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 PC Board mounted slotted switches and for mounted interrupt detectors.

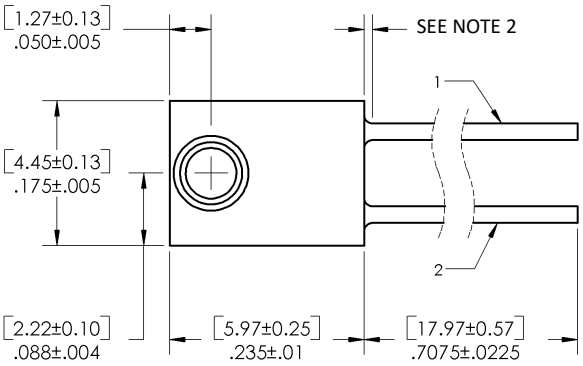
The stable forward V_F vs T_A characteristic make them suitable for applications that have limited voltage, such as battery operation; whereas, the low T_R/T_F makes them ideal for high-speed operations.

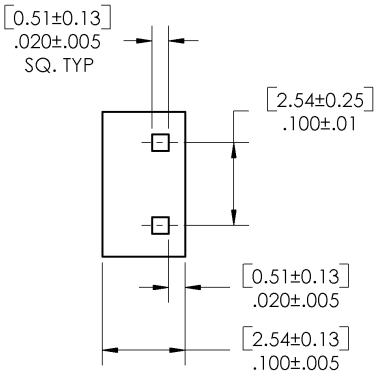
Please refer to Application Bulletin 210 for additional thermal design information.

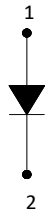
Applications:

- Space-limited applications
- PC Board 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	Recessed Dome	±18°	0.5" / 12.7 mm







Pin #	LED
1	Anode
2	Cathode

NOTES:

1. **OUTSIDE DISCRETE SHELL IS POLYSULFONE.**
2. **MAX ALLOWABLE EPOXY MENSCUS IS 0.010".**

1 ANODE 2 CATHODE

DIMENSIONS ARE IN: [MILLIMETERS] INCHES

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.

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Electrical Specifications

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] (1)	260° C
Power Dissipation (2)	100 mW

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
$E_{E\ (APT)}$ (3)	Apertured Radiant Incidence	0.12	-	0.8	mW/cm^2	I_F = 20 mA
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	$I_{F(PK)}$ = 20 mA, PW = 10 µs, D.C. = 10%

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 1.07 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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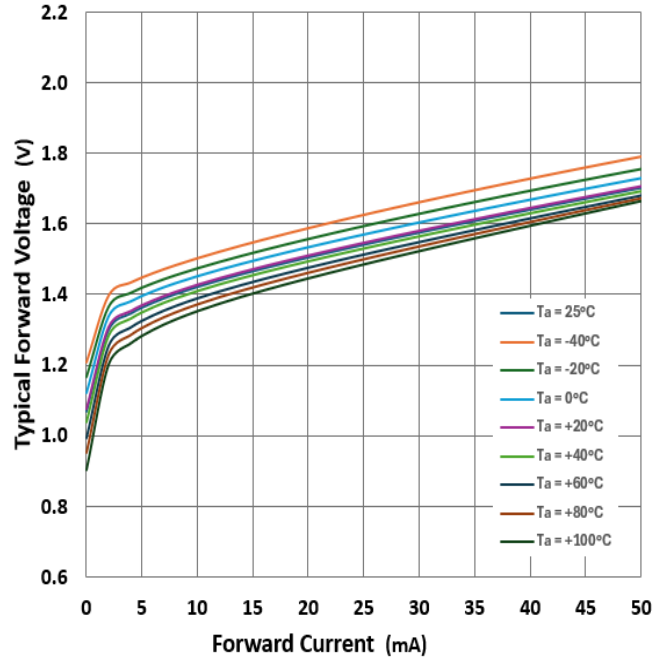
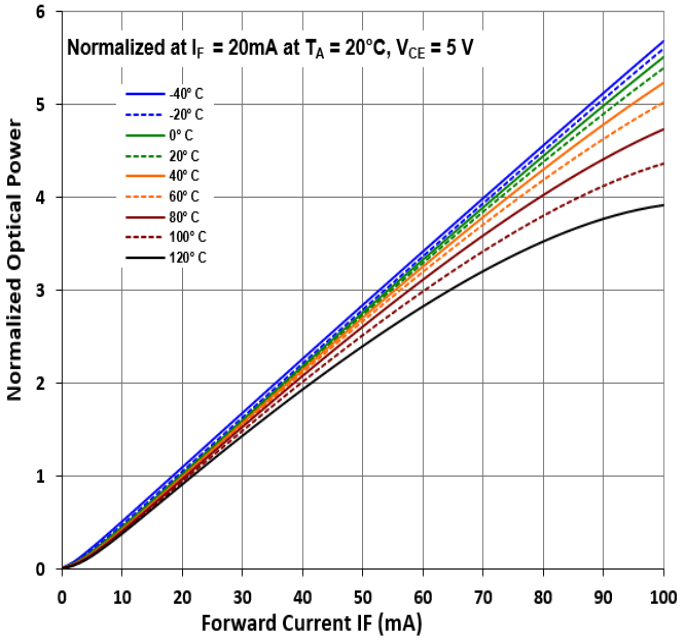
Typical Performance

OP245PS

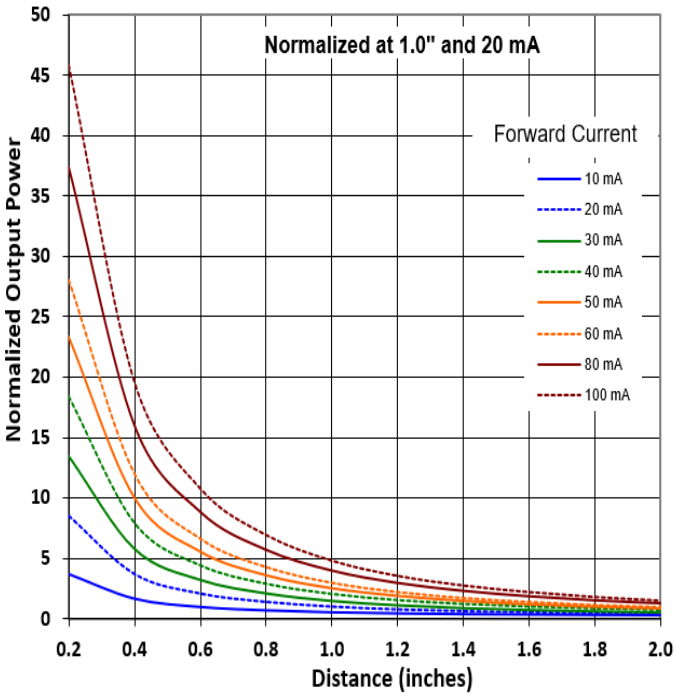
Forward Current vs Forward Voltage vs Temperature



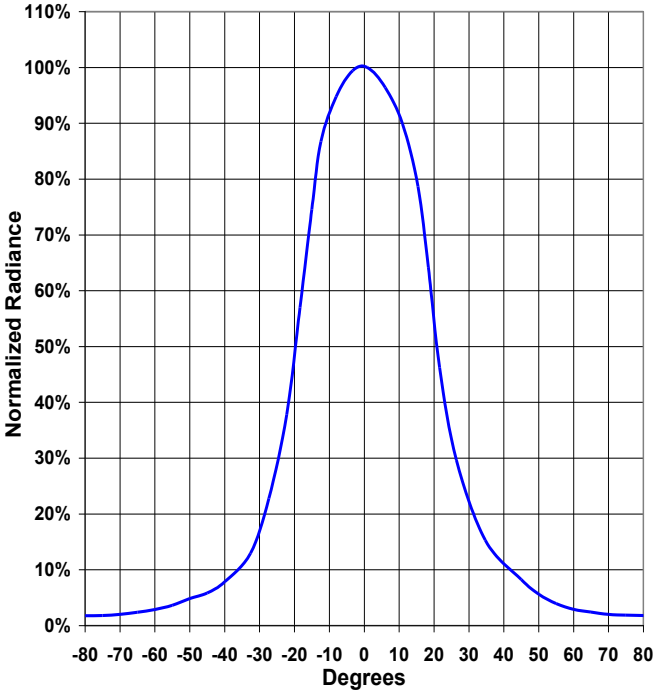
Optical Power vs Forward Current vs Temperature



Distance vs Power vs Forward Current



Beam Angle



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