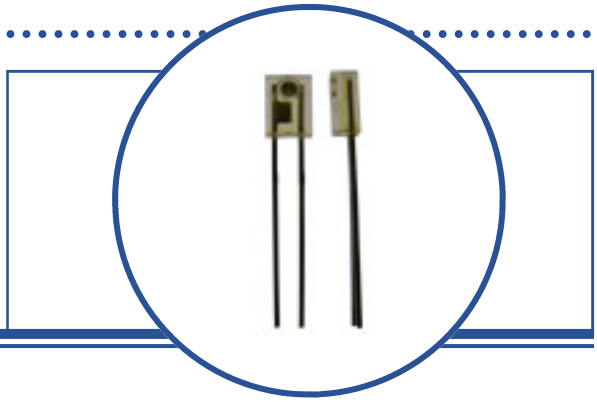
Plastic Point Source Infrared Emitting Diode

OP245PS

TT electronics
OPTEK Technology

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.

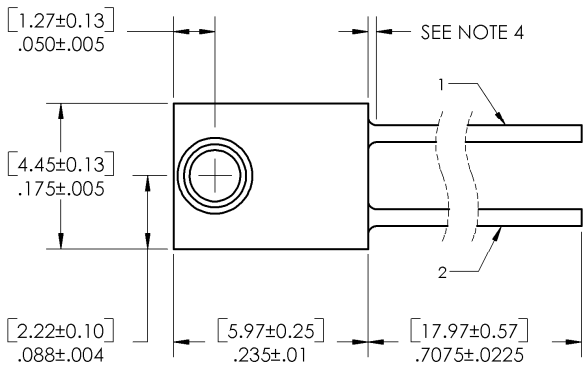
Please refer to Application Bulletins 208 and 210 for additional design information and reliability (degradation) data.

Applications:

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

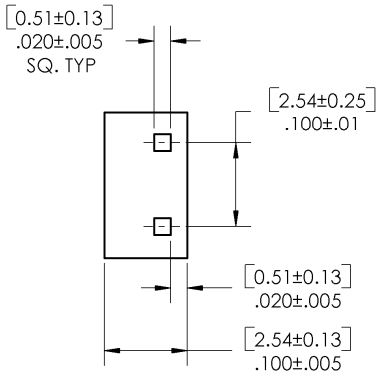
Ordering Information

Part Number	LED Peak Wavelength	Lens Type	Total Beam Angle	Lead Length (min.)
OP245PS	850 nm	Flat	±18°	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 MENSCUS IS 0.010".**



1 ANODE 2 CATHODE

DIMENSIONS ARE IN: [MILLIMETERS] INCHES

Pin #	LED
1	Anode
2	Cathode

RoHS

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.

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

OPTEK Technology Inc. — 1645 Wallace Drive, Carrollton, Texas 75006
Phone: (972) 323-2200 or (800) 341-4747 FAX: (972) 323-2396 sensors@optekinc.com www.optekinc.com

Absolute Maximum Ratings (T_A = 25° 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(1)
Power Dissipation	100 mW(2)

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
$E_{E\ (APT)}$	Apertured Radiant Incidence	0.12	-	0.8	mW/cm^2	I_F = 20 mA(,3)
V_F	Forward Voltage	1.2	-	1.7	V	I_F = 20 mA
I_R	Reverse Current	-	10	-	µA	V_R= 2 V
λ_P	Wavelength at Peak Emission	-	850	-	nm	I_F = 20 mA
B	Spectral Bandwidth between Half Power Points	-	50	-	nm	I_F = 20 mA
θ_{HP}	Emission Angle at Half Power Points	-	±18°	-	Degree	I_F = 20 mA
t_r	Output Rise Time	-	10	-	ns	$I_{F(PK)}$ = 20 mA, PW = 10 µs, 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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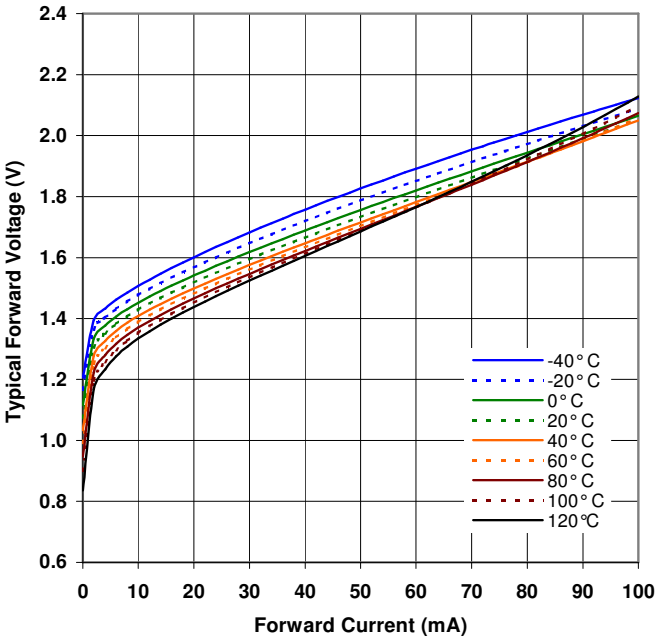
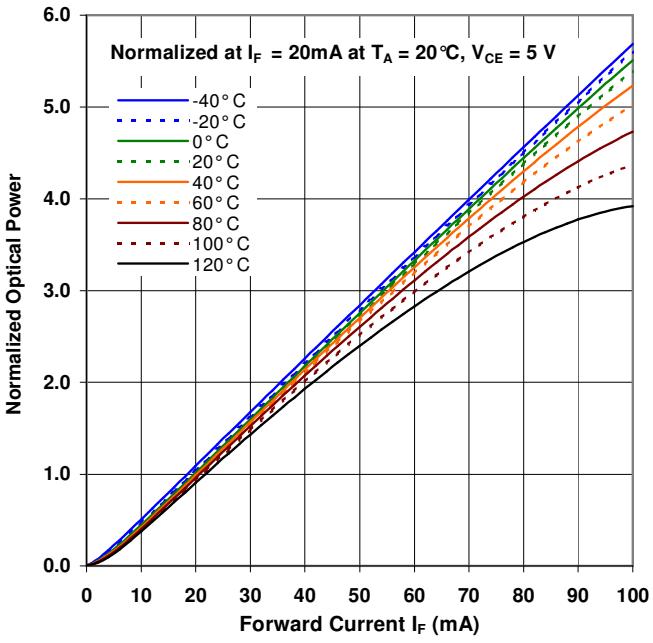
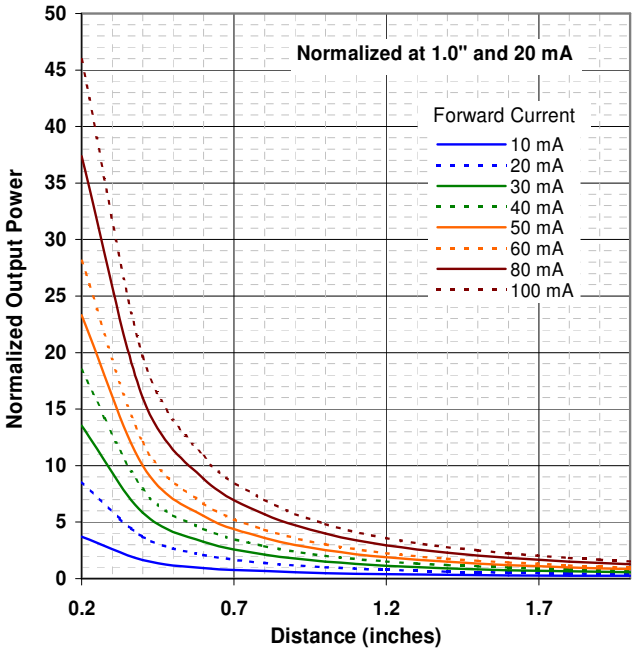
Forward Voltage vs Forward Current vs Temperature



Optical Power vs Forward Current vs Temperature



Distance vs Power vs Forward Current



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