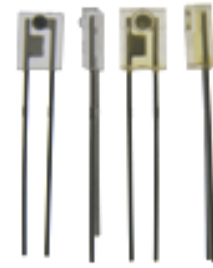


Plastic Infrared Emitting Diode

OP240 Series

OP245 Series



OP240 OP245

Features:

- Wide irradiance pattern
- Side-looking package for space-limited applications
- Wavelength matched to silicon's peak response
- Mechanically and spectrally matched to other OPTEK products

Description:

Each device in this series is a high intensity gallium aluminum arsenide infrared emitting diode that is suited for use as a PCBoard mounted slotted switch or an easy mount PCBoard interrupter.

Each dome lens **OP240** and **OP245** device is an 890 nm diode that is molded in an IR-transmissive clear epoxy side-looking package. *OP240 is mechanically and spectrally matched to the OP550 and OP560 series of phototransistors. OP245 is mechanically and spectrally matched to the OP555 and OP565 series devices.*

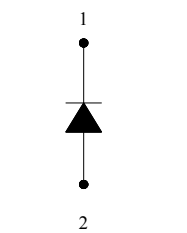
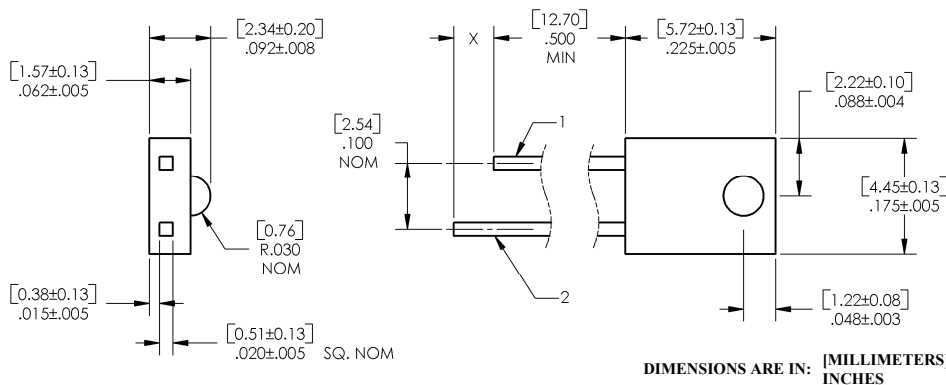
Please refer to Application Bulletins 208 and 210 for additional design information and reliability (degradation) data.

Applications:

- Space-limited applications
- PCBoard mounted slotted switch
- PCBoard interrupter

Ordering Information				
Part Number	LED Peak Wavelength	Lens Type	Total Beam Angle	Lead Length
OP240A	890 nm	Dome	40°	0.50" minimum
OP240B				
OP240C				
OP240D				
OP245A		Recessed		
OP245B				
OP245C				
OP245D				

OP240 (A, B, C, D)



Pin #	LED
1	Cathode
2	Anode

OP245 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.



General Note
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 www.optekinc.com | www.ttelectronics.com

Plastic Infrared Emitting Diode

OP240 Series

OP245 Series

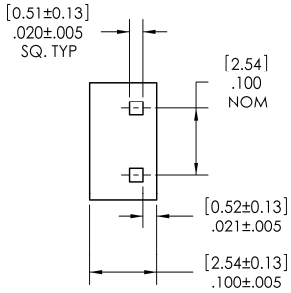
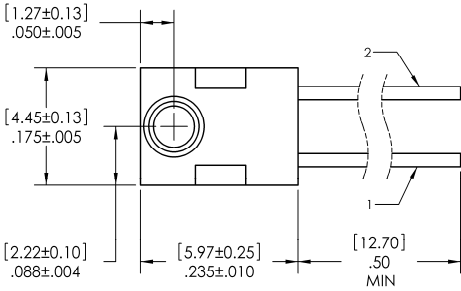


OP245 (A, B, C, D)



Pin #	LED
1	Cathode
2	Anode

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.



DIMENSIONS ARE [MILLIMETERS INCHES]

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Plastic Infrared Emitting Diode

OP240 Series

OP245 Series



Electrical Specifications

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)	
Storage and Operating Temperature Range	-40°C to $+100^\circ\text{C}$
Reverse Voltage	2.0 V
Continuous Forward Current	50 mA
Peak Forward Current	3.0 A
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	$260^\circ\text{C}^{(1)}$
Power Dissipation	$100\text{ mW}^{(2)}$

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
$E_{E(APT)}$	Apertured Radiant Incidence					$I_F = 20\text{ mA}^{(3)}$
	OP240A, OP245A	0.60	-	-	mW/cm^2	
	OP240B, OP245B	0.40	-	1.20		
	OP240C, OP245C	0.20	-	0.86		
	OP240D, OP245D	0.05	-	-		
V_F	Forward Voltage	-	-	1.80	V	$I_F = 20\text{ mA}$
I_R	Reverse Current	-	-	100	μA	$V_R = 2.0\text{ V}$
λ_P	Wavelength at Peak Emission	-	890	-	nm	$I_F = 10\text{ mA}$
B	Spectral Bandwidth between Half Power Points	-	80	-	nm	$I_F = 10\text{ mA}$
$\Delta\lambda_P/\Delta T$	Spectral Shift with Temperature	-	± 0.18	-	$\text{nm}/^\circ\text{C}$	$I_F = \text{Constant}$
θ_{HP}	Emission Angle at Half Power Points	-	40	-	Degree	$I_F = 20\text{ mA}$
t_r	Output Rise Time	-	500	-	ns	$I_{F(PK)}=100\text{ mA}$, $PW=10\text{ }\mu\text{s}$, and $D.C.=10.0\%$
t_f	Output Fall Time	-	250	-	ns	$I_{F(PK)}=100\text{ mA}$, $PW=10\text{ }\mu\text{s}$, and $D.C.=10.0\%$

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 $1.33\text{ mW}/^\circ\text{C}$ 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 $0.653''$ (6.60 mm) from the lens tip. $E_{E(APT)}$ is not necessarily uniform within the measured area.

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Plastic Infrared Emitting Diode

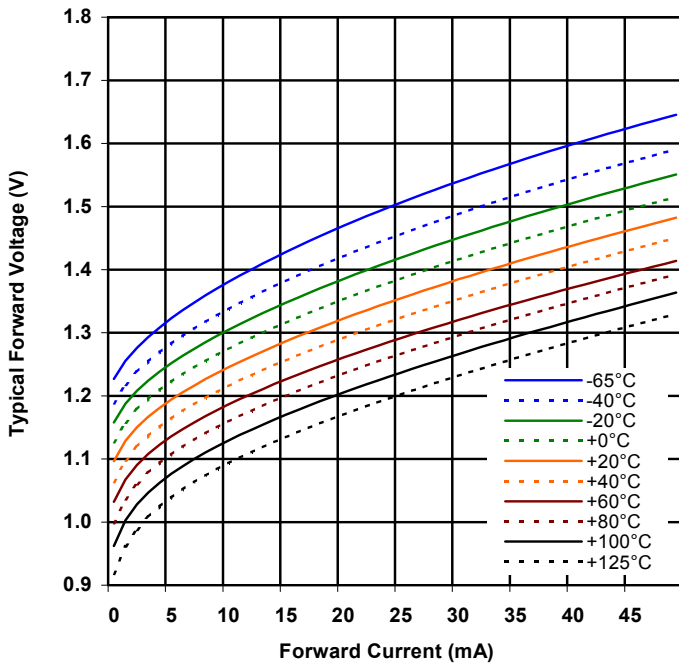
OP240 Series

OP245 Series

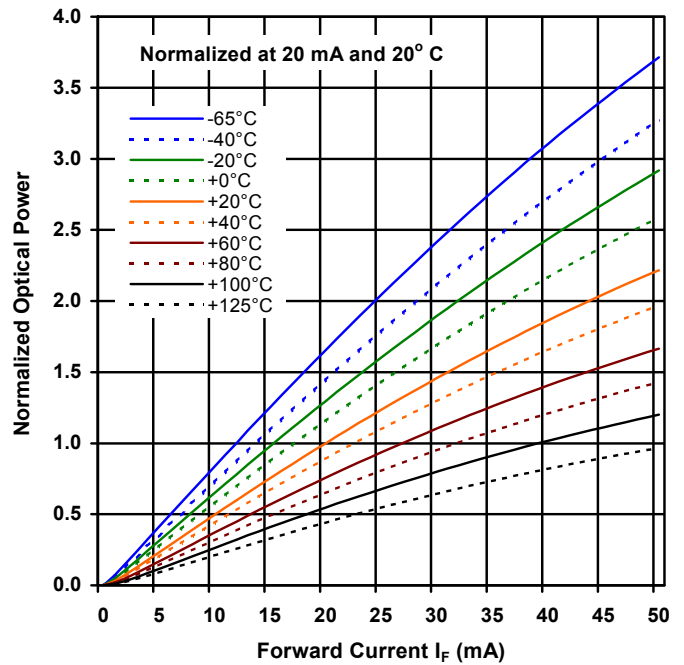


Performance OP240, OP245 (A, B, C, D)

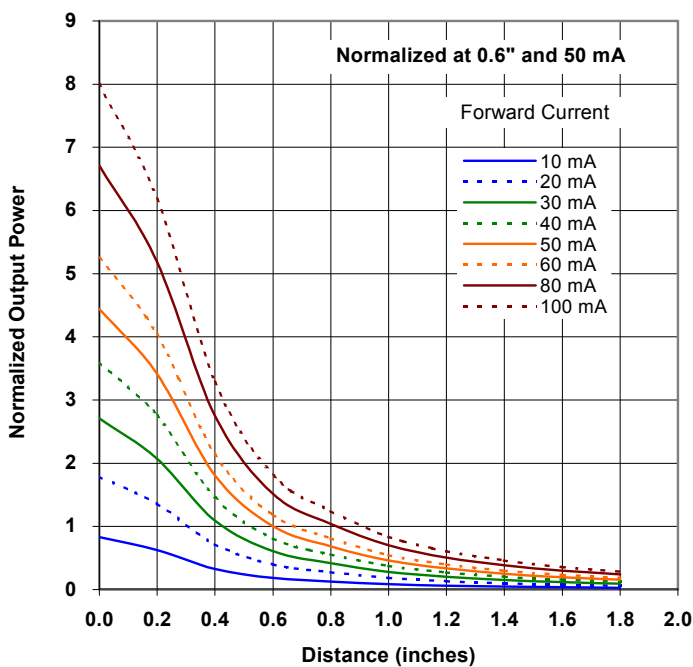
Forward Voltage vs Forward Current vs Temperature



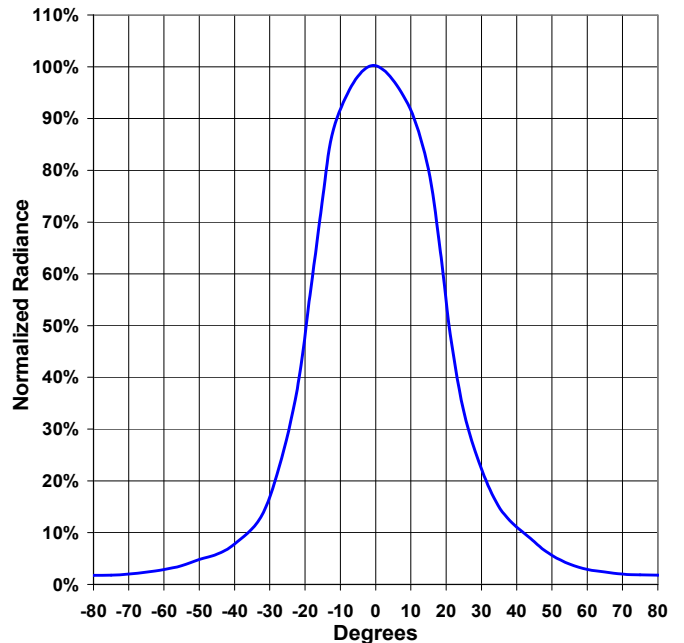
Optical Power vs I_F vs Temp



Distance vs Output Power vs Forward Current



Beam Angle



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