Plastic Infrared Emitting Diode

OP265 (A, B, W), OP266 (A, B, D, W)



Features:

- T-1 (3 mm) package style
- Choice of narrow or wide irradiance pattern
- Choice of dome or flat lens
- Mechanically and spectrally matched to other OPTEK devices
- Higher power output than GaAs at equivalent drive currents
- 890 nm LED

Description:

Each device in the **OP265** and **OP266** series is a high intensity gallium aluminum arsenide infrared emitting diode (GaAlAs) that is molded in an IR transmissive clear epoxy package with either a dome or flat lens. Devices feature narrow and wide irradiance patterns and a variety of electrical characteristics. The small T-1 package style makes these devices ideal for space-limited applications.

OP265 devices conform to the OP505 and OP535 series devices. OP266 devices conform to OP506 series devices.

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

Applications:

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

Ordering Information

Part Number	LED Peak Wavelength	Output Power (mW/cm²) Min / Max	I_F (mA) Typ / Max	Total Beam Angle	Lead Length
OP265A	890 nm	2.70 / NA	20 / 50	18°	See page 2
OP265B		1.65 / 4.70			
OP265W		1.00 / NA		90°	
OP266A		2.70 / NA		18°	
OP266B		1.65 / 4.70			
OP266D		0.54 / NA			
OP266W		1.00 / NA		90°	

RoHS

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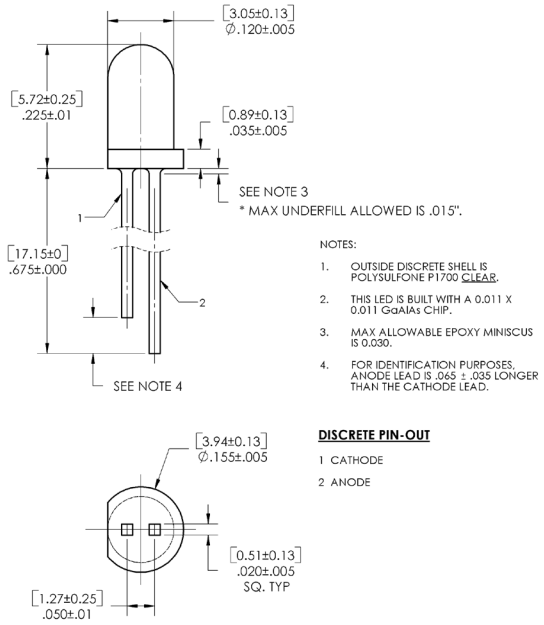
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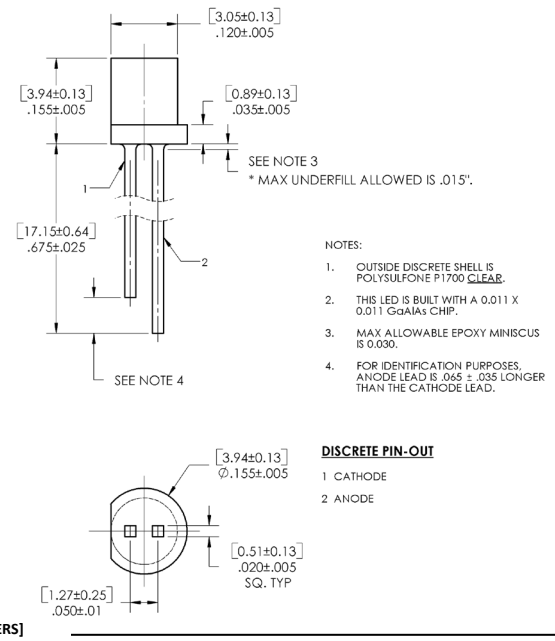
Plastic Infrared Emitting Diode

OP265 (A, B, W), OP266 (A, B, D, W)

OP265 (A, B)

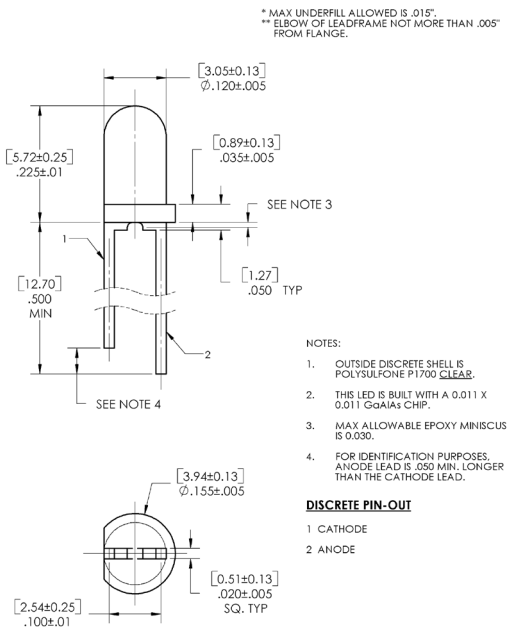


OP265W



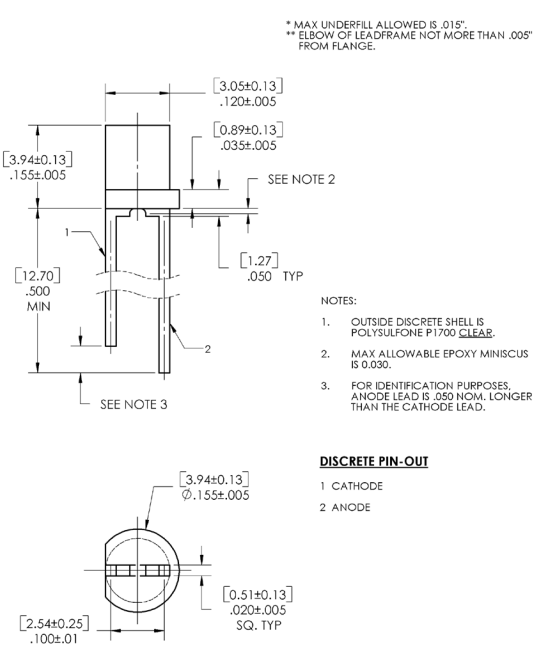
DIMENSIONS ARE IN: [MILLIMETERS] INCHES

OP266 (A, B, D)





OP266W



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.

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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 µs pulse width, 300 pps)	3.0 A
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	260° C
Power Dissipation (1)	100 mW

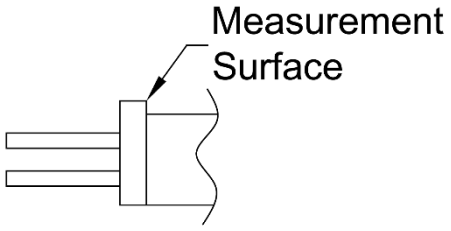
Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
$E_{E(APT)}$ (2)	Apertured Radiant Incidence OP265A, OP266A OP265B, OP266B OP266D	 2.70 1.65 0.54	 - - -	 - 4.70 -	mW/cm²	I_F = 20 mA
P_O	Radiant Power Output OP265 (A, B), OP266 (A, B, D) OP265W, OP266W	 - 1.00	 - -	 - -	mW	I_F = 20 mA
V_F	Forward Voltage	1.00	-	1.80	V	I_F = 20 mA
I_R	Reverse Current	-	-	100	µA	V_R = 2 V
λ_P	Wavelength at Peak Emission	-	890	-	nm	I_F = 10 mA
β	Spectral Bandwidth between Half Power Points	-	80	-	nm	I_F = 10 mA
$\Delta\lambda_P/\Delta_T$	Spectral Shift with Temperature OP265 (A, B), OP266 (A, B, D) OP265W, OP266W	 - -	 ±0.30 ±0.18	 - -	nm/° C	I_F = Constant
θ_{HP}	Emission Angle at Half Power Points OP265 (A, B), OP266 (A, B, D) OP265W, OP266W	 - -	 18 90	 - -	Degree	I_F = 20 mA
t_r	Output Rise Time	-	500	-	ns	$I_{F(PK)}$ = 100 mA, PW = 10 µs, D.C. = 10.0 %
t_f	Output Fall Time	-	250	-	ns	$I_{F(PK)}$ = 100 mA, PW = 10 µs, D.C. = 10.0 %

Notes:

(1) Derate linearly 1.07 mW/° C above 25° C.

(2) $E_{E(APT)}$ 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 areas.



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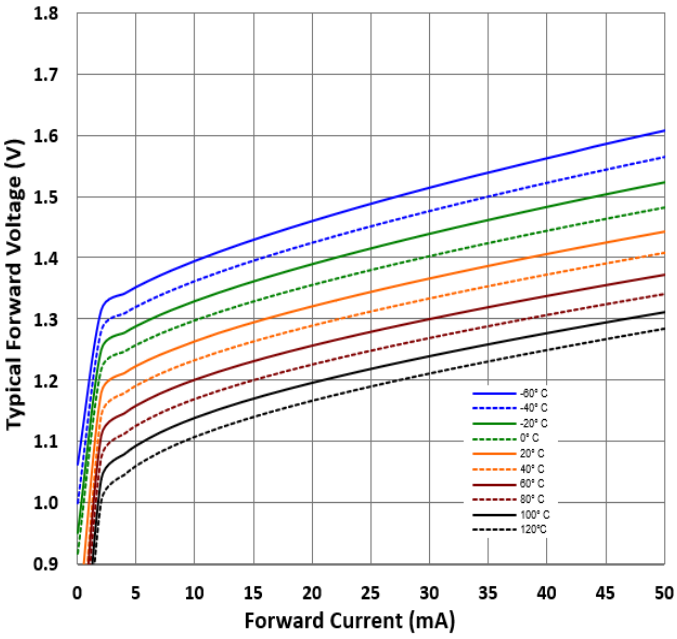
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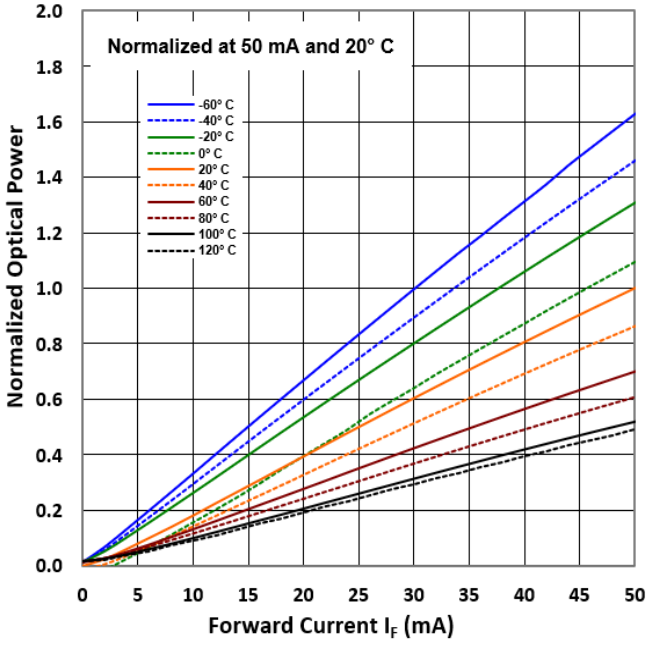
Typical Performance

OP265 (A, B, W), OP266 (A, B, D, W)

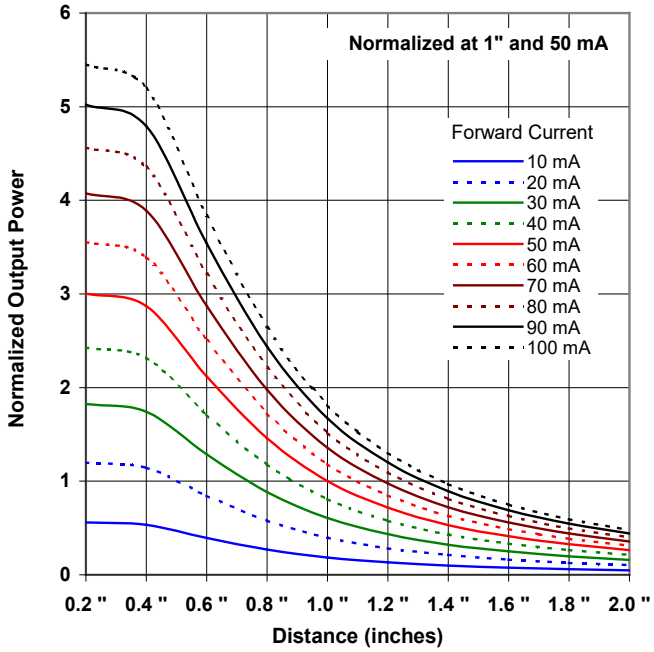
LED Forward Voltage vs I_F vs Temp



Optical Power vs I_F vs Temperature



Distance vs Output Power vs Forward Current



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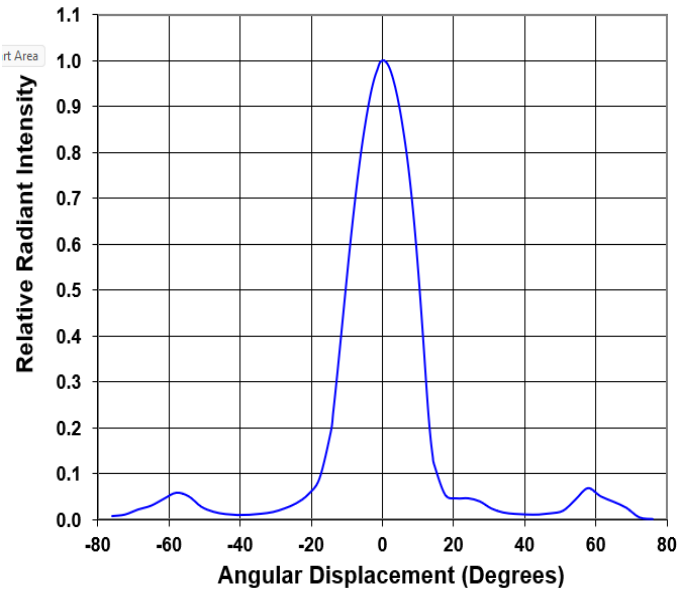
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Typical Performance

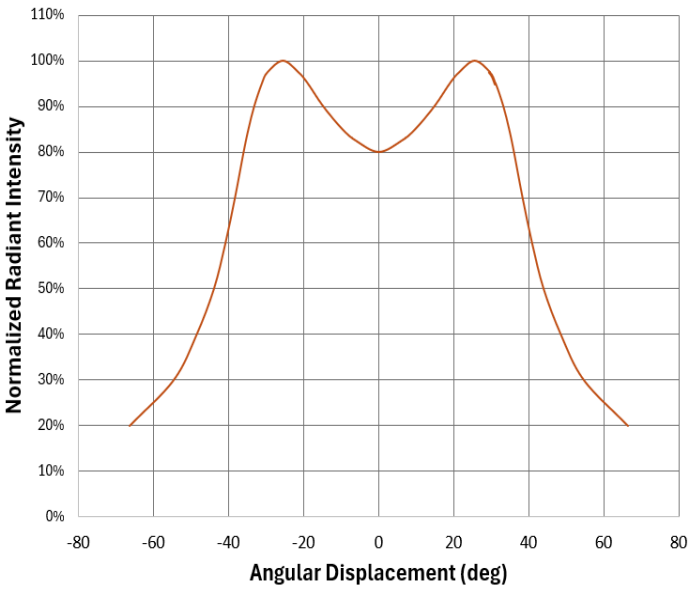
OP265 (A, B), OP266 (A, B, D)

Relative Radiant Intensity vs Angular Displacement



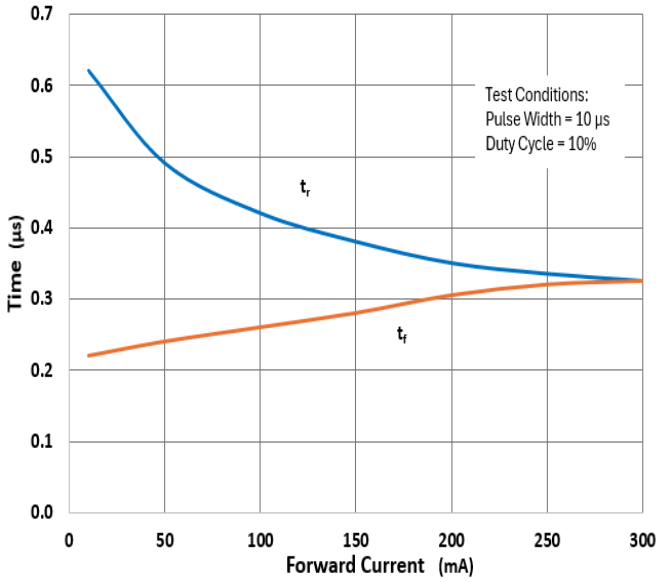
OP265W, OP266W

Relative Radiant Intensity vs Angular Displacement

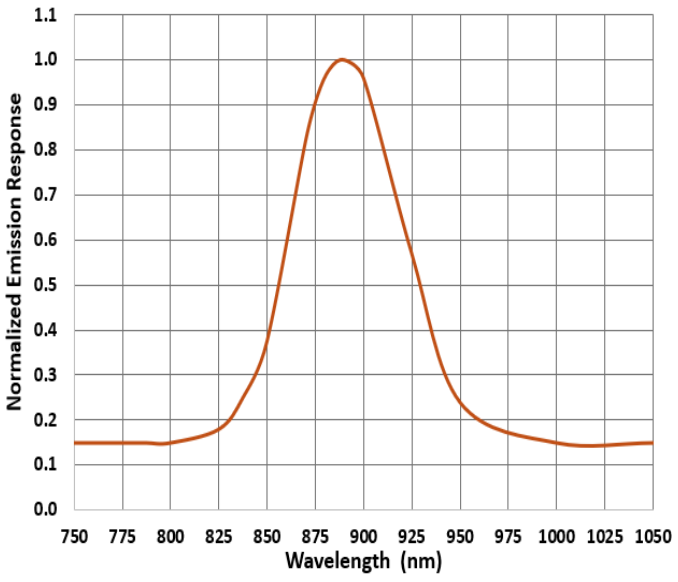


OP265 OP265W OP266 OP266W

Rise and Fall Time vs Forward Current



GaAlAs LED Spectral Output



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