

Plastic Infrared Emitting Diode

OP265FA Series



Features:

- T-1 (3 mm) package style
- Narrow irradiance pattern
- Dome lens
- Higher power output than GaAs at equivalent drive currents
- 850 nm LED

Description:

Each device in the **OP265FA** series is a high intensity gallium arsenide infrared emitting diode (GaAlAs) that is molded in an IR transmissive clear epoxy package with a dome lens. Devices feature a narrow source irradiance pattern and a variety of electrical characteristics. The small T-1 package style makes these devices ideal for space-limited applications.

These devices are mechanically and spectrally matched to other OPTEK products as follows:

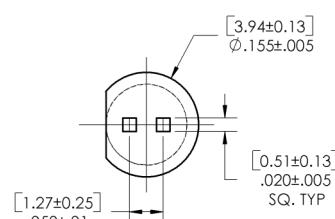
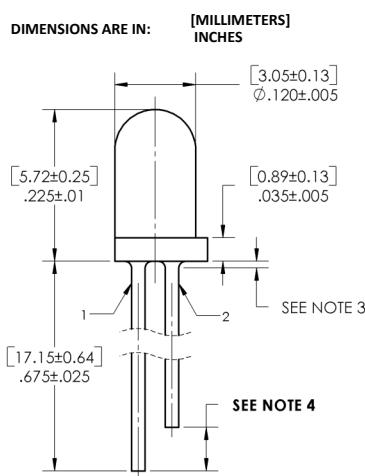
OP265 devices conform to the OP505 and OP535 series devices.

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

Applications:

- Space-limited applications
- Applications requiring coupling efficiency
- Battery-operated or voltage-limited applications

Ordering Information					
Part Number	LED Peak Wavelength	Output Power (mW/cm ²) Min / Max	I _F (mA) Typ / Max	Total Beam Angle	Lead Length (Min)
OP265FAA	850 nm	5.5 / NA	20 / 50	18°	0.50"
		7.5 / 12.5			



DISCRETE PIN-OUT
1 CATHODE
2 ANODE



NOTES:

1. OUTSIDE DISCRETE SHELL IS POLYSULFONE P1700 CLEAR.
2. THIS LED IS BUILT WITH A 850nm CHIP.
3. MAX ALLOWABLE EPOXY MINISCUS IS 0.030.
4. FOR IDENTIFICATION PURPOSES, ANODE LEAD IS .065 ± .035 SHORTER THAN THE CATHODE LEAD.

IMPORTANT:
For identification purposes, ANODE lead is shorter than the CATHODE lead in order to differentiate this product from regular OP265 and/or OP313.

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.



RoHS

General Note

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Electrical Specifications

Absolute Maximum Ratings ($T_A = 25^\circ C$ 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 μ s pulse width, 300 pps)	3.0 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

Notes:

1. RMA flux is recommended. Duration can be extended to 10 second maximum when flow soldering. A maximum of 20 grams force may be applied to the leads when soldering.
2. Derate linearly at 1.07 mW/° C above 25° C.
3. $E_{E(APT)}$ is a measurement of the average apertured radiant incidence upon a sensing area 0.081" (2.06 mm) in diameter, perpendicular to and centered on the mechanical axis of the lens and 0.590" (14.99 mm) from the measurement surface. $E_{E(APT)}$ is not necessarily uniform within the measured area.

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
$E_{E(APT)}$ ⁽³⁾	Apertured Radiant Incidence OP265FAA OP265FAB	5.50 7.50	- -	- 12.5	mW/cm ²	$I_F = 20$ mA Aperture = 0.081" diameter Distance = 0.590" from seating surface to aperture surface
V_F	Forward Voltage	1.00	-	1.80	V	$I_F = 20$ mA
I_R	Reverse Current	-	10	-	μ A	$V_R = 10$ V
λ_p	Wavelength at Peak Emission	-	850	-	nm	$I_F = 10$ mA
B	Spectral Bandwidth between Half Power Points	-	50	-	nm	$I_F = 20$ mA
$\Delta\lambda_p/\Delta T$	Spectral Shift with Temperature	-	± 0.18	-	nm/° C	$I_F = \text{Constant}$
θ_{HP}	Emission Angle at Half Power Points	-	18	-	Degree	$I_F = 20$ mA
t_r	Output Rise Time	-	10	-	ns	$I_{F(PK)} = 100$ mA, PW = 10 μ s, D.C. = 10.0 %
t_f	Output Fall Time	-	10	-	ns	$I_{F(PK)} = 100$ mA, PW = 10 μ s, D.C. = 10.0 %

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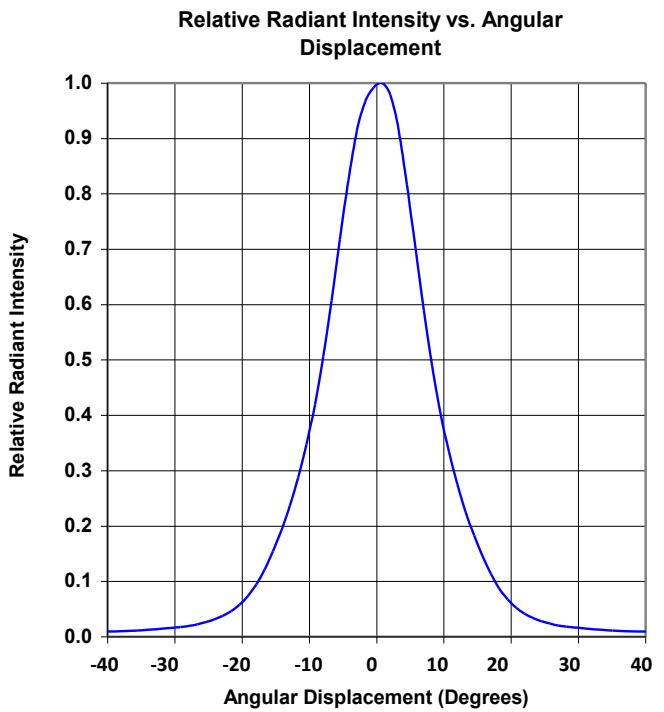
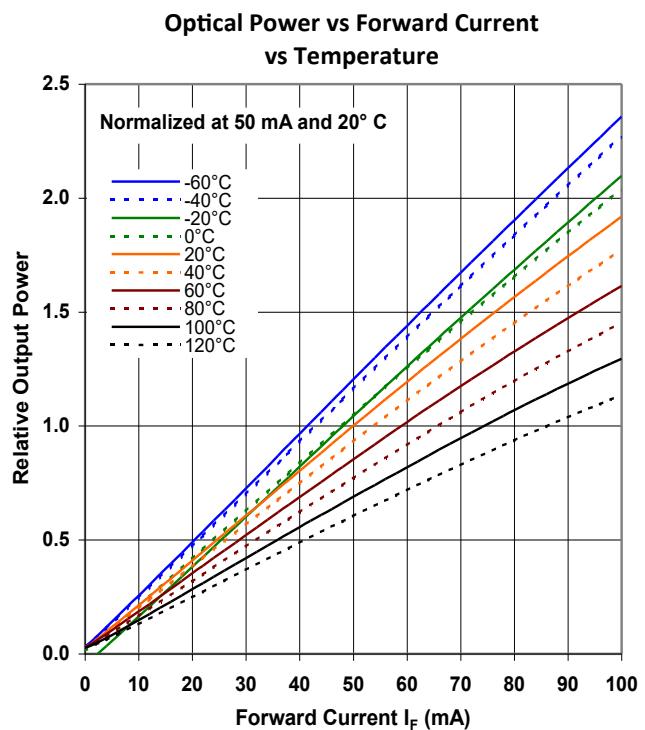
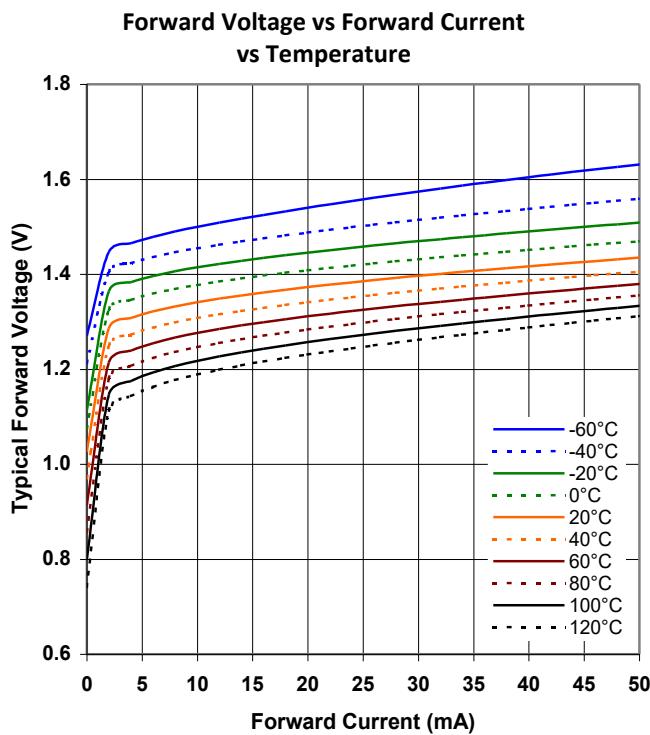
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Typical Performance

OP265F (AA, AB)



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